

ANSI Approved Standards

Listed below are all approved American National Standards as of 3/1/2006. Many of these documents are available in electronic format (PDF) and can be purchased from ANSI's Electronic Standards Store (ESS) at webstore.ansi.org. Hard copies of these documents can be purchased through Global Engineering Documents at global.ihc.com. They may also carry documents in electronic format that are not available on the ESS.

3 (3-A Sanitary Standards, Inc.)

AA (Aluminum Association)

ANSI H35.1(M)-2004, Alloy and Temper Designation Systems for Aluminum (Metric)

Covers systems for designating wrought aluminum and wrought aluminum alloys, aluminum and aluminum alloys in the form of castings and foundry ingot, and the tempers in which wrought products and castings are produced

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ANSI H35.2(M)-2003, Dimensional Tolerances for Aluminum Mill Products (Metric)

Includes dimensional tolerances for aluminum mill products accepted by both the aluminum industry and users of the metal. They are the basis for dimensional tolerances specified in government, technical societies and other specifications for aluminum.

ANSI H35.2-2003, Dimensional Tolerances for Aluminum Mill Products

Includes dimensional tolerances for aluminum mill products accepted by both the aluminum industry and users of the metal. They are the basis for dimensional tolerances specified in government, technical societies and other specifications for aluminum.

ANSI H35.3-1997 (R2003), Designation System for Aluminum Hardeners

Covers a system for designating aluminum hardeners used primarily for the addition of alloying, or grain refining elements, or modifiers to aluminum alloy melts.

ANSI H35.4-2003, Designation System for Unalloyed Aluminum

Covers a system for designating unalloyed aluminum not made by a refining process and used primarily for remelting.

ANSI H35.5-1993 (R2003), Nomenclature System for Aluminum Metal Matrix Composite Materials

This standard covers a system for designating wrought and cast aluminum metal matrix composite materials by appending suffixes to existing aluminum designation systems, including generic tempers.

AAMA (American Architectural Manufacturers Association)

ANSI/NAFS 1-2000, Voluntary Performance Specification for Windows, Skylights and Glass Doors

Provides an updated revision to ANSI/AAMA/NWWDA 101/I.S.2-97, which has enjoyed wide acceptance in the United States since its publication. Like its predecessor, the North American Fenestration Standard (NAFS1) is a material-neutral, performance-based specification for wood, vinyl and aluminum windows and glass doors. The specification establishes performance criteria for multiple tiers of product rating and classification, in response to the wide variety of end use conditions fenestration products encounter across the United States and Canada. In addition, specific requirements for all operator types are given. The revised specification also includes many improvements and additions. The addition of skylights, specialty products, sidelights and transoms to the standard brings the total number of operating

AAMI (Association for the Advancement of Medical

ANSI/AAMI AT6-2005, Autologous Transfusion Devices

Establishes labeling and performance requirements, test methods, and terminology that will help establish a reasonable level of safety and efficacy for autologous transfusion devices. Specifically, includes requirements for sterile, disposable systems and associated electromechanical hardware designed to collect and filter or process, or both, extravasated blood for reinfusion or erythrocytes or filtered whole blood into the patient's circulation. Aspects of these systems related to collection, anticoagulation (systemic and regional), storage, processing and filtration, and reinfusion are within the scope of this standard.

ANSI/AAMI BE78-2002, Biological Evaluation of Medical Devices – Part 10: Tests for Irritation and Sensitization

Gives guidance to agencies, manufacturers, research laboratories and others for evaluating the interactions of medical devices with blood.

ANSI/AAMI BF64-2002, Leukocyte Reduction Filters

Contains labeling requirements, performance requirements, test methods, and terminology for disposable filters used for the reduction of leukocytes from blood or blood components during transfusion.

ANSI/AAMI BF7-1989 (R2002), Blood Transfusion Micro-Filters

Describes safety and performance requirements for disposable microfilters used for the removal of microaggregates from blood or blood products during transfusion.

ANSI/AAMI BP22-1994 (R2001), Blood Pressure Transducers

Specifies safety and performance requirements for transducers, including cables, designed for blood pressure measurements through an indwelling catheter or direct puncture and disclosure.

ANSI/AAMI DF80-2003, Medical electrical equipment - Part 2-4: Particular requirements for the safety of cardiac defibrillators (including automated external defibrillators)

Specifies requirements for the safety of medical electrical equipment intended to defibrillate the heart by an electrical pulse via electrodes applied either to the patient's skin (external electrodes) or to the exposed heart (internal electrodes). This standard does not apply to implantable defibrillators, remote control defibrillators, external transcutaneous pacemakers, or separate cardiac monitors. This adoption of an international standard with modifications was previously listed for comment under AAMI/IEC 60601-2-4.

ANSI/AAMI EC11-1991 (R2001), Diagnostic Electrocardiographic Devices

Establishes minimum safety and performance requirements for electrocardiographic (ECG) systems with direct writing devices which are intended for use, under the operating conditions specified in this standard, in the analysis of rhythm and of detailed morphology of complex cardiac complexes. Subject to this standard are all parts of the electrocardiographic system necessary to obtain the signal from the surface of the patient's body, to amplify this signal, and to display it in a form suitable for diagnosing the heart's electrical activity.

ANSI/AAMI EC12-2000 (R2005), Disposable ECG Electrodes

This standard contains minimum labeling, safety and performance requirements; test methods; and terminology for disposable electrocardiographic electrodes.

ANSI/AAMI EC13-2002, Cardiac Monitors, Heart Rate Meters, and Alarms

Establishes minimum safety and performance requirements for cardiac monitors, heart rate meters, and alarms, which are used to acquire and/or display electrocardiographic signals with the primary purposes of continuous detection of cardiac rhythm.

ANSI/AAMI EC38-1998, Ambulatory Electrocardiographs

Establishes minimum safety and performance requirements for long-term electrocardiographic monitoring devices (ECGs), also commonly called ambulatory electrocardiographs (AECGs), that are intended for use under the operating conditions specified in this standard, in the analysis of rhythm and of relevant morphology of cardiac complexes.

ANSI/AAMI EC53-1995 (R2001), ECG Cables and Wires

Covers cables and patient leadwires used for surface electrocardiographic (ECG) monitoring in cardiac monitors. This standard covers both disposable and reusable leadwires.

ANSI/AAMI EC53A-1998 (R2001), ECG Cables and Wires

Covers cables and patient leadwires used for surface electrocardiographic (ECG) monitoring in cardiac monitors. This standard covers both disposable and reusable leadwires.

ANSI/AAMI EC57-1998 (R2003), Testing and Reporting Performance Results of Cardiac Rhythm and ST Segment Measurement Algorithms

This recommended practice establishes a method for testing and reporting the performance of algorithms used to detect cardiac rhythm disturbances, including the ST segment.

ANSI/AAMI EC71-2001, Standard Communications Protocol for Computer-Assisted Electrocardiography

Covers the two-way digital transmission of remote requests and results between digital electrocardiographs (ECG carts) and heterogeneous computer systems (hosts). It documents the common conventions required for the cart-to-host as well as cart-to-cart interchange of specific patient data (demographic, recording...), ECG signal data, ECG measurement and ECG interpretation results.

ANSI/AAMI EQ56-1999 (R2004), Recommended Practices for a Medical Equipment Management Program

Specifies the minimum required characteristics for a management program designed to minimize certain risks associated with equipment that is used during routine care of patients in a health care organization. The document addresses the structure of the program, the documentation that must be produced by the program, and the staffing and resources allocated to those responsible for maintaining the medical equipment.

ANSI/AAMI HE48-2001, Human Factors Engineering Guidelines and Preferred Practices for the Design of Medical Devices

To provide ergonomic information and human factors engineering guidance so that optimum user and patient safety, system safety and performance, and operator effectiveness will be reflected in medical device design. Specifically, the recommended practice deals with the controls, displays, consoles, size, weight, and general user interface design of medical devices and is extensively illustrated. User instructions, manuals, software, and algorithms associated with medical devices are also discussed briefly.

ANSI/AAMI HF18-2001, Electrosurgical Devices

Establishes minimum safety and performance requirements for electrosurgical systems.

ANSI/AAMI ID26-2004, Medical Electrical Equipment - Part 2: Particular Requirements for the Safety of Infusion Pumps and Controllers

Establishes minimum labeling, safety, performance, and testing requirements for electromechanical infusion devices that have a pumping or gravity-feed controlling function, that deliver fluid from either a separate or a self-contained source, and that are intended for use with parenteral fluids for such purposes as parenteral nutrition and administration of drugs and routine fluids. Public review of this revised document was originally announced in the May 21 2004 edition of ANSI Standards Action, and closed on July 20 2004. Comments received by a member of the document's authoring committee prompted the two additional revisions encompassed in the current review.

ANSI/AAMI ID54-1996 (R2005), Enteral Feeding Set Connectors and Adapters

Specifies safety requirements for enteral feeding set connectors and adapters.

ANSI/AAMI II36-2004, Infant Incubators

Establishes safety requirements for baby incubators with the view to minimizing hazards to the patient and user. It also specifies tests by which compliance requirements can be verified. It does not apply to transport incubators nor infant radiant warmers which are covered in other publications.

ANSI/AAMI II51-2004, Medical electrical equipment - Part 2: Particular requirements for safety of transport incubators

Specifies safety requirements for transport incubators with the view to minimizing hazards to the patient and user. It also specifies tests by which compliance requirements can be verified. It does not apply to infant incubators nor infant radiant warmers which are covered in other publications.

ANSI/AAMI NS14-1995 (R2002), Implantable Spinal Cord Stimulators

This standard establishes safety and performance requirements for internally and/or externally powered implantable spinal cord stimulators. This standard covers all electrode configurations and all elements of the spinal cord stimulation system. The system consists of an implanted pulse generator, connected electrodes placed over the spinal cord, and an external transmitter or programmer for transmitting energy and/or information across the patient's skin to the implanted pulse generator.

ANSI/AAMI NS15-1995 (R2002), Implantable Peripheral Nerve Stimulators

Establishes safety and performance requirements for internally and/or externally powered implantable peripheral nerve stimulators. This standard covers all elements of the peripheral nerve stimulation system, which consists of an implanted pulse generator, connecting electrodes placed on or around the nerve, and an external transmitter or programmer for transmitting energy and/or information across the patient's skin to the implanted pulse generator.

ANSI/AAMI NS28-1988 (R2001), Intracranial Pressure Monitoring Devices

Establishes minimum labeling, safety, and performance requirements for intracranial pressure monitoring devices, whether percutaneous, fully implantable, or noninvasive. Also covered by this standard are test and calibration methods needed to establish compliance with the standard.

**ANSI/AAMI PAC49-1993 (R2000),
Pacemaker Emergency Intervention
System**

Specifies labeling and performance requirements for a pacemaker emergency intervention system (EIS), which consists of a magnet and a bradycardial pacemaker. When a pacemaker conforming to this standard is perceived to be operating in a nonstandard way, or in a way that is not understood by the examiner, the magnet can be used to reprogram the pacemaker to a standard mode as specified by the standard. An EIS is intended to be used in emergency rooms, clinics, or other medical locations where a physician skilled in pacemakers is not immediately available. Follow-up to use of the EIS should always occur so that the pacemaker can be reprogrammed to an optimum setting by a physician skilled in the use of pacemakers.

**ANSI/AAMI PB70-2003, Liquid Barrier
Performance and Classification of
Protective Apparel and Drapes Intended for
Use in Health Care Facilities**

Establishes a barrier performance classification system for protective apparel and drapes used in health care facilities. It provides manufacturers with a consistent basis for creating device labeling claims regarding barrier efficacy against liquid-borne microorganisms. Through labeling requirements, the standard is also intended to assist end-users in selecting the appropriate protective apparel and drapes to inhibit the transfer of microorganisms associated with blood, body fluids, and other potentially infectious materials (OPIM). The standard uses industry-accepted laboratory test methods to form the basis for barrier claims.

**ANSI/AAMI PC69-2000, Active Implantable
Medical Devices - Electromagnetic
Compatibility - EMC Test Protocols for
Implantable Cardiac Pacemakers and
Implantable Cardioverter Defibrillators**

Specifies test methods appropriate to the interference frequencies at issue. The standard may specify performance limits or require disclosure of performance in the presence of electromagnetic emitters where appropriate. Provides manufacturers of electromagnetic emitters with information about the level of immunity to be expected from active implantable cardiovascular devices.

**ANSI/AAMI RD16-1996 (R2005), First-Use
Hemodialyzers**

Establishes labeling requirements, safety and performance requirements, and tests for hemodialyzers in the purification of the blood by diffusion and convection between the blood and a solution of chemicals through a semipermeable membrane.

**ANSI/AAMI RD16-1996/A1-2002 (R2005),
Hemodialyzers**

Establishes labeling requirements, safety and performance requirements, and tests for hemodialyzers in the purification of the blood by diffusion and convection between the blood and a solution of chemicals through a semipermeable membrane.

**ANSI/AAMI RD17-2005, Hemodialyzer Blood
Tubing**

Provides minimum requirements to ensure safe and effective performance of hemodialysis blood tubing sets. Includes all tubing segments which are used to transport blood (or fluids) from a patient's vascular access device to a hemodialyzer, as well as all tubing segments that are used to transport blood (or fluids) to a patient's vascular access device from a hemodialyzer. This standard is technically identical to the 1994 standard and its 2002 amendment but has been consolidated into a single document and informative material (the committee roster and foreword) have been updated."

**ANSI/AAMI RD47-2002, Reuse of
Hemodialyzers**

This recommended practice is addressed to the physician responsible for reprocessing hemodialyzers. It covers personnel and patient considerations, records, equipment, physical plant and environmental safety, reprocessing material, patient identification and hemodialyzer labeling, reprocessing and storage procedures, disposition of rejected dialyzers, preparation for subsequent use, patient monitoring, and quality assurance and quality control.

**ANSI/AAMI RD47:2002/A1:2003, Reuse of
Hemodialyzers Amendment 1**

This amendment modifies storage temperature requirements for used dialyzers prior to reprocessing.

ANSI/AAMI RD5-2003, Hemodialysis Systems

Covers the dialysis machine used to proportion dialysate, monitor the dialysate and the accessories normally found on the dialysis machine.

**ANSI/AAMI RD52-2004, Dialysate for
Hemodialysis**

The intent of this recommended practice is to provide dialysis practitioners with guidance on the preparation of dialysate for hemodialysis and related therapies, from the point at which municipal water enters their dialysis facility to the point at which the final dialysate enters the dialyzer. Included in the scope of the recommended practice is: (1) equipment used to purify and distribute water used for the preparation of dialysate and other hemodialysis applications, (2) equipment used to prepare concentrate from powder at a dialysis facility, and (3) preparation of the final dialysate from purified water and concentrate.

**ANSI/AAMI RD61-2000, Concentrates for
Hemodialysis**

Covers apparatus for preparing dialysate, monitors of the dialysate, and accessories for monitoring the extracorporeal blood circuit. (NOTE: ANSI/AAMI RD5-1992 is being divided into three separate documents covering (1) Hemodialysis systems, revision of ANSI/AAMI RD5-1992; (2) Concentrates for hemodialysis, new American National Standard, AAMI RD61; and (3) Water for hemodialysis, new American National Standard, AAMI RD62)

**ANSI/AAMI RD62-2001, Water Treatment
Equipment for Hemodialysis Applications**

Applies to water to be used in preparation of concentrates and dialysing fluids for hemodialysis. This standard was listed for public review in the 2/9/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

**ANSI/AAMI SP10-2002, Manual, Electronic,
or Automated Sphygmomanometers**

Establishes safety and performance requirements for all sphygmomanometers, whether non-automated, automated or electronic, that are used with an occluding cuff for the indirect determination of arterial blood pressure. The devices which sense or display pulsations, flow, or sounds in connection with the measurement, display, or recording of blood pressure are included in this document. Establishes safety and performance requirements for all sphygmomanometers, whether non-automated, automated or electronic, that are used with an occluding cuff for the indirect determination of arterial blood pressure. The devices which sense or display pulsations, flow, or sounds in connection with the measurement, display, or recording of blood pressure are included in this document. This standard was listed for public review in the

**ANSI/AAMI SP10-2002/A1, Manual,
electronic or automated
sphygmomanometers**

This amendment modifies sections 4.1.3 and 4.4.5.1B of the ANSI/AAMI SP10:2002.

**ANSI/AAMI ST19-1999, Biological Indicators
for Saturated Steam Sterilization Processes
in Health Care Facilities**

Specifies general production, labeling, and performance requirements for the manufacture of biological indicators and suspensions intended for use in the validation and monitoring of sterilization cycles.

**ANSI/AAMI ST21-1999, Biological Indicators
for Ethylene Oxide Sterilization Processes
in Health Care Facilities**

Specifies general production, labeling, and performance requirements for the manufacture of biological indicators and suspensions intended for use in the validation and monitoring of sterilization cycles.

ANSI/AAMI ST24-1999 (R2005), Automatic, General-Purpose Ethylene Oxide Sterilizers and Ethylene Oxide Sterilant Sources Intended for Use in Health Care Facilities

Covers minimum labeling, safety, performance and testing requirements for ethylene oxide sterilizers that are intended for general-purpose use in health care facilities and that have automatic controls. It also covers labeling, product composition, and container requirements for ethylene oxide sterilant sources and requirements for emission control systems.

ANSI/AAMI ST33-1996, Guidelines for the Selection and Use of Reusable Rigid Sterilization Container Systems for Ethylene Oxide Sterilization and Steam Sterilization in Health Care Facilities

Covers the selection and use of reusable rigid sterilization container systems. Guidelines are provided for cleaning and decontamination, preparation and assembly, sterilizer loading and unloading, matching the container system to the appropriate sterilization cycle, quality assurance, sterile storage, transport, and aseptic presentation.

ANSI/AAMI ST35-2003, Safe Handling and Biological Decontamination of Medical Devices in Health Care Facilities and in Nonclinical Settings

Covers safe handling and biological decontamination of reusable medical devices, design criteria for decontamination areas; staff qualifications and personnel considerations; immediate handling of contaminated items; transport of contaminated items; and decontamination processes. Also includes informative annexes on principles of infection transmission; chemical disinfectants, thermal disinfection; safe handling of devices returned to manufacturers for service, repair, & failure investigation.

ANSI/AAMI ST37-1996, Flash Sterilization – Steam Sterilization of Patient Care Items for Immediate Use

In-hospital steam sterilization by the unwrapped (flash) method, including guidelines for functional and physical design of areas in health care facilities where flash sterilization is carried out; staff qualifications, education personnel considerations; sterilization processing procedures use and maintenance of gravity-displacement and prevacuum sterilizers for flash sterilization.

ANSI/AAMI ST40-2004, Table-Top Dry Heat (Heated Air) Sterilization and Sterility Assurance in Dental and Medical Facilities

Provides guidelines for dry heat sterilization in health care facilities. Covers functional and physical design criteria for work areas; staff qualifications, education, and other personnel considerations; sterilization processing procedures; installation, care and maintenance of table-top dry heat sterilizers; and quality control.

ANSI/AAMI ST41-1999 (R2005), Ethylene oxide sterilization in health care facilities: Safety and effectiveness

Covers the safe and effective use of ethylene oxide as a sterilant in health care facilities. The provisions of this document are intended to promote assurance of sterility, help minimize occupational exposure to ethylene oxide, and guide health care personnel in the proper use of processing equipment.

ANSI/AAMI ST42-1998, Steam Sterilization and Sterility Assurance in Office-Based, Ambulatory-Care, Medical and Dental Facilities

Provides guidelines for sterilization by either the wrapped or unwrapped method, in ambulatory-care clinics, office-based surgical practices, dental offices, and similar health care facilities.

ANSI/AAMI ST46-2002, Good Hospital Practice: Steam Sterilization and Sterility Assurance

Provides guidelines for steam sterilization in hospitals and other health care facilities. The recommendations are intended to promote assurance of sterility and to guide health care personnel in the proper use of processing equipment. Included within the scope are functional and physical design criteria for sterilization processing areas (decontamination, preparation, sterilization, and sterile storage areas); staff qualifications, education, and other personnel considerations; processing procedures; installation, care, and maintenance of steam sterilizers; quality control; and quality process improvement. Definitions of terms and a bibliography are also provided. This standard was listed for public review in the 4/20/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/AAMI ST50-2004, Dry Heat (Heated Air) Sterilizers

Establishes minimum labeling and performance requirements for dry heat (heated air) sterilizers intended for use in dental and physicians offices, laboratories, ambulatory-care clinics, hospitals, and other health care facilities.

ANSI/AAMI ST55-2003, Table-Top Steam Sterilizers

Covers minimum labelling, safety, performance and testing requirements for small steam sterilizers that have a volume of less than or equal to 2 cubic feet, have automatic controls, generate steam from water within the chamber or from an integral steam generator and provide means of controlling process time and temperature.

ANSI/AAMI ST58-2005, Chemical sterilization and high-level disinfection in health care facilities

Provides guidelines for the selection and use of liquid chemical sterilants (LCS) high-level disinfectants (HLDs) and gaseous chemical sterilizers for use in hospitals and other health care facilities. Includes functional and design criteria for chemical sterilization and high-level disinfection processing areas; staff qualifications, education and other personnel considerations; criteria for selecting LCSs/HLDs and gaseous chemical sterilizers; safety and efficacy considerations; preparation of devices for LCS or HLD processing; quality control methods; and quality process development.

ANSI/AAMI ST59-1999, Sterilization of Healthcare Products - Biological Indicators - Part 1: General Requirements

Specifies general production, labeling, and performance requirements for the manufacture of biological indicators and suspensions intended for use in the validation and monitoring of sterilization cycles. (This draft is based on an International Standard, ISO 11138-1, with U.S. deviations). This is the third public review for this standard. It was originally listed in the July 21, 1995 and November 10, 1995 issues of Standards Action. It is being resubmitted due to substantive changes.

ANSI/AAMI ST63-2002, Sterilization of health care products-Requirements for the development, validation, and routine control of an industrial sterilization process for medical devices-Dry heat

Specifies requirements and guidance for the development, validation and routine control of a dry heat sterilization process for medical devices. Although the scope of this standard is limited to medical devices, it specifies requirements and provides guidance that may be applicable to other health care products. This standard does not apply to processes that utilize infrared or microwaves as the heating medium and does not detail a specified requirement for designation of a medical device as "sterile".

ANSI/AAMI ST65-2000, Processing of Reusable Surgical Textiles for Use in Health Care Facilities

Provides guidelines for the proper handling, processing, and preparation of reusable surgical textiles, either on-site or off-site for use in health care facilities. Specifically addressed are design criteria for functional work areas; staff qualifications, education, training, dress codes, and other personnel considerations; receiving and handling of soiled surgical textiles; laundry processing considerations; reasport of both soiled and clean surgical textiles; installation, care, and maintenance of laundry equipment; quality control; and regulatory considerations. Definitions of term and a bibliography are provided.

ANSI/AAMI ST66-1999, Sterilization of Health Care Products - Chemical Indicators - Part 2: Class 2 Indicators for Air Removal Test

Specifies the requirements for an indicator and alternative test system used to evaluate the effectiveness of air removal during the pre-vacuum phase of pre-vacuum steam sterilization cycles. Additionally, this standard includes test methods and equipment used to meet these performance requirements.

ANSI/AAMI ST67-2003, Sterilization of health care products - Requirements for products labeled "STERILE"

Establishes requirements and provides guidance for the selection of an appropriate Sterility Assurance Level (SAL) for terminally sterilized medical devices labeled "sterile." Also establishes acceptance criteria for maximum contamination rates for aseptically-filled products labeled "sterile."

ANSI/AAMI ST72-2002, Bacterial Endotoxin -Test Methodologies, Routine Monitoring and Alternatives to Batch Testing

Specifies general criteria to be applied in the determination of bacterial endotoxins (pyrogens) on sterilized or sterilizable healthcare products, components or raw materials. Endotoxin methodologies covered include both qualitative (limit) methods and quantitative (end-point) methods. Determination of pyrogens other than bacterial endotoxins is not covered and acceptable levels for bacterial endotoxins are not covered. This standard was listed for public review in the 4/20/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/AAMI ST8-2001, Hospital Steam Sterilizers

Establishes minimum construction and performance requirements for steam sterilizers that are intended for use in health care facilities, have a volume greater than 2 cubic feet (cu ft) (56 liters [l]), and have automatic controls, generally use an external steam source (but may also have an integral electric boiler), and provide a means for automatically recording time and temperature. Definitions of terms and normative references are also included. NOTE: For the purposes of this standard, health care facilities means hospitals, nursing homes, extended-care facilities, free-standing surgical centers, clinics, and medical and dental offices.

ANSI/AAMI ST81-2004, Sterilization of medical devices -- Information to be provided by the manufacturer for the processing of resterilizable medical devices

Specifies the information to be provided by the medical device manufacturer on the processing of a medical device claimed to be resterilizable. This information is required so that the medical device can be adequately processed and will continue to meet its performance specification.

ANSI/AAMI SW68-2001, Medical Device Software - Software Life Cycle Processes

Defines the life cycle requirements for medical device software. The set of processes, activities and tasks described in this standard establishes a common framework for medical device software life cycle processes, with well-defined terminology, that can be referenced by the medical device software industry.

ANSI/AAMI/IEC 60601-1-2-2001, Medical Electrical Equipment - Part 1: General Requirements for Safety - 2. Collateral Standard: Electromagnetic Compatibility - Requirements and Tests

Specifies requirements and tests for electromagnetic compatibility of equipment and/or systems and serves as the basis of electromagnetic compatibility requirements and tests in Particular Standards. This standard was originally listed for public review in the April 24, 1998 issue of Standards Action. It is being resubmitted due to substantive changes in the text.

ANSI/AAMI/IEC 60601-1-2:2001/A1-2004, Medical electrical equipment, Part 1: General requirements for safety. 2. Collateral standard: Electromagnetic compatibility - Requirements and tests (Amendment 1 to IEC 60601-1-2, Ed.2:2001.)

This amendment deals primarily with requirements for equipment and systems that comply with CISPR 11 Class A Group 2 and are not intended for sale to the general public but are intended for use in domestic establishments or connected to the public mains network..

ANSI/AAMI/IEC 60601-2-21 & 60601-2-21 Amd 1-2000, Medical Electrical Equipment - Part 2: Particular Requirements for the Safety of Infant Radiant Warmers

Provides minimum labeling, performance, and safety requirements that will help assure a reasonable level of clinical efficacy and patient safety.

ANSI/AAMI/ISO 10993-1-2003, Biological Evaluation of Medical Devices – Part 1: Guidance on Selection of Tests

Specifies the general principles governing the biological evaluation of medical devices; the categorization of medical devices based on the nature and duration of their contact with the body; and the selection of appropriate tests.

ANSI/AAMI/ISO 10993-11-1993, Biological Evaluation of Medical Devices – Part 11: Tests for Systemic Toxicity (included in ANSI/AAMI/ISO 10993-1993: A collection)

ANSI/AAMI/ISO 10993-12-2002, Biological Evaluation of Medical Devices – Part 12: Sample Preparation and Reference Materials

Specifies requirements and gives guidance on procedures to be followed in the preparation of samples of medical devices for testing in biological systems in accordance with the other parts of ISO 10993. Revisions are listed in their entirety.

ANSI/AAMI/ISO 10993-13-1999 (R2004), Biological evaluation of medical devices - Part 13: Identification and quantification of degradation products from polymers

Provides guidance on general requirements for the design of tests for identifying and quantifying degradation products from finished polymeric medical devices ready for clinical use.

ANSI/AAMI/ISO 10993-14-2001, Biological Evaluation of Medical Devices - Part 14: Identification and Quantification of Degradation Products from Ceramics

Specifies two methods for obtaining solutions of degradation products from ceramic materials (including glasses) for the purposes of quantification. Also gives guidance on the analysis of these solutions to identify the degradation products. This is the fourth public review for this standard. It was originally listed in the February 2, 1996, February 14, 1997, and September 12, 1997 issues of Standards Action and is being resubmitted due to substantive changes to the text.

ANSI/AAMI/ISO 10993-15-2000, Biological Evaluation of Medical Devices - Part 15: Identification and Quantification of Degradation Products from Metals and Alloys

Provides guidance on general requirements for the design of tests for identifying and quantifying degradation products from finished metallic medical devices or corresponding materials or samples finished as ready for clinical use. This is the third public review for this standard. It was originally listed in the February 14, 1997 and the December 5, 1997 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/AAMI/ISO 10993-16-1997 (R2003), Biological Evaluation of Medical Devices - Part 16: Toxicokinetic Study Design for Degradation Products and Leachables

Gives principles on how toxicokinetic studies relevant to medical devices should be designed and performed.

ANSI/AAMI/ISO 10993-17-2002, Biological Evaluation of Medical Devices - Part 17: Establishment of Allowable Limits for Leachable Substances

Specifies the methods to be used to determine allowable limits for leachable substances in medical devices. It is intended for use in deriving standards and estimating appropriate limits where standards do not exist. It describes a systematic process through which identified risks arising from toxicologically hazardous substances present in medical devices can be quantified.

ANSI/AAMI/ISO 10993-2-1993 (R2001), Biological Evaluation of Medical Devices – Part 2: Animal Welfare Requirements (included in ANSI/AAMI/ISO 10993-1993: A collection)

Specifies minimum requirements for the use of animals in biological testing.

ANSI/AAMI/ISO 10993-3-2003, Biological Evaluation of Medical Devices – Part 3: Tests for Genotoxicity, Carcinogenicity and Reproductive Toxicity (included in ANSI/AAMI/ISO 10993-1993: A collection)

Gives guidance to agencies, manufacturers, research laboratories and others for evaluating the interactions of medical devices with blood. This standard was first listed in the February 12, 1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/AAMI/ISO 10993-4-2002, Biological evaluation of medical devices - Part 4: Selection of tests for interactions with blood

Gives guidance to agencies, manufacturers, research laboratories and others for evaluating the interactions of medical devices with blood.

ANSI/AAMI/ISO 10993-5-1999, Biological Evaluation of Medical Devices – Part 5: Test for Cytotoxicity: In Vitro Methods (included in ANSI/AAMI/ISO 10993-1993: A collection)

Describes tests methods to assess the in vitro cytotoxicity of medical devices. These methods specify the incubation of cultured cells either directly through diffusion with extracts of the device, and/or in contact with a device. These methods are designed to determine the biological response of mammalian cells in vitro using appropriate biological parameters. This is the second public review for this standard. It previously appeared in the July 5, 1996 issue of Standards Action and is being resubmitted now due to substantive changes to the text.

ANSI/AAMI/ISO 10993-6-1993 (R2001), Biological Evaluation of Medical Devices - Part 6: Tests for Local Effects after Implantation

Specifies test methods for the assessment of the local effects of an implant material on living tissue, at both the macroscopic and microscopic level.

ANSI/AAMI/ISO 10993-7-1995 (R2001), Biological Evaluation of Medical Devices – Part 7: Ethylene Oxide Sterilization Residuals

Specifies allowable limits for residual ethylene oxide (EO) and ethylene chlorohydrin (ECH) in individual EO-sterilized medical devices, procedures for the measurement of EO and ECH, and methods for determining compliance so that devices may be released.

ANSI/AAMI/ISO 10993-9-1999 (R2005), Biological Evaluation of Medical Devices - Part 9: Framework for Identification and Quantification of Potential Degradation Products

Provides general principles for the systematic evaluation of the potential and observed biodegradation of medical devices and on the design and performance of biodegradation.

ANSI/AAMI/ISO 11134-1993, Sterilization of Health Care Products – Requirements for Validation and Routine Control – Industrial Moist Heat Sterilization

This standard specifies requirements for the use of moist heat in sterilization process development, validation, and control. Also included is guidance on validation and routine control and an informative annex on sterilization cycles.

ANSI/AAMI/ISO 11135-1994, Medical Devices – Validation and Routine Control of Ethylene Oxide Sterilization

This standard establishes requirements and guidance for validation and routine control of ethylene oxide sterilization processes for medical devices.

ANSI/AAMI/ISO 11137-1-2006, Sterilization of health care products - Radiation - Part 1: Requirements for the development, validation and routine control of a sterilization process for medical devices

Specifies requirements for validation, process control and routine monitoring in the radiation sterilization for health care products. It applies to continuous and batch type gamma irradiators using the radionuclides 60 Co and 137 Cs, and to irradiators using a beam from an electron or x-ray generator.

ANSI/AAMI/ISO 11137-1994, Sterilization of Health Care Products – Requirements for Validation and Routine Control – Radiation Sterilization

This standard specifies requirements for radiation sterilization of health care products.

ANSI/AAMI/ISO 11137-2-2006, Sterilization of health care products - Radiation - Part 2: Establishing the sterilization dose

Describes methods of determining the minimum dose needed to achieve a specified requirement for sterility and methods to substantiate the use of 25 kGy or 15 kGy as the sterilization dose to achieve a sterility assurance level (SAL) of 10⁻⁶. This International Standard also describes methods of dose auditing to demonstrate the continued effectiveness of the sterilization dose.

ANSI/AAMI/ISO 11137-3-2006, Sterilization of health care products - Radiation - Part 3: Guidance on dosimetric aspects

Gives guidance on the requirements relating to dosimetry and dose measurement in ISO 11137 parts 1 and 2. It applies to gamma irradiators using the radionuclides 60Co and 137 Cs, and to irradiators using a beam from an electron or x-ray generator.

ANSI/AAMI/ISO 11140-1-2005, Sterilization of health care products - Chemical indicators - Part 1: General requirements

This standard specifies general requirements and test methods for indicators that show exposure to sterilization processes by means of physical and/or chemical change of substances, and which are used to monitor the attainment of one or more of the variables required for a sterilization process. They are not dependent for their action on the presence or absence of a living organism.

ANSI/AAMI/ISO 11607-1-2006, Packaging for terminally sterilized medical devices - Part 1: Requirements for materials, sterile barrier systems and packaging

Specifies the requirements and test methods for materials, preformed sterile barrier systems, sterile barrier systems and packaging systems that are intended to maintain sterility of terminally sterilized medical devices to the point of use.

ANSI/AAMI/ISO 11607-2-2006, Packaging for terminally sterilized medical devices - Part 2: Validation and requirements for forming, sealing and assembly processes

Specifies the requirements for development and validation of processes for packaging medical devices that are terminally sterilized and maintain sterility to the point of use. These processes include forming, sealing and assembly of preformed sterile barrier systems, sterile barrier systems and packaging systems.

ANSI/AAMI/ISO 11737-1-2006, Sterilization of medical devices - Microbiological methods - Part 1: Determination of a population of microorganisms on products

Specifies requirements and provides guidance for the enumeration and characterization of the population of viable microorganisms on or in a medical device, component, raw material or package.

ANSI/AAMI/ISO 11737-2-1998, Sterilization of Health Care Products - Microbiological Methods - Part 2: Tests of Sterility Performed in the Validation of a Sterilization Process

Specifies the general criteria for tests of sterility on medical devices which have been exposed to a treatment with the sterilizing agent that is a fraction of the specified sterilization process. This standard was originally listed for public review in the July 21, 1995 issue of Standards Action. It is being resubmitted due to substantive changes in the text.

ANSI/AAMI/ISO 11737-3-2004, Sterilization of medical devices - Microbiological methods - Part 3: Guidance on evaluation and interpretation of bioburden data

Provides guidance on evaluating and interpreting the data generated from a program for monitoring the microbiological quality of medical devices. This guidance does not apply to the use of bioburden data generated for establishing the extent of treatment to be applied in a sterilization process or to microbiological data generated from sampling the environment in manufacturing areas.

ANSI/AAMI/ISO 13485-2003, Quality Management Systems - Medical Devices - System Requirements for Regulatory Purposes

Specifies requirements for a quality management system where an organization needs to demonstrate its ability to provide medical devices that consistently meet customer requirements and regulatory requirements applicable to medical devices.

ANSI/AAMI/ISO 13488-1996, Quality Systems - Medical Devices - Particular Requirements for The Application of ISO 9002

This standard specifies, in conjunction with ISO 9002, the quality system requirements for the production and, when relevant, installation and servicing of medical devices. This standard, in conjunction with ISO 9002, is applicable when there is a need to assess a medical device supplier's quality system.

ANSI/AAMI/ISO 14155-1-2003, Clinical Investigation Of Medical Devices for Human Subjects - Part 1: General Requirements

Defines procedures for the conduct and performance of clinical investigations of medical devices. Defines procedures for the conduct and performance of clinical investigations of medical devices. This standard was listed for public review in the 12/3/1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/AAMI/ISO 14155-2-2003, Clinical investigation of medical devices for human subjects - Part 2: Clinical investigation plans

Defines procedures for the conduct and performance of clinical investigations of medical devices.

ANSI/AAMI/ISO 14160-1998, Sterilization of Medical Devices - Validation and Routine Control of the Sterilization by use of Liquid Chemical Sterilants of Single-Use Medical Devices Incorporating Materials of Animal Origin

Specifies specific requirements for the development, validation, process control and monitoring of the sterilization of single-use medical devices comprising, in whole or in part, materials of animal origin by the use of chemical sterilants.

ANSI/AAMI/ISO 14161-2000, Guideline for the Use of Ethylene Oxide and Steam Biological Indicators in Industrial Sterilization Processes

Provides guidance for the selection, use and interpretation of results from application of biological indicators when used in the development, validation and routine monitoring of sterilization processes. This document applies to biological indicators for which International Standards exist. Adoption of International Standard ISO 14161 as revision of ANSI/AAMI ST34.

ANSI/AAMI/ISO 14937-2000, Sterilization of Health Care Products - General Requirements for Characteristics of a Sterilizing Agent and the Development, Validation and Routine Control of a Sterilization Process

Specifies general requirements for the characterization of a sterilizing agent, and for the development, validation and routine control of a sterilization process for medical devices. Although the scope of this standard is limited to medical devices, the principles described may be applied to other health care products. This standard is intended to be applied by process developers, manufacturers of sterilization equipment, manufacturers of products to be sterilized and the organization with responsibility for sterilizing the product. This standard does not supersede or modify the published standards for particular sterilization processes.

ANSI/AAMI/ISO 14969-1999, Quality Systems - Medical Devices - Guidance on the Application of ISO 13485 and ISO 13488

Provides guidance for the application of the requirements for quality systems contained in ISO 13485 and ISO 13488. This is the second public review for this standard. It first appeared in the January 3, 1997 issue of Standards Action and is being resubmitted now due to substantive changes to the text.

ANSI/AAMI/ISO 14971-2000, Medical Devices - Risk Management - Part 1: Application of Risk Analysis to Medical Devices

Specifies a procedure for the manufacturer to identify the hazards associated with medical devices and their accessories, including in vitro diagnostic devices, estimate and evaluate the risks, control these risks and monitor the effectiveness of the control.

ANSI/AAMI/ISO 14971-2000/A1, Medical Devices - Application of Risk Management to Medical Devices - Amendment 1: Annex H - Rationale for the Requirements

Provides rationale for establishing the various requirements contained in ISO 14971:2000.

ANSI/AAMI/ISO 15223-2000, Medical Devices - Symbols to be Used With Medical Device Labels, Labelling and Information to be Supplied

Identifies symbols and their meanings which may be used to convey information essential to the user and others for safe and effective use of medical devices.

ANSI/AAMI/ISO 15223/A1-2001, Medical Devices - Symbols to be Used With Medical Device Labels, Labelling and Information to be Supplied - Amendment 1

ANSI/AAMI/ISO 15223/A2-2004, Medical devices- Symbols to be used with medical device labels, labelling and information to be supplied - Amendment 2

Specifies requirements for a quality management system where an organization needs to demonstrate its ability to provide medical devices that consistently meet customer requirements and regulatory requirements applicable to medical devices.

ANSI/AAMI/ISO 15225-2000 (R2006), Nomenclature - Specification for a Nomenclature System for Medical Devices for the Purpose of Regulatory Data Exchange

Specifies requirements and guidance for the construction of a nomenclature for medical devices to facilitate cooperation and exchange of regulatory data on an international level between such interested parties as regulatory authorities, manufacturers, suppliers, health care providers, and end users.

ANSI/AAMI/ISO 15225-A1-2004 (R2006), Nomenclature - Specification for a nomenclature system for medical devices for the purpose of regulatory data exchange (AMENDMENT 1) pose of Regulatory Data Exchange

AMENDMENT 1 to ANSI/AAMI/ISO 15225-2000.

ANSI/AAMI/ISO 15674-2001, Cardiovascular Implants and Artificial Organs - Hard-Shell Cardiotomy/Venous Reservoir System (with/without filter) and Soft Venous Reservoir Bags

Specifies requirements for sterile, single-use, extracorporeal hard shell cardiotomy/venous reservoir systems and soft venous reservoir bags intended for use as a blood reservoir during cardiopulmonary bypass (CPB) surgery.

ANSI/AAMI/ISO 15675-2001, Cardiovascular Implants and Artificial Organs - Cardiopulmonary Bypass Systems - Arterial Blood Line Filters

Specifies requirements for sterile, single-use, arterial filters intended to filter and remove emboli, debris, blood clots, and other potentially hazardous solid and gaseous material from the blood of humans during cardiopulmonary bypass surgery.

ANSI/AAMI/ISO 15882-2003, Sterilization of health care products - Chemical indicators - Guidance for the selection, use and interpretation of results

Provides guidance for the selection, use and interpretation of results of chemical indicators used in process definition, validation, and routine monitoring and control of sterilization processes. Applies to chemical indicators for which International Standards exist. Is not applicable to those processes that rely on physical removal of microorganisms, e.g. filtration. Is not intended to apply to combination processes, for example, washer-disinfectors or flushing and steaming of pipelines.

ANSI/AAMI/ISO 17665-1-2005, Sterilization of health care products - Moist heat - Requirements for development, validation and routine control of a sterilization process for medical devices

Specifies requirements for the development, validation and routine control of a moist heat sterilization process for medical devices. Moist heat sterilization processes covered by this standard include saturated steam venting processes, saturated steam active air removal processes, air steam mixture processes, water spray processes, and water immersion processes.

ANSI/AAMI/ISO 18472-2006, Sterilization of health care products - Biological and chemical indicators - Test equipment

Specifies the requirements for the test equipment to be used to test chemical and biological indicators for steam, ethylene oxide, dry heat and vaporised hydrogen peroxide processes for conformity to the requirements given in ISO 11140, part 1 for chemical indicators, or the ISO 11138 series for biological indicators. This standard also provides informative methods useful in characterising the performance of biological and chemical indicators for intended use and for routine quality control testing.

ANSI/AAMI/ISO 25539-1-2003, Cardiovascular Implants - Endovascular Devices - Part 1: Endovascular Prostheses

Specifies requirements for endovascular prostheses, based upon current medical knowledge. With regard to safety, it gives requirements for intended performance, design attributes, materials, design evaluation, manufacturing, sterilization packaging and information to be supplied by the manufacturer. It should be considered as a supplement to ISO 14630, which specifies general requirements for the performance of non-active surgical implants.

NOTE- The document was formerly designated 15539-1 but was changed to 25539-1 at the DIS stage by ISO to distinguish it from ISO/TS 15539.

ANSI/AAMI/ISO 25539-1-2003/A1, Amendment 1 to ANSI/AAMI/ISO 25539-1:2003, Cardiovascular implants - Endovascular devices - Part 1: Endovascular prostheses: Annex E - Test methods

The Amendment provides guidance for the development of preclinical test methods to be used to characterize and evaluate endovascular prostheses, and for developing test reports.

ANSI/AAMI/ISO 5840-2005, Cardiovascular implants - Cardiac valve prostheses

Outlines an approach for qualifying the design and manufacture of a heart valve substitute through risk management. The selection of appropriate qualification tests and methods are to be derived from the risk assessment. Imposes design specifications and minimum performance specifications for heart valve substitutes where adequate scientific and/or clinical evidence exists for their justification.

ANSI/AAMI/ISO 7198-2001 (R2004), Vascular Graft Prostheses

Specifies requirements relating to testing, packaging, labeling and terminology for sterile tubular vascular prostheses intended to replace, bypass or to form shunts between segments of the vascular system in humans.

ANSI/AAMI/ISO 7199-1996 (R2002), Cardiovascular implants and artificial organs- Blood-gas exchangers (oxygenators)

Specifies requirements for sterile, single-use, extracorporeal blood-gas exchangers (oxygenators) intended for supply of oxygen to, and removal of carbon dioxide from, the blood of humans. It also applies to heat exchangers that are integral parts of oxygenators and to external equipment unique to the use of the device.

AAMVA (American Association of Motor Vehicle Administrators)

ANSI D20-2002, Data Element Dictionary for Traffic Records Systems

Data Element Dictionary for Traffic Records Systems

To provide a common set of coding instruction for data elements related to highway safety, driver licensing, and vehicle registration.

ABMA (American Bearing Manufacturers Association)

ANSI B3.1-1992 (R1999), Rolling Element Bearings – Aircraft Engine, Engine Gearbox, and Accessory Applications – Eddy Current Inspection

Specifies a method of detecting discontinuities in bearing components by means of eddy current interrogation. Applies to rolling element bearings used in aircraft engines, engine gearboxes and accessory applications.

ANSI B3.2-1992 (R1999), Rolling Element Bearings – Aircraft Engine, Engine Gearbox, and Accessory Applications – Surface Visual Inspection

This standard provides a system for uniform visual acceptance criteria for surface imperfections on rolling element bearings used in aircraft engine, engine gearbox and accessory applications.

ANSI B3.3-1992 (R1999), Rolling Element Bearings – Aircraft Engine, Engine Gearbox, and Accessory Applications – Surface Temper Etch

Applies to rolling element bearings used in aircraft engines, engine gearboxes and accessory applications.

ANSI/ABMA 10A-2001, Metal Balls for Unground Bearings and Other Uses

Establishes the requirements for metal balls for unground bearings and for other uses. It is intended to complement the requirements for finished balls for rolling contact bearings contained in ANSI/ABMA/ISO 3290. It contains requirements for materials, physical properties and geometric properties for balls for unground bearings and for other uses. A designation system for ball grades is specified. Informational annexes provide descriptions of measurement of deviation from spherical form, microhardness testing, and case depth measurement.

ANSI/ABMA 11-1990 (R1999), Roller Bearings, Load Ratings and Fatigue Life for

Specifies the method of calculating the basic dynamic load rating of roller bearings within the size ranges shown in the relevant ANSI/AFBMA standards.

ANSI/ABMA 12.1-1992 (R1998), Instrument Ball Bearings – Metric Design

Covers the characteristics that define the requirements of precision and super-precision instrument ball bearings. It establishes their boundary dimensions, tolerances, internal clearances, and classification for selective assembly. The recommended practices for gauging, frictional torque determination, load rating determination, operational life prediction and yield rate limitation are provided. All components covered by this Standard are designed to S.I. (metric) dimensions and are presented in Part 1 of the tables provided. The equivalent U.S. Customary (inch) dimensions shown in Part 2 of the Tables are provided for the convenience of those using that system.

ANSI/ABMA 12.2-1992 (R1998), Instrument Ball Bearings – Inch Design

Covers the characteristics that define the requirements of precision and super-precision instrument ball bearings. It establishes their boundary dimensions, tolerances, internal clearances, and classification for selective assembly. The recommended practices for gauging, frictional torque determination, load rating determination, and operational life prediction and yield rate limitation are provided. All components covered by this standard are designed to U.S. Customary (inch) dimensions and are presented in Part 2 of the tables provided. The equivalent S.I. (metric) dimensions shown in Part 1 of the tables are provided for the convenience of those using that system.

ANSI/ABMA 13-1987 (R1999), Rolling Bearing Vibration and Noise, Methods of Measuring

Serves to define and specify, for purposes of bearing quality assurance, the physical quantities measured and the test conditions utilized in measurement of vibration and noise generated by roller bearings.

ANSI/ABMA 14-1995 (R2001), Housings for Bearings with Spherical Outside Surfaces

Establishes boundary dimensions and other dimensions, and tolerances values for those dimensions, for pillow block housings, flanged housings and take-up units for use with ball bearings with spherical outside surfaces (insert bearings).

ANSI/ABMA 15-1991 (R1999), Ball Bearings with Spherical Outside Surfaces and Extended Inner Ring Width

Specifies boundary dimensions and tolerances for bearings with spherical outside surfaces and extended inner ring width and eccentric locking collars.

ANSI/ABMA 18.1-1982 (R1999), Radial Needle Roller Bearings, Metric Design

Includes identification code, boundary dimensions, bearing tolerances, and fitting and mounting practice.

ANSI/ABMA 18.2-1982 (R1999), Radial Needle Roller Bearings, Inch Design

Includes identification code, boundary dimensions, bearing tolerances, and fitting and mounting practice.

ANSI/ABMA 19.1-1987 (R1999), Tapered Roller Bearings – Radial, Metric Design

Covers metric design radial tapered roller bearings of various types, part numbering systems, boundary dimensions, tolerances, and fitting practices.

ANSI/ABMA 19.2-1994 (R1999), Tapered Roller Bearings -- Radial – Inch Design

Covers inch-design radial-tapered roller bearings of various types, part numbering systems, tolerances, and fitting practices.

ANSI/ABMA 20-1996, Radial Bearings of Ball, Cylindrical Roller, and Spherical Roller Types, Metric Design

Specifies boundary dimensions, tolerances and radial internal clearances for metric radial ball, cylindrical roller and spherical roller bearings in common useage in the United States. This standard has been revised to be in close conformity with International Standards developed by the members of the International Organization for Standardization (ISO).

ANSI/ABMA 21.1-1988 (R1999), Thrust Needle Roller and Cage Assemblies and Thrust Washers – Metric Design

Includes identification code, symbols and nomenclature, boundary dimensions, tolerances, and mounting practice.

ANSI/ABMA 21.2-1988 (R1999), Thrust Needle Roller and Cage Assemblies and Thrust Washers – Inch Design

Includes identification code, symbols and nomenclature, boundary dimensions, tolerances, and mounting practice.

ANSI/ABMA 22.2-1988 (R1999), Spherical Plain Radial Bearings, Joint Type, Inch Design

Defines the characteristics of spherical bearings, joint type such as boundary dimensions, tolerances and terminology.

ANSI/ABMA 23.2-1988 (R1999), Thrust Bearings of Tapered Roller Type, Inch Design

Covers bearing number and type identity, symbols and nomenclature, boundary dimensions, tolerances, and mounting dimensions (covers only external dimensions).

ANSI/ABMA 24.1-1989 (R1999), Thrust Bearings of Ball, Cylindrical Roller and Spherical Roller Types, Metric Design

This standard covers identification code, symbols and nomenclature, boundary dimensions, tolerances, and mounting dimensions for specified bearings

ANSI/ABMA 24.2-1989 (R1999), Thrust Bearings of Ball and Cylindrical Roller Types, Inch Design

Covers identification code, symbols and nomenclature, boundary dimensions, tolerances, and mounting dimensions (external dimensions only).

ANSI/ABMA 25.2-1990 (R1999), Rolling Bearings, Linear Motion, Recirculating Ball, Sleeve Type – Inch Series

Covers boundary dimensions, tolerances, and terminology for these bearings.

ANSI/ABMA 26.2-1994 (R2000), Thin Section Ball Bearings – Inch Design

Specifies the boundary dimensions, running accuracies and internal clearances for thin-section ball bearings of single-row radial-contact, angular-contact and four-point angular-contact types.

ANSI/ABMA 4-1994 (R1999), Tolerance Definitions and Gaging Practices for Ball and Roller Bearings

Provides terms and definitions of tolerances for the boundary dimensions, running accuracy, and internal clearance of ball and roller bearings.

ANSI/ABMA 7-1995 (R2001), Shaft and Housing Fits for Metric Radial Ball and Roller Bearings (Except Tapered Roller Bearings) Conforming to Basic Boundary Plan)

Provides the general selection of shaft and housing fits for metric radial ball and roller bearings of tolerance classes ABEC-1 and BREC-1. Bearing type, loading and other design requirements influence the criteria for shaft and housing fits.

ANSI/ABMA 8.1-1990 (R1999), Ball and Roller Bearing Mounting Accessories, Metric Design

Establishes dimensions and minimum physical properties of these bearings consistent and compatible with ABMA, ANSI, and ISO standards related to ball and roller bearings. Mounting accessories covered in this standard are used for the location or fixing of ball and roller bearings to the shaft of a machine or mechanism. This is the second public review for this standard. It was originally listed in the January 29, 1999 issue of Standards Action. It is being resubmitted due to substantive changes in the text.

ANSI/ABMA 8.2-1999, Ball and Roller Bearing Mounting Accessories, Inch Design

Establishes dimensions and minimum physical properties of these bearings consistent and compatible with ABMA, ANSI, and ISO standards related to ball and roller bearings. Mounting accessories covered in this standard are used for the location or fixing of ball and roller bearings to the shaft of a machine or mechanism. This is the second public review for this standard. It was originally listed in the January 29, 1999 issue of Standards Action. It is being resubmitted due to substantive changes in the text.

ANSI/ABMA 9-1990 (R2000), Ball Bearings, Load Ratings and Fatigue Life for

Standard specifies method of calculating basic dynamic, static load ratings of certain rolling bearings.

ANSI/ABMA/ISO 10285-1992 (R1997), Rolling Bearings, Linear Motion, Recirculating Ball, Sleeve Type – Metric Series

Specifies the general boundary dimensions, tolerances and definitions for linear motion, recirculating ball, sleeve-type rolling bearings of the metric series.

ANSI/ABMA/ISO 104-1994, Roller Bearings - Thrust Bearings - Boundary Dimensions, General Plan

Specifies the major boundary dimensions of single direction and double direction thrust bearings with flat back faces.

ANSI/ABMA/ISO 12240-1-1998, Spherical Plain Bearings - Part 1: Radial Spherical Plain Bearings

Specifies dimension series, tolerances and radial spherical plain bearings.

ANSI/ABMA/ISO 12240-2-1998, Spherical Plain Bearings - Part 2: Angular Contact Radial Spherical Plain Bearings

Specifies tolerance values applied to finished, angular, contact radial, spherical, plain bearings before any coating or plating.

ANSI/ABMA/ISO 12240-3-1998, Spherical Plain Bearings - Part 3: Thrust Spherical Plain Bearings

Specifies dimensions and tolerances for thrust spherical plain bearings.

ANSI/ABMA/ISO 12240-4-1998, Spherical Plain Bearings - Part 4: Spherical Plain Bearing Rod Ends

Specifies dimensions, tolerances and radial internal clearances for various dimension series of spherical plain bearing rod ends.

ANSI/ABMA/ISO 13411:1997, Aerospace - Airframe Needle Roller, Cylindrical Roller and Track Roller Bearings - Technical Specification

Specifies the required characteristics, inspections and test, quality assurance and conditions for qualification, static radial loads, acceptance and delivery conditions for needle roller, needle track roller and cylindrical roller bearings used as airframe rolling bearings designed to withstand, under load, slow, rotations and small oscillations only.

ANSI/ABMA/ISO 13412:1997, Aerospace - Airframe Needle Track Roller, Yoke Type, Single-Row, Sealed - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible static radial loads of inch series, single row, yoke type, needle rollers used in airframe applications.

ANSI/ABMA/ISO 13413:1997, Aerospace - Airframe Needle Track Roller, Yoke Type, Double-Row, Sealed - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible static radial loads of inch series, double row, yoke type, needle rollers used in airframe applications.

ANSI/ABMA/ISO 13414:1997, Aerospace - Airframe Needle Roller Bearings, Single-Row, Shielded - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible static radial loads of inch series, single-row, needle roller bearings used in airframe design.

ANSI/ABMA/ISO 13415:1997, Aerospace - Airframe Needle Roller Bearings, Stud Type, Single-Row, Sealed - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible static radial loads of inch series, single-row, stud type needle track rollers used in airframe application.

ANSI/ABMA/ISO 13416:1997, Aerospace - Airframe Needle Track Roller, Yoke Type, Single-Row, Sealed - Metric Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible static radial loads of inch series, single-row, stud type needle track rollers used in airframe application.

ANSI/ABMA/ISO 13417:1997, Aerospace - Airframe Needle Track Roller, Stud Type, Single-Row, Sealed - Metric Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible static radial loads of inch series, single-row, stud type needle track rollers used in airframe application.

ANSI/ABMA/ISO 14190:1998, Aerospace - Airframe Rolling Bearings: Ball and Spherical Roller Bearings - Technical Specification

Specifies the required characteristics, inspections and tests, quality assurance and conditions for qualification, permissible static loads, acceptance and delivery conditions for rigid and self-aligning airframe ball and spherical roller bearings.

ANSI/ABMA/ISO 14191:1998, Aerospace - Airframe Spherical Roller Bearings, Single-Row, Self-Aligning, Diameter Series 3 and 4 - Metric Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads metric series single row, self-aligning spherical roller bearings of diameter series 3 and 4, in accordance with ISO 15, used in airframe applications.

ANSI/ABMA/ISO 14192:1998, Aerospace - Airframe Spherical Roller Bearings, Single-Row, Self-Aligning, Shielded, Intermediate Duty - Metric Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads metric series single row, self-aligning, shielded, intermediate duty spherical roller bearings used in airframe applications.

ANSI/ABMA/ISO 14193:1998, Aerospace - Airframe Spherical Roller Bearings, Single-Row, Self-Aligning, Sealed, Extended Inner Ring, Intermediate Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads inch series single row, self-aligning, sealed, intermediate duty spherical roller bearings with extended inner rings used in airframe applications.

ANSI/ABMA/ISO 14194:1998, Aerospace - Airframe Spherical Roller Bearings, Double-Row, Self-Aligning, Sealed, Extended Inner Ring, Heavy Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads inch series double row, self-aligning, sealed, heavy duty spherical roller bearings with extended inner rings used in airframe applications.

ANSI/ABMA/ISO 14195:1998, Aerospace - Airframe Spherical Roller Bearings, Double-Row, Self-Aligning, Sealed, Torque Inner Tube Design, Light Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads inch series double row, self-aligning, sealed, torque tube design, light duty spherical roller bearings with cylindrical rollers used in airframe applications.

ANSI/ABMA/ISO 14196:1998, Aerospace - Airframe Spherical Roller Bearings, Double-Row, Self-Aligning, Sealed, Plain Inner Ring, Heavy Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads inch series double row, self-aligning, sealed, heavy duty spherical roller bearings with plain inner rings used in airframe applications.

ANSI/ABMA/ISO 14197:1998, Aerospace - Airframe Spherical Roller Bearings, Single-Row, Self-Aligning, Sealed, Intermediate Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads inch series single row, self-aligning, sealed, intermediate duty spherical roller bearings used in airframe applications.

ANSI/ABMA/ISO 14201:1998, Aerospace - Airframe Ball Bearings, Double-Row, Self-Aligning, Diameter Series 2 - Metric Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of metric series double row, self-aligned ball bearings of diameter series 2, in accordance with ISO 15, used in airframe applications

ANSI/ABMA/ISO 14202:1998, Aerospace - Airframe Ball Bearings, Single-Row, Rigid, Diameter Series 0 and 2 - Metric Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of metric series - single row, rigid ball bearings of diameter series 0 and 2, in accordance with ISO 15, used in airframe applications

ANSI/ABMA/ISO 14203:1998, Aerospace - Airframe Ball Bearings, Single-Row, Rigid, Diameter Series 8 and 9 - Metric Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of metric series single-row, rigid ball bearings in diameter series 8 and 9, in accordance with ISO 15, used in airframe applications.

ANSI/ABMA/ISO 14204:1998, Aerospace - Airframe Ball Bearings, Double-Row, Rigid, Diameter Series 0 - Metric Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of metric series double-row, rigid, ball bearings of diameter series 0, in accordance with ISO 15, used in airframe applications.

ANSI/ABMA/ISO 14206:1998, Aerospace - Airframe Ball Bearings, Single-Row, Rigid, Sealed, Light Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearance and permissible loads of inch series, single-row, sealed, rigid, light duty, ball bearings used in airframe application.

ANSI/ABMA/ISO 14207:1998, Aerospace - Airframe Ball Bearings, Single-Row, Rigid, Precision, Sealed, Light Duty - Inch Design

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of inch series single-row, sealed, rigid, light duty, ball bearings with increased precision and reduced clearances used in airframe applications.

ANSI/ABMA/ISO 14208:1998, Aerospace - Airframe Ball Bearings, Single-Row, Rigid, Sealed, Intermediate Duty - Inch Design

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of inch series single-row, sealed, rigid, intermediate duty, ball bearings used in airframe applications.

ANSI/ABMA/ISO 14209:1998, Aerospace - Airframe Ball Bearings, Single-Row, Rigid, Precision, Intermediate Duty - Inch Design

Specifies the characteristics, boundary dimensions, tolerances, load ratings of inch series, single-row, sealed, rigid, intermediate duty, ball bearings with increased precision and reduced internal clearances used in airframe applications.

ANSI/ABMA/ISO 14210:1998, Aerospace - Airframe Ball Bearings, Single-Row, Rigid, Torque Tube Design, Light Duty - Inch Design

Specifies the characteristics, boundary dimensions, tolerances, load ratings of inch series, single-row, sealed, rigid, light duty, ball bearings of torque tube design used in airframe applications.

ANSI/ABMA/ISO 14211:1998, Aerospace - Airframe Ball Bearings, Single-Row, Rigid, Precision, Sealed, Torque Tube Design, Light Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, clearances and load ratings of inch series, single row, sealed rigid, light duty ball bearings of torque tube design with increased precision and reduced internal clearance used in airframe applications.

ANSI/ABMA/ISO 14212:1998, Aerospace - Airframe Ball Bearings, Single-Row, Rigid, Torque Tube Design, Extra-Light Duty - Inch Design

Specifies the characteristics, boundary dimensions, tolerances, load ratings of inch series, single-row, sealed, rigid, extra-light duty, ball bearings of torque tube design used in airframe applications.

ANSI/ABMA/ISO 14213:1998, Aerospace - Airframe Ball Bearings, Single-Row, Rigid, Precision, Sealed, Torque Tube Design, Extra-Light Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of metric series double row, self-aligned ball bearings of diameter series 2, in accordance with ISO 15, used in airframe applications

ANSI/ABMA/ISO 14214:1998, Aerospace - Airframe Ball Bearings, Double-Row, Rigid, Sealed, Heavy Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of inch series, double row, sealed, rigid, heavy duty ball bearings with increased precision and reduced internal clearances used in airframe applications.

ANSI/ABMA/ISO 14215:1998, Aerospace - Airframe Ball Bearings, Double-Row, Rigid, Precision, Sealed, Heavy Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of inch series, double row, sealed, rigid, heavy duty ball bearings with increased precision and reduced internal clearances used in airframe applications.

ANSI/ABMA/ISO 14216:1998, Aerospace - Airframe Ball Bearings, Double-Row, Self-Aligning, Sealed, Heavy Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of inch series, double row, self-aligning, sealed, heavy duty ball bearings used in airframe applications.

ANSI/ABMA/ISO 14217:1998, Aerospace - Airframe Ball Bearings, Double-Row, Self-Aligning, Precision, Sealed, Heavy Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of inch series, double row, self-aligning, sealed, heavy duty ball bearings with increased precision and reduced internal clearances used in airframe applications.

ANSI/ABMA/ISO 14218:1998, Aerospace - Airframe Ball Bearings, Single-Row, Self-Aligning, Sealed, Heavy Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of inch series, single row, self-aligning, sealed heavy duty ball used in airframe applications.

ANSI/ABMA/ISO 14219:1998, Aerospace - Airframe Ball Bearings, Single-Row, Self-Aligning, Precision, Sealed, Heavy Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of inch series, single row, self-aligning, sealed, heavy duty ball with increasing precision and reduced internal clearances used in airframe applications.

ANSI/ABMA/ISO 14220:1998, Aerospace - Airframe Ball Bearings, Single-Row, Self-Aligning, Sealed, Light Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of inch series, single row, self-aligning, sealed, light duty ball bearings used in airframe applications.

ANSI/ABMA/ISO 14221:1998, Aerospace - Airframe Ball Bearings, Single-Row, Self-Aligning, Precision, Sealed, Light Duty - Inch Series

Specifies the characteristics, boundary dimensions, tolerances, internal clearances and permissible loads of inch series, single row, self-aligning, sealed, light duty ball bearings used in airframe applications.

ANSI/ABMA/ISO 199-1997, Roller Bearings - Thrust Bearings - Tolerances

Specifies the major boundary dimensions and running accuracy of thrust rolling bearings and their technology.

ANSI/ABMA/ISO 3096-1998, Rolling Bearings - Needle Rollers - Dimensions and Tolerances, Metric Design

ANSI/ABMA/ISO 3290-2000, Rolling Bearings - Balls - Dimensions and Tolerances

Specifies the requirements for finished steel balls for rolling bearings. It covers sizes, geometry and surface quality, sorting accuracy and harness for balls.

ANSI/ABMA/ISO 5593-1997, Rolling Bearings - Vocabulary

Establishes a vocabulary of terms, with their definitions, applied in the field of rolling bearings and their technology.

ABMA (American Brush Manufacturers Association)

ANSI B165.1-2005, Power Tools - Power-Driven Brushing Tools - Safety Requirements for Design, Care, and Use

Guidelines for the safe design, care and use of power driven brushing tools. Responsibilities of all parties involved in the usage chain from designer and manufacturer to specific end user.

ABYC (American Boat and Yacht Council)

ANSI/ABYC A-16-1998, Electric Navigation Lights

Establishes guidelines for the design, construction, performance, and installation of electric navigation lights on vessels under 20 meters (65 feet) in length.

ANSI/ABYC A-28-1998, Galvanic Isolators

Covers the design and construction of galvanic isolators. It establishes a minimum level of DC current blocking capability, establishes requirements for continuous duty current-carrying capacity, minimum level of conduction for AC current, and a temperature rise over time limitation. Establishes the requirements for design, construction, and installation of galvanic isolators for AC electrical systems for boats. This standard applies to isolators in AC electrical systems operating at less than 300 volts, and frequencies of 50 or 60 hertz.

ACC (American Chemistry Council)

ANSI Z129.1-2000, Hazardous Industrial Chemicals - Precautionary Labeling

Establishes guidelines for the preparation of precautionary information on hazardous chemicals, as defined in the standard, that is placed on container labels intended for industrial use. It also defines criteria necessary for assessing hazards that determine which, if any, precautionary information should be placed on the label and other forms of labeling. Labeling includes container labels and other documents that contain precautionary and hazard communication information, such as product literature, technical brochures, and material safety data sheets (MSDSs). The standard must be applied in a manner that is consistent with all statutory and regulatory requirements, such as OSHA's Hazard Communication Standard; it is not the intent of the standard to substitute for these requirements, or to list each and every unique

ANSI Z400.1-2004, Hazardous Industrial Chemicals - Material Safety Data Sheets - Preparation

This Standard applies to the preparation of MSDSs for chemicals and materials used under occupational conditions. It presents basic information on how to develop and write MSDSs that are complete, clear and consistent. It also identifies information that must be included to comply with the HCS. Additional information is provided to help comply with state and federal environmental and safety laws and regulations. With the addition of certain data elements, this Standard is also acceptable for international use.

ACCA (Air Conditioning Contractors of America)

ANSI Man "D"/ ACCA 1-2002, Residential Duct Design

Technical manual outlining the proper methods and procedures for the design of residential HVAC duct systems.

ANSI/ACCA 3 Manual S-2004, Residential Equipment Selection

Technical manual outlining the proper methods and procedures used to select and size residential cooling, furnaces and heat pump equipment.

ANSI/ACCA Man J 2-2004 Addendum B, AED Protocol Revisions to MJ8

This addendum revises the adequate exposure diversity (AED) approach on windows/glass exposures by implementing software support. The procedure utilizes hourly fenestration gain (HFG) for midsummer unless southerly-facing fenestration causes a peak gain in the fall.

ANSI/ACCA Man J 2-2004, Addendum C, Duct Gain/Loss Revisions to MJ8

This addendum revises the duct gain/loss procedure through a computer based approach that expands the capability and sensitivity of the procedure.

ANSI/ACCA Man J 2-2004, Addendum D, Infiltration Gain/Loss Revisions to MJ8

This addendum enhances the standard by utilizing recent research in the area of infiltration and air change values that are conditionally dependent on the size of a dwelling and the details of the sealing effort.

ANSI/ACCA Man J 2-2004, Standard for Residential Heating and Cooling Load Calculations

Technical Manual (With Tables and electronic spreadsheet) outlining the proper methods and procedures for accurately calculating the heat loss and heat gain of conventional residential structures.

ACDE (Association of Commercial Diving Educators)

ANSI/ACDE 01-1998, Commercial Diver Training – Minimum Standards

Establishes the minimum parameters for curriculum, hours of training, facilities and equipment requirements, safety standards, and instructor qualifications for training entry-level commercial divers.

ACMI (Art & Creative Materials Institute)

ANSI Z356.5-1998, Art and Craft Materials – Paints and Inks

Provides minimum requirements for materials, toxicity, coarse particle content, characteristics, working qualities, preservative effectiveness, size, and packaging of paints and inks for art education.

ADA (American Dental Association)

ANSI/ADA 1-2003, Alloy for Amalgam and Dental Mercury

This specification is for alloys, composed mainly of silver, tin and/or copper, used in the preparation of dental amalgam. Only encapsulated alloy is covered under this specification.

ANSI/ADA 100-2004, Orthodontic Brackets and Tubes

This specification pertains to brackets and tubes as components of the orthodontic appliance.

ANSI/ADA 1000-2001, Standard Clinical Data Architecture for the Structure and Content of an Electronic Health Record

Creates and introduces an organizing framework for the components of the Standard Clinical Data Architecture for the Structure and Content of an Electronic Health Record. This health care information architecture is independent of profession and specialty, care delivery environment, and management approach; and free of cultural and language constraints. This specification document presents the modeling method, rationale, and nomenclature, as well as the logical data model structures and metadata composing the specification.

ANSI/ADA 1001-2002, Guidelines for the Design of Educational Software

The purpose of these Guidelines is to ensure quality in educational software. Software developers can use the guidelines to ensure that their products are of high instructional quality. End users can compare educational software programs with the Guidelines to recognize quality products. The standard denotes features of educational software that have clear learning objectives and fulfill those objectives in a way that permits the learner to focus on the content and not on operating the software.

ANSI/ADA 101-2001, Root Canal Instruments - General Requirements

Specifies requirements and test methods for hand or mechanically operated instruments for root canal shaping and cleaning having designs or materials which are not included within the provisions of ANSI/ADA Specification Nos. 28 and 58. Generally this specification includes root-canal instruments having 2% tapers with diameter sizes not included within Specifications Nos. 28 and 58; root-canal instruments having tapers other than 2%; and root-canal instruments having other shapes. The purpose of this specification is to provide a document to identify methods for size and product designation, safety considerations, for example, minimum requirements for fracture forces, flexibility, and instructions/labeling. Areas such as effects of sterilization processes on the instrument will be investigated for inclusion.

ANSI/ADA 102-1998, Non-Sterile Nitrile Gloves for Dentistry

This specification covers non-sterile nitrile gloves suitable for dentistry that do not contain any natural rubber latex. It contains test methods and requirements as well as labeling and marking requirements.

ANSI/ADA 103-2001, Non-Sterile Polyvinyl Chloride Gloves for Dentistry

Covers non-sterile poly vinyl chloride gloves suitable for dentistry.

ANSI/ADA 11-1997, Agar Impression Materials

Enumerates requirements for essential physical properties and other characteristics of impression material having reversible agar hydrocolloid as a gel forming ingredient, along with tests specified for determining compliance with those requirements. It also specifies requirements with respect to the manufacturer's instructions, and the essentials for packaging, labeling, and marking.

ANSI/ADA 12-2002, Denture Base Polymers

ISO 1567:1999 classifies denture base polymers and copolymers and specifies their requirements. It also specifies the test methods to be used in determining compliance with these requirements. It further specifies requirements with respect to packaging and marking the products and to the instructions to be supplied for use of these materials.

ANSI/ADA 13-1981 (R1999), Denture Cold-Curing Repair Resin

Provides specifications for pink and clear denture repair resins, of powder-liquid type that are used primarily for the repair of acrylic resin denture bases. It is restricted to materials that contain monomers and comonomers, usually of the acrylic type of mixtures that are capable of auto-initiated polymerization, and which bond to denture base polymers of composition outlined in American National Standard for Denture Base Polymers, ANSI/ADA 12-1975.

ANSI/ADA 14-1982 (R1998), Casting Alloy, Dental Chromium-Cobalt

Covers dental base metal casting alloys used in the fabrication of removable dental prostheses.

ANSI/ADA 15-1999 (R2005), Synthetic Polymer Teeth

This specification specifies a classification, requirements and test methods for teeth that are composed of synthetic polymers such as polymethyl methacrylate and its copolymers, and that are manufactured for use in prostheses used in dentistry.

ANSI/ADA 16-1962 (R1999), Impression Paste, Dental-Zinc Oxide Eugenol Type

Provides specifications for dental impression paste, the reactive ingredients of which are zinc oxide and eugenol.

ANSI/ADA 17-1983 (R1999), Denture Base Temporary Relining Resins

Provides specifications for pink and clear powder/liquid auto-polymerizing (self-initiating cure) type hard-setting resins used as temporary relining materials for denture bases. The soft relining materials are not covered by this specification.

ANSI/ADA 19-2004, Dentistry - Elastomeric Impression Materials

This specification specifies requirements and tests for evaluating elastomeric dental impression materials.

ANSI/ADA 2-2002, Gypsum-Bonded Casting Investment for Dental Gold Alloy

Establishes a classification of and specifies requirements for, gypsum-bonded casting investments. It also specifies test methods to be used to determine compliance with these requirements.

ANSI/ADA 23-1982 (R1999), Dental Excavating Burs

Establishes the requirements for burs suitable for use with straight and angle dental handpieces.

ANSI/ADA 24 and 24a-1991 (R2003), Dental Baseplate Wax

This specification is for wax used in the construction of artificial dentures. The wax consists essentially of natural and synthetic waxes, resins, and hydrocarbon waxes of the paraffin series.

ANSI/ADA 25-2000 (R2005), Dental Gypsum Products

This specification provides a classification of, and specifies requirements for, dental gypsum products used for dental purposes, such as making oral impressions, moulds, casts, or dies. It specifies the test methods to be employed to determine compliance with these requirements.

ANSI/ADA 26-1991 (R1999), Dental X-ray Equipment

Applies to diagnostic x-ray equipment used for intraoral radiography.

ANSI/ADA 28-2002, Root Canal Files and Reamers, Type K for Hand Use

Pertains to endodontic files and reamers for hand use only having a working part taper of 2% (0.02 millimeter per millimeter of length) as in endodontic preparation or shaping operations.

ANSI/ADA 28a-1996, Root Canal Files and Reamers, Type K

This addendum includes changes in Tip, Equipment, Corrosion Tests, and Sterilization of ANSI/ADA Specification No. 28.

ANSI/ADA 30-2000 (R2005), Zinc Oxide-Eugenol and Non-Eugenol Cements

This standard specifies the requirements and test methods for zinc oxide - eugenol or zinc oxide - non-eugenol cements supplied as two separate components that may be either powder/liquid or paste/paste and are suitable for use in the oral cavity.

ANSI/ADA 32-2000, Orthodontic Wires Not Containing Precious Metals

This specification pertains to all metallic wires as components of fixed, intra-oral, orthodontic appliances with the exception of (metallic) ligatures.

ANSI/ADA 33-2003, Dental Terminology

This standard defines terms used in dentistry, particularly those relating to dental materials, instruments and equipment, and terms associated with the testing of such products.

ANSI/ADA 34-1978 (R2000), Dental Aspirating Syringes

Covers the requirements for devices that are capable of aspiration and are used for parenteral injections in dentistry.

ANSI/ADA 34a-1981 (R2000), Dental Aspirating Syringes

Covers the requirements for devices that are capable of aspiration and are used for parenteral injections in dentistry.

ANSI/ADA 37-2001 (R2005), Dental Abrasive Powders

This specification is for powdered abrasive materials used in dentistry for removing stains and gross scratches from natural tooth structures and prostheses but not including materials used in laboratory blasting processes. These materials are divided into types depending on the intended manner of use and further sub-divided into classes based upon the predominant abrasive agent present in the product.

ANSI/ADA 38-2000, Metal-Ceramic Systems

Specifies requirements and test methods for dental metallic materials processed by casting or machining, and ceramics suitable for use in the fabrication of metal-ceramic dental restorations together with requirements and test methods for the composite structure. (Revises current ANSI by adopting international standard, ISO 9693.) This standard was listed for Public Review in the August 27, 1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ADA 39-1992 (R1999), Dental Resin-Based Pit and Fissure Sealants

Covers requirements and test methods for resin-based materials suitable for sealing pits and fissures in teeth.

ANSI/ADA 4-1983 (R2003), Dental Inlay Casting Wax

This specification is for the inlay casting wax used in making patterns in the production of inlays and crowns. The wax consists essentially of natural and synthetic waxes, resins, and hydrocarbons of the paraffin series.

ANSI/ADA 42-2002, Dental Phosphate-Bonded Casting Investments

Classifies dental phosphate-bonded casting investments into two types according to the intended use. It specifies requirements for the essential physical properties of the investment and the test methods to be used to determine these properties. It also includes a requirement for adequate instructions to accompany each package.

ANSI/ADA 43-1986 (R2005), Electrically Powered Dental Amalgamators

This specification is for mechanical dental amalgamators used for the mixing of alloy and mercury to make dental amalgam. It includes multipurpose devices but is restricted to their function of triturating alloy and mercury to produce dental amalgam.

ANSI/ADA 44-1979 (R1999), Dental Material – Electrosurgical Equipment

Covers the minimal requirements for dental electrosurgical devices that operate in the 1.5 to 4MHz frequency range and have a maximum power output capability of 100 watts or less, but not less than a maximum capability of 50 watts, and are used principally in the oral cavity for performing clinical dental electrosurgery procedures by biterminal technique.

ANSI/ADA 46-2004, Dental Chairs

Applies to all dental patient chairs, regardless of their construction and also regardless of whether they are operated manually or electrically or by other means, or as a combination of these. It specifies requirements, test methods, manufacturer's information, marking and packaging.

ANSI/ADA 47-1983 (R2003), Dental Units

This specification covers the requirements for all equipment used for delivering and storing dynamic and static instruments, such as handpieces, syringes, amalgamators, saliva ejectors, or high volume evacuators.

ANSI/ADA 48-2004, Visible Light Curing Units

Gives requirements and test methods for polymerization activators with powered tungsten-halogen lamps in the blue wavelength region intended for chairside use in polymerization of dental resin-based materials. This specification is also applicable to rechargeable battery-powered polymerization activators. It does not cover powered polymerization activators used in laboratory fabrication of indirect restorations, veneers, dentures or other oral dental appliances.

ANSI/ADA 5-1997, Dental Casting Alloys

Provides a classification and specifies requirements and test methods for dental casting alloys.

ANSI/ADA 53-1999 (R2005), Polymer-Based Crown and Bridge Materials

This specification covers polymer-based crown and bridge materials for laboratory-fabricated permanent facings or anterior crowns which may or may not be attached to a metal substructure. This specification also applies to polymer-based crown and bridge materials for which the manufacturer claims adhesion to the metal sub-frame without macromechanical retention, such as beads or wires. This specification further classifies polymer-based crown and bridge materials and specifies the requirements; it also specifies the test methods to be used to determine compliance with these requirements.

ANSI/ADA 54-1986 (R2000), Double-Pointed, Parenteral, Single-Use Needles for Dentistry

Covers sterile, single-use, individually-packaged, double-pointed needles with a means of secure attachment to cartridge-type syringes used for dental, regional, anesthetic injections.

ANSI/ADA 57-2000, Dental Material – Endodontic Filling Materials

Provides a specification is for materials used in endodontics within the tooth to seal the root canal space.

ANSI/ADA 58-2004, Root Canal Files, Type H (Hedstrom)

This specification is for endodontic Hedstrom files for hand use only having a working part taper of 2% (0.02 millimeter per millimeter of length) as used in endodontic preparation or shaping operations.

ANSI/ADA 6-1987 (R2005), Dental Mercury

This standard specifies the requirements and test methods for mercury suitable for the preparation of dental amalgam, and the requirements for packaging and marking.

ANSI/ADA 62-2005, Dental Abrasive Pastes

This specification is for in-office abrasive pastes used in dentistry for removing stains and other exogenous materials from natural tooth structures and prostheses.

ANSI/ADA 63-1999, Root Canal Barbed Broaches and Rasps

This is a revision of ADA 63 - 1989. The revision is essentially the same as ISO 3630, Part 1, 1992 except for the method of identification of the location of the diameter measurement points. This specification addresses root canal barbed broaches and rasps for hand use utilized in endodontic preparations.

ANSI/ADA 69-1999, Dental Ceramic (same as ISO 6872)

Specifies the requirements and the corresponding test methods for dental ceramic materials for all fixed ceramic restorations. Revises current ANS by adopting ISO 6872.

ANSI/ADA 70-1999 (R2005), Dental X-Ray Protective Aprons and Accessory Devices

This specification applies to dental x-ray protective aprons and accessory devices, such as thyroid collars and thyroid shields used in dentistry that protect the patient, as much as feasible, from the harmful effects of dental diagnostic X-radiation. It specifies the requirements for X-radiation absorption and the areas of anatomy that the aprons and thyroid collars protect.

ANSI/ADA 71-2001, Root Canal Filling Condensers (Pluggers and Spreaders)

Pertains to root canal instruments for finger or hand-used to compact root canal filling materials.

ANSI/ADA 73-2001, Dental Absorbent Points

Specifies requirements and test methods for nonmedicated dental absorbent points used in endodontic procedures.

ANSI/ADA 74-2002, Dental Operator's Stools

Specifies requirements, recommendations and methods of test for dental operator's stools as well as requirements for manufacturer's instructions, marking and packaging. It covers also recommendations to manufacturers on the design of tools.

ANSI/ADA 75-1997 (R2003), Resilient Lining Materials for Removable Dentures - Part 1: Short-Term Materials

This standard specifies requirements for the physical properties, test methods, packaging, marking and manufacturer's instructions for denture lining materials suitable for short-term use.

ANSI/ADA 76-2005, Non-Sterile Natural Rubber Latex Gloves for Dentistry

This specification covers non-sterile natural rubber latex gloves suitable for dentistry.

ANSI/ADA 78-2000, Endodontic Obturating Points

Describes materials used in endodontics within the tooth to seal the root canal space.

ANSI/ADA 80-2001, Color Stability Test Procedure

Specifies a method for the determination of the color stability of dental materials after exposure to light and water.

ANSI/ADA 82-1998 (R2003), Dental Reversible/Irreversible Hydrocolloid Impression Material

This ANSI/ADA specification enumerates requirements for essential physical properties and other characteristics of impression material having reversible agar hydrocolloid as a gel forming ingredient, along with tests specified for determining compliance with those requirements. It also specifies requirements with respect to the manufacturer's instructions, and the essentials for packaging, labeling, and marking.

ANSI/ADA 85-Part 1-2004, Disposable Prophyl Angles: Part 1

Second public review: ADA Specification No. 85: Part 1 Disposable Prophyl Angles

The following section was deleted from the specification that underwent ANSI Public Review in August 2003:

4.2 Microbial Limits
~~Disposable angles shall be free from designated microbial species. Test per the United States Pharmacopoeia 25 (USP25), Chapter 61, or current USP, for the following: E coli; Salmonella species, Pseudomonas, Staphylococcus.~~

Scope of first public review: This specification covers disposable prophyl angles suitable for a dental hygienist or a

ANSI/ADA 87-1995 (R2003), Dental Impression Trays

This specification applies to reusable and disposable impression trays used in dentistry for delivering impression materials into the oral cavity for the purpose of making impressions (negative copies) of teeth and oral tissues. It applies to trays made of plastic, aluminum, stainless steel and nickel or chrome plated brass for the purposes of full arch edentulous or edentulous, partially edentulous, partial arch and water cooled impressions.

ANSI/ADA 88-2000, Dental Brazing Alloys

Specifies requirements and test methods for brazing filler alloys suitable for use in brazing cast dental restorations. (Creates a new ANS by adopting international standard ISO 9333-1990.)

ANSI/ADA 89-1999 (R2005), Dental Operating Lights

This standard applies to dental operating lights, however constructed, used for illuminating the oral cavity. It specifies requirements and test methods. It also contains specifications on manufacturer's instruction, marking and packaging.

ANSI/ADA 91-1999 (R2005), Ethyl Silicate Investments

This standard specifies a method for ethyl silicate bonded casting investments to be assessed for their efficacy for casting dental base metal alloy restorations. This standard applies to ethyl silicate bonded investments used in the fabrication of dental base metal casting alloy restorations. This standard also specifies requirements for the essential physical properties of the investment and methods for their determination. It further includes requirements for adequate instructions to accompany each container.

ANSI/ADA 92-2002, Dental Phosphate-Bonded Refractory Die Materials

Applies to phosphate bonded refractory die materials used in the production of dental restorations by a sintering technique.

ANSI/ADA 93-2000 (R2005), Soldering Investments

This specification establishes a classification of and specifies requirements for dental brazing investments. It specifies test methods to be used to determine compliance with these requirements. It also lists information which shall be included in the manufacturer's instructions and gives requirements for labeling.

ANSI/ADA 94-1996 (R2003), Dental Compressed Air Quality

This Standard applies to all compressed air used in the dental office to power dental equipment and laboratory equipment and to dry oral structures. It does not apply to compressed air use to supply breathable air and should never be used to support life.

ANSI/ADA 95-2003, Root Canal Enlargers

This specification is for root canal instruments used mechanically to access and enlarge canals.

ANSI/ADA 96-2000 (R2005), Dental Water-Based Cements

This standard specifies requirements for certain types of dental cements, including both hand-mixed and capsulated cements for the mechanical mixing, that are intended for permanent cementation, lining and restoration, and that effect setting only by an aqueous acid-base reaction.

ANSI/ADA 97-2002, Corrosion Test Methods

Provides test methods and protocols to determine the corrosion behavior of all metallic materials used in restorative, prosthetic and orthodontic dentistry in the oral cavity, including cast, machined and prefabricated devices. This Standard is not applicable to instruments and appliances.

ANSI/ADA 99-2001, Athletic Mouth Protectors and Materials

Provides specifications for thermoplastic or thermosetting polymeric materials with or without a polymeric shell that are capable of being formed into an athletic mouth protector, either on a model of the teeth or in the mouth directly on the teeth. It lists the types and classes of mouth protectors and lists requirements for physical properties along with tests specified for determining compliance with those requirements. It also specifies requirements for manufacturer's instructions and for packaging, labeling, and marking.

ANSI/ADA Specification No. 41-2005, Recommended Standard Practices for Biological Evaluation of Dental Materials

This document covers standard practices for the biological evaluation of the safety of medical devices used in dentistry, including those with pharmacological agents as an integral part of the device.

ANSI/ADA Specification No. 27-2005, Polymer-based Filling, Restorative and Luting Materials

This Standard specifies requirements for dental polymer-based filling and restorative materials and polymer-based luting materials supplied in a form suitable for mechanical mixing, hand-mixing, or intra-oral and extra-oral external energy activation, and intended for use primarily for the direct or indirect restoration of cavities in the teeth.

ANSI/ADA Specification No. 27-2005, Polymer-based Filling, Restorative and Luting Materials

This Standard specifies requirements for dental polymer-based filling and restorative materials and polymer-based luting materials supplied in a form suitable for mechanical mixing, hand-mixing, or intra-oral and extra-oral external energy activation, and intended for use primarily for the direct or indirect restoration of cavities in the teeth.

ANSI/ADA/ISO 3950-1994, Dentistry - Designation System for Teeth and Areas of the Oral Cavity

Provides a system for designating teeth or areas of the oral cavity using two digits. It also provides a system for designating surfaces of the teeth using letters of the alphabet.

AFPA (American Forest & Paper Association)

ANSI/AF&PA NDS-2005, National Design Specification for Wood Construction

This specification provides guidelines and requirements for structural and fire design of wood products, and their connectors.

ANSI/AF&PA SDPWS-2005, NDS Supplement: Special Design Provisions for Wind and Seismic

Provide special design and construction requirements for wind and seismic design of wood frame structures. This adds supplemental information to NDS design procedures.

ANSI/AF&PA WFCM-2001, Wood Frame Construction Manual for One and Two-Family Dwellings

A comprehensive design and construction manual providing engineered and prescriptive design requirements for wood frame one and two-family dwellings resisting dead, live, snow, wind and seismic loads. The WFCM includes design and construction provisions for connections, wall systems, floor systems, and roof systems. A range of structural elements are covered, including sawn lumber, structural glued laminated timber, wood structural sheathing, I-joists, and trusses.

AGA (American Gas Association)

ANSI B109.1-2000, Diaphragm-Type Gas Displacement Meters (500 Cubic Feet per Hour Capacity and Under)

Applies to diaphragm type gas meters, designed for revenue measurement of fuel gas, having a flow rating of less than 500 cubic feet per hour (14.1 m³/h) capacity at 0.5 inch water column (125 Pa) differential pressure at standard conditions. To obtain an electronic draft: e-mail aquraishi@aga.org

ANSI B109.2-2000, Diaphragm-Type Gas Displacement Meters (Over 500 Cubic Feet per Hour Capacity)

Applies to diaphragm type gas meters, designed for revenue measurement of fuel gas, having a flow rating of 500 cubic feet per hour (14.1 m³/h) capacity and over at 0.5 inch water column (125 Pa) differential pressure at standard conditions. To obtain an electronic draft: e-mail aquraishi@aga.org

ANSI B109.3-2000, Rotary-Type Gas Displacement Meters

Applies to rotary type positive gas displacement meters designed for revenue measurement of fuel gas. To obtain an electronic draft: e-mail aquraishi@aga.org

ANSI B109.4-1998, Self-Operated Diaphragm-Type Natural Gas Service Regulators

Provides the basic standard for safe and reliable operation, substantial and durable construction, of self-operated, diaphragm-type, natural gas service regulators, for nominal pipe size of 1-1/4 inch and smaller, with outlet pressure of 14-inch water column and less.

ANSI Z223.1/NFPA 54-2005, National Fuel Gas Code (same as ANSI/NFPA 54)

Second public review contains substantive revisions the committee accepted as a result of the first public review comments and additional committee actions. The code offers general criteria for the installation and operation of gas piping and gas equipment on consumers' premises. It is the cumulative result of years of experience of many individuals and many organizations acquainted with the installation of gas piping and equipment designed for utilization of gaseous fuels. It is intended to promote public safety by providing requirements for the safe and satisfactory utilization of gas.

ANSI/GPTC Z380.1-1998-2003, Addendum No. 1, GPTC Guide for Gas Transmission and Distribution Piping Systems

Addendum No. 1 updates the material in the Guide for Gas Transmission and Distribution Piping Systems (Guide). The Guide contains information and some methods to assist the operator in complying with the Code of Federal Regulations (CFR), Title 49, Part 191 & Part 192.

ANSI/GPTC Z380.1-2003, Addendum No. 2-2005, Guide for Gas Transmission and Distribution Piping Systems

Addendum No. 2 will update the Guide by revising existing material and adding new material. The Guide for Gas Transmission and Distribution Piping Systems (Guide) contains information to assist the operator in complying with the Code of Federal Regulations (CFR), Title 49, Part 191 and Part 192.

ANSI/GPTC Z380.1-2003 Addendum No. 3-2005, GPTC Guide for Gas Transmission and Distribution Piping Systems

These items received a public review and will be combined to form Addendum No. 3 to the 2003 Edition of ANSI Z380.1, Guide for Gas Transmission and Distribution Piping Systems.

BSR/GPTC Z380.1-2003 TR00-15
BSR/GPTC Z380.1-2003 TR02-25
BSR/GPTC Z380.1-2003 TR03-12
BSR/GPTC Z380.1-2003 TR03-41
BSR/GPTC Z380.1-2003 TR04-06
BSR/GPTC Z380.1-2003 TR04-07
BSR/GPTC Z380.1-2003 TR04-12
BSR/GPTC Z380.1-2003 TR04-53
BSR/GPTC Z380.1-2003 TR04-55
BSR/GPTC Z380.1-2003 TR04-57

ANSI/GPTC Z380.1-2003, Addendum No. 4-2006, Guide for Gas Transmission and Distribution Piping Systems 2003 Edition - Addendum 4

These items received a public review and will be combined to form Addendum No. 4 to the 2003 Edition of ANSI Z380.1, Guide for Gas Transmission and Distribution Piping Systems.

BSR/GPTC Z380.1-2003 TR01-24
BSR/GPTC Z380.1-2003 TR03-31
BSR/GPTC Z380.1-2003 TR03-38
BSR/GPTC Z380.1-2003 TR03-43
BSR/GPTC Z380.1-2003 TR04-14
BSR/GPTC Z380.1-2003 TR04-24
BSR/GPTC Z380.1-2003 TR04-28

ANSI/GPTC Z380.1-2003 TR00-15-2005, Guide for Gas Transmission and Distribution Piping Systems (consolidated into ANSI GPTC Z380.1-2003 Addendum No. 3-2005)

Revision to guide material under 192.353, 192.355 and 192.357. The Standard provides information to assist the gas pipeline operator in complying with the Code of Federal Regulations, Title 49, Part 192.

ANSI/GPTC Z380.1-2003 TR02-25-2005, Guide for Gas Transmission and Distribution Piping Systems (consolidated into ANSI GPTC Z380.1-2003 Addendum No. 3-2005)

Revision to guide material under 192.615. The Standard provides information to assist the gas pipeline operator in complying with the Code of Federal Regulations, Title 49, Part 192.

ANSI/GPTC Z380.1-2003 TR03-12-2005, Guide for Gas Transmission and Distribution Piping Systems (consolidated into ANSI GPTC Z380.1-2003 Addendum No. 3-2005)

Revision to guide material under 192.3, 192.121, 192.123, 192.281, 192.283 and GMA G-192-1. The Standard provides information to assist the gas pipeline operator in complying with the Code of Federal Regulations, Title 49, Part 192.

ANSI/GPTC Z380.1-2003 TR03-41-2005, Guide for Gas Transmission and Distribution Piping Systems (consolidated into ANSI GPTC Z380.1-2003 Addendum No. 3-2005)

Revision to guide material under 192.605 and 192.615. The Standard provides information to assist the gas pipeline operator in complying with the Code of Federal Regulations, Title 49, Part 192.

ANSI/GPTC Z380.1-2003 TR04-06-2005, Guide for Gas Transmission and Distribution Piping Systems (consolidated into ANSI GPTC Z380.1-2003 Addendum No. 3-2005)

Revision to guide material under 192.615, and GMA G-192-14. The Standard provides information to assist the gas pipeline operator in complying with the Code of Federal Regulations, Title 49, Part 192.

ANSI/GPTC Z380.1-2003 TR04-07-2005, Guide for Gas Transmission and Distribution Piping Systems (consolidated into ANSI GPTC Z380.1-2003 Addendum No. 3-2005)

Revision to guide material under 192.317, 192.455 and 192.473. The Standard provides information to assist the gas pipeline operator in complying with the Code of Federal Regulations, Title 49, Part 192.

ANSI/GPTC Z380.1-2003 TR04-12-2005, Guide for Gas Transmission and Distribution Piping Systems (consolidated into ANSI GPTC Z380.1-2003 Addendum No. 3-2005)

Revision to guide material under 192.144. The Standard provides information to assist the gas pipeline operator in complying with the Code of Federal Regulations, Title 49, Part 192.

ANSI/GPTC Z380.1-2003 TR04-53-2005, Guide for Gas Transmission and Distribution Piping Systems (consolidated into ANSI GPTC Z380.1-2003 Addendum No. 3-2005)

Revision to guide material under 192.943. The Standard provides information to assist the gas pipeline operator in complying with the Code of Federal Regulations, Title 49, Part 192.

ANSI/GPTC Z380.1-2003 TR04-55-2005, Guide for Gas Transmission and Distribution Piping Systems (consolidated into ANSI GPTC Z380.1-2003 Addendum No. 3-2005)

Revision to guide material under 192.947. The Standard provides information to assist the gas pipeline operator in complying with the Code of Federal Regulations, Title 49, Part 192.

ANSI/GPTC Z380.1-2003 TR04-57-2005, Guide for Gas Transmission and Distribution Piping Systems (consolidated into ANSI GPTC Z380.1-2003 Addendum No. 3-2005)

Revision to guide material under 192.951. The Standard provides information to assist the gas pipeline operator in complying with the Code of Federal Regulations, Title 49, Part 192.

ANSI/IAS U.S. LC-2-1996, Direct Gas-Fired Circulating Heaters for Agricultural Animal Confinement Buildings

Details test and examination criteria for direct gas-fired circulating heaters primarily intended for permanent installation in agricultural animal confinement buildings for use with natural, manufactured and mixed gases, liquefied petroleum gases, and LP gas-air mixtures.

AGMA (American Gear Manufacturers Association)

ANSI/AGMA 1003-G93 (R99), Tooth Proportions for Fine-Pitch Spur and Helical Gearing

Provides requirements that are similar to those of coarse pitch gearing except in the matter of clearance. For 20-degree profile angle fine pitch gearing, this standard provides a system of enlarged pinions, which use the involute form above 5 degrees of roll. Data on 14-1/2- and 25-degree profile angle systems are included in the annexes.

ANSI/AGMA 1006-A97 (R2003), Tooth Proportions for Plastic Gears

Presents a new basic rack, AGMA PT, which, with its full round fillet, may be preferred in many applications of gears made from plastic materials. Contains a description, with equations and sample calculations, of how the proportions of a spur or helical gear may be derived from the design tooth thickness and the basic rack data. In annexes, there are discussions of possible variations from the basic rack and also a procedure for defining tooth proportions without using the basic rack concept.

ANSI/AGMA 1010-E95 (R2000), Appearance of Gear Teeth – Terminology of Wear and Failure

Provides nomenclature for general modes of gear tooth wear and failure. It classifies, identifies and describes the most common types of failure and provides information which will, in many cases, enable the user to identify failure modes and evaluate the degree of progression of wear.

ANSI/AGMA 1012-2005, Gear Nomenclature, Definitions of Terms with Symbols

This standard establishes the definitions of terms, symbols and abbreviations which may be used to communicate the technology and specifications of external and internal gear teeth. It provides definitive meanings by the use of words and illustrations, for commonly used gearing terms.

ANSI/AGMA 1102-2003, Tolerance Specification of Gear Hobs

Provides specifications for nomenclature, dimensions, tolerances, and inspection for gear hobs. It establishes a basis for understanding the use and manufacture of these tools.

ANSI/AGMA 1106-A97 (R2003), Tooth Proportions for Plastic Gears (Metric Version of ANSI/AGMA 1006-A97)

Presents a new basic rack, AGMA PT, which, with its full round fillet, may be preferred in many applications of gears made from plastic materials. Contains a description, with equations and sample calculations, of how the proportions of a spur or helical gear may be derived from the design tooth thickness and the basic rack data. In annexes, there are discussions of possible variations from the basic rack and also a procedure for defining tooth proportions without using the basic rack concept.

ANSI/AGMA 2001-D04, Fundamental Rating Factors and Calculation Methods for Involute Spur and Helical Gear Teeth

This standard specified a method for rating the pitting resistance and bending strength of spur and helical involute gear pairs. A detailed discussion of factors influencing gear survival and calculation methods are provided.

ANSI/AGMA 2002-B88 (R1996), Tooth Thickness Specification and Measurement

This standard establishes the procedures for determining tooth thickness measurements of external and internal cylindrical involute gearing. It includes equations and calculation procedures for the commonly used measuring methods.

ANSI/AGMA 2003-B97 (R2003), Rating the Pitting Resistance and Bending Strength of Generated Straight Bevel, Zerol Bevel and Spiral Bevel Gear Teeth

Presents a method for rating the pitting resistance and bending strength of generated straight bevel, zerol bevel, and spiral bevel gear teeth. It includes a detailed discussion of factors influencing gear survival and a calculation method.

ANSI/AGMA 2004-B89 (R2000), Gear Materials and Heat Treatment Manual

Provides information pertaining to engineering materials and material treatment used in gear manufacture. Includes definitions, selection guidelines, heat treatment, quality control, life considerations and a bibliography. Material selection includes ferrous, nonferrous and nonmetallic materials. Examines wrought, cast and fabricated gear blanks. Includes heat treatment sections on through hardened, flame hardened, induction hardened, carburized, carbonitrided and nitrided gears. Discusses quenching, distortion and shot peening. Also discusses quality control as related to gear blanks, process control and metallurgical testing on the final products.

ANSI/AGMA 2005-D03, Design Manual for Bevel Gears

Provides the standards for designing straight bevel, zerol bevel, spiral bevel and hypoid gears with information on fabrication, inspection and mounting. Covers preliminary gear design parameters, blank design including standard taper, uniform depth, duplex taper and tilted root. Also includes drawing format, inspection, materials, lubrication, mountings and assembly.

ANSI/AGMA 2007-C00/ISO 14104:1995, IDT, Surface Temper Etch Inspection After Grinding

Explains the materials and procedures to determine and evaluate localized overheating on ground surfaces. Includes a system to describe and classify the indications produced during this inspection. However, does not provide specific acceptance or rejection criteria

ANSI/AGMA 2008-C01, Assembling Bevel Gears

Pertains to the assembly man in the factory and the service man in the field. Each definition, explanation and instruction is directed toward the physical appearance of the gears as they are inspected and assembled by these personnel.

ANSI/AGMA 2009-B01, Bevel Gear Classification, Tolerances and Measuring Methods

Revises subclauses 7.2.3 and 7.2.8 only. This standard, for bevel gearing, correlates gear accuracy grades with gear tooth tolerances. It provides information on manufacturing practices as well as gear measuring methods and practices. Annex material provides guidance on specifying an accuracy grade and information on additional methods of gear inspection. This project revises clauses 7.2.3 and 7.2.8 only.

ANSI/AGMA 2010-A94 (R2000), Measuring Instrument Calibration – Part 1, Involute Measurement

Applies solely to the qualification of gear tooth profile inspection instruments. Provides procedures for the design, calibration and traceability of involute, pin and plane (flank) masters. Also covers condition evaluation of involute measuring instruments, such as probe location, gain, hysteresis, etc.

ANSI/AGMA 2011-A98 (R2004), Cylindrical Wormgearing Tolerance and Inspection Methods

Establishes a classification system for the geometrical accuracy specification of wormgearing. It also provides uniform measurement procedures including discussions on single and double flank composite testing and tooth thickness measurements. The standard establishes ten accuracy grades based on the relative effect of geometrical errors on conjugate action for wormgear sets.

ANSI/AGMA 2015-1-A02, Accuracy Classification System – Tangential Measurements for Cylindrical Gears

Correlates gear accuracy grades with gear tooth tolerances. It provides information on manufacturing practices as well as gear measuring methods and practices. Annex material provides guidance on specifying an accuracy grade and information on additional methods of gear inspection.

ANSI/AGMA 2101-D04, Fundamental Rating Factors and Calculation Methods for Involute Spur and Helical Gear Teeth

This standard specifies a method for rating the pitting resistance and bending strength of spur and helical involute gear pairs. A detailed discussion of factors influencing gear survival and calculation methods are provided. Metric version of AGMA 2001-DXX.

ANSI/AGMA 2110-A94 (R2000), Measuring Instrument Calibration – Part 1, Involute Measurement (Metric)

Applies solely to the qualification of gear tooth profile inspection instruments. It provides procedures for the design, calibration, and traceability of involute, pin, and plane (flank) masters. It also covers condition evaluation of involute measuring instruments such as probe location, gain, hysteresis, etc. Recommendations are included for establishment of a proper environment and for statistical data evaluation procedures.

ANSI/AGMA 2111-A98 (R2004), Cylindrical Wormgearing Tolerance and Inspection Methods (Metric)

Establishes a classification system for the geometrical accuracy specification of wormgearing. It also provides uniform measurement procedures including discussions on single and double flank composite testing and tooth thickness measurements. The standard establishes ten accuracy grades based on the relative effect of geometrical errors on conjugate action for wormgear sets. (Metric edition of ANSI/AGMA 2011-A98.

ANSI/AGMA 2113-A97 (R2004), Measuring Instrument Calibration, Gear Tooth Alignment Measurement

This document provides procedures for the design, calibration and traceability of involute, pin and plane (flank) masters. It covers the condition evaluation of involute measuring instruments such as probe location, gain, hysteresis, etc. Recommendations are included for establishment of a proper environment and for statistical data evaluation procedures. This standard is applicable solely to the qualification of gear tooth profile inspection instruments.

ANSI/AGMA 2114-A98 (R2004), Measuring Instrument Calibration, Gear Pitch and Runout Measurements

This document provides qualification procedures for gear measuring instruments that are used for evaluation of pitch and runout measurements. This includes instruments that measure runout directly, or compute it from index measurements. It also covers condition evaluation of the measuring instrument. Recommendations are included for establishment of a proper environment and for statistical data evaluation procedures.

ANSI/AGMA 2116-A05, Evaluation of Double Flank Testers for Radial Composite Measurement of Gears

This standard provides the evaluation criteria for double flank testers. Recommended artifact sizes and geometry are provided along with the measurement system conditions. Annexes are provided for methods of estimating calibration uncertainty and artifact calibration certificates.

ANSI/AGMA 6000-B96 (R2002), Specification for Measurement of Linear Vibration on Gear Units

Presents a method for measuring linear vibration on a gear unit. Recommends instrumentation, measuring methods, test procedures and discrete frequency vibration limits for acceptance testing. Annexes list system effects on gear unit vibration and system responsibility. The ISO vibration rating curves from ISO 8579-2, Acceptance code for gears – Part 2: Determination of mechanical vibrations of gear units during acceptance testing, are introduced.

ANSI/AGMA 6001-D97 (R2003), Design and Selection of Components for Enclosed Gear Drives

Outlines the basic practices for the design and selection of components (other than gearing) which are used in commercial and industrial enclosed gear drives. It discusses bearings, bolting, keys, and the most recent theories on shafting among other components.

ANSI/AGMA 6002-B93 (R2001), Design Guide for Vehicle Spur and Helical Gears

Provides a guide to the design, fabrication, and inspection of spur and helical gears for vehicles and for power transmission on vehicles.

ANSI/AGMA 6005-B89 (R1996), Power Rating for Helical and Herringbone Gearing for Rolling Mill Service

This standard specifies a method for rating the pitting resistance and bending strength of herringbone, double helical, and helical involute gear pairs as applied to metal rolling mills.

ANSI/AGMA 6006-2004, Design and Specification of Gearboxes for Wind Turbines

Applies to wind turbine gearboxes. It provides information for specifying, selecting, designing, manufacturing, procuring, operating and maintaining reliable speed increasing gearboxes for wind turbine generator system service. Annex information is supplied on: wind turbine architecture, wind turbine load description, quality assurance, operation and maintenance, minimum purchaser gearbox manufacturer ordering data, lubrication selection and condition monitoring, and gear and bearing design.

ANSI/AGMA 6008-A98 (R2004), Specifications for Powder Metallurgy Gears

Defines the minimum detailed information to be included in the powder metallurgy gear specifications submitted by the gear purchaser to the gear producer. Specifications on gear tooth geometry are described in detail for external spur and helical gears and for straight bevel gears. The standard applies to gears made by the conventional P/M process consisting of compaction followed by sintering and, in some cases, by post sintering treatments.

ANSI/AGMA 6009-A00, Gearmotor, Shaft Mounted and Screw Conveyor Drives

Presents methods for rating gearmotors, shaft-mounted reducers, and screw conveyor drives containing spur, helical, bevel and worm gears. Included is information on pitting resistance and bending strength rating, lubrication, component ratings, thermal rating, storage and installation.

ANSI/AGMA 6010-F97 (R2003), Spur, Helical, Herringbone, and Bevel Enclosed Drives

Presents a method for rating the pitting resistance and bending strength of spur, helical, herringbone and bevel gears used for enclosed speed reducers and increasers. It includes information on unit rating, lubrication, components, thermal rating, storage, and installation.

ANSI/AGMA 6011-2003, Specification for High-Speed Helical Gear Units

This standard includes information on design, lubrication, bearings, testing and rating of single and double helical external tooth, parallel shaft gear reducers or increasers. Units covered include those operating with at least one stage having a pitch line velocity equal to or greater than 35 meters per second or rotational speeds greater than 4500 rpm, and other stages having pitch line velocities equal to or greater than 8 meters per second.

ANSI/AGMA 6017-E86 (R2000), Rating and Application of Single and Multiple Reduction Double-Enveloping Worm and Helical Worm

Specifies the method for rating single and multiple reduction, double-enveloping worm and helical-worm speed reducers. Design considerations such as thermal limitations, service factors, efficiency, stress limits, overhung load capacity, and lubrication are included. Tables of basic pressure constants, ratio correction factors, facewidths and material factors, velocity factors, overhung load factors, service factors, typical rubbing speeds and efficiency are provided.

ANSI/AGMA 6019-E89 (R1995), Gearmotors Using Spur, Helical, Herringbone, Straight Bevel or Spiral Bevel Gears

ANSI/AGMA 6021-G89 (R1995), Shaft Mounted and Screw Conveyor Drives Using Spur, Helical, and Herringbone Gears

ANSI/AGMA 6022-C93 (R2000), Design Manual for Cylindrical Wormgearing

This Design Manual provides information pertaining to selection of geometric parameters which will constitute good design of fine and coarse pitch cylindrical wormgearing. The power rating for fine and coarse pitch wormgearing is not included in this design manual, but can be found in ANSI/AGMA 6034-B92, Practice for Enclosed Cylindrical Wormgear Speed Reducers and Gearmotors.

ANSI/AGMA 6023-A88 (R2000), Design Manual for Enclosed Epicyclic Gear Drives

Includes descriptions of epicyclic drives, nomenclature, application information, and design guidelines with reference to other AGMA standards.

ANSI/AGMA 6025-A98 (R2004), Sound for Enclosed Helical, Herringbone, and Spiral Bevel Gear Drives

Describes a recommended method of acceptance testing and reporting of the sound pressure levels generated by a gear speed reducer or increaser when tested at the manufacturer's facility. Annexes to the standard present sound power measurement methods for use when required by specific contract provisions between the manufacturer and purchaser.

ANSI/AGMA 6030-C87 (R2001), Design of Industrial Double-Enveloping Wormgears

Provides data for the design of double-enveloping wormgears with axes at a 90-degree angle. Specific definitions for double-enveloping wormgearing terms are presented, along with formulas for determining the geometric sizes of the major features for worm and wormgear. Design considerations, design procedures, gear blanks and self-locking conditions are also discussed. Procedures for rating the load capacity of double-enveloping wormgearing are not included.

ANSI/AGMA 6032-A94 (R2000), Standard for Marine Gear Units: Rating

Considers rating practices for marine main propulsion, pump, and ship generator set service. Practical suggestions are included for various factors. Allowable contact stress numbers and allowable bending stress numbers for materials of this standard covered in ANSI/AGMA 6033-A88 are included.

ANSI/AGMA 6033-B1998 (R2004), Marine Propulsion Gear Units, Part 1 – Materials

This document identifies commonly used alloy steels, heat treatments and inspection requirements for through hardened, case hardened and surface hardened gearing for main propulsion marine gear service over 1500 hp. Mechanical, metallurgical and nondestructive test requirements are provided for various heat treatment processes and metallurgical quality grades of gearing.

ANSI/AGMA 6034-B92 (R2005), Practice for Enclosed Cylindrical Wormgear Speed Reducers and Gearmotors

This standard gives a method for rating and design of specific enclosed cylindrical wormgear reducers and gearmotors. It contains power, torque and efficiency equations with guidance on component design, thermal capacity, service factor selection, lubrication and self-locking features.

ANSI/AGMA 6035-2002, Design, Rating and Application of Industrial Globoidal Wormgearing

ANSI/AGMA 6109-A-00, Gearmotor, Shaft Mounted and Screw Conveyor Drives (Metric)

Presents methods for rating gearmotors, shaft-mounted reducers, and screw conveyor drives containing spur, helical, bevel and worm gears. Included is information on pitting resistance and bending strength rating, lubrication, component ratings, thermal rating, storage and installation.

ANSI/AGMA 6110-F97 (R2003), Spur, Helical, Herringbone, and Bevel Enclosed Drives

Presents a method for rating the pitting resistance and bending strength of spur, helical, herringbone and bevel gears used for enclosed speed reducers and increasers. It includes information on unit rating, lubrication, components, thermal rating, storage, and installation. Metric version of ANSI/AGMA 6010-F97.

ANSI/AGMA 6123-A88 (R2000), Design Manual for Enclosed Epicyclic Metric Module Gear Drives

Includes descriptions of epicyclic drives, nomenclature, application information, and design guidelines with reference to other AGMA standards.

ANSI/AGMA 6133-B1998- (R2004), Materials for Marine Propulsion Gearing

This document identifies commonly used alloy steels, heat treatments and inspection requirements for through hardened, case hardened and surface hardened gearing for main propulsion marine gear service over 1500 hp. Mechanical, metallurgical and nondestructive test requirements are provided for various heat treatment processes and metallurgical quality grades of gearing.

ANSI/AGMA 6135-2002, Design, Rating and Application of Industrial Globoidal Wormgearing (Metric Edition)

ANSI/AGMA 9000-C90 (R2001), Flexible Couplings – Potential Unbalance Classification

Describes potential coupling unbalance and identifies its sources. The standard breaks down the requirements into usable groups and outlines how to calculate the potential unbalance of the coupling.

ANSI/AGMA 9001-B97 (R2003), Flexible Couplings - Lubrication

This standard provides information on lubrication of gear couplings, chain couplings and metallic grid couplings. Types of lubricants and lubrication methods and practices are included. In addition, selection guides for grease and oil lubrication are provided.

ANSI/AGMA 9002-B2004, Bores and Keyways for Flexible Couplings (Inch Series)

Describes and provides tolerances for straight and tapered bores and the associated keys and keyways as furnished in flexible couplings. The data in the standard considers commercially standard coupling bores and keyways, not special coupling bores and keyways that may require special tolerances. Annexes are provided to discuss inspection methods for keyways and tapered bores, and design practices for tapered shafts.

ANSI/AGMA 9003-A91 (R2005), Flexible Couplings – Keyless Fits

Presents information on design, dimensions, tolerances, inspection, mounting, removal and equipment that is in common use with keyless tapered and keyless straight (cylindrical) bore hubs for flexible couplings.

ANSI/AGMA 9004-A99 (R2005), Flexible Couplings - Mass Elastic Properties and Other Characteristics

Provides information and calculation methods to system designers for the selection of system components and natural frequency calculations. Properties discussed include weight, inertia, center of gravity, and axial, lateral and torsional stiffness.

ANSI/AGMA 9005-E-2002, Industrial Gear Lubrication

This standard provides lubrication guidelines for enclosed and open gearing which is installed in general industrial power transmission applications. It is not intended to supplant specific instructions from the gear manufacturer.

ANSI/AGMA 9008-B99, Flexible Couplings - Gear Type, Flange Dimensions - Inch Series

ANSI/AGMA 9009-D02, Flexible Couplings – Nomenclature of Flexible Couplings

This standard sets forth nomenclature common to flexible couplings that are used in mechanical power transmission drives. This standard is for designers, manufacturers and users when designating various types of flexible couplings, their flexible elements and component parts. It provides definitions, nomenclature, system terms and the addition of terms used in coupling selection, balancing, and other characteristics.

ANSI/AGMA 9112-A2004, Bores and Keyways for Flexible Couplings (Metric Series)

Describes and provides tolerances for straight and tapered bores and the associated keys and keyways as furnished in flexible couplings. The data in the standard considers commercially standard coupling bores and keyways, not special coupling bores and keyways that may require special tolerances. Annexes are provided to discuss inspection methods for keyways and tapered bores, and design practices for tapered shafts. (Metric version of AGMA 9002-BXX).

ANSI/AGMA/ISO 1328-1-1999, Cylindrical Gears - ISO System of Accuracy - Part 1: Definitions and Allowable Values of Deviations Relevant to Corresponding Flanks of Gear Teeth

Establishes a system of accuracy relevant to corresponding flanks of individual cylindrical involute gears. It specifies the appropriate definitions of gear tooth accuracy terms, the structure of the gear accuracy system, and the allowable values of pitch deviations and total helix deviations.

ANSI/AGMA/ISO 1328-2-1999, Cylindrical Gears - ISO System of Accuracy - Part 2: Definitions and Allowable Values of Deviations Relevant to Radial Composite Deviations and Runout Information

Establishes a system of accuracy relevant to radial composite deviations of individual cylindrical involute gears. It specifies the appropriate definitions of gear tooth accuracy terms, the structure of the gear accuracy system, and the allowable values of the above-mentioned deviations.

AGRSS (Automotive Glass Replacement Safety Standards)

ANSI/AGRSS 002-2002, Automotive Glass Replacement Safety

Presents procedures, education and product performance requirements for auto glass replacement shops and personnel.

AH (American Hotel & Lodging Association)

AHAM (Association of Home Appliance Manufacturers)

ANSI/AHAM AC-1-2006, Method for Measuring Performance of Portable Household Electric Room Air Cleaners

This standard method establishes uniform, repeatable procedures and standard methods for measuring specified product characteristics of portable household electric room air cleaners. The standard method measures the relative reduction by the air cleaner of particulate matter suspended in the air in a specified test chamber, and the energy consumption and standby power of the air cleaner. The standard method provides a means to compare and evaluate different brands of portable household electric room air cleaners regarding characteristics significant to product use.

ANSI/AHAM AC-2-2006, Method for Sound Testing of Portable Household Electric Room Air Cleaners

Establishes a method to determine the sound rating of portable household electric room air cleaners. The sound rating is comprised of a set of sound levels that includes: (1) A-weighted sound power level and (2) loudness.

ANSI/AHAM CHA-1-2003, Connected Home Appliances - Object Modeling

The purpose of this standard is to promote new appliance services and features enabled through networking by describing generic appliance models, objects, and high-level messages. The models define standardized elements of appliances that are accessible and controllable remotely by users, service providers, and other devices, independent of the underlying network. The document assumes that each appliance and device contains a communications interface module linked to a home systems network.

ANSI/AHAM CM-1-2005, Method for Measuring Performance of Household Electric Coffee Makers

This standard establishes uniform methods for measuring specified product characteristics of household electric coffee makers.

ANSI/AHAM DH-1-1986 (R2003), Dehumidifiers

Establishes a uniform, repeatable procedure for measuring the capacity and energy input of self-contained, encased, electrically operated, mechanically-refrigerated dehumidifiers under specified test conditions. The procedure and the recommended levels of performance, where they appear, are intended to provide a means to compare and evaluate different brands and models of dehumidifiers regarding characteristics significant to product use.

ANSI/AHAM DW-1-2005, Household Electric Dishwashers

This standard establishes uniform, repeatable procedures or standard methods for measuring specified product characteristics of household electric dishwashers. The standard includes definitions, methods for testing and evaluating dishwasher cleaning performance.

ANSI/AHAM HLW-1-2002, Performance Evaluation Procedure for Household Washers

Establishes a uniform, repeatable procedure or standard method for evaluating the performance of home laundry equipment. Methods provide a means to compare and evaluate different brands and models of household washers regarding characteristics significant to product use. Standard methods are not intended to inhibit improvement and innovation in product testing, design, or performance.

ANSI/AHAM HRF-1-2004, Household Refrigerators/Household Freezers

Applies to household refrigerators, refrigerator-freezers, freezers and wine chillers. This standard covers definitions, methods for computing volumes and shelf areas, methods for determining volumes of special features, performance test procedures, durability test procedures, methods for determining energy consumption and energy factor, and safety recommendations.

ANSI/AHAM I-1-2005, Household Electric Irons

Establishes a uniform, repeatable procedure or standard method for measuring specified performance characteristics of household electric irons.

ANSI/AHAM OV-1-2006, Procedures for the Determination and Expression of the Volume of Household Microwave and Conventional Ovens

Establishes a uniform, repeatable procedure or standard method for determining and expressing the overall volume, and usable oven space, of the cooking cavity of individual household microwave ovens and conventional ovens fuelled by electricity and gas.

ANSI/AHAM RAC-1-1982 (R2003), Room Air Conditioners

Establishes standard methods for measuring performance and includes sections on definitions, test conditions, tests for standard measurements, performance tests, and safety which apply to room air conditioners as defined in 3.1. Performance tests for Heating-Cooling Units (Section 7) apply to units designed as air-to-air source heat pumps with or without supplementary electric resistance heat. The tests apply to units with electric resistance as the only heat source.

AIAA (American Institute of Aeronautics and Astronautics)

ANSI/AIAA G-034-1999, Guide to Reference and Standard Ionosphere Models

Provides guidelines for selecting ionospheric models for engineering design or scientific research. The Guide describes the content of the models, uncertainties and limitations, technical basis, databases from which the models are formed, publication references, and sources of computer codes for approximately 30 ionospheric models. The models cover the altitude range from the Earth's surface to approximately 10,000 kilometers. This Guide is intended to assist communication (C 3 I) and space system designers and developers, geophysicists, space physicists, and climatologists in understanding available models and comparing sources of data and interpreting engineering and scientific results based on different ionospheric models.

ANSI/AIAA G-035A-2000, Human Performance Measurements

Provides methods for measuring human performance for the purpose of scientific research and system evaluation. The guidelines are intended to assist scientists and systems specialists in selecting human performance measurement methods appropriate to the situation being studied or the system being evaluated.

ANSI/AIAA G-095-2004, Guide for Safety of Hydrogen and Hydrogen Systems

This Guide presents information that designers, builders, and users of hydrogen systems can use to avoid or resolve hydrogen hazards. Guidelines are presented for system design, materials selection, operations, storage, and transportation. Pertinent research is summarized, and the data are presented in a quick reference form. Further information can be found in the extensive bibliography.

ANSI/AIAA R-020A-1999, Guide for Estimating and Budgeting Weight and Power Contingencies for Spacecraft Systems

This Recommended Practice provides a methodology for the management of the growth of mass properties during the development of aerospace flight vehicles. It is particularly applicable to missiles, satellites, and launch vehicles. The standardized methodology is consistent with former Mil-Std 1811 and is based on planning, controlling, and reporting at each stage of product or system development.

ANSI/AIAA R-023A-1995, Recommended Practice for Human Computer Interfaces for Space System Operations

Establishes a standardized set of HCI requirements that will be used in the design of next-generation satellite control systems to simplify them and make them more user friendly, operationally efficient, and cost effective. There are 36 generic requirements for the HCI, grouped into: data entry, data display, sequence control, operator guidance, data transmission, and data protection. The requirements are layered as core enhancements, and secure systems.

ANSI/AIAA R-100A-2001, Recommended Practice for Parts Management

Establishes a parts management approach that is consistent with today's business environment. This Recommended Practice, as viewed by industry and government, is a shift in business philosophy from a controlled approach to a performance-based process. The dynamic growth of the commercial market for electronic parts as well as corresponding decrease in aerospace and defense have caused the government and industry to seek alternative methods of managing parts. To develop a solution to this complex problem, industry and government teamed to develop this Recommended Practice for mitigating potential problems/risks. The result of this team effort is a nongovernment standard (NGS) on Parts Management. The basic strategy employed by this document is to understand and manage risk as early as possible in program

ANSI/AIAA S-017A-2000, Aerodynamic Decelerator and Parachute Drawings

Establishes terminology for 260 terms critical to communication about the design and function of parachutes. It further sets requirements for the graphic description of materials, stitching, seams, view, and projections, with related dimensions and tolerances, all of which are consistent with current procurement practice. Many figures are included to illustrate the requirements. Additional illustrations of several types of parachutes are provided in an annex.

ANSI/AIAA S-061-1998, Commercial Launch Safety

Establishes criteria for the establishment of the safety roles and responsibilities and relationships between the various operators who may conduct simultaneous aerospace vehicle operations at a launch or landing site. Risk management processes for ensuring the safety of the public, its property and the safety of the personnel involved in the preparatory and launch operations are addressed. The training and qualifications of the personnel involved in operations at the launch and landing sites are addressed. The appendices to this standard provide guidelines for the design, testing and safe operation of aerospace vehicles and their support equipment.

**ANSI/AIAA S-080-1998, Space Systems -
Metallic Pressure Vessels, Pressurized
Structures, and Pressure Components**

Provides requirements for the analysis, design, manufacture, qualification, and acceptance for flight of metallic pressure vessels, pressurized structures, and pressure components for use in space systems. The document includes specific requirements addressing pressure vessels with hazardous and non-hazardous failure modes and special pressurized equipment such as batteries, heat pipes, cryostats, and pressure components. This is the second public review for this standard. It was previously listed in the September 12, 1997 edition of Standards Action and is being resubmitted due to substantive changes to the text.

**ANSI/AIAA S-081-2000, Space Systems -
Composite Overwrapped Pressure Vessels
(COPV)**

Provides requirements for the analysis, design, manufacture, qualification, and acceptance for flight of composite overwrapped pressure vessels (COPVs) for use in space systems. The document includes specific requirements addressing pressure vessels with hazardous and non-hazardous failure modes.

**ANSI/AIAA S-096-2004, Space Systems -
Flywheel Rotor Assemblies**

This standard establishes baseline requirements for the design, fabrication, test, inspection, storage, and transportation of a flywheel rotor assembly used in a spaceflight flywheel system for energy storage and/or attitude control. These requirements when implemented on a particular system will assure a high level of confidence in achieving safe and reliable operation

**ANSI/AIAA G-003B-2004, Guide to
Reference and Standard Atmosphere
Models**

Provides guidelines for selected reference and standard atmospheric models for use in engineering design or scientific research. The guide describes the content of the model, uncertainties and limitations, technical basis, data bases from which the model is formed, publication references, and sources of computer code for thirty-seven (37) Earth and planetary atmospheric models, for altitudes from surface to 3500 kilometers, which are generally recognized in the aerospace sciences.

**AIHA (American Industrial Hygiene
Association)**

**ANSI Z88.10-2001, Respirator Fit Testing
Methods**

Provides guidance on how to perform fit testing on tight fitting respirators and appropriate methods to be used. Fit testing is only one element of a complete respirator protection program. A complete respiratory protection program is defined in ANSI Z88.2, American National Standard for Respiratory Protection.

**ANSI Z88.7-2001, Color-Coding of
Air-Purifying Respirator Canisters,
Cartridges and Filters**

Establishes a system of marking air-purifying respirator canisters, cartridges, and filters by means of colors in order to: 1) Facilitate rapid identification of the canisters, cartridges, and filters by users; and 2) Ensure color consistency among respirator manufacturers. This standard was listed for public review in the 5/21/1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

**ANSI/AIHA Z10-2005, Occupational Health
and Safety Management Systems**

Defines minimum performance requirements for occupational health and safety management systems (OHSMS).

**ANSI/AIHA Z9.2-2001, Design and Operation
of Local Exhaust Systems, Fundamentals
Governing the**

This standard describes fundamental good practices related to the commissioning, design, selection, installation, operation, maintenance, and testing of local exhaust ventilation (LEV) systems used for control of employee exposure to airborne contaminants. It is intended for use by LEV system owners, employers, industrial hygienists, facilities engineers, maintenance personnel, testing and balancing personnel, ventilation system designers, and others with responsibility for LEV systems. It is compatible with the ACGIH Industrial ventilation Manual and other recognized standards of good practice. You may access the draft standard at www.aiha.org/committe/z9-2-final-draft.pdf.

**ANSI/AIHA Z9.4-1997, Exhaust Systems -
Abrasive Blasting Operations - Ventilation
and Safe Practices for Fixed Location
Enclosures**

Provides rules and principles to protect employees engaged in or working in the vicinity of abrasive blasting in fixed location enclosures from (1) significant risk of health impairment and (2) physical injury due to explosions, high velocity jets of abrasive blasting particles, or moving equipment. This standard applies to all operations in fixed-location abrasive blast enclosures in which forcibly comes in contact with a surface by pneumatic or hydraulic pressure or by centrifugal force.

ANSI/AIHA Z9.5-2002, Laboratory Ventilation

Describes practices for the design and operation of laboratory ventilation systems used for control of exposure to airborne contaminants. It is intended for use by employers, architects, industrial hygienists, safety engineers, ventilation system designers, facilities engineers, maintenance personnel and testing and balancing personnel. It is compatible with the ACGIH Industrial Ventilation Manual, ASHRAE ventilation standards and other recognized standards of good practice.

**ANSI/AIHA Z9.6-1999, Exhaust Systems for
Grinding, Polishing and Buffing**

Describes rules and engineering principles that represent the minimum criteria intended (1) to protect the health of personnel engaged in and working in the vicinity of grinding, polishing and buffing operations and (2) to control contaminants generated by those operations.

**ANSI/AIHA Z9.7-1998, Recirculation of Air
from Industrial Process Exhaust Systems**

This standard establishes the minimum criteria for designing a recirculating process exhaust ventilation system used for contaminant control.

**AIIM (Association for Information and
Image Management)**

**ANSI/AIIM MS1-1996, Recommended
Practice for Alphanumeric
Computer-Output Microforms – Operational
Practices for Inspection and Quality Control**

Provides guidelines and recommended practices for the quality control of Computer Output Microfilm (COM) produced on recorders using fixed hard form slides. Quality control procedures, recommended criteria, and corrective guidance is provided.

**ANSI/AIIM MS11-1987 (R1999), Information
and Image Management – Microfilm
Jackets**

Defines the dimensions, operational constraints and other basic characteristics of the microfilm jacket. It is addressed primarily to user requirements rather than production requirements. It does not cover formats or channel configurations.

**ANSI/AIIM MS14-1996, Specifications for
16mm and 35mm Roll Microfilm**

Applies to 16mm- and 35mm-roll microfilm produced as a result of source document and computer-output microfilming and specifies physical characteristics, formats, placement and orientation.

ANSI/AIIM MS15-2000, Dimensions and Operational Constraints for Single-Core Cartridge for 16-mm Processed Microfilm

This standard specifies the physical and performance characteristics of cartridges used for storing and viewing processed 16mm microfilm. The intent of the standard is to achieve compatibility between the cartridge and automatic threading readers and reader-printers. Accordingly, the standard addresses those physical features that interface with readers required to assure multi-reader usage. Also the winding of the processed microfilm on the reel and the physical characteristics of the leading end of the film are standardized to ensure proper interfacing of the cartridge with all readers of this type. To obtain an electronic draft: document posted at <http://www.aiim.org/aiimstd/MS15-2000.pdf>. or e-mail at bfanning@aiim.org.

ANSI/AIIM MS17-2001, Test Chart for Rotary Microfilm Cameras

Describes specifications for creating a test chart and a test target for rotary (flow) microfilm cameras, and a method for evaluating the photographic quality and mechanical performance of rotary microfilm cameras. Available at [www.aiim.org/aiimstd/ANSI MS17-2000.pdf](http://www.aiim.org/aiimstd/ANSI%20MS17-2000.pdf)

ANSI/AIIM MS18-1992 (R1998), Micrographics – Splices for Imaged Film – Dimensions and Operational Constraints

Covers the requirements for splicing processed microfilm and leaders and trailers, independent of film width or type of base support. It includes both tape and ultrasonic splices.

ANSI/AIIM MS23-2004, Recommended Practice - Production, Inspection, and Quality Assurance of First-Generation, Silver Microforms of Documents

This document identifies and discusses the qualitative characteristics of first-generation silver gelatin microforms and the methods to attain, maintain, and measure levels of quality. The scope of this document excludes COM, updateable, color, and thermally processed microforms.

ANSI/AIIM MS24-1996, Test Target for Use in Microrecording Engineering Graphics on 35-mm Microfilm

Specifies the minimum test elements, their composition, and other criteria that addresses routine usage for testing, which are utilized by 35mm planetary microfilm camera microfilming source document engineering graphics.

ANSI/AIIM MS26A-1999, 35-mm Planetary Cameras (Top-Light) - Procedures for Determining Illumination Uniformity of Microfilming Engineering Drawings

Provides updated information for ANSI/AIIM MS26-1990 which specifies the minimum test target elements and their criteria to be used in determining the uniformity of illumination on the copyboard of a 35-mm planetary camera. This standard deals exclusively with top-light and does not address the use of back-light.

ANSI/AIIM MS28-1996, Micrographics – Alphanumeric COM Quality Test Slide

Describes the requirements for providing a fixed image form slide used to superimpose constant information over the output of the COM recorder dynamic display. Only the requirements for the fixed image on the original artwork and the photographic image of the test object are described.

ANSI/AIIM MS32-1996, Microrecording of Engineering Source Documents on 35-mm Microfilm

Specifies the procedures, dimensions, and quality values governing the microrecording of engineering documentation on 35mm microfilm. This includes procedures, dimensions and quality values for: microform physical characteristics that are related to engineering source document microforming; microimages created by placement of engineering source documents on the copyboards of 35mm planetary cameras; and duplication of the original microimage.

ANSI/AIIM MS37a-1996, Recommended Practice for Microphotography of Cartographic Materials

Provides updated information for ANSI/AIIM MS37-1988. Covers negative-to-negative and direct camera microphotography using color and black-and-white film to record maps, charts and related graphic products and documents.

ANSI/AIIM MS40-1987 (R1999), Microfilm – Computer Assisted Retrieval (CAR) Interface Commands

Applies to computer assisted retrieval (CAR) software commands necessary to drive 16-mm microfilm retrieval systems. The minimum 16-mm CAR command set is defined by this standard. This standard addresses two of the upper three layers of the ISO Open System Interconnect (OSI) architecture model.

ANSI/AIIM MS41-1996, Unitized Microfilm Carriers (Aperture, Camera, Copy, and Image Cards)

Specifies the dimensions and location of the aperture and carrier for aperture camera, copy and image cards.

ANSI/AIIM MS43-1998, Recommended Practice for Operational Procedures/Inspection and Quality Control of Duplicate Microforms of Documents and from COM

Provides guidelines for the production of duplicate microforms.

ANSI/AIIM MS46-1996, Test Procedures for Duplicating 35-mm Diazo Microfilm Aperture Cards

Provides updated information for ANSI/AIIM MS46-1990. Test Procedure for Duplicating 35-mm Diazo Microfilm Aperture Cards. Clauses that include changes are the foreword (clause 0), references (clause 2), and definitions (clause 3). Please note that although no new definitions have been added to definitions (clause 3), the introductory paragraph has been modified. Refer to ANSI/AIIM MS46-1990 for information not updated in this addendum.

ANSI/AIIM MS48-1999, Recommended Practice for Microfilming Public Records on Silver-Halide Film

Covers original first-generation microforms, including raster COM, encompassing roll film, microfiche, aperture cards, and jacket film. The practice applies to the microfilming of records of federal, state, local, and other public agencies. This practice is compatible with government regulations for the microfilming of permanently valuable records and may be used by private industry to comply with public record requirements.

ANSI/AIIM MS5-1992 (R1998), Micrographic Microfiche

Applies to microfiche produced as a result of source document and computer-output microfilming. This standard does not preclude the use of other standards for unitized microforms.

ANSI/AIIM MS54-1993 (R1999), Graphic Symbols for Controls on Document Imaging Equipment

Provides graphic symbols for micrographics and other document management equipment to be used for identifying equipment functions.

ANSI/AIIM MS58-1996, Standard Recommended Practice for Implementation of Small Computer Systems Interface (SCSI-2), (X3.131.1994) for Scanners

The purpose of this standard recommended practice is to assist document scanner designers in devising a common implementation of the SCSI-2 interface standard. (ANSI X3.131-1994). This standard specifies the physical and logical implementation of ANSI X3.131-1994.

ANSI/AIIM MS59-1996, Standard Recommended Practice for Media Error Monitoring and Reporting Techniques for Verification of the Information Stored in Optical Digital Data Disks

Documents two approaches of media error monitoring and reporting techniques to verify the information stored on optical digital data disks: a high-level approach with functional commands, and an implementation of a set of SCSI-2 (Small Computer System Interface - version 2) commands.

ANSI/AIIM MS6-1993 (R1999), Microfilm Packaging Labeling

Outlines the required and optional information that should be placed on unexposed photographic material packaging, either on a label or printed surface, to identify the contents of the package. The standard applies to microfilm in roll, sheet, and card formats, but does not attempt to specify the type of storage container or protection needed for specific products.

ANSI/AIIM MS60-1996, Information and Image Management – Standard – Electronic Folder Interchange Datastream

This standard describes how to transmit objects, attributes, and hierarchical relationships between Electronic Image Management (EIM) Systems. This Standard format for folder interchange is independent of storage media or of EIM operating systems. The datastream is defined using Abstract Syntax Notation One (ASN.1).

ANSI/AIIM MS61-1996, Application Programming Interface (API) for Scanners in Document Imaging Systems

Specifies the format and content of the Application Programming Interface (API) between a document scanner driver layer and an electronic image management (EIM) system. The API is intended to minimize the extent of unique development normally required by product users and product suppliers in the integration of document scanners into EIM systems.

ANSI/AIIM MS62-1999, Recommended Practice for COM Recording Systems Having an Internal Electronic Forms Generating System - Operational Practices for Inspection and Quality Control

Provides a description of software forms used for the image quality evaluation of Computer Output Microfilm (COM) recorder systems. Also provided is a description of a preferred method for using the test forms for initial COM recorder testing to establish a quality reference baseline, and for periodic testing of COM image quality that may signal the need for adjustment or maintenance.

ANSI/AIIM MS66-1999, Metadata for Interchange of Files on Sequential Storage Media between File Storage Management Systems (FSMS)

Describes a standard for specifying metadata that describes how a File Storage Management System (FSMS) has stored files on sequential media. This metadata description is independent on any particular proprietary metadata format, but it may be used to describe the proprietary format that an FSMS uses to write files to sequential media.

ANSI/AIIM MS8-1998, Document Mark (Blip) Used in Image Mark Retrieval Systems

Contains the specifications for the location, size, and density of single and multisize image marks recorded on 16mm roll film used in image mark retrieval systems. This standard is limited to the 16mm film used in the retrieval device, regardless of the method and equipment used to generate the original or duplicate film.

ANSI/AIIM MS9a-1995, Method for Measuring Thickness of Buildup Area on Unitized Microfilm Carriers (Aperture, Camera, Copy and Image Cards)

Describes the method for measuring the thickness of the buildup area on aperture, camera, copy and image cards. It is intended to provide the means for determining the classification of unitized microfilm carriers as indicated in American National Standard for Information and Image Management--Unitized Microfilm Carriers (Aperture, Camera, Copy and Image Cards) ANSI/AIIM MS41-1988.

ANSI/AIIM TR1-1993, Guidelines for Metrics (NOT AN AMERICAN NATIONAL STANDARD)

This technical report provides information to individuals considering the reasons for and benefits of converting from the U.S. customary units (inch and pound) to the metric system in business practices.

ANSI/AIIM/ISO 10197-2000, Reader-Printers

Specifies the essential performance characteristics of reader-printers designed to view and make hard copies from roll microfilm and microfilm strips that have a maximum width of 35mm, microfiche, jackets, and image cards with a magnification no greater than 50:1.

ANSI/AIIM/ISO 10198-1999, Rotary Cameras for 16mm Microfilm – Mechanical and Optical Characteristics

Defines the mechanical and optical characteristics of rotary cameras used for recording documents onto 16 mm microfilms as specified in ANSI/AIIM MS14-1988.

ANSI/AIIM/ISO 10198-1999, Rotary Cameras for 16mm Microfilm – Mechanical and Optical Characteristics

Defines the mechanical and optical characteristics of rotary cameras used for recording documents onto 16 mm microfilms as specified in ANSI/AIIM MS14-1988.

ANSI/AIIM/ISO 6198-1999, Readers for Transparent Microforms – Performance Characteristics

Specifies the essential performance characteristics of readers with magnification less than or equal to 50:1 designed for use with black-and-white roll microfilm and strips that have a maximum width of 35 mm.

ANSI/AIIM/ISO 6198-1999, Readers for Transparent Microforms – Performance Characteristics

Specifies the essential performance characteristics of readers with magnification less than or equal to 50:1 designed for use with black-and-white roll microfilm and strips that have a maximum width of 35 mm.

ANSI/ISO/AIIM 7565-1993, Micrographics - Readers for transparent microforms - Measurement of characteristics

Specifies the method for measuring screen luminance, image contrast, and screen reflectance of microform readers that have translucent or built-in opaque screens up to 46 x 61 cm. The standard describes the type of instrumentation required and units of measurement. This partial international adoption of ISO 7565:1993 revises ANSI/AIIM MS12-1990.

AIM (Automatic Identification Manufacturers, Inc.)

ANSI/AIM BC-10-1997, AIM International Technical Specification - International Symbology Specification - MaxiCode

This standard provides a description of the MaxiCode bar code symbology. Includes complete information on how to encode data into a symbol and how to decode MaxiCode symbols.

ANSI/AIM BC-11-1997, AIM International Technical Specification - International Symbology Specification - Data Matrix

Provides a description of the Data Matrix bar code symbology. Includes complete information on how to encode data into a symbol and how to decode Data Matrix symbols.

ANSI/AIM BC-12-1998, Uniform Symbology Specification - Channel Code

Describes "Channel Code," which is a family of linear (one dimensional) bar code symbols designed for enumerating a countable number of items in the least symbol length possible while providing reasonable decoding ease and security.

ANSI/AIM BC-13-1998, International Symbology Specification - Aztec Code

Describes submission of a bar code symbology specification for SuperCode.

ANSI/AIM BC1-1995, Uniform Symbology Specification – Code 39

Covers a description of the bar code symbology, Code 39, including symbol structure, start and stop characters, quiet zones, and check character. Includes necessary additional pass-fail parameters for the symbology required by ANSI X3.182.

ANSI/AIM BC2-1995, Uniform Symbology Specification – Interleaved 2-Of-5

Covers a description of the bar code symbology, Interleaved 2 of 5, including symbol structure, start and stop characters, quiet zones, and check character. Includes necessary additional pass-fail parameters for the symbology required by ANSI X3.182.

ANSI/AIM BC3-1995, Uniform Symbology Specification – Codabar

Cover a description of the bar code symbology, Codabar, including symbol structure, start and stop characters, quiet zones, and check character. Includes necessary additional pass-fail parameters for the symbology required by ANSI X3.182.

ANSI/AIM BC4-1995, Uniform Symbology Specification Code 128

Covers a description of the bar code symbology, Code 128, including symbol structure, start and stop characters, quiet zones, and check character. Includes necessary additional pass-fail parameters for the symbology required by ANSI X3.182.

ANSI/AIM BC5-1995, Uniform Symbology Specification Code 93

Covers a description of the bar code symbology, Code 93, including symbol structure, start and stop characters, quiet zones, and check character. Includes necessary additional pass-fail parameters for the symbology required by ANSI X3.182.

ANSI/AIM BC6-1995, Uniform Symbology Specification – Code 49

Covers a description of the bar code symbology, Code 49, including symbol structure, start and stop characters, quiet zones, and check character. Includes necessary additional pass-fail parameters for the symbology required by ANSI X3.182.

ANSI/AIM BC7-1995, Uniform Symbology Specification – Code 16K

Covers a description of the bar code symbology, Code 16K, including symbol structure, start and stop characters, quiet zones, and check characters. Includes necessary pass-fail parameters for the symbology by ANSI X3.182.

AISC (American Institute of Steel Construction)

ANSI/AISC 341-2005, Seismic Provisions for Structural Steel Buildings

These provisions are for the design and construction of structural steel members and connections in the Seismic Load Resisting Systems in buildings and other structures. The design forces in these structures shall result from earthquake motions determined on the basis of various levels of energy dissipation in the inelastic range of response.

ANSI/AISC 341s1-2005, Supplement No. 1 to the Seismic Provisions for Structural Steel Buildings

These provisions are for the design and construction of structural steel members and connections in the Seismic Load Resisting Systems in buildings and other structures. The design forces in these structures shall result from earthquake motions determined on the basis of various levels of energy dissipation in the inelastic range of response. The supplement will add new provisions for OCBF over base isolation and for determining brace design forces.

ANSI/AISC 358-2005, Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Applications

Provides design, detailing, quality, and inspection requirements for prequalified beam-to-column connections in Special Moment Frames (SMFs) and Intermediate Moment Frames (IMFs). Will eliminate the need for project-specific qualification testing to substantiate connection designs for steel moment frames when connections are designed within the range of prequalification.

ANSI/AISC 360-2005, Specification for Structural Steel Buildings

This Specification governs the design, fabrication and erection of structural steel-framed buildings and other structures. Structural steel includes hot-rolled W-, S-, and HP-shapes, channels and angles listed in ASTM A6/A6M; structural tees split from the hot-rolled W-, S- and M- shapes listed in ASTM A6/A6M; hollow structural sections produced to ASTM A500, A501, A618 or A847, and steel pipe produced to ASTM A53/A53M. This specification is intended for the common building design in routine office practice.

ANSI/AISC N690-2004, Design, Fabrication, and Erection of Steel Safety-Related Structures for Nuclear Facilities, Specification for the

Applies to the design, fabrication, and erection of steel safety-related structures and structural elements for nuclear facilities using the Allowable Stress Design method. The structures or structural elements subject to this Specification are those steel structures which are parts of the nuclear safety-related system or which support, house, or protect nuclear safety-related systems or components, the failure of which would impair the safety-related functions of these systems or components. Specifically excluded from this Specification are pressure retaining components, e.g.

ANSI/AISC N690L-2003, Load and Resistance Factor Design Specification for Safety-Related Steel Structures for Nuclear Facilities

This specification governs the design, fabrication and erection of steel safety-related structures for nuclear facilities using load and resistance factor design.

AISI (American Iron and Steel Institute)

ANSI/AISI COFS/GP-2004, Cold-Formed Steel Framing - General Provisions

This standard provides general provisions for cold-formed steel framing that are common to prescriptive and engineered design. The provisions apply to the design, construction and installation of structural and non-structural cold-formed steel framing members where the specified minimum base metal thickness is between 18 mils to 118 mils.

ANSI/AISI COFS/HEADER-2004, Cold-Formed Steel Framing - Header Design

This standard provides state-of-the-art technical information and specifications for cold-formed steel header design. The provisions apply to the design and installation of cold-formed steel box, back-to-back and L-headers used in single-span conditions for load carrying purposes in buildings.

ANSI/AISI COFS/L99-1-2001, Cold-Formed Steel Framing - Header Design

Provides technical information and specifications for designing headers made from cold-formed steel. The design and installation of cold-formed steel box and back-to-back headers, and double L-headers used in single-span conditions for load carrying purposes in buildings shall be in accordance with the Specification for the Design of Cold-Formed Steel Structural Members [Specification] and the Standard for Cold-Formed Steel Framing - General Provisions [General Provisions], except as modified by the provisions of this Header Standard. This Header Standard shall not preclude the use of other materials, assemblies, structures or designs not meeting the criteria herein, when the other materials, assemblies, structures or designs demonstrate equivalent performance for the intended use to those specified in this

ANSI/AISI COFS/LATERAL-2004, Cold-Formed Steel Framing - Lateral Design

This standard provides state-of-the-art technical information and specifications for cold-formed steel framing lateral design. The provisions apply to shear walls, diagonal strap bracing that is part of a structural wall and diaphragms..

ANSI/AISI COFS/PM Supplement-2004, Cold-Formed Steel Framing - Prescriptive Method for One and Two Family Dwellings, 2001 Edition (Supplement)

Provides revisions and updates to the Standard for Cold-Formed Steel Framing - Prescriptive Method for One and Two Family Dwellings, 2001 Edition.

ANSI/AISI COFS/PM-2001, Cold-Formed Steel Framing - Prescriptive Method for One and Two Family Dwellings

Provides prescriptive requirements for cold-formed steel-framed detached one- or two-family dwellings, townhouses, attached multi-family dwellings, and other attached single-family dwellings.

ANSI/AISI COFS/TRUSS-2004, Cold-Formed Steel Framing - Truss Design

This standard provides state-of-the-art technical information and specifications for cold-formed steel truss design. The provisions apply to manufacturing, quality criteria, installation and testing as they relate to the design of cold-formed steel trusses.

ANSI/AISI COFS/WSD-2004, Cold-Formed Steel Framing - Wall Stud Design

This standard provides state-of-the-art technical information and specifications for cold-formed steel wall stud design. The provisions apply to wall studs designed on the basis of an all steel design or sheathing braced design, stud-to-track connections and deflection track connections.

ANSI/AISI/COS TS-1-2002, Rotational-Lateral Stiffness Test Method for Beam-to-Panel Assemblies

This is a test procedure to determine the rotational-lateral stiffness of beam-to-panel assemblies. The test method is used primarily in determining the strength of beams connected to panels as part of a structural assembly.

ANSI/AISI/COS TS-2-2002, Stub-Column Test Method for Effective Area of Cold-Formed Steel Columns

This test method covers the determination of the effective cross-sectional area of cold-formed steel columns. It primarily considers the effects of local buckling and residual stresses and applied to solid or perforated columns that have holes (or hole patterns) in the flat and/or curved elements of the cross section.

ANSI/AISI/COS TS-3-2002, Standard Methods for Determination of Uniform and Local Ductility

This method covers the determination of uniform and local ductility from a tension test. Its primary use is as an alternative method of determining if a steel has adequate ductility as defined in the North American Cold-Formed Steel Specification. It is based on the method suggested by Dhalla and Winter.

ANSI/AISI/COS TS-4-2002, Standard Test Methods for Determining the Tensile and Shear Strength of Screws

The performance test methods included in this standard establish procedures for conducting tests to determine the tensile and shear strength of carbon steel screws. The screws may be thread-forming or thread-cutting, with or without a self-drilling point, and with or without washers. The intended application for these screws is to connect cold-formed sheet steel material.

ANSI/AISI/COS TS-5-2002, Test Method for Mechanically Fastened Cold-Formed Steel Connections

These performance test methods cover the determination of the strength and deformation of mechanically fastened connections for cold-formed steel building components, and are based extensively on test methods used successfully in the past. Connections in which the fasteners are stressed in shear (loads applied perpendicular to the shank of the fastener) and those in which the fasteners are stressed in tension (loads applied parallel to the shank of the fastener) are included. The objective is to evaluate actual field connections using standard test specimens and fixtures.

ANSI/AISI/COS TS-6-2004, Standard Procedures for Panel and Anchor Structural Tests

This test procedure extends and provides methodology for interpretation of results of tests performed according to ASTM E1592.

ANSI/AISI/COS TS-7-2002, Cantilever Test Method for Cold-Formed Steel Diaphragms

This test method is used to determine the nominal diaphragm shear strength and the shear stiffness for steel diaphragms used in framed wall, or floor construction.

ANSI/AISI/COS TS-8-2004, Base Test Method for Purlins Supporting a Standing Seam Roof System

This test is to obtain the reduction factor to be used in determining the nominal flexural strength of a purlin supporting a standing seam roof system.

ANSI/COS/NASPEC SUPPLEMENT 2004, Supplement 2004 to the North American Specification for the Design of Cold-Formed Steel Structural Members, 2001 Edition

The Supplement provides updates to the 2001 North American Specification for the Design of Cold-Formed Steel Structural Members. This Supplement includes the updates to the Specification and the Commentary; and a new addition of Appendix 1, Design of Cold-Formed Steel Structural Members Using the Direct Strength Method.

ANSI/COS/NASPEC-2001, 2001 North American Specification for the Design of Cold-Formed Steel Structural Members

The North American Specification for the Design of Cold-Formed Steel Structural Members is a standard for determining member and connection strengths of cold-formed carbon and low alloy steels. It also provides methodology for determining resistance factors of cold-formed carbon and low alloy steel members and connections via tests.

AITC (American Institute of Timber Construction)

ANSI/AITC A190.1-2002, Wood Products – Structural Glued Laminated Timber

This Standard covers minimum requirements for the production of structural glued laminated timber, including sizes and tolerances, grade combinations, lumber, adhesives, appearance grades, and manufacture. It also covers the quality control system for the laminator, plant qualification, daily quality control, and the functions of an accredited inspection and testing agency, and marking. Definitions of words used in the trade are included, as well as guides for specifying and for field reinspection. These requirements are intended to permit the use of any suitable method of manufacture which will produce a product equal to or superior in quality and performance to that specified, provided such method is approved in accordance with the requirements of this Standard.

Annexes are a part of this Standard.

ALI (American Ladder Institute)

ANSI A14.1-2000, Ladders – Portable Wood, Safety Requirements for

Prescribes rules and establishes minimum requirements for the construction, testing, care, and use of the common types of portable wood ladders described herein in order to ensure safety under normal conditions of usage.

This standard also prescribes rules and minimum requirements for labeling of the common types of portable stepladders, extension ladders, and single ladders, in order to ensure safety under normal conditions of usage. |

ANSI A14.10-2000, Special Duty Ladders

Prescribes rules governing the safe construction, design, testing, care and use of special-duty (duty ratings of 350 lbs. or more) portable metal and reinforced plastic ladders of various types including, but not limited to, portable extension, single, sectional, step and platform ladders. It does not cover special-purpose ladders that do not meet the general requirements of this standard, nor does it cover ladder accessories that may be installed on or used in conjunction with ladders. These requirements are also intended to prescribe rules and criteria for labeling/marketing of the kinds of portable ladders cited in this standard. These labeling/marketing requirements do not apply to those situations where training, supervision, or documented safety procedures would be in conflict, or serve in lieu of, these labeling/marketing requirements.

ANSI A14.2-2000, Portable Metal Ladders, Safety Requirements for

Prescribes rules governing the safe construction, design, testing, care, and use of portable metal ladders of various types including, but not limited to, step stools, portable extension, step, trestle, sectional, combination, single, and platform ladders, but not excluding ladders in and on mines, the fire services, mobile equipment, hoisting equipment, work platforms, antenna communication towers, transmission towers, utility poles, and chimneys. It does not cover special-purpose ladders that do not meet the general requirements of this standard, nor does it cover ladder accessories, including, but not limited to, ladder levelers, ladder stabilizers of stand-off devices, ladder jacks, or ladder straps or hooks, that may be installed on or used in conjunction with ladders. This standard also prescribes rules and minimum requirements for labeling of the

ANSI A14.3-2002, Ladders – Fixed – Safety Requirements

This standard prescribes minimum requirements for design, construction, and use of fixed ladders, and sets forth requirements for cages, wells, and ladder safety systems used with fixed ladders, in order to minimize personal injuries. All parts and appurtenances necessary for a safe and efficient ladder shall be considered integral parts of the design.

ANSI A14.4-2002, Job-Made Wooden Ladders, Safety Requirements for

This safety standard is intended to prescribe minimum requirements for the construction, design, installation and use of job-made wood ladders in order to minimize personal injuries. This standard does not cover portable manufactured ladders, permanent fixed ladders and or mobile equipment ladders. This standard provides reasonable safety for life and limb during the construction or demolition operation where conditions do not permit the erection of temporary stairs or ramps.

ANSI A14.5-2000, Ladders – Portable Reinforced Plastic – Safety Requirements

Prescribes rules governing the safe construction, design, testing, care, and use of portable reinforced plastic ladders of various types including, but not limited to, step stools, portable extension, step, trestle, sectional combination, single, and platform ladders but excluding ladders in and on mines, the fire services, mobile equipment, hoisting equipment, work platforms, antenna communications towers, transmission towers, utility poles, and chimneys. It does not cover special-purpose ladders that do not meet the general requirements of this standard, nor does it cover ladder accessories including, but not limited to, ladder levelers, ladder stabilizers or stand-off devices, ladder jacks, or ladder straps or hooks, that may be installed on or used in conjunction with ladders. This standard also prescribes rules and minimum requirements for labeling of the

ANSI A14.7-2000, Mobile Ladder Stands and Mobile Work Platforms, Safety Requirements for

Prescribes rules and requirements for design, construction, care and use of manually propelled mobile ladders.

ANSI A14.9-2004, Safety Requirements for Ceiling Mounted Disappearing Climbing Systems

This standard prescribes rules concerning the safe design, construction, testing, care, installation and use of permanently installed metal or wood, ceiling mounted disappearing climbing systems of various types designed to be used for access to upper levels such as attics. Household units with duty ratings of 200, 250, 300 and 350 lbs., or commercial units with a rating of 500 lbs. are the only units covered in this standard. This standard is not intended to apply to any climbing systems covered in any other ANSI A14 standards, or disappearing climbing systems intended for use with ceiling heights in excess of 12 feet. This standard also prescribes rules and minimum requirements for installation instructions and labeling of climbing systems in order to promote safety under normal conditions of usage.

ALI (Automotive Lift Institute)

ANSI/ALI ALCTV-1998, Automotive Lifts - Safety Requirements for Construction, Testing and Validation

Covers lifts used to raise self-propelled ground vehicles typically used in facilities for the repair and service of automobiles, trucks, buses, rail and similar vehicles.

ANSI/ALI ALIS-2001, Automotive Lifts - Safety Requirements for Installation and Service

Provides guidance to the installer and service technician for the installation and service of automotive lifts including required installation and service considerations and qualifications, training, reporting and documentation for installers and service technicians. The standard also provides sample forms for installers or service technicians to use to comply with this standard.

ANSI/ALI ALOIM-2000, Automotive Lifts – Safety Requirements for Operation, Inspection and Maintenance

Covers the safety requirements for operation, inspection and maintenance of installed automotive lifts.

AMCA (Air Movement and Control Association)

ANSI/AMCA 204-2005, Balance Quality and Vibration Levels for Fans

This standard defines appropriate fan balance quality and operating vibration levels to individuals who specify, manufacture, use and maintain fans.

ANSI/AMCA 220-2005, Laboratory Methods of Testing Air Curtain Units for Aerodynamic Performance Rating

The purpose of this standard is to establish uniform methods for laboratory testing of air curtain units to determine performance in terms of flow rate, outlet velocity, uniformity, power consumption and velocity profile for rating for guarantee purposes. The scope of this standard is limited to air curtain units with an average outlet velocity of more than 500 fpm. It is not the purpose of this standard to specify the testing procedures to be used for design, production, or field testing.

ANSI/AMCA 230-1999, Laboratory Method of Testing Air Circulator Fans for Rating

The purpose of this standard is to establish uniform methods for laboratory testing of fans and other air circulating devices to determine performance in terms of airflow rate for rating or guarantee purposes. This standard may be used as the basis for testing pedestal fans, ceiling fans, box fans, table fans, and portable personnel coolers, or other air circulating devices when air is used as the test gas. Blowers, exhausters, compressors, positive displacement machines, and positive pressure ventilators are not within the scope of this standard. The following change has been made: at the end of Section 7.2, a new sentence has been added, "In all cases, the test apparatus shall provide the means of isolating the load cell from torque loading."

ANSI/AMCA 240-1996, Laboratory Method of Testing Positive Pressure Ventilators for Rating

Establishes uniform laboratory methods of testing PPVs in order to determine performance in terms of flow rate, pressure, air density, and speed of rotation for rating or guarantee purposes. Prior to this standard, PPV's were tested in accordance with ANSI/AMCA Standard 210-85. Due to their design some PPVs could be tested using standard 210 and some could not. This standard provides a single method of test applicable to all PPVs and uses a test setup that resembles real world applications of PPVs.

ANSI/AMCA 250-2005, Laboratory Methods of Testing Jet Tunnel Fans for Performance

Determination of those technical characteristics needed to describe all aspects of the performance of jet tunnel fans. Test procedures relate to laboratory conditions; measurement of performance under in-situ conditions is not included.

ANSI/AMCA 510-2004, Methods of Testing Heavy Duty Dampers for Rating

Establishes methods used in measuring performance of dampers generally described as heavy duty or severe service, normally used in applications where elevated temperature, erosion and/or corrosion conditions exist, including dampers which are used to control the flow of gas, or to isolate one section of a duct system from another section of the system.

ANSI/AMCA 520-2004, Laboratory Methods of Testing Actuators

Establishes an industry standard for testing of actuators used on fire dampers. Requirements cover torque or force rating, long term holding, operational life, elevated temperature performance, periodic maintenance, production, and sound testing for both pneumatic and electric operators.

ANSI/AMCA 610-1995, Methods of Testing Airflow Measurement Stations for Rating

Establishes uniform test methods for measuring the performance capability and accuracy of airflow measurement stations under varied flow rates and conditions. Covers field-installed airflow measurement stations for heating, ventilating, and air conditioning applications.

ANSI/AMCA 99-0068-2003, The AMCA Vocabulary: Product Definitions

Definitions of products within the air movement/air control industries.

ANSI/AMCA 99-2404-2003, Drive Arrangements for Centrifugal Fans

Describes the various possible drive arrangements for centrifugal fans and is in harmony with ISO 13499.
Single copy price: \$5.00
Order from: Joseph Brooks, AMCA
Send comments (with copy to BSR) to: Same

ANSI/AMCA 99-2405-2003, Inlet Box Positions for Centrifugal Fans

Depicts and defines the various locations of a centrifugal fan inlet box.
Single copy price: \$5.00
Order from: Joseph Brooks, AMCA
Send comments (with copy to BSR) to: Same

ANSI/AMCA 99-2406-2003, Designation for Rotation and Discharge of Centrifugal Fans

Depicts and defines the designations for rotation and discharge of centrifugal fans.
Single copy price: \$5.00
Order from: Joseph Brooks, AMCA
Send comments (with copy to BSR) to: Same

ANSI/AMCA 99-2407-2003, Motor Positions for Belt or Chain Drive Centrifugal Fans

Depicts and defines the designations for prime mover positions for belt for chain driven centrifugal fans.
Single copy price: \$5.00
Order from: Joseph Brooks, AMCA
Send comments (with copy to BSR) to: Same

ANSI/AMCA 99-2410-2003, Drive Arrangements for Tubular Centrifugal Fans

Describes the various possible drive arrangements with designations for tubular centrifugal fans.
Single copy price: \$5.00
Order from: Joseph Brooks, AMCA
Send comments (with copy to BSR) to: Same

ANSI/AMCA 99-2412-2003, Impeller Diameters and Outlet Areas for Centrifugal Fans

Provides maximum impeller diameter and outlet area for both SWSI and DWDI centrifugal fans.

ANSI/AMCA 99-2413-2003, Impeller Diameters and Outlet Areas for Industrial Centrifugal Fans

Defines the maximum inlet diameters and outlet area for nominal sizes of industrial centrifugal fans.
Single copy price: \$5.00
Order from: Joseph Brooks, AMCA
Send comments (with copy to BSR) to: Same

ANSI/AMCA 99-2414-2003, Impeller Diameters and Outlet Areas for Tubular Centrifugal Fans

Provides maximum impeller diameters and outlet areas for tubular centrifugal fans.

ANSI/AMCA 99-3001-2003, Dimensions for Axial Fans

Delineates dimensions for axial fans conforming to the R20 series.

ANSI/AMCA 99-3404-2003, Drive Arrangements for Axial Fans With or Without Evase and Inlet Box

Depicts and designates the standard drive arrangements for axial fans with or without evase and inlet box.
Single copy price: \$5.00
Order from: Joseph Brooks, AMCA
Send comments (with copy to BSR) to: Same

AMT (Association for Manufacturing Technology)

ANSI B11.1-2001, Machine Tools – Mechanical Power Presses – Safety Requirements for Construction, Care, and Use

Pertains to the safety requirements for the design, construction, operation and maintenance of mechanical power presses as described in the standard. This standard is part of the ANSI B11 series of safety standards for machine tools.

ANSI B11.10-2003, Metal Sawing Machines, Safety Requirements for Construction, Care, and Use of

Covers the safety requirements as they relate to the design, installation, safeguarding, operation and maintenance of powered machines used to saw metals.

ANSI B11.11-2001, Gear Cutting Machines, Safety Requirements for the Construction, Care, and Use of

Pertains to the safety requirements for gear [spline] -cutting machines as described in the document. Part of the ANSI B11 series of machine tool safety standards. It is limited to the requirements of safeguarding of personnel, installation, verification, operation, maintenance, training, and documentation for individual machines.

ANSI B11.12-2005, Machine Tools - Roll-Forming and Roll-Bending Machines - Safety Requirements for the Construction, Care, and Use

The requirements of this standard apply to any power-driven metal-forming machine that changes the shape or the direction, or both, of materials by use of rolls, rotary forming dies, and associated tooling.

ANSI B11.13-1992 (R1998), Machine Tools - Single- and Multiple-Spindle Automatic Bar and Chucking Machines - Safety Requirements for Construction, Care and Use

Applies to single-and multiple-spindle automatic bar and chucking machines.

ANSI B11.14-1996, Machine Tools - Coil-Slitting Machines Safety Requirements for Construction, Care, and Use

ANSI B11.15-2001, Pipe, Tube, and Shape Bending Machines, Safety Requirements for Construction, Care, and Use

Pertains to the safety requirements for pipe, tube, and shape bending machines as described in this standard. This standard is part of the ANSI B11 series of safety standards for machine tools. It is limited to the requirements of safeguarding of personnel, installation, verification, operation, maintenance, training, and documentation for individual machines.

ANSI B11.16 (MPIF #47)-2003, Safety Requirements for Powder / Metal Compacting Presses

This performance standard covers the safety performance requirements as they relate to the design, installation, operation and maintenance of powder/metal compacting presses.

ANSI B11.17-2004, Machine Tools - Horizontal Hydraulic Extrusion Presses,- Safety Requirements for Construction, Care, and Use

This standard specifies the safety requirements for the design, construction, set-up, operation and maintenance (including installation, dismantling and transport) of integrated manufacturing systems.

ANSI B11.18-1997, Machine Tools - Machines and Machinery Systems for Processing Strip, Sheet, or Plate from Coiled Configuration - Safety Requirements for Construction, Care, and Use

Applies to machines, and groups of machines arranged in production systems, for processing coils of strip, sheet, or plate material through the machines that shape, size, or otherwise convert the material into desired part or material configurations.

ANSI B11.19-2003, Performance Criteria for the Design, Construction, Care, and Operation of Safeguarding When Referenced by the Other B11 Machine Tool Safety Standards

Covers the safety performance requirements as they relate to the design, installation, operation and maintenance of safeguarding devices, means and measures for machine tools.

ANSI B11.2-1995 (R2005), Machine Tools - Hydraulic Power Presses, Safety Requirements for Construction, Care, and Use

The requirements of this standard apply only to those machine tools, commonly referred to as hydraulic power presses, which transmit force hydraulically to cut, form, or assemble metal or other materials by means of tools or dies attached to or operated by slides.

ANSI B11.20-2004, Machine Tools - Manufacturing Systems/Cells - Safety Requirements for Construction, Care, and Use

Specifies the safety requirements for the design, construction, set-up, operation and maintenance (including installation, dismantling and transport) of integrated manufacturing systems.

ANSI B11.21-1997, Machine Tools - Machine Tools Using Lasers for Processing Materials - Safety Requirements for Design, Construction, Care, and Use

Applies to automachine tools using laser radiation to process materials, as defined in Clause 3. Describes the hazards generated by such machines and states the safety measure to be incorporated into such machines. Also contains the description of information required to be provided by suppliers and users of such equipment.

ANSI B11.22-2001, Safety Requirements for Turning Centers and Automatic Numerically Controlled Turning Machines

This standard is part of the ANSI B11 series of machine tool safety standards and pertains to the safety requirements for turning centers and automatic numerically controlled turning machines as described in the document. It is limited to the requirements of safeguarding of personnel, installation, verification, operation, maintenance, training, and documentation for individual machines.

ANSI B11.23-2001, Safety Requirements for Machining Centers and Automatic Numerically Controlled Milling, Drilling and Boring Machines

This standard is part of the ANSI B11 series of machine tool safety standards and pertains to the safety requirements for machining centers and automatic numerically controlled milling, drilling and boring machines as described in the document. It is limited to the requirements of safeguarding of personnel, installation, verification, operation, maintenance, training, and documentation for individual machines.

ANSI B11.24-2001, Safety Requirements for Transfer Machines

This standard is part of the ANSI B11 series of machine tool safety standards and pertains to the safety requirements for transfer machines as described in the document. It is limited to the requirements of safeguarding of personnel, installation, verification, operation, maintenance, training, and documentation for individual machines.

ANSI B11.3-2002, Power Press Brakes, Safety Requirements for the Construction, Care, and Use of

Covers the safety requirements as they relate to the design, installation, operation and maintenance of power press brakes.

ANSI B11.4-2003, Machine Tools - Safety Requirements for Shears

Covers the safety requirements as they relate to the design, installation, operation and maintenance of powered shears.

ANSI B11.5-1988 (R2002), Machine Tools - Iron Workers - Safety Requirements for Construction, Care, and Use

Apply to those combination, multipurpose powered machines that punch, shear, notch, cope and form metals or other materials, commonly referred to as "ironworkers."

ANSI B11.6-2001, Lathes, Safety Requirements for the Construction, Care, and Use of

Pertains to the safety requirements for manual turning machines as described in the document. Part of the ANSI B11 series of machine tool safety standards. It is limited to the requirements of safeguarding of personnel, installation, verification, operation, maintenance, training, and documentation for individual machines.

ANSI B11.7-1995 (R2005), Machine Tools – Cold Headers and Cold Formers, Safety Requirements for Construction, Care, and Use

The requirements of this standard apply only to those mechanically-powered machines commonly referred to as cold headers and cold formers, which perform many operations such as shearing, heading, upsetting, extruding, trimming, forming, cold working, or warm forming material by means of tools and dies. This type of equipment generally has the ram in a horizontal position. Included are pointers and roll formers when they are mechanically an integral part of the basic machine.

ANSI B11.8 2001, Drilling, Milling, and Boring Machines, Safety Requirements for the Construction, Care, and Use of

Comprises part of the ANSI B11 series of machine tool safety standards and pertains to the safety requirements for manual milling, drilling and boring machines as described in the document. It is limited to the requirements of safeguarding of personnel, installation, verification, operation, maintenance, training, and documentation for individual machines. This standard is part of the ANSI B11 series of machine tool safety standards and pertains to the safety requirements for manual milling, drilling and boring machines as described in the document. It is limited to the requirements of safeguarding of personnel, installation, verification, operation, maintenance, training, and documentation for individual machines. This standard was listed for public review in the 4/20/2001 issue of Standards Action. It is being resubmitted due to substantive

ANSI B11.9-1975 (R2005), Safety Requirements for the Construction, Care, and Use of Grinding Machines

This standard applies only to grinding machines, designed primarily for metal removal, that present grinding tools against workpieces, producing change in shape, size, and surface finish by grinding. This standard also applies to these machines when they are grinding materials other than metals such as glass, ceramics, plastics, and rubber.

ANLA (American Nursery & Landscape Association)

ANSI Z60.1-2004, Nursery Stock

Nursery crop growers, landscape architects, landscape contractors, and others trading in or specifying nursery plants have assisted in developing these standards for various kinds of nursery plants. The standards establish a common framework for sizing and describing plants. Illustrations, examples, and written descriptions have been combined to clarify the standards.

ANS (American Nuclear Society)

ANSI/ANS 1-2000, Nuclear Safety – Critical Experiments, Safety Guide for the Performance of

Provides for the safe performance of critical experiments. Such experiments study neutron behavior in a fission device where the energy produced is insufficient to require auxiliary cooling, and the power history is such that the inventory of long-lived fission products is insignificant.

ANSI/ANS 10.2-2000, Portability of Scientific Computer Programs, Recommended Programming Practices to Facilitate the

Recommends programming practices to facilitate the portability of computer programs prepared for scientific and engineering computation on micro, mini, and mainframe computers.

ANSI/ANS 10.4-1987 (R1998), Verification and Validation of Scientific and Engineering Computer Programs for the Nuclear Industry, Guidelines for

Provides guidelines for the verification and validation (V&V) of scientific and engineering computer programs developed for use by the nuclear industry.

ANSI/ANS 14.1-2004, Fast Pulse Reactors, Operation of

This standard is for those involved in the design, operation, and review of fast pulse reactors. It has been formulated in general terms to be applicable to all current fast pulse reactors. This standard does not apply to periodically pulsed reactors or booster assemblies.

ANSI/ANS 15.1-1990 (R1999), Research Reactors, Development of Technical Specifications for

Identifies and establishes the content of technical specifications for research reactors. Areas addressed are: Definitions, Safety Limits (SL), Limiting Safety System Settings (LSSS), Limiting conditions for Operation (LCO), Surveillance Requirements, Design Features, and Administrative Controls. Sufficient detail is incorporated so that applicable specifications can be derived or extracted.

ANSI/ANS 15.11-1993 (R2004), Radiation Protection at Research Reactor Facilities

This standard establishes the elements of a radiation protection program and the criteria necessary to provide an acceptable level of radiation protection for personnel at research reactor facilities and the public consistent with keeping exposures and releases as low as is reasonably achievable (ALARA).

ANSI/ANS 15.16-1982 (R2000), Emergency Planning for Research Reactors

Identifies the elements of an emergency plan which describes the approach to coping with emergencies and minimizing the consequences of accidents at research reactor facilities. The emphasis given each of these elements shall be commensurate with the potential risk involved. The emergency plan shall be implicated by emergency procedures.

ANSI/ANS 15.17-1981 (R2000), Fire Protection Program Criteria for Research Reactors

Provides the criteria for a fire protection program for research reactor facilities and for the reactor safety-related systems included in those facilities. Stresses preservation of the capability to achieve and maintain safe shutdown of the reactor, and includes consideration of both direct fire hazards and indirect or consequential hazards.

ANSI/ANS 15.2-1999, Quality Control for Plate-Type Uranium-Aluminum Fuel Elements

Sets forth general requirements for the establishment and execution of a program designed to verify that the quality of plate-type uranium-aluminum fuel elements being purchased for research reactors conforms to the requirements of the contract and applicable technical documents, including specifications, standards, and drawings.

ANSI/ANS 15.21-1996, Format and Content for Safety Analysis Reports for Research Reactors

Provides the criteria for the content and format for Safety Analysis Reports for research reactors.

ANSI/ANS 15.4-1988 (R1999), Selection and Training of Personnel for Research Reactors

Provides criteria for the selection and training of operating personnel for research reactors. Addresses qualifications, training, initial certification responsibilities, requalification, and recertification of such personnel.

ANSI/ANS 15.8-1995 (R2005), Research Reactors, Assurance Program Requirements

This standard provides criteria for quality assurance in the design, construction, operation, and decommissioning of research reactors.

ANSI/ANS 16.1-2003, Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure

This standard provides a uniform procedure to measure and index the release of radionuclides from waste forms as a result of leaching in demineralized water for five days (seven data points). The results cannot be interpreted to apply to any specific environmental situation except through correlative studies of actual disposal site conditions.

ANSI/ANS 18.1-1999, Nuclear Power Plants – Source Term Specification

Establishes typical long-term concentrations of principal radionuclides in fluid streams of light-water-cooled nuclear power plants for use in estimating the expected release of radioactivity from various effluent streams. These fluid streams are: Boiling Water Reactor (BWR) and Pressurized Water Reactor (PWR) reactor coolant and PWR stream generator fluids. The concentrations in fluid streams of BWRs and PWRs are treated in a similar manner, but have different numerical values because of the differences in design. This is the second public review for this standard. It was originally listed in the November 11, 1994 issue of Standards Action. It is being resubmitted due to substantive changes in the text.

ANSI/ANS 19.1-2002, Nuclear Data Sets for Reactor Design Calculations

Identifies and describes the specifications for developing, preparing, and documenting nuclear data sets to be used in reactor design calculations. The specifications include (a) criteria for acceptance of evaluated nuclear data sets, (b) criteria for processing evaluated data and preparation of processed continuous data and averaged data sets, and (c) identification of specific evaluated, processed continuous, and averaged data sets that meet these criteria for specific reactor types.

ANSI/ANS 19.11-1997 (R2002), Calculation and Measurement of the Moderator Temperature Coefficient of Reactivity for Water Moderated Power Reactors

This standard provides guidance and specifies criteria for determining the MTC in water moderated power reactors. Measurement of the isothermal temperature coefficient of reactivity (ITC) at hot zero power (HZP) conditions is covered in American National Standard Reload Startup Physics Tests for Pressurized Water Reactors, ANSI/ANS-19.6.1-1997 [1]. This standard therefore addresses the calculation of the ITC at HZP and the calculation and measurement of the MTC at power. At present, this standard addresses the calculation and measurement of the MTC only in PWRs, because that is the only type of power reactor currently sited in the United States for which measurement of the MTC is required.

ANSI/ANS 19.3-2005, Neutron Reaction Rate Distributions and Reactivity of Nuclear Reactors, Determination of

The standard provides criteria for the selection of computational methods used by reactor-core analysts to predict reactivity, reaction rates, and changes in fuel composition in calculations for commercial types of nuclear reactors. It gives criteria for verification and validation of calculational methods, criteria for evaluation of accuracy and range of applicability of data and methods, and requirements for documentation of these activities.

ANSI/ANS 19.3.4-2002, Determination of Thermal Energy Deposition Rates in Nuclear Reactors

Provides criteria for: (1) determination of the energy allocation among the principal particles and photons produced in fission, both prompt and delayed; (2) adoption of appropriate treatment of heavy charged particle and electron slowing down in matter; (3) determination of the spatial energy deposition rates resulting from the interactions of neutrons; (4) calculation of the spatial energy deposition rates resulting from the various interactions of photons with matter; and (5) presentation of the results of such computations, including verification of accuracy and specification of uncertainty. This standard addresses the energy generation and deposition rates for all types of nuclear reactors where the neutron reaction rate distribution and photon and beta emitter distributions are known. Its scope is limited to the reactor core and the thermal

ANSI/ANS 19.4-1976 (R2000), Acquisition and Documentation of Reference Power Reactor Physics Measurements for Nuclear Analysis Verification, Guide for

Applies to measurements of reactor parameters in light water power reactors that are intended to serve as reference measurements to be used in evaluating reactor physics computational procedures. This standard includes: identification of the types of parameters of interest as reference measurements; a brief description of test conditions and experimental data required for such reference measurements; identification of problems and concerns that may affect the accuracy or interpretation of the data; and criteria to be used on documenting the results of reference measurements.

ANSI/ANS 19.5-1995, Physics Measurements, Requirements for Reference Reactor

Provides criteria for the qualification of reference reactor physics measurements obtained from subcritical (including non-multiplying), critical, and other experiments for the purpose of verifying nuclear design and analysis methods. This standard provides guides for documentation of reference data and independent expert review of proposed reference reactor physics data to assure compliance with the criteria of this standard.

ANSI/ANS 19.6.1-2005, Reload Startup Physics Tests for Pressurized Water Reactors

This standard provides criteria for verifying the nuclear characteristics of pressurized water reactor cores. It addresses the physics tests that are performed following a refueling or other alteration of the reactor core for which nuclear design calculations are required.

ANSI/ANS 2.10-2003, Criteria for the Handling and Initial Evaluation of Records from Nuclear Power Plant Seismic Instrumentation

This standard provides criteria for the timely retrieval and the subsequent processing, handling and storage of data obtained from seismic instrumentation specified in ANS-2.2. Also included are initial evaluation criteria to determine whether earthquake motion at the site has exceeded the plant's operating basis earthquake ground motion (OBE).

ANSI/ANS 2.23-2002, Nuclear Plant Response to an Earthquake

Specifies actions that the owner of a nuclear power plant should take in the event of an earthquake. By using this standard and its companion document, proposed *American National Standard for Handling and Initial Evaluation of Records Obtained from Nuclear Power Plant Seismic Instrumentation*, BSR/ANS 2.10, the owner can evaluate the need for post-earthquake plant shutdown in a timely manner. Also provides guidelines for determining the condition of components, systems, and structures needed for shutdown and criteria for restart when a nuclear power plant is required to shut down following an earthquake.

ANSI/ANS 2.26-2004, Categorization of Nuclear Facility Structures Systems and Components for Seismic Design

A. This standard provides: (i) criteria and guidelines for selecting an SSC Limit State based on its safety and performance requirements and (ii) criteria for selecting the Seismic Design Category (SDC) for nuclear facility structures, systems, and components (SSCs) for the purpose of designing SSCs to withstand earthquakes using methods specified in ASCE XX. B. The standard outlines the essential facility data and safety analyses necessary to support the seismic design categorization process.

ANSI/ANS 3.1-1993 (R1999), Selection, Qualification, and Training of Personnel for Nuclear Power Plants

Provides criteria for the selection, training, and qualification of personnel for stationary nuclear power plants. The qualifications of personnel in the operating organizations appropriate to safe and efficient operation of a nuclear power plant are addressed in terms of the minimum education, experience, and training requirements.

ANSI/ANS 3.11-2005, Determining Meteorological Information at Nuclear Facilities

The standard includes the identification of which meteorological parameters should be measured, parameter accuracies, meteorological tower siting considerations, data monitoring methodologies, data reduction techniques and quality assurance requirements.

ANSI/ANS 3.2-1994 (R1999), Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

Provides requirements and recommendations for administrative controls and the quality assurance program to help ensure that activities associated with nuclear power plant operation are carried out without undue risk to the health and safety of the public. This standard applies to all activities affecting those functions necessary to ensure: (1) the integrity of the reactor coolant boundary, (2) the capability to shut down the reactor and maintain it in a safe shutdown condition or, (3) the capability to prevent or mitigate the consequences of accidents, which could result in potential offsite exposures comparable to the guideline exposures of Title 10, Energy, Code of Federal Regulations, Part 100, Reactor Site Criteria.

ANSI/ANS 3.4-1996 (R2002), Medical Certification and Monitoring of Personnel Requiring Operating Licenses for Nuclear Power Plants

Defines the medical and psychological requirements for licensing of nuclear power plant reactor operators and senior operators. It also addresses the content, extent, and methods of examination.

ANSI/ANS 3.5-1998, Nuclear Power Plant Simulators for Use in Operator Training and Examination

This standard establishes the functional requirements for full-scope nuclear power plant control room simulators used for operator training and examination. Criteria are established for the degree of simulation, performance, and functional capability of the simulated control room instrumentation and controls. This standard does not address simulators for test, mobile and research reactors, or reactors not subject to U.S. NRC licensing. This standard does not establish criteria for application of simulators in training programs.

ANSI/ANS 3.8.7-1998, Criteria for Planning, Development, Conduct, and Evaluation of Drills and Exercises for Emergency Preparedness

This standard establishes requirements for the administration of a program of radiological emergency response drills and exercises in support of emergency preparedness. This standard addresses:

- (1) Types of emergency drills and exercises, and the reasons for each.
- (2) Planning activities associated with drills and exercises.
- (3) Development of scenarios for drills and exercises.
- (4) Conduct of drills and exercises
- (5) Evaluation of drills and exercises

The topic discussed in this standard are applicable to both exercises and drills unless specifically identified otherwise. The general principles and activities for developing, conducting, and evaluating an exercise as described here should be applied to drills on a level commensurate with the scope of the

ANSI/ANS 5.1-2005, Light Water Reactors, Decay Heat Power in

This standard sets forth values for the decay heat power from fission products and ²³⁹U and ²³⁹Np following shutdown of light water reactors (LWRs) containing ²³⁵U, ²³⁸U, and plutonium. The decay heat power from fission products is presented in tables and equivalent analytical representations. Methods are described which account for the reactor operating history, for the effect of neutron capture in fission products, and for assessing the uncertainty in the resultant decay heat power.

ANSI/ANS 5.10-1998, Airborne Release Fractions at Non-Reactor Nuclear Facilities

Provides criteria for defining Airborne Release Fractions (ARFs) for radioactive materials under accident conditions (excluding nuclear criticalities) at non-reactor nuclear facilities. The criteria in this standard provide requirements for selecting ARFs based on the calculated or assumed forms of radioactive material released. Because the predominant physical forms of radioactive materials in non-reactor facilities are solids and liquids, the standard focused on these forms. Criteria are also provided for gases and materials that can be converted into the form of a vapor. Respirable source terms are also addressed in this standard. This is the second public review for this standard. It was first listed in the June 6, 1997 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ANS 51.10-1991(R2002), Auxiliary Feedwater System for Pressurized Water Reactors

Sets forth the nuclear safety-related functional requirements, performance requirements, design criteria, design requirements for testing and maintenance, and interfaces for the nuclear safety-related portion of the auxiliary feedwater system of pressurized water reactor plants.

ANSI/ANS 55.1-1992 (R2000), Solid Radioactive Waste Processing System for Light-Water-Cooled Reactor Plants

This standard sets forth the design, construction, and performance requirements for a solid radioactive waste processing system for light-water-cooled reactor plants. For the purposes of this standard, the solid radioactive waste processing system begins at the interface with the liquid radioactive waste processing system boundary and at the inlets to the spent resin, filter sludge, evaporator concentrate, and phase separator tanks. In addition, this standard pertains to dry active waste, mixed waste, and other solid radioactive waste forms that are generated as part of the operation and maintenance of light-water-cooled reactor plants. The system includes facilities for temporary (up to 30 days of anticipated normal waste generation) on-site storage of packaged waste but terminates at the point of loading the filled drums and other containers on a vehicle for

ANSI/ANS 55.4-1993 (R1999), Gaseous Radioactive Waste Processing Systems for Light Water Reactor Plants

Sets forth minimum design, construction, and performance requirements, with due consideration for operation, for gaseous radioactive waste processing systems (GRWPS) for light water reactor (LWR) plants. It is applicable for routine operation, design basis fuel leakage, and other design basis occurrences.

ANSI/ANS 55.6-1993 (R1999), Liquid Radioactive Waste Processing Systems for Light Water Reactor Plants

Sets forth minimum design, construction, and performance requirements, with due consideration for operation, for Liquid Radioactive Waste Processing Systems (LRWPS) for light water reactor (LWR) plants for design basis inputs. It is applicable to routine operation including design basis fuel leakage and other design basis occurrences.

ANSI/ANS 56.8-2002, Nuclear Reactors – Containment System Leakage Testing Requirements

Specifies acceptable primary containment leakage rate test requirements to assure valid testing. The scope includes:

- (1) Leakage test requirements
- (2) Test instrumentation
- (3) Test procedures
- (4) Test methods
- (5) Acceptable criteria
- (6) Data analysis
- (7) Inspection and reporting of test results

ANSI/ANS 57.1-1992 (R2005), Design Requirements for Light Water Reactor Fuel Handling Systems

This standard sets forth the required functions of fuel handling systems at light water reactor nuclear power plants. It provides minimum design requirements for equipment and tools to handle nuclear fuel and control components safely.

ANSI/ANS 57.10-1996, Design Criteria for Consolidation of LWR Spent Fuel

Provides criteria for the process of consolidating LWR spent nuclear fuel in either a wet or dry environment. This standard also contains requirements for facility or installation interfaces, nuclear safety, structural design, thermal design, accountability, safeguards, decommissioning, and quality assurance.

ANSI/ANS 57.5-1996, Light Water Reactors Fuel Assembly Mechanical Design and Evaluation

This standard sets forth a series of design conditions and functional requirements for the design of fuel assemblies for light water cooled commercial power reactors. It includes specific requirements for design as well as design criteria developed to avoid potential performance problems. The standard establishes a procedure for performing and evaluation of the mechanical design of fuel assemblies. It does not address the various aspects of neutronic or thermal-hydraulic performance except where these factors impose loads or constraints on the mechanical design of the fuel assemblies.

ANSI/ANS 57.7-1988 (R1997), Design Criteria for an Independent Spent Fuel Storage Installation (Water Pool Type)

Provides design criteria for systems and equipment of a facility for the receipt and storage of spent fuel from light water reactors. Contains requirements for the design of major buildings and structures including the shipping cask decontamination, unloading and loading areas, and the surrounding buildings which contain radwaste treatment, heating, ventilation and air conditioning, and other auxiliary systems. Also contains requirements and recommendations for spent fuel storage racks, special equipment and area layout configurations, the pool structure and its integrity, pool water cleanup, ventilation, residual heat removal, radiation monitoring, fuel handling equipment, cask handling equipment, cask handling equipment, prevention of criticality, radwaste control and monitoring systems, quality assurance requirements, materials

ANSI/ANS 57.8-1995 (R2005), Nuclear Fuel Assembly Identification

This standard describes requirements for the unique identification of fuel assemblies utilized in nuclear power plants. It defines the characters and proposed sequence to be used in assigning identification to fuel assemblies.

ANSI/ANS 57.9-1992 (R2000), Design Criteria for an Independent Spent Fuel Storage Installation (Dry Type)

This standard is intended to be used by the owner and operator of a dry storage-type independent spent fuel storage installation (ISFSI) in specifying the design requirements and by the designer in meeting the minimum requirements of such installations.

This standard includes requirements for the following: the design of major buildings and structures, shipping cask unloading and handling facilities, cask decontamination, loading and unloading areas, spent fuel storage areas and racks, fuel handling equipment, radiation shielding, special equipment and area layout configurations, air or gas quality, storage area integrity, air or gas cleanup, fuel inspection, ventilation, residual heat removal, radiation monitoring, prevention of criticality, radwaste control, and monitoring systems, provisions to facilitate

ANSI/ANS 58.11-1995 (R2002), Cooldown Criteria for Light Water Reactors

Provides design criteria for systems that perform the safety-related function necessary to shut down a reactor and maintain it in a safe shutdown condition for selected design basis events: any design basis events that do not require operation of engineered safety features. For design basis events that require operation of engineered safety features, this standard can be selectively applied because of plant features specifically designed for these conditions. For systems that serve multiple function, the dicing criteria associated with the most limiting function shall be applied.

The following safety-related functions are required for safe shutdown and are addressed in this standard:
 1-Reactor core reactivity control
 2-Reactor core heat removal
 3-Reactor coolant pressure boundary integrity

ANSI/ANS 58.21-2003, External Events PRA Methodology

External events covered within the Standard's scope include both natural external events (e.g. earthquakes, high winds, and external flooding) and human-made events (e.g. airplane crashes, explosions at nearby industrial facilities, and impacts from nearby transportation activities).

ANSI/ANS 58.3-1992 (R1998), Physical Protection for Nuclear Safety-Related Systems and Components

Sets forth physical protection criteria for nuclear safety-related systems and components in stations using light water reactors (LWRs). This standard includes an identification of potential hazards to nuclear safety-related systems and components and acceptable means of ensuring the protection of this equipment from these hazards.

ANSI/ANS 58.6-1996 (R2001), Remote Shutdown for Light Water Reactors, Criteria for

Provides design criteria for controls and monitoring instrumentation necessary to shut down a reactor and maintain it in a safe shutdown condition from outside the control room. The design criteria require that: (a) specific controls and monitoring instrumentation be provided; (b) these controls be installed at a location (or locations) that is physically separate from the control room and cable spreading areas; (c) simultaneous control from both locations be prevented by devices for transfer of control from the control room to the remote location(s); and (d) the remote controls be used as a defense-in-depth measure in addition to the control room shutdown controls and as a minimum provide for one complete channel of shutdown equipment.

ANSI/ANS 58.8-1994 (R2001), Nuclear Power Plants – Time Response Design Criteria for Safety Related Operator Actions

Sets forth criteria intended to provide guidance to the designer for determining the time response requirements that are acceptable for relying on operator actions to mitigate the consequences of design basis events in nuclear power plants.

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ANSI/ANS 58.9-2002, Application of the Single Failure Criterion for Light Water Reactor Safety-Related Fluid Systems

Provides criteria for the designer which interpret the requirements of Title 10, Code of Federal Regulations, Part 50, "Licensing of Production and Utilization Facilities," Appendix A, "General Design Criteria for Nuclear Power Plants," with respect to design against single failures in safety-related Light Water Reactor (LWR) fluid systems [1]. Means of treating both active and passive failures are addressed for safety-related fluid systems following various initiating events. Current acceptable practice is used as a basis for these criteria. Failure criteria for the electric power systems and the protection systems are provided in IEEE Std 308-1980 "IEEE Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations", IEEE Std 279-1971 "IEEE Standard Criteria for Protection Systems for Nuclear Power Generating Stations" (N42.7-1971),

ANSI/ANS 59.3-1992 (R2002), Nuclear Safety Criteria for Control Air Systems

Provides criteria for the control air system that furnishes compressed air to nuclear safety-related components and other equipment that could affect any nuclear safety-related function in nuclear power plants.

This standard provides

(1) the system nuclear safety design requirements and the non-nuclear safety design recommendations for equipment, piping, instruments, and controls that constitute the control air system; and (2) the nuclear safety design requirements and the non-nuclear safety design recommendations to accommodate the testing and maintenance necessary to ensure adequate performance of the control air system.

This standard applies only to the control air system and does not apply to air-operated

ANSI/ANS 59.51-1997, Fuel-Oil Systems for Emergency Diesel Generators

ANSI/ANS 59.52-1998, Lubricating Oil Systems for Safety Related Emergency Diesel Generators

This standard provides functional, performance and design requirements for the lube oil system for diesel generators that provide emergency on site power for light water reactor nuclear power plants. This standard addresses all mechanical equipment associated with the lube oil system with the exception of the engine mounted components. These components, which are mounted directly to the engine structure itself, are excluded, except to define interface requirements. This standard also includes the lube oil system instrumentation and control functional requirements. It excludes motors, motor control centers, switchgear, cables, and other electrical equipment used in the operation of the lube oil system, except to define interface requirements.

ANSI/ANS 6.1.2-1999, Neutron and Gamma-Ray Cross Sections for Nuclear Radiation Protection Calculations for Nuclear Power Plants

Details neutron and gamma-ray cross sections and related group-averaged or derived data for the energy range and materials of importance in nuclear radiation protection and shielding calculations for nuclear power plants.

ANSI/ANS 6.3.1-1987 (R1998), Program for Testing Radiation Shields in Lightwater Reactors

Describes a test program to be used in evaluating biological radiation shielding in nuclear reactor facilities under normal operating conditions including anticipated operational occurrences. The program encompasses examining and testing to be performed before startup, during startup, and testing subsequent to the startup phase. Post-startup tests are required for the shielded components that do not contain sufficient radioactivity during the startup phase to allow valid testing. Shielding of these components is to be tested when radiation sources develop or are introduced in sufficient strength to allow meaningful measurements. Post-startup shield tests are also required whenever radioactive or potentially radioactive equipment that could affect the adequacy of the installed shielding is introduced into the plant or relocated within

ANSI/ANS 6.4-1997 (R2004), Concrete Radiation Shielding for Nuclear Power Plants, Guidelines on the Nuclear Analysis and Design of

This standard contains methods and data needed to calculate the concrete thickness required for radiation shielding in nuclear power plants. It provides guidance to architect-engineers, utilities, and reactor vendors who are responsible for the shielding design of stationary npp. The standard does not consider sources of radiation other than those associated with npp.

ANSI/ANS 6.4.2-1985 (R2004), Radiation Shielding Materials, Specification for

This standard sets forth physical and nuclear properties that shall be reported by the supplier as appropriate for a particular application in order to form the basis for selection of radiation shielding materials.

ANSI/ANS 6.6.1-1987 (R1998), Calculation and Measurement of Direct and Scattered Gamma Radiation from LWR Nuclear Power Plants,

This standard defines calculational requirements and discusses measurement techniques for estimates of dose rates near lightwater reactor (LWR) nuclear power plants due to direct and scattered gamma-rays from contained sources on site. On site locations in the off site unrestricted area are considered. All sources that contribute significantly to dose rates are identified and methods for calculating the source strength of each is discussed. particular emphasis is placed on ^{16}N sources as they are significant sources of direct and scattered radiation for boiling water reactors (BWR). The standard specifically excludes radiation from gaseous and liquid effluents. The standard describes the consideration necessary to compute dose rates, including component self-shielding, shielding afforded by walls and structures, and scattered radiation. The requirements for

ANSI/ANS 8.1-1998, Operations with Fissionable Materials Outside Reactors, Nuclear Criticality Safety in

Applies to operations with fissionable materials outside nuclear reactors in which there exists a potential for criticality accidents, except the assembly of these materials under controlled conditions, such as in critical experiments. Generalized basic criteria are presented and limits are specified for some single fissionable units of simple shape containing ^{235}U , ^{235}U , or ^{239}Pu , but not for multi-nit arrays. Requirements are stated for establishing the validity and areas of applicability of any calculational method used in assessing nuclear criticality safety. This standard was originally listed in the April 26, 1996 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ANS 8.10-1983 (R2005), Criteria for Nuclear Criticality Safety Controls in Operations With Shielding and Confinement

This standard is applicable to operations outside of nuclear reactors with ^{235}U , ^{233}U , ^{239}Pu , and other fissile and fissionable materials in which shielding and confinement are provided for protection of personnel and the public, except the assembly of these materials under controlled conditions, such as in critical experiments. Criteria are provided that may be used for criticality control under these conditions. The standard does not include the details of administrative procedures for control (which are considered to be management prerogatives) nor details regarding the design of processes and equipment or descriptions of instrumentation for process control.

ANSI/ANS 8.12-1987 (R2002), Plutonium-Uranium Fuel Mixtures Outside Reactors, Nuclear Criticality Control and Safety of

Applies to operations with plutonium-uranium oxide fuel mixtures outside nuclear reactors, except the assembly of these materials under controlled conditions, such as critical experiments. Basic criteria are presented for plutonium-uranium fuel mixtures in single units of simple shape containing no more than 30 wt% plutonium combined with uranium containing no more than 0.71 wt% ^{235}U . The limits for uniform aqueous mixtures (solution) are applicable to homogeneous mixtures and slurries in which the particles constituting the mixture are uniformly distributed and have a diameter no larger than $127\ \mu\text{m}$ (0.005 in.), i.e., are capable of being passed through 120 mesh screen.

ANSI/ANS 8.14-2004, Use of Soluble Neutron Absorbers in Nuclear Facilities Outside Reactors

Provides guidance for the use of soluble neutron absorbers for criticality accident control. The standard addresses neutron absorber selection, system design and modifications, safety evaluations, and quality control programs.

ANSI/ANS 8.15-1981 (R2005), Nuclear Criticality Control of Special Actinide Elements

Applicable to operations with the following: 237/93 Np, 238/94 Pu, 240/94 Pu, 241/94 Pu, 242/94 Pu, 241/95 Am, 242m/95 Am, 243/95 Am, 243/96 Cm, 244/96 Cm, 245/96 Cm, 247/96 Cm, 249/98 Cf and 251/98 Cf. Subcritical mass limits are presented for isolated fissionable units. The limits are not applicable to interacting units.

ANSI/ANS 8.17-2004, Handling, Storage, and Transportation of LWR Fuel Outside Reactors, Criteria for

This standard provides nuclear criticality safety criteria for the handling, storage, and transportation of LWR fuel rods and units outside reactor cores.

ANSI/ANS 8.19-2005, Nuclear Criticality Safety – Administrative Practices

This standard provides criteria for the administration of a nuclear criticality safety program for outside-of-reactor operations in which there exists a potential for nuclear criticality accidents. Responsibilities of management, supervision, and the nuclear criticality safety staff are addressed. Objectives and characteristics of operating and emergency procedures are included.

ANSI/ANS 8.20-1991 (R2005), Nuclear Criticality Safety Training

This standard provides criteria for nuclear criticality safety training for personnel associated with operations outside reactors where a potential exists for criticality accidents. It is not sufficient for the training of nuclear criticality staff.

ANSI/ANS 8.21-1995 (R2001), Use of Fixed Neutron Absorbers in Nuclear Facilities Outside Reactors

Provides guidance for the use of fixed neutron absorbers as an integral part of nuclear facilities and fissionable material process equipment outside reactors where such absorbers provide criticality safety control.

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ANSI/ANS 8.22-1997, Nuclear Criticality Safety Based on Limiting and Controlling Moderators

Provides guidance for criticality safety by the limitation and control of moderators in the range from no moderation to optimum for fissile materials. For many operations, criticality safety is achieved by limiting geometry, mass, and spacing of fissile materials. The amount of fissile material that can be safely handled, stored, or processed at one time can also depend on the credible mass of fissile materials, other conditions being unchanged. An allowable mass significantly greater than the allowable mass at optimum moderation can be justified by limitation and control of moderators.

ANSI/ANS 8.23-1997, Nuclear Criticality Accident Emergency Planning and Response

Provides guidance for minimizing risks to personnel during emergency response to a nuclear criticality accident outside reactors. Applies to those facilities for which a criticality accident alarm system, as specified in American National Standard ANSI/ANS 3.8-1986, is in use.

ANSI/ANS 8.3-1997 (R2003), Criticality Accident Alarm System

Applicable to all operations involving fissionable materials in which inadvertent criticality can occur and cause personnel to receive unacceptable exposure to radiation. This standard is not applicable to detection of criticality events where no excessive exposure to personnel is credible, nor to nuclear reactors or critical experiments. This standard does not include details of administrative actions or of emergency response actions that occur after alarm activation.

ANSI/ANS 8.5-1996 (R2002), Use of Borosilicate-Glass Raschig Rings as a Neutron Absorber in Solutions of Fissile Material

This standard provides guidance for the use of borosilicate-glass Raschig rings as a neutron absorber for criticality control in ring-packed vessels containing solutions of 235U, 239Pu, or 233U. The chemical and physical environment, properties of the rings and packed vessels, maintenance inspection procedures, and operating guidelines are specified.

ANSI/ANS 8.6-1983 (R2001), Safety in Conducting Subcritical Neutron-Multiplication Measurements in situ

Provides safety guidance for conducting subcritical neutron multiplication measurements where physical protection of personnel against the consequences of a criticality accident is not provided. The objectives of in situ measurements are either to confirm an adequate safety margin or to improve an estimate of such a margin. The first objective may constitute a test of the criticality safety of a design that is based on calculations. The second may effect improved operating conditions by reducing the uncertainty of safety margins and providing guidance to new designs.

ANSI/ANS 8.7-1998, Nuclear Criticality Safety in the Storage of Fissile Materials, Guide for

Applies to the storage of fissile materials. Mass and spacing limits are tabulated for uranium containing greater than 30 wt % 235U, for 233U and for plutonium as metals and oxides. Criteria range of application of these limits are provided.

API (American Petroleum Institute)

ANSI/API 10A/ISO 10426-1-2001, Specification for Cements and Materials for Well Cementing (Twenty Third Edition)

Covers requirements for manufacturing eight classes of well cements. This includes chemical and physical requirements and physical testing procedures.

ANSI/API 10B-2/ISO 10426-2-2005, Recommended Practice for Testing Well Cements

This recommended practice specifies requirements and gives recommendations for the testing of cement slurries and related materials under simulated well conditions.

ANSI/API 10B-3/ISO 10426-3-2004, Recommended Practice on Testing of Deepwater Well Cement Formulations

This recommended practice takes into account the specialized sampling/testing requirements and unique downhole temperature profiles found in deepwater wells.

ANSI/API 10D/ISO 10427-1-2001, Specification for Bow-Spring Casing Centralizers (Sixth Edition)

Provides minimum performance standards, test procedures, and marking requirements for bow-spring casing centralizers.

ANSI/API 10F/ISO 18165-2001, Recommended Practice for Performance Testing of Cementing Float Equipment

Provides recommended testing practices to evaluate the performance of cementing float equipment.

ANSI/API 1104-1999, Welding of Pipelines and Related Facilities

Covers gas and arc welding for the production of high-quality welds in carbon and low-alloy steel piping used in the compression, pumping, and transmission of crude petroleum, petroleum products, and fuel gases, and where applicable, to distribution systems.

ANSI/API 1160-2001, Managing System Integrity for Hazardous Liquid Pipeline

Applies to pipeline systems used to transport hazardous liquids as defined in Title 49 CFR 195.2. The use of this Standard is not limited to pipelines regulated under Title 49 CFR 195.1 and the principles embodied in integrity management are applicable to all pipeline systems. This Standard is specifically designed to provide the operator with a description of industry proven practices in pipeline integrity management. The guidance is specific to the line pipe along the right-of-way, from scraper trap to scraper trap, but the process and approach can and should be applied to all pipeline facilities, including pipeline stations, terminals and delivery facilities associated with pipeline systems. Certain sections of this standard provide guidance specific to pipeline stations, terminals, and delivery facilities.

ANSI/API 1163-2005, In-Line Inspection Systems Qualification Standard (first edition)

Covers the use of in-line inspection systems for onshore and offshore gas and hazardous liquid pipelines. This includes, but is not limited to, tethered or free flowing systems for detecting metal loss, cracks, mechanical damage, pipeline geometries, and pipeline location or mapping. The Standard applies to both existing and developing technologies. This Standard is an umbrella document that provides performance-based requirements for in-line inspection systems, including procedures, personnel, equipment and associated software.

ANSI/API 13M/ISO 13503-1-2004, Recommended Practice for Measurement of viscous properties of completion fluids

This recommended practice provides consistent methodology for determining the viscosity of completion fluids used in the petroleum and natural gas industries. For certain cases, methods are also provided to determine the rheological properties of a fluid.

ANSI/API 14A/ISO 10432, 11th Edition, Specification for Subsurface Safety Valve Equipment

Provides the minimal acceptable requirements for subsurface safety valves (SSSVs). It covers subsurface safety valves including all components that establish tolerances and/or clearances which may affect performance or interchangeability of the SSSVs. It includes repair operations and the interface connections to the flow control or other equipment, but does not cover the connections to the well conduit.

ANSI/API 2000-1992, Venting Atmospheric and Low-Pressure Storage Tanks: Nonrefrigerated and Refrigerated

This standard covers the normal and emergency venting requirements for aboveground liquid petroleum storage tanks and aboveground and belowground refrigerated storage tanks designed for operation at pressures from 1/2 oz. per sq in. (22 millimeters water column) vacuum through 15 psig (1.034 bar gage). This standard does not apply to floating- or lifter-roof tanks.

ANSI/API 2015-2001, Safe Entry and Cleaning of Petroleum Storage Tanks: Planning and Managing Tank Entry from Decommissioning Through Recommissioning

Applies to cleaning stationary atmospheric and low pressure (up to 15 psig) above-ground petroleum storage tanks used in all sectors of the petroleum and petrochemical industry, including crude oil and gas production, refineries, petrochemical plants, bulk plants and terminals.

ANSI/API 2016-2001, Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks

Provides guidance and information on cleaning stationary atmospheric and low pressure (up to 15 psig) aboveground petroleum storage tanks used in all sectors of the petroleum and petrochemical industry, including crude oil and gas production, refineries, petrochemical plants, bulk plants and terminals. Addresses planning and tank preparation, and safe work practices to be used in accordance with the requirements of API Standard 2015.

ANSI/API 2510-1996, Design and Construction of LPG Installations

Covers the design, construction, and location of liquified petroleum gas (LPG) installations at marine and pipeline terminals, natural gas processing plants, refineries, petrochemical plants and tank farms. The standard covers storage vessels, loading and unloading systems, piping and related equipment.

ANSI/API 510-2000, Pressure Vessel Inspection Code: Maintenance Inspection, Rating, Repair, and Alteration, 8th Edition, Including Addenda 1 & 2

Covers the maintenance inspection, repair, alteration, and rerating procedures for pressure vessels used by the petroleum and chemical process industries. The application of this inspection code is restricted to organizations that employ or have access to an authorized inspection agency. The use of this inspection code is restricted to organizations that employ or have access to engineering and inspection personnel or organizations that are technically qualified to maintain, inspect, repair, alter, or rerate pressure vessels. Pressure vessel inspectors are to be certified as stated in this inspection code. Since other codes that cover specific industries and general service applications already exist (for example, Sections VI, VII, and XI of the ASME Boiler and Pressure Vessel Code and the National Board Inspection Code), the industries that fit within

ANSI/API 521-2006, Guide for Pressure-Relieving and Depressuring Systems

This recommended practice is applicable to pressure-relieving and vapor depressuring systems. This recommended practice provides guidelines for examining the principal causes of overpressure; determining individual relieving rates; and selecting and designing disposal systems, including such component parts as vessels, flares, and vent stacks. The information provided is designed to aid in the selection of the system that is most appropriate for the risks and circumstances involved in various installations.

ANSI/API 530-5th edition-2003, Petroleum and natural gas industries - Calculation of heater-tube thickness in petroleum refineries

This International Standard, ISO 13704-2001 specifies the requirements and gives recommendations for the procedures and design criteria used for calculating the required wall thickness of new tubes for petroleum refinery heaters.

ANSI/API 541-2003, Form-Wound Squirrel-Cage Induction Motors 250 Horsepower and Larger

Covers the minimum requirements for form-wound squirrel-cage induction motors 500 horsepower and larger for use in petroleum industry services. Standard is typically utilized for machines that have one or more of the following: (1) is in critical service, (2) is larger than 3000 hp for speeds 1800 rpm and below, (3) is rated 800 hp or greater for two-pole 3000 or 3600 rpm, (4) drives a high-inertia load, (5) uses an adjustable speed drive as a source of power, (6) is an induction generator, (7) is a vertical machine rated 500 hp or greater and (8) operates in abnormally hostile environments

ANSI/API 547-2004, General Purpose Form-Wound Squirrel Cage Induction Motors-250 Horsepower and Larger

Covers the requirements for form-wound induction motors for use in general-purpose petroleum, chemical and other industrial severe-duty applications. These motors are (a) rated 250hp (185kW) through 3000hp (2250kW) for 4, 6 and 8 pole speeds, (b) are rated less than 800hp (600kW) for two-pole (3000 or 3600rpm) motors of totally-enclosed construction, (c) are rated less than 1250hp (930kW) for two-pole motors of WP-II type enclosures, (d) drive centrifugal loads, (e) drive loads having inertia values within those listed in NEMA MG-1 Part 20, and (f) are not induction generators.

ANSI/API 553-1999, Refinery Control Valve

Provides criteria for the selection, specification, and application of piston- and diaphragm-actuated control valves. It also outlines control valve design considerations; discusses control valve sizing, noise, and fugitive emissions; and defines types of commonly used control valves and their actuators. Recommendations for specific refinery applications are also included.

ANSI/API 570-2000, Piping Inspection Code – Inspection, Repair, Alteration, and Rerating of In-Service Piping Systems (Second Edition, Including Addendum 1)

Covers inspection, repair, alteration, and rerating procedures for metallic piping systems that have been in-service. API 570 was developed for the petroleum refining and chemical process industries but may be used, where practical, for any piping system. It is intended for use by organizations that maintain or have access to an authorized inspection agency, a repair organization, and technically qualified piping engineers, inspectors, and examiners. Applies to piping systems for process fluids, hydrocarbons, and similar flammable or toxic fluid services, such as the following:

- a. Raw, intermediate, and finished petroleum products.
- b. Raw, intermediate, and finished chemical products.
- c. Catalyst lines.
- d. Hydrogen, natural gas, fuel gas,

ANSI/API 572-2001, Inspection of Pressure Vessels

Covers the inspection of pressure vessels. It includes a description of the various types of pressure vessels and the standards for their construction and maintenance. The reasons for inspection, causes of deterioration, frequency, and methods of inspection, methods of repair, and preparation of records and reports are covered. This document also emphasizes safe operation.

ANSI/API 573-2003, Inspection of Fired Boilers and Heaters

Provides guidance on the inspection of fired boilers and heaters. This guidance is meant to promote proactive inspection procedures and to thereby prevent equipment failures and increase overall equipment reliability and plant safety.

ANSI/API 574-1998, Inspection of Piping, Tubing, Valves, and Fittings

Covers the inspection practices for piping, tubing, valves (other than control valves), and fittings used in petroleum refineries and chemical plants. Although this Publication is not specifically intended to cover speciality items, many of the inspection methods described in this recommended practice are applicable to specialty items such as: control valves, level gages, instrument controls columns, etc.

ANSI/API 575-2004 (Second Edition), Guidelines and Methods for Inspection of Existing Atmospheric and Low Pressure Storage Tanks

Covers the inspection of atmospheric and low-pressure storage tanks that have been in service. This recommended practice describes the various types of storage tanks and the standards for their construction and maintenance. The reasons for inspection, causes of deterioration, frequency and methods of inspection, methods of repair, and preparation of records and reports are covered. Safe and efficient operation is emphasized. This recommended practice is intended to supplement API Standard 653, which provides minimum requirements for maintaining the integrity of storage tanks after they have been placed in service.

ANSI/API 576-2000, Inspection of Pressure-Relieving Devices

Describes the inspection and repair practices for automatic pressure-relieving devices commonly used in the oil and petrochemical industries. As a guide to the inspection and repair of these devices in the user's plant, it is intended to ensure their proper performance. This publication covers such automatic devices as spring-loaded pressure-relief valves, pilot-operated valves, rupture disks, and weight loaded pressure vacuum vents. The scope of this recommended practice includes the inspection and repair of automatic pressure-relieving devices commonly used in the oil and petrochemical industry.

ANSI/API 580-2002, Risk-Based Inspection

Provides users with a practical guide for implementing Risk Based Inspection. The methodology is presented in a systematic manner to the maximum extent practicable. RP580 provides the basic elements required to implement an RBI program. The expected outcome from the application of the RBI process should be the linkage of unacceptable risks with appropriate inspection or other risk mitigation activities to reduce risks to acceptable levels.

ANSI/API 599-2002, Metal Plug Valves - Flanged and Welding Ends

A purchase specification that covers requirements for steel, nickel based and other alloy plug valves with flanged, threaded, and welding end, and ductile iron plug valves with flanged ends, in sizes NPS ½ through NPS 24, which correspond to nominal pipe sizes in ASME B36.10M. Valve bodies conforming to ASME B16.34 may have flanged end and one butt-welding end. It also covers both lubricated and nonlubricated valves that have two-way coaxial ports, and includes requirements for valves fitted with internal body, plug, or port linings or applied hard facings on the body, body ports, plug, or plug port.

ANSI/API 603-2001, Class 150, Cast, Corrosion-Resistant, Flanged-End Gate Valves

Covers Class 150, cast, corrosion resistant, flanged-end gate valves in sizes NPS ½ through 12 for use in petroleum refinery piping systems. The valves are outside-screw-and-yoke (OS&Y) valves with rising stem, nonrising handwheel, bolted bonnet, integral seats in the body, raised-face end flanges, and various types of gates.

ANSI/API 608-2002, Metal Ball Valves – Flanged and Butt-Welding Ends

Covers Class 150 and Class 300 metal ball valves that have either butt-welding or flanged ends and are for use in on-off service.

ANSI/API 610-2002, Centrifugal Pumps for General Refinery Services

This International Standard specifies requirements for centrifugal pumps including pumps running in reverse as hydraulic power recovery turbines, for use in petroleum, petrochemical, and gas industry process services. This standard does not cover sealless pumps (see API 685). This International Standard is applicable to overhung pumps, between bearings pumps, and vertically suspended pumps (see Table 1). Clause 9 specifies requirements applicable to specific types of pumps. All other clauses of this International Standard apply to all pump types. The figures in clause 4.1 show the various specific pump types and the designations assigned to each specific type.

ANSI/API 613-2002, Special-Purpose Gear Units for Refinery Service

This standard covers the minimum requirements for special-purpose, enclosed, precision single- and double-helical one- and two-stage speed increasers and reducers of parallel-shaft design for petroleum, chemical and gas industry services. This standard is primarily intended for gear units that are in continuous service without installed spare equipment. Gear sets furnished to this standard shall be considered matched sets.

ANSI/API 614-1999, Lubrication, Shaft-Sealing, and Control-Oil Systems for Special-Purpose Applications

Covers the minimum requirements for lubrication systems, oil-type shaft-sealing systems, dry gas face-type shaft sealing systems and control-oil systems for general or special purpose applications. General purpose applications are limited to lubrication systems. These systems may serve equipment such as compressors, gears, pumps and drivers.

ANSI/API 617-2002, Axial and Centrifugal Compressors and Expander-Compressors for Petroleum, Chemical and Gas Industry Services

Covers the minimum requirements for centrifugal compressors used in petroleum, chemical, and gas industry services that handle air or gas. Does not apply to fans or blowers that develop less than 34 kPa (5 pounds per square inch) pressure rise above atmospheric pressure; these are covered by API Standard 673. This standard was listed for public review in the 9/16/1994 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/API 619-2004, Rotary Type Positive Displacement Compressors for Petroleum, Petrochemical and Natural Gas Industries

This standard covers the minimum requirements for dry and flooded helical lobe rotary compressors (see Figure 1) used for vacuum or pressure or both in petroleum, chemical, and gas industry services. It is intended for compressors that are in special-purpose applications. It does not cover general purpose air compressors, liquid ring compressors, and vane-type compressors. Standard air compressors are covered in ISO 10440: Petroleum and natural gas industries - Rotary-Type Positive-Displacement Compressors - Part 2 - Packaged Air Compressors (oil free).

ANSI/API 621-2001, Reconditioning of Metallic Gate, Globe, and Check Valves

Provides guidelines for reconditioning flanged and butt weld cast or forged valves.

ANSI/API 660-2003, Petroleum and natural gas industries - Shell and Tube Heat Exchangers (7th edition)

Specifies requirements and gives recommendations for the mechanical design, material selection, fabrication, inspection, testing and preparation for shipment of shell-and-tube heat exchangers for the petroleum and natural gas industries. This standard is applicable to the following types of shell-and-tube heat exchangers: heaters, condensers, coolers and reboilers. This Standard is not applicable to vacuum-operated steam surface condensers and feed-water heaters.

ANSI/API 661/ISO 13706-2001, Air Cooled Heat Exchangers for General Refinery Service

Specifies requirements and gives recommendations for the design, materials, fabrication, inspection, testing and preparation for shipment of air-cooled heat exchangers for use in petroleum and natural gas industries. This International Standard is applicable to air cooled heat exchangers with horizontal bundles, but the basic concepts may also be applied to other configurations.

ANSI/API 662/ISO 15547-2001, Plate Heat Exchangers for General Refinery Service

Gives requirements and recommendations for the mechanical design, materials selection, fabrication, inspection, testing, and preparation for shipment of plate heat exchangers, sometimes referred to as plate-and-frame heat exchangers, for use in petroleum and natural gas industries. This International Standard covers gasketed, semi-welded and welded plate heat exchangers constrained within a frame. As used in this International Standard, the term heat exchangers, or exchangers, include coolers, heaters, condensers, evaporators and reboilers.

ANSI/API 671-1999, Special-Purpose Couplings for Refinery Service

Covers the minimum requirements for special-purpose couplings that transmit power between the rotating shafts of two pieces of equipment of the petroleum, chemical, and gas industries. These couplings are designed to be operated continuously and to accommodate misalignment and axial displacement.

ANSI/API 682/ISO 21049-2004, Pumps - Shaft Sealing Systems for Centrifugal and Rotary Pumps

Establishes the minimum electromechanical requirements for sealing systems for centrifugal and rotary pumps. It also provides a standard seal design that has been tested and qualified under the service conditions for which it is intended to operate. In addition, this standard encourages evolving technology through qualification testing, data sheet input, and for engineered seals.

ANSI/API 685-1999, Sealless Centrifugal Pumps for Petroleum, Heavy Duty Chemical and Gas Industry Services

Covers the minimum requirements for sealless centrifugal pumps for use in petroleum, heavy-duty chemical, and gas industry services. End suction pumps, single-stage pumps, overhung pumps of two classifications, magnetic drive pumps, and canned motor pumps are also covered.

ANSI/API 8B/ISO 13534-2000, Recommended Practice for Procedures for Inspections, Maintenance, Repair, and Remanufacture of Hoisting Equipment

Provides owners and users of drilling and production hoisting equipment guidelines for inspection, maintenance, repair, and remanufacture procedures that may be utilized to maintain serviceability of this equipment.

ANSI/API 8B/ISO 13534-2003, Addendum 1, Recommended Practice for Procedures for Inspections, Maintenance, Repair, and Remanufacture of Hoisting Equipment

Make modifications as recommended by the committee.

ANSI/API 8C/ISO 13535-2005, Specification for Drilling and Production Hoisting Equipment (PSL 1 and PSL 2)

To revise section 9.8.3 Slip-type elevators and slip-type spiders by replacing the last line and editing a section on guide dollies.

ANSI/API MPMS 14.3.1-2003, General Equations and Uncertainty Guidelines - Concentric, Square-edged Orifice Meters

Provides the basic equations and uncertainty statements for computing the flow through orifice meters. Formally designated as ANSI/API 2530, Part 1, 1991.

ANSI/API MPMS 14.3.3-2003, Natural Gas Applications

API MPMS 14.3.3 is an application guide for the calculation of natural gas flow through a flange-tapped, concentric orifice meter, using the inch-pound system of units. It also provides practical guidelines for applying API MPMS 14.3.1 and 14.3.2 to the measurement of natural gas.. Formally designated as ANSI/API 2530, Part 3, 1991.

ANSI/API MPMS 2.2C-2002, Calibration of Upright Cylindrical Tanks Using the Optical-Triangulation Method

Describes the calibration of vertical cylindrical tanks by means of optical triangulation using theodolites. The circumference of the tank is determined at different levels by reference to a base line which may be either a reference circumference measured by strapping or a base line between two stations of a theodolite measured by means of a tape or by an optical method. External circumferences are corrected to five true internal circumferences.

ANSI/API MPMS 2.2E-2004, Petroleum and Liquid Petroleum Products - Calibration of Horizontal Cylindrical Tanks - Part 1: Manual Methods

Specifies manual methods for the calibration of nominally horizontal cylindrical tanks, installed at a fixed location. It is applicable to horizontal tanks up to 4 m (13 ft.) in diameter and 30 m (100 ft.) in length This is the US National Adoption of ISO 12917-1:2002(E) as a replacement in part for API Standard 2551 (First Edition, January, 1965; also issued as ANSI/ASTM D-1420).

ANSI/API MPMS 2.2F-2004, Petroleum and Liquid Petroleum Products - Calibration of Horizontal Cylindrical Tanks - Part 2: Internal Electro-Optical Distance-Ranging Method

Specifies a method for the calibration of horizontal cylindrical tanks having diameters greater than 2 m by means of internal measurements using an electro-optical distance-ranging instrument, and for the subsequent compilation of tank-capacity tables This is the US National Adoption of ISO 12917-2:2002(E) as a replacement in part for API Standard 2551 (First Edition, January, 1965; also issued as ANSI/ASTM D-1420).

ANSI/API MPMS 5.6-2002, Measurement of Liquid Hydrocarbons by Coriolis Meters

This standard is intended to describe methods to achieve custody transfer levels of accuracy when a Coriolis meter is used to measure liquid hydrocarbons.

ANSI/API MPMS Chapter 14.3, Part 2-2000, Chapter 14 - Natural Gas Fluids Measurement, Section 3 - Concentric, Square-Edged Orifice Meters, Part 2 - Specification and Installation Requirements

Outlines the various design parameters that must be considered when designing metering facilities using orifice meters. The mechanical tolerances found in this document encompass a wide range of orifice diameter ratios for which experimental results are available.

ANSI/API RP 10B-4/ISO 10426-4-2004, Recommended Practice on Preparation and Testing of Foamed Cement Slurries at Atmospheric Pressure

This standard defines the methods for the generation and testing of foamed cement slurries and their corresponding unfoamed base cement slurries at atmospheric pressure.

ANSI/API RP 10D-2/ISO 10427-2-2004, Centralizer Placement and Stop Collar Testing

Provides calculations for determining centralizer spacing, based on performance and desired standoff, in deviated and dogleg holes in wells. It also provides a procedure for testing stop collars and reporting test results.

ANSI/API RP 1162-2003, Public Awareness Programs for Pipeline Operators

This recommended practice will provide guidance to pipeline operators for developing strong and effective public awareness programs to communicate with the public adjacent to pipeline rights-of-way, local emergency officials, local governmental officials and excavators. The Recommended Practice will be applicable to hazardous liquid transmission pipelines, natural gas transmission pipelines and natural gas distribution pipelines, and will improve the consistency among such programs and foster public confidence.

ANSI/API RP 13B-1/ISO 10414-1-2003, Recommended Practice for Field Testing Water-Based Drilling Fluids

Nationally adopt ISO 10414-1 to replace the existing API Recommended Practice 13B-1. This standard will provide standard procedures for field testing water-based drilling fluids.

ANSI/API RP 13I/ISO 10416-2003, Recommended Practice for Laboratory Testing of Drilling Fluids

Nationally adopt ISO 10416 to replace the existing API Recommended Practice 13I. This standard provides standard procedures for laboratory testing drilling fluids.

ANSI/API RP 17A/ISO 13628-1-2005, Design and Operation of Subsea Production Systems- Part 1: General Requirements and Recommendations

Provides guidelines for the design, installation, operation, repair, and decommissioning of subsea production systems. The elements of subsea production systems included are wellheads and trees; pipelines and end connections; controls, control lines and control fluids; templates and manifolds; and production riser. Other sections cover operations, quality assurance, materials, and corrosion.

ANSI/API RP 17C/ISO 13628-3-2002 (R2005), TFL (Through Flowline) Systems

Presents recommendations for designing, fabricating, and operating TFL equipment. Procedures and guidelines presented are for hydraulic servicing of downhole equipment, subsea tree and tubing hanger, and pipelines and equipment within the pipelines. This edition of API RP 17C is an identical adoption of ISO 13628-3

ANSI/API RP 17F/ISO 13628-6-2002, Specification for Subsea Control Systems

Applicable to design, fabrication, testing, installation and operation of subsea production control systems. Covers surface control system equipment, subsea-installed control system equipment and control fluids. This equipment is utilized for control of subsea production of oil and gas and for subsea water and gas injection services.

ANSI/API RP 17H-2002, Remotely Operated Vehicle (ROV) interfaces on subsea production systems

Gives functional requirements and guidelines for ROV interfaces on subsea production systems for the petroleum and natural gas industries. It is applicable to both the selection and use of ROV interfaces on subsea production equipment, and provides guidance on design as well as the operational requirements for maximising the potential of standard equipment and design principles. The auditable information for subsea systems it offers will allow interfacing and actuation by ROV-operated systems, while the issues it identifies are those that have to be considered when designing interfaces on subsea production.

ANSI/API RP 17M/ISO 13628-9-2000, Recommended Practice for Remotely Operated Vehicle (ROV) Interfaces on Subsea Production Systems

Applicable to design, fabrication, testing, installation and operation of subsea production control systems. Covers surface control system equipment, subsea-installed control system equipment and control fluids. This equipment is utilized for control of subsea production of oil and gas and for subsea water and gas injection services.

ANSI/API RP 2RD-1998, Recommended Practice for the Design of Risers for Floating Production Systems (FPSs) and Tension-Leg Platforms (TLPs)

This recommended practice addresses structural analysis procedures, design guidelines, component selection criteria and typical designs for all new riser systems used on FPSs. Guidance is also given for developing load information for the equipment attached to the ends of the risers.

ANSI/API RP 2T-1997, Planning, Designing and Constructing Tension Leg Platforms

Summarizes available information and guidance for the design, fabrication and installation of a tension leg platform.

ANSI/API RP 555-2000, Process Analyzers

Standard addresses the considerations in the application of process analyzers and associated systems, installation and maintenance. These systems measure and transmit information about chemical composition, physical properties or chemical properties. Process monitors are used in the refining industry for (a) monitoring and controlling product quality, (b) implementing advanced control strategies in improving process operations, (c) enhancing area safety and (d) continuous emission monitoring and environmental measurement of air and water quality.

ANSI/API RP 578-1999, Material Verification Program for New and Existing Alloy Piping Systems

Ensures that the normal composition of alloy components of a process piping system is consistent with those selected or specified in order to minimize the potential for catastrophic toxic or hazardous releases of liquids or vapors. This recommended practice covers the guidelines for positive material identification (PMI) programs on ferrous and nonferrous alloys during the construction, installation, maintenance, and inspection when necessary, of new and existing process piping systems covered by the ASME B31.3 and API 570 piping codes (American National Standard for Process Piping, ANSI/ASME B31.3-1999, and American National Standard for Piping Inspection Code - Inspection, Repair, Alteration, and Rerating of In-Service Piping Systems, ANSI/API 570-1993).

ANSI/API RP 579-2000, Fitness-for-Service

This publication standardizes fitness-for-service (FFS) assessment techniques for pressurized equipment in the refining and chemical industries. FFS is defined as the ability to demonstrate the structural integrity of an in-service component containing a flaw. These procedures can be used for FFS evaluations and rerating of pressure vessels designed and constructed to the ASME Boiler & Pressure Vessel Code; ASME B31.3 designed piping systems; and aboveground storage tanks designed to API 650 and API 620.

ANSI/API RP 5A5-2005, Field Inspection of New Casing, Tubing, and Plain-End Drill Pipe, 7th Edition

This standard specifies requirements and gives recommendations for field inspection and testing of oil country tubular goods (OCTG). It covers the practices and technology commonly used in field inspection; however, certain practices may also be suitable for mill inspections. It also covers the qualification of inspection personnel, a description of inspection methods and apparatus calibration and standardization procedures for various inspection methods. The evaluation of imperfections and marking of inspected OCTG are included.

ANSI/API RP 652-2005, Lining of Aboveground Petroleum Storage Tank Bottoms

Provides guidance presents procedures and practices for achieving effective corrosion control in aboveground storage tanks by application of tank bottom linings. It contains information pertinent in the selection of lining materials, surface preparation, lining application, cure, and inspection provisions for the application of tank bottom linings to for both existing and new storage tanks.

ANSI/API RP 8B/ISO 13534, Addendum 2-2005, Inspection, Maintenance, Repair, and Remanufacture of Hoisting Equipment

Provides guidelines & establishes requirements for inspection, maintenance, repair, and remanufacture of items of hoisting equipment used in drilling and product operations to maintain equipment serviceability.

ANSI/API RP-11S1-1998, Electrical Submersible Pump Teardown Report

This recommended practice covers a recommended electric submersible pump teardown report form.

ANSI/API RP-2Z-1998, Preproduction Qualification for Steel Plates for Offshore Structures

Covers requirements for preproduction qualification, by special welding and mechanical testing of specific steelmaking processing procedures for the manufacture of steel by a specific producer. It was developed in conjunction with, and is intended primarily for use with API Spec 2W and 2Y. However, it may be used to supplement API Spec 2H.

ANSI/API RP-500-1998 (R2003), Classification of Locations for Electrical Installations at Petroleum Facilities, Recommended Practice for

Recommended practice provides guidelines for determining the degree and extent of Class I, Division 1 and Class I, Division 2 locations at petroleum facilities, for the selection and installation of electrical equipment. RP 500 is intended to be applied where there may be a risk of ignition due to the presence of flammable gas or vapor, mixed with air under normal atmospheric conditions.

ANSI/API RP-505-1998 (R2002), Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class 1, Zone 0, Zone 1, and Zone 2

Recommended practice provides guidelines for determining the degree and extent of Class I, Zone 0, Zone 1 and Zone 2 locations at petroleum facilities for the selection and installation of electrical equipment. RP 505 is intended to be applied where there may be a risk of ignition due to the presence of flammable gas or vapor, mixed with air under normal atmospheric conditions.

ANSI/API Spec 13A/ISO 13500-2003, Specification for Drilling-Fluid Materials

Covers physical properties and test procedures for materials manufactured for use in oil- and gas-well drilling fluids. The materials covered are barite, haematite, bentonite, nontreated bentonite, OCMA grade bentonite, attapulgite, sepiolite, technical grade low-viscosity carboxymethylcellulose (CMC-LVT), technical grade high-viscosity carboxymethylcellulose (CMC-HVT), and starch. This specification is intended for the use of manufacturers of named products. It is proposed to adopt a modified version of ISO 13500 as API Spec 13A.

ANSI/API Spec 16A/ISO 13533-2001, Specification for Drill Through Equipment

Specifies requirements for performance, design, materials, testing and inspection, welding, marking, handling, storing and shipping of drill-through equipment used for drilling for oil and gas. It also defines service conditions in terms of pressure, temperature and wellbore fluids for which the equipment will be designed. It is applicable to and establishes requirements for the following specific equipment: a) ram blowout preventers; b) ram blocks, packers and top seals; c) annular blowout preventers; d) annular packing units; e) hydraulic connectors; f) drilling spools; g) adapters; h) loose connections; i) clamps.

ANSI/API Spec 16C-1993 (R2001), Choke and Kill Systems

Provides for safe and functionally interchangeable surface and subsea choke and kill systems equipment utilized for drilling oil and gas wells. Technical content of this document provides the minimum requirements for performance, design, materials, welding, testing, inspection, storing, and shipping of choke and kill system equipment.

ANSI/API Spec 17E-2003, Specification for Subsea Umbilicals

Specifies requirements and gives recommendations for the design, material selection, manufacture, design verification, testing, installation and operation of subsea control systems, chemical injection, gas lift, utility and service umbilicals and associated ancillary equipment for the petroleum and natural gas industries.

ANSI/API Spec 17K-2005, Specification for Bonded Flexible Pipe

This Standard defines the technical requirements for safe, dimensionally and functionally interchangeable bonded flexible pipes that are designed and manufactured to uniform standards and criteria. Minimum requirements are specified for the design, material selection, manufacture, testing, marking and packaging of bonded flexible pipes, with reference to existing codes and standards where applicable. See API RP 17B for guidelines on the use of flexible pipes and ancillary components.

ANSI/API Spec 2F-1997, Mooring Chain

Covers flashwelded chain used for mooring of offshore floating vessels such as drilling vessels, pipe lay barges, derrick barges, and storage tankers.

ANSI/API Spec 6A/ISO 10423-2004, Specification for Wellhead and Christmas Tree Equipment

Covers equipment utilized for pressure control systems for production of oil and natural gas. Specific equipment covered includes end and outlet connections, ring gaskets, chokes, valves including surface and underwater safety valves, actuators and wellhead and Christmas tree equipment (casing and tubing head spools, hangars, connectors, fittings).

ANSI/API Spec 7K/ISO 14693 ,4th edition-2005, Specification for Drilling and Well Servicing Equipment

Provides general principles and specifies requirements for design, manufacture and testing of new drilling and well-servicing and well-servicing equipment and of replacement primary load-carrying components manufactured subsequent to the publication of this standard.

ANSI/API Spec 9A/ISO 10425-2004, Specification for Wire Rope

Nationally adopt ISO 10425 to replace API Specification 9A. This specification provides standards for wire rope in the petroleum industry.

ANSI/API Spec Q1-2003, Specification for Quality Programs for the Petroleum, Petrochemical and Gas Industry

Defines the quality management system requirements for the design, development, production, installation and service of products for the petroleum, petrochemical and natural gas industries. Also sets forth the minimum quality management system requirements, which complied in conjunction with API industry standards, are necessary to obtain a licensee to use the API monogram.

ANSI/API Standard 612-2005, (ISO 10437-2003), Petroleum, Petrochemical and Natural Gas Industries - Steam Turbines - Special-Purpose Applications

Specifies requirements and gives recommendations for the design, materials, fabrication, inspection, testing and preparation for shipment of steam turbines for special-purpose applications. It also covers the related lube-oil systems, instrumentation, control systems and auxiliary equipment. It is not applicable to general-purpose steam turbines.

ANSI/API Std. 600/ISO 10434 MOD-2001, Bolted Bonnet Steel Gate Valves for Petroleum and Natural Gas Industries

Covers steel gate valves with flanged or butt-welding ends in sizes NPS 1 through 24. For purchasers and manufacturers who order, fabricate, or install steel gate valves.

ARI (Air-Conditioning and Refrigeration Institute)

ANSI/ARI 1060-2001, Rating Air-to-Air Energy Recovery Ventilation Heat Exchangers

Establishes air-to-air heat exchangers intended for use in Energy Recovery Ventilation Equipment: definitions; test requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

ANSI/ARI 110-2004, Air-Conditioning and Refrigerating Equipment Nameplate Voltages

Establishes, for air-conditioning and refrigerating equipment: definitions; voltage rating requirements; equipment performance requirements; and conformance conditions.

ANSI/ARI 310/380-1993, Packaged Terminal Air-Conditioners and Heat Pumps

Provides requirements for rating, performance, and tests of all sizes of factory-assembled packaged terminal air-conditioners and heat pumps for use in residential, commercial, and industrial heating and cooling systems.

ANSI/ARI 330-1993, Ground Source Closed-Loop Heat Pumps

Establishes definitions and classification; requirements for testing and rating; specification, literature and advertising requirements; performance requirements and conformance conditions for ground source closed-loop heat pumps

ANSI/ARI 340/360-2000, Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment

The purpose of this standard is to establish for Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

ANSI/ARI 365-1994, Commercial and Industrial Unitary Air-Conditioning Condensing Units

Establishes definitions and classifications, requirements for testing and rating, performance requirements, and conformance conditions for commercial and industrial unitary air-conditioning condensing units. Applies to factory-made commercial and industrial unitary air-conditioning condensing units. Applies only to electrically driven, mechanical-compression-type condensing units.

ANSI/ARI 365-2002, Commercial and Industrial Unitary Air-Conditioning Condensing Units

This standard applies to factory-made Commercial and Industrial Unitary Air-Conditioning Condensing Units greater than or equal to 135,000 Btu/h [39.6 kW].

ANSI/ARI 400-2001, Liquid to Liquid Heat Exchangers

The purpose of this standard is to establish for Liquid to Liquid Heat Exchangers: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

ANSI/ARI 430-1999, Central Station Air-Handling Units

Establishes definitions and classifications; specifications for standard equipment; requirements for testing and rating, and conformance conditions for central station air-handling units.

ANSI/ARI 460-2000, Remote Mechanical-Draft Air-Cooled Refrigerant Condensers

The purpose of this standard is to establish for Remote Mechanical-Draft Air-Cooled Refrigerant Condensers: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

ANSI/ARI 495-1999, Refrigerant Liquid Receivers

Establishes definitions, specifications for standard equipment, rating requirements and requirements for marking for refrigerant liquid receivers

ANSI/ARI 500-1990, Variable Capacity Positive Displacement Refrigerant Compressors and Compressor Units for Air-Conditioning and Heat Pump Applications

Applies to electric motor driven variable capacity positive displacement refrigerant compressors and compressor units; for air-cooled, evaporatively-cooled, or water-cooled air conditioning and heat pump applications. Also, applies to compressors which are capable of variable capacity that is obtained by mechanical and/or electrical means. The rating points in this standard are based on commonly used refrigerants. This standard is intended to serve as a guide for use with other refrigerants.

ANSI/ARI 500-2001, Variable Capacity Positive Displacement Refrigerant Compressors and Compressor Units for Air-Conditioning and Heat Pump Applications

The purpose of this standard is to establish for Variable Capacity Positive Displacement Refrigerant Compressors and Compressor Units for Air-Conditioning and Heat Pump Applications: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

ANSI/ARI 510-1993, Ammonia Compressor Units

Applies to positive displacement ammonia compressor units for use in commercial and industrial refrigeration applications. Also, applies to compressors and units using ammonia (R717) as defined in ANSI/ASHRAE 34-92, Number Designation and Safety Classifications of Refrigerants (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.).

ANSI/ARI 540-1999, Positive Displacement Refrigerant Compressors and Compressor Units

Applies to performance data presentation for all positive displacement refrigerant compressors and compressor units. This standard was listed for public review in the 5/8/1998 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ARI 560-2000, Absorption Water Chilling and Water Heating Packages

The purpose of this standard is to establish for Absorption Water Chilling and Water Heating Packages: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

ANSI/ARI 580-1995, Performance of Non-Condensable Gas Purge Equipment for Use with Low Pressure Centrifugal Liquid Chillers

Defines general equipment requirements, test methods and analysis techniques used to determine the performance rating of purge equipment that removes non-condensable gases from centrifugal liquid chillers. This purge equipment is typically used in conjunction with chillers which operate with at least a portion of the system below atmospheric pressure. Purge equipment is sometimes used on chillers with high pressure refrigerant but, since there is no way for non-condensable gases to enter these systems once they have been charged with refrigerant, this purge equipment does not operate for any significant amount of time.

ANSI/ARI 580-2001, Non-Condensable Gas Purge Equipment for Use with Low Pressure Centrifugal Liquid Chillers

Establishes Non Condensable Gas Purge Equipment for Use with Low Pressure Centrifugal Liquid Chillers: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

ANSI/ARI 610-1996, Central System Humidifiers for Residential Applications

Establishes definitions and classifications, requirements for testing and rating, minimum data requirements for published ratings, operating requirements, marking and nameplate data, and conformance conditions for central system humidifiers.

ANSI/ARI 620-1996, Self-Contained Humidifiers for Residential Applications

Establishes definitions and classifications, requirements for testing and rating, minimum data requirements for published ratings, operating requirements, marking and nameplate data, and conformance conditions for self-contained humidifiers.

ANSI/ARI 640-1996, Commercial and Industrial Humidifiers

Establishes definitions and classifications, requirements for testing and rating, minimum data requirements for published data, marking and nameplate data and conformance

ANSI/ARI 750-2001, Thermostatic Refrigerant Expansion Valves

Establishes Thermostatic Refrigerant Expansion Valves: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

ANSI/ARI 770-1994, Refrigerant Pressure Regulating Valves

Covers pressure regulating valves controlling volatile refrigerant flow whose primary response is to pressure.

ANSI/ARI 870-2001, Direct GeoExchange Heat Pumps

Establishes Direct GeoExchange Heat Pumps: definitions; test requirements; rating requirements; minimum data requirements for Published Ratings; marking and nameplate data; and conformance conditions.

ANSI/ARI/ASHRAE/ISO 13256-1-1998, Water-Source Heat Pumps - Testing and Rating for Performance: Part 1 - Water-to-Air and Brine-to-Air Heat Pumps

Establishes performance testing and rating criteria for factory-made water-to-air and brine-to-air heat pumps.

ANSI/ARI/ASHRAE/ISO 13256-2-1998, Water-Source Heat Pumps - Testing and Rating for Performance: Part 2 - Water-to-Water and Brine-to-Water Heat Pumps

Establishes performance testing and rating criteria for factory-made water-to-water and brine-to-water heat pumps.

ARMA (Association of Records Managers and Administrators)

ANSI/ARMA 10-1999, Glossary of Records Management Terms

Defines and explains more than 300 terms representing common and specialized terminology used in the field of records and information management. It includes a section of abbreviations and acronyms. It does not include dictionary terms unless such terms also have a unique information management definition. Previous public review and comment period resulted in subsequent changes in Glossary; therefore, an additional review period is required. This is the second public review for this standard. It was previously listed in the August 28, 1998 issue of Standards Action.

ANSI/ARMA 12-2005, Alphabetic Filing Rules

This standard is intended to aid in the selection and application of a filing system that will enable users to retrieve information when needed. It describes three principal systems: alphabetic filing, subject filing, and numeric filing. In addition, it contains standard rules for indexing alphabetical data. Three informative appendices accompany this standard.

ANSI/ARMA 5-2003, Vital Records Programs: Identifying, Managing, and Recovering Business-Critical Records

Addresses the development and implementation of a vital records program within the context of a formal records management program. Vital records are defined as records containing information essential to the survival of an organization in the event of a disaster, since they document an organization's legal and financial position and preserve the rights of employees, customers and stockholders. Specific procedures addressed include: vital records analysis and selection, records protection methods, and the overall administration of a vital records program.

ANSI/ARMA 8-2005, Developing and Operating a Records Retention Program

This standard covers general principles in structuring an information retention and disposition program, including authority and responsibility, identifying and classifying records for retention purposes, and principles for determining retention periods.

ANSI/ARMA 9-2004, Requirements for Managing Electronic Messages as Records

Establishes standard records management practices to be addressed in the creation and maintenance of electronic mail (e-mail) messages. The publication addresses the creation, maintenance, and disposition of e-mail within the context of a formal records and information management program. Specific areas addressed include: appropriate use, ownership, liabilities, privacy/access, security, filing and classification, auditing trails, and applying retention. This is the second public review for this standard. It was originally listed in the August 28, 1998 issue of Standards Action. It is being resubmitted due to substantive changes in the text.

ASA (Acoustical Society of America)

ANSI S1.1-1994 (R2004), Acoustical Terminology

This standard provides definitions for a wide variety of terms, abbreviations, and letter symbols used in acoustics and electroacoustics. Terms of general use in all branches of acoustics are defined, as well as many terms of special use for architectural acoustics, acoustical instruments, mechanical vibration and shock, physiological and psychological acoustics, underwater sound, sonics and ultrasonics, and music.

ANSI S1.11-2004, Octave-Band and Fractional Octave-Band Analog and Digital Filters, Specifications for

Provides performance requirements for analog, sampled-data, and digital implementations of bandpass filters that comprise a filter set or spectrum analyzer for acoustical measurements. It supersedes ANSI S1.11-1986 (R1998), and is a counterpart to International Standard IEC 61260:1995 Electroacoustics – Octave-Band and Fractional-Octave-Band Filters. Significant changes from ANSI S1.11-1986 have been adopted in order to conform to most of the specifications of IEC 61260:1995

ANSI S1.13-2005, Measurement of Sound Pressure Levels in Air

Specifies requirements and describes procedures for the measurement of sound pressure levels in air at a single point in space. These apply primarily to measurements performed indoors but may be utilized in outdoor measurements under specified conditions. This is a fundamental standard applicable to a wide range of measurements and to sounds that may differ widely in temporal and spectral characteristics; more specific ANS complement its requirements. A classification is given of the types of sound generally encountered, and the preferred descriptor for each type is identified.

ANSI S1.14-1998 (R2003), Recommendations for Specifying and Testing the Susceptibility of Acoustical Instruments to Radiated Radio-Frequency Electromagnetic Fields, 25 MHz to 1GHz

This standard provides recommendations for specifying and testing the susceptibility of acoustical instruments to radiated electromagnetic fields. The instruments may be powered by batteries or from a public supply of electric power. Recommendations related to testing an instrument's susceptibility to electromagnetic radiation are given in annex A. Annex B contains a bibliography of background information.

ANSI S1.15, Part 1-1997 (R2001), Measurement Microphones – Part 1: Specifications for Laboratory Standard Microphones

Specifies mechanical dimensions and certain electroacoustical characteristics for capacitor (condenser) microphones used as laboratory standards for sound pressure measurements of the highest attainable accuracy. The specifications are intended to ensure that primary calibration by the reciprocity method can be readily carried out. This Standard establishes a system to classify laboratory standard microphones into a number of types according to their dimensions and properties. This American National Standard is comparable to International Standard IEC 61094-1:1992, "Measurement microphones - Part 1: Specifications for laboratory standard microphones.

ANSI S1.15-2005/Part 2, Measurement Microphones - Part 2: Primary Method for Pressure Calibration of Laboratory Standard Microphones by the Reciprocity Technique

This Standard specifies a primary method for the calibration of microphones by the reciprocity technique. The specifications are intended to ensure that primary calibration with the reciprocity technique can attain the highest accuracy. The technical requirement of this American National Standard is identical to International Standard IEC 61094-2: 1992, "Measurement microphones -- Part 2: Primary method for pressure calibration of laboratory standard microphones by the reciprocity technique". Various improvements have been made to include recent technical information.

ANSI S1.16-2000 (R2005), Method for Measuring the Performance of Noise Discriminating and Noise Cancelling Microphones

Describes procedures for measuring the performance of noise discriminating and noise canceling microphones. The signal-to-noise ratio is measured at 1/3 octave band intervals with the desired test source in a diffuse noise field. The noise canceling performance of the microphone is defined as the noise canceling index (NCI), a weighted summation of the signal-to-noise ratios. The NCI of the microphone under test can be compared to the required baseline NCI of a laboratory standard pressure microphone.

ANSI S1.17/Part 1-2004, Microphone Windscreens - Part 1: Measurements and Specification of Insertion Loss in Still or Slightly Moving Air

This standard specifies a test to use to determine the insertion loss of windscreens for measuring microphones over a defined frequency range. The insertion loss is determined in conditions that reflect performance in still or slightly moving air.

ANSI S1.18-1999 (R2004), Template Method for Ground Impedance

Describes procedures for obtaining the real and imaginary parts of the specific acoustic impedance of natural ground surfaces outdoors. The Standard uses templates to compare measured sound pressure level differences with a specific set of calculated level differences. The impedance values are obtained from a model based on best fit of measured and calculated level differences. The standard may also be used to obtain the impedance of porous sound absorbing material.

ANSI S1.20-1988 (R2003), Procedures for Calibration of Underwater Electroacoustic Transducers

This standard establishes measurement procedures for calibrating underwater electroacoustic transducers and describes forms for presenting the resultant data. It is a revision of American National Standard S1.20-1972 (R1977).

ANSI S1.22-1992 (R2002), Scales and Sizes for Frequency Characteristics and Polar Diagrams in Acoustics

For rectangular cartesian graphs in which a level (in decibels) of an acoustical quantity is plotted against frequency on a logarithmic scale, the scale proportions shall be those for which the length for a 10:1 frequency ratio on the abscissa is equal to the length for a level difference of 25, 50, or 10 decibels (dB) on the ordinate. For polar diagrams in which an absolute or relative level (in decibels) is shown increasing outward along a radius on a linear scale, a reference circle shall be identified whose radius is a difference in level of 50 dB (alternatively, 25 dB), and such that maximum level is preferably plotted within 5 dB (alternatively, 2.5 dB) of the reference circle. For polar diagrams of relative level, the level assigned to the reference circle is preferably 0 dB; the angle assigned to the reference direction is preferably zero degrees. The preferred size for one decibel is 2, 1, or 5

ANSI S1.25-1991 (R2002), Personal Noise Dosimeters, Specification for

Contains specifications for performance characteristics of personal noise dosimeters which measure the percentage criterion sound exposure. The Standard makes provision for three exchange rates: 3 dB, 4 dB, and 5 dB per doubling of exposure time. The Standard provides tolerances for the entire instrument including frequency response, exponential averaging (employing SLOW and FAST), threshold, dynamic range, and other characteristics. It specifies that these tolerances be attained by the instrument in a random incidence sound field without the presence of a person wearing the instrument.

ANSI S1.26-1995 (R2004), Method for the Calculation of Absorption of Sound by the Atmosphere

Provides the means to calculate atmospheric absorption losses of sound from any source for a wide range of meteorological conditions. The atmosphere is assumed to be still, homogeneous moist air of normal composition. Non-homogeneous atmospheres may be divided into horizontal layers within which homogeneous conditions may be assumed. Attenuation coefficients for pure-tone sounds are calculated by over ranges of frequency, and the humidity, pressure, and temperature of the atmosphere. For sounds analyzed by fractional-octave-band filters alternative methods are provided.

ANSI S1.4-1983 (R2001), Sound Level Meters, Specification for

Revises American National Standard Specification for Sound Level Meters, S1.4 - 1971. It conforms as closely as possible to the IEC Standard for Sound Level Meters, Publication 651, First Edition issued in 1979. This revision represents a significant improvement over ANSI S1.4 - 1971, particularly in its specifications relating to measurement of transient sound signals. It also permits the use of digital techniques and displays. The principal changes from ANSI S1.4 - 1971 are: inclusion of an optional impulse exponential-time averaging characteristic, inclusion of an optional peak characteristic, more rigorous definition of the dynamic characteristics for the Fast and Slow exponential-time-averaging, increase in the crest factor requirement to ten for type 1 instruments, specification of a type 0 laboratory instrument with generally smaller

ANSI S1.40-1984 (R2001), Specifications for Acoustical Calibrators

Specifies performance requirements for coupler-type acoustical calibrators. For each microphone type that may be used with the calibrator, requirements include the sound pressure level in the coupler, the frequency of the sound, and the determination of the influence of atmospheric pressure, temperature, humidity, and magnetic fields on the pressure level and frequency of the sound produced by the calibrator. Specifications are to be met within stated tolerances at each frequency and sound pressure level of operation.

ANSI S1.42-2001, Weighting Networks for Acoustical Measurements, Design Response of

Examines the design goal specifications of weighting networks for acoustical measurements. The scope is restricted to the design, or target, responses of weighting networks. Tolerances that belong in the instrument performance specifications are not included.

ANSI S1.43-1997 (R2002), Specifications for Integrating-Averaging Sound Level Meters

Describes instruments for the measurement of frequency-weighted and time-average sound pressure levels. Optionally, sound exposure levels may be measured. This Standard is consistent with the relevant requirements of ANSI S1.4-1983 (R 1997) American National Standard Specification for Sound Level Meters, but specifies additional characteristics that are necessary to measure the time-average sound pressure level of steady, intermittent, fluctuating, and impulsive sounds.

ANSI S1.4a-1985 (R2001), Sound Level Meters, Specification for

ANSI S1.6-1984 (R2001), Preferred Frequencies, Frequency Levels, and Band Numbers for Acoustical Measurements

Defines the preferred frequencies, or nominal band-center frequencies to be used for acoustical measurements. Frequency levels or band numbers are associated with these sets of frequencies and the preferred frequencies are rounded values obtained from those for which the corresponding frequency levels or band numbers are integers.

ANSI S1.8-1989 (R2001), Reference Quantities for Acoustical Levels

Provides certain reference quantities to be used for acoustical levels. Reference quantities are stated in the International System of Units (SI). The unit of most acoustical levels is the decibel. Acoustical levels are equal to ten (or twenty) times the common (base-10) logarithm of an appropriate nondimensional ratio of a variable quantity (in the numerator) to a reference quantity of the same kind (in the denominator). The multiplier ten is used when the numerator is a power or power-like quantity (such as the time-average of the square of a time-varying sound pressure or vibration acceleration) or an energy-like quantity (such as sound exposure). The multiplier twenty is used when the numerator is the root-mean-square of a field quantity or an instantaneous quantity, such as a peak or maximum sound pressure.

ANSI S1.9-1996 (R2001), Instruments for the Measurement of Sound Intensity

Specifies the requirements for instruments to measure sound intensity employing the two microphone technique and methods for performance verification to meet the requirements. It conforms as closely as possible to the IEC Standard on Instruments for the Measurement of Sound Intensity, publication IEC 1043. The primary application of this standard is to instruments used for the determination of sound power of sources according to the requirements of ANSI S1.2-1992. The requirements and methods of performance verification are specified for the complete instrument system, and separately for the probes and processors forming the complete system. The latter enables the user to assemble the instrument system from probes and processor procured from different manufacturers. Performance verifications are written in terms of type tests

ANSI S12.1-1983 (R2001), Preparation of Standard Procedures to Determine the Noise Emission from Sources, Guidelines for the

Contains guidelines for the preparation of procedures (standards, test codes, recommended practices, etc.) for determination of noise emission from sources. Included are the general questions that need to be considered during development of a measurement procedure. Guidelines on the following subjects are included: prefatory material, measurement conditions, measurement operations, data reduction, preparation of a test report, and guidelines for the selection of a descriptor for noise emission.

ANSI S12.10-2002/ISO 7779:1999 (incl AMD1), Acoustics - Measurement of Airborne Noise Emitted by Information Technology and Telecommunications Equipment

This International Standard adoption ISO 7779:1999 specifies methods for the measurement of airborne noise emitted by information technology and telecommunications equipment. It is the basis for the declaration of the noise emission levels of information technology and telecommunications equipment. This Standard is the National Adoption of ISO 7779: 1999 and its amendment ISO 7779: 1999/DAM 1.

ANSI S12.11/1 ISO 10302-1996 (MOD)-2003, Acoustics - Measurement of Noise and Vibration of Small Air-Moving Devices, Part 1: Airborne noise Emission

This Nationally Adopted International Standard specifies in detail a laboratory method for determining and reporting the airborne noise emissions of small air-moving devices used primarily for cooling electronic equipment, such as computer and business equipment. To provide compatibility with measurements of noise emitted by such equipment, this Nationally Adopted International Standard used the noise emission descriptors and sound power measurement methods of ISO 7779.

ANSI S12.11/2-2003, Acoustics - Measurement of noise and vibration of small air-moving devices - Part 2: Structure-borne vibration

Contains the recommended methods for testing, determining, and reporting the vibration levels induced by small air moving devices (AMDs) that are found in cooling equipment used for information technology and telecommunications. The use of this Standard is encouraged to promote uniformity in the measurement and reporting of the vibration levels induced by AMDs for use in information technology and telecommunications equipment.

ANSI S12.12-1992 (R2002), Engineering Method for the Determination of Sound Power Levels of Noise Sources Using Sound Intensity

Describes a method for in situ determination of the sound power level of noise sources in indoor or outdoor environments using sound intensity measurements. The standard contains information on instrumentation, installation and operation of the source, procedures for the selection of a measurement surface, methods for the sampling of sound intensity on the measurement surface, procedures for the calculation of sound power level, and techniques that can be used to qualify the measurement environment.

ANSI S12.14-1992 (R2002) , Field Measurement of the Sound Output of Audible Public Warning Devices Installed at Fixed Locations Outdoors, Methods for the

This standard specifies methods for measuring and reporting the sound produced by sound-making devices installed at fixed locations outdoors for the purpose of warning people of emergencies. The sound-making devices to which this standard is applicable include mechanical, electronic, and mechanical/ electronic sirens that produces steady, tonal sounds with a nominal fundamental frequency in the range from 300 to 1000 Hz; when installed at a fixed location outdoors in accordance with the manufacturer's recommendations.

ANSI S12.15-1992 (R2002), Acoustics – Portable Electric Power Tools, Stationary and Fixed Electric Power Tools, and Gardening Appliances – Measurement of Sound Emitted

The purpose of this standard is to provide test procedures for the measurement of airborne sound from portable electric power tools, stationary and fixed electric power tools, and gardening appliances. This standard provides for the measurement of sound pressure levels and for the calculation of sound power levels.

ANSI S12.16-1992 (R2002), Guidelines for the Specification of Noise of New Machinery

This standard provides guidelines for obtaining sound level data from manufacturers of stationary equipment to allow the user to make appropriate decisions.

ANSI S12.17-1996 (R2001), Impulse Sound Propagation for Environmental Noise Assessment

Describes engineering methods to calculate the propagation of high-energy impulsive sounds through the atmosphere for purposes of assessment of environmental noise. The methods yield estimates for the mean C-weighted sound exposure level of impulsive sound at distances between the source and receiver ranging from 1 to 30 km. Equations to estimate the standard deviation about the mean C-weighted sound exposure levels are provided. The methods apply for explosive masses between 50 g and 1000 kg.

ANSI S12.18-1994 (R2004), Procedures for Outdoor Measurement of Sound Pressure Level

Describes procedures for the measurement of sound pressure levels in the outdoor environment, considering the effects of the ground, of refraction due to wind and temperature gradients, and of turbulence. The measured sound pressure levels can be used to calculate sound pressure levels at other distances from the source or to extrapolate to other environmental conditions or to assess compliance with regulation. Describes two methods: 1: general method, outlines conditions for routine measurements; 2: precision method, describes strict conditions for more accurate measurements.

ANSI S12.19-1996 (R2001), Measurement of Occupational Noise Exposure

Presents methods that can be used to measure a person's noise exposure received in a work place. The methods have been developed to provide uniform procedures and repeatable results for the measurement of occupational noise exposure.

ANSI S12.2-1995 (R1999), Criteria for Evaluating Room Noise

Defines four sets of criteria for evaluating room noise: (1). Balanced noise-criterion (NCB) curves, (2). Room-criterion (RC) curves, (3). Criteria for acoustically-induced vibrations, and (4). One-third octave band hearing threshold curves. Guidance is given for determining whether a set of octave band sound pressure levels satisfies a specified NCB or RC curve. Guidance is given for using the NCB or RC curves to evaluate a set of octave band sound pressure levels as room noise. Guidance is given for using a set of octave band sound pressure levels to determine the likelihood of audible acoustically-induced vibrations. Guidance is given for using the one-third octave band hearing threshold curves to evaluate a low-noise situation.

ANSI S12.23-1989 (R2001), Method for the Designation of Sound Power Emitted by Machinery and Equipment

Describes a method for expressing the noise emission of machinery and equipment in a convenient manner. This Standard applies to all machinery and equipment that is essentially stationary in nature and for which overall A-weighted sound power is a meaningful descriptor of noise emission. This Standard is intended to facilitate preparation of equipment specifications, labels, or other documentation that expresses in quantitative terms the noise emission of machinery or equipment.

ANSI S12.3-1985 (R2001), Statistical Methods for Determining and Verifying Stated Noise Emission Values of Machinery and Equipment

Defines the preferred methods for determining and verifying noise emission values for machinery and equipment which are stated in product literature or labeled by other means.

ANSI S12.30-1990 (R2002), Sound Power Standards and the Preparation of Noise Test Codes, Guidelines for the Use of

Introduces a series of six standards specifying various methods for determining the sound power levels of machines and equipment. When applying these six standards to sound measurements on specific machines, it is necessary to decide which one or more of these standards is most appropriate for the required precision for the particular class of machine or equipment and for the purpose of the test. It is also necessary to decide on specific details for mounting and operating the machine to be tested within the general principles stated in the standards. Guidelines for making these decisions are provided in this standard.

ANSI S12.35-1990 (R2001), Sound Power Levels of Noise Sources in Anechoic and Hemi-Anechoic Rooms, Determination of

Describes a precision method for determination of the sound power levels of noise sources in laboratory anechoic or hemi-anechoic rooms. The standard contains information on instrumentation, installation, and operation of the source; methods for determination of the sound pressure level on the measurement surface; procedures for the calculation of sound power level, directivity index, and directivity factor; and techniques that may be used to qualify the laboratory facilities used for the measurements.

ANSI S12.42-1995 (R2004), Microphone-In-Real-Ear and Acoustic Test Fixture Methods for the Measurement of Insertion Loss of Circumaural Hearing Protection Devices

This standard describes the microphone-in-real-ear and the acoustic test fixture methods for the measurement of the insertion loss of circumaural earmuffs, helmets, and communications headsets. The standard contains information on instrumentation, calibration, and electroacoustic requirements, as well as procedures for determining sound pressure levels at the ear with and without the hearing protection devices in place and for calculating and reporting the insertion loss values.

ANSI S12.43-1997 (R2002), Methods for Calculation of Sound Emitted by Machinery and Equipment at Workstations and Other Specified Positions

This standard specifies three methods for measuring sound pressure levels from machinery and equipment, at a workstation and at other specified positions nearby.

ANSI S12.44-1997 (R2002), Methods for Measurement Calculation of Sound Emitted by Machinery and Equipment at Work Stations and other Specified Positions from Sound Power Levels

This standard specifies two methods for determining the emission sound pressure levels of machinery and equipment, at workstations and at other specified positions nearby, by calculation from the sound power level. The principal purpose of this determination to permit comparison of the performance of different units of a given family of machinery or equipment, under defined environmental conditions and standardized mounting and operating conditions.

ANSI S12.5-1990 (R1997), Reference Sound Sources, Requirements for the Performance and Calibration of

Contains performance requirements for reference sound sources that are to be used in conjunction with measurements of the noise emission of machinery or for certain other types of acoustical measurements. The standard also contains information on procedures to be followed in calibrating a reference sound source to determine the sound power that it emits into a free field above a reflecting plane.

ANSI S12.50-2002/ISO 3704-2000, Acoustics - Determination of sound power levels of noise sources - Guidelines for the use of basic standards

Gives guidance for the use of a series of nine International Standards describing various methods for determining the sound power levels from all types of machinery and equipment.

ANSI S12.51-2002/Part 1/ISO 3741:1999, Acoustics - Determination of sound power levels of noise sources using sound pressure - Precision methods for reverberation rooms

Specifies a direct method and a comparison method for determining the sound power level that would be produced by a source operating in an environment at standard meteorological conditions corresponding to a characteristic impedance of $p_c = 400 \text{ N s/m}^3$ (where p is the density of air and c is the speed of sound). It specifies test room requirements, source location and general rules for operating conditions, instrumentation and techniques for obtaining an estimate of mean-square sound pressure levels from which the sound power levels of the source in octave or one-third-octave bands are calculated with a grade 1 accuracy.

ANSI S12.53 /Part 2-1999/ISO 3743-2-1994 (R2004), Acoustics - Determination of Sound Power Levels of Noise Sources - Engineering Methods for Small, Movable Sources in Reverberant Fields - Part 2: Methods for Special Reverberation Test Rooms

Specifies a relatively simple engineering method for determining the sound power levels of small, movable noise sources. The measurements are carried out when the source is installed in a specially designed room having a specified reverberation time over the frequency range of interest. The A-weighted sound power level of the source under test is determined from a single A-weighted sound pressure level measurement at each microphone position, rather than a summation of octave-band levels.

ANSI S12.53/Part 1-1999 ISO 3743-1-1994 (R2004), Acoustics - Determination of Sound Power Levels of Noise Sources - Engineering Methods for Small, Movable Sources in Reverberant Fields - Part 1: Comparison Method for Hard-Walled Test Rooms

Specifies an engineering method for determining the sound power levels of small, movable noise sources. The measurements are carried out when the source is installed in a hard-walled test room. A comparison method is used to determine the octave-band sound power levels of the source.

ANSI S12.54-1999/ISO 3744-1994 (R2004), Acoustics - Determination of Sound Power Levels of Noise Sources using Sound Pressure - Engineering Method in an Essentially Free Field over a Reflecting Plane

Specifies a method for measuring the sound pressure levels on a measurement surface enveloping a noise source, under essentially free-field conditions near one or more reflecting planes, in order to calculate the sound power level produced by the noise source. Gives requirements for the test environment and instrumentation, as well as techniques for obtaining the surface sound pressure level from which the sound power level of the source is calculated, leading to results which have a grade 2 accuracy.

ANSI S12.56-1999/ISO 3746-1995 (R2004), Acoustics - Determination of Sound Power Levels of Noise Sources using Sound Pressure - Survey Method using an Enveloping Measurement Surface over a Reflecting Plane

Specifies a method for measuring the sound pressure levels on a measurement surface enveloping the source in order to calculate the sound power level produced by the noise source. It gives requirements for the test environment and instrumentation as well as techniques for obtaining the surface sound pressure level from which the sound power level of the source is calculated, leading to results which have a grade 3 accuracy.

ANSI S12.57-2002/ISO 3747-2000, Acoustics - Determination of sound power levels of noise sources using sound pressure - Comparison method in situ

Specifies a method for determining the sound power levels of sound sources in situ, especially if non-movable. A comparison method is used and all measurements are carried out in octave bands. The measurement uncertainty depends on the test environment. The measurement uncertainty is evaluated by comparing with an indicator describing the spatial sound distribution. The accuracy will either be that of an engineering method or a survey method.

ANSI S12.6-1997 (R2002), Methods for Measuring the Real-Ear Attenuation of Hearing Protectors

This standard specifies laboratory-based procedures for measuring, analyzing, and reporting the noise-reducing capabilities of hearing protection devices. The methods consist of psychophysical tests conducted on human subjects to determine real-ear attenuation at threshold.

ANSI S12.60-2002, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools

Provides acoustical performance criteria, design requirements and design guidelines for new or renovated school classrooms and other learning spaces. These criteria, requirements, and guidelines are keyed to the acoustical qualities needed for speech communication in learning spaces with a high degree of intelligibility. Design guidelines in informative annexes are intended to aid in conforming to the performance and design requirements, but do not guarantee conformance. Test procedures are provided in an annex when conformance to this standard is to be verified.

ANSI S12.7-1986 (R2006), Measurement of Impulse Noise

Describes methods of measurement of impulse noise and presentation of data. Applies to all kinds of impulse noise, whether discrete event sources or multiple event sources but not to sounds from sources which have specific measurement standards based on the general methods for measurement of quasisteady noise. Data which may be reported include characteristics of the time variation of the sound pressure, with or without specific frequency weighting, and sound exposure level.

ANSI S12.8-1998 (R2003), Methods for Determination of Insertion Loss of Outdoor Noise Barriers

This Standard adopts insertion loss - the difference between acoustical levels before and after a noise-barrier installation - as the basis for evaluating the acoustical effectiveness of an outdoor noise barrier. Methods are provided to determine the insertion loss of outdoor noise barriers at selected receiver locations and under conditions of interest.

ANSI S12.9-Part 1-1988 (R2003), Quantities and Procedures for Description and Measurement of Environmental Sound, Part 1

This standard defines the basic quantities that can be used separately or in combination for the description of community sound and describes basic procedures for measurement of the quantities. The scope of this standard encompasses all types of environmental sound, separately or in combination, that contribute to the total sound at a site.

ANSI S12.9-Part 2-1992 (R2003), Quantities and Procedures for Description and Measurement of Environmental Sound - Part 2: Measurement of Long-Term, Wide-Area Sound

This standard describes recommended procedures for measurement of long-term, time-average environmental sound outdoors at one or more locations in a community for environmental assessment or planning for compatible land uses and for other purposes such as noise prediction validation and regulation.

ANSI S12.9-Part 3-1993 (R2003), Quantities and Procedures for Description and Measurement of Environmental Sound - Part 3: Short-Term Measurements with an Observer Present

This standard is the third part of a series related to quantities and procedures for description and measurement of environmental sound. This present standard, Part 3, deals with basic measurements of sound with an observer present. Typically, the duration of these measurements ranges from several minutes to several hours.

ANSI S12.9-Part 4-2005, Quantities and Procedures for Description and Measurement of Environmental Sound - Part 4: Noise Assessment and Prediction of Long-Term Community Response

Specifies methods to assess environmental sounds and to predict the annoyance response of communities to long-term noise from any and all types of environmental sounds produced by one or more distinct or distributed sound sources. The sources may be separate or in various combinations. Application of the method is limited to areas where people reside and related long-term land uses.

ANSI S12.9-Part 5-1998 (R2003), Quantities and Procedures for Description and Measurement of Environmental Sound - Part 5: Sound Level Descriptors for Determination of Compatible Land Use

This Standard provides guidelines for assessing the compatibility of various human uses of land with the actual or projected outdoor noise environment at a site. The total noise environment is characterized by the yearly average total day-night adjusted or non-adjusted sound exposure or the yearly average adjusted or non-adjusted day-night average sound level. This standard is based on the long-term annoyance response of communities as measured by the percent of a community that is highly annoyed.

ANSI S12.9-Part 6-2000 (R2005), Quantities and Procedures for Description and Measurement of Environmental Sound - Part 6: Methods for Measurement of Awakenings Associated with Noise Events Heard in Homes

Provides a method to predict sleep disturbance in terms of percent awakenings associated with the noise level of events in terms of sound exposure level (SEL). The Standard was developed using field studies of behavioral awakening primarily in homes near areas of routine aircraft takeoff and landing operations. The database used in derivation of the dose-response relationship consists of more than 5,000 subject-nights of observations in a variety of communities in the United States.

ANSI S2.1-2000, ANSI/ISO 2041-1990, Vibration and Shock - Vocabulary

This standard provides definitions for a relatively comprehensive compilation of terms used in the fields related to the theory and practice of (mechanical) vibration and shock, including the transducers and other instrumentation used to sense, measure and record the parameters by means of which the dynamics of rigid and flexible bodies are characterized and the data-processing techniques and methods used to analyze the motions and stresses caused by vibration and shock. It is intended to complement ANSI S1.1-1994, Acoustical Terminology in which terms in acoustics are defined, including, at present, a selection of terms from the fields of mechanical vibration and shock given in this Standard. The principal terms and definitions used in the mathematical fields associated with the analysis of the motions and stresses caused by the application of vibratory and

ANSI S2.13-Part 1-1996 (R2001), Mechanical Vibration of Non-Reciprocating Machines – Measurements on Rotating Shafts and Evaluation – Part 1: General Guidelines

Provides the test procedure for the measurement and evaluation of the mechanical vibration of non-reciprocating machines, as measured on rotating shafts. The standard also provides guidelines for adapting evaluation criteria for different types of machines.

ANSI S2.16-1997 (R2001), Vibration Noise Measurements and Acceptance Criteria of Shipboard Equipment

Contains guidelines for limiting the machinery and operating equipment vibration on board ships for the purposes of habitability and mechanical suitability. The mechanical suitability guidelines result in a suitable environment for installed equipment and precludes many major vibration problems, such as unbalance, misalignment, or other damage to the machinery and operating equipment.

ANSI S2.17-1980 (R2004), Machinery Vibration Measurement

The purpose of this standard is to identify procedures for the measurement of machinery vibration so that results will be comparable when machines of the same type, with similar mounting conditions, are measured by the same technique. The standard has direct applications to preventative maintenance programs, vibration diagnostics, and basic measurement.

ANSI S2.19-1999 (R2004), Mechanical Vibration – Balance Quality Requirements of Rigid Rotors – Part 1, Determination of Permissible Residual Unbalance

This part of S12.19 gives recommendations for determining unbalance and for specifying related quality requirements of rigid rotors. It specifies (a) a representation of unbalance in one or two planes; (b) methods for determining permissible residual unbalance; (c) methods for allocating it to the correction planes; (d) methods for identifying the residual unbalance state of a rotor by measurement; (e) a summary of errors associated with the residual unbalance identification.

ANSI S2.2-1959 (R2001), Methods for the Calibration of Shock and Vibration Pickups

Acquaints the user with the general principles of calibration of shock and vibration pickups and to describe concisely several standard methods which have proven to give reliable and reproducible results. Further details concerning these methods are given in the Appendix.

ANSI S2.20-1983 (R2001), Air Blast Characteristics for Single Point Explosions in Air, with a Guide to Evaluation of Atmospheric Propagation and Effects

Provides consensus quantitative definitions of explosion characteristics for a single point explosion in air, along with methodologies for scaling these characteristics for a wide range of yield and ambient air conditions. Factors for use with common solid explosives are also included. Methods are provided for predictions of long range propagation under atmospheric refractive influences. Target damage estimation procedures are provided for use in explosion operation planning and evaluation.

ANSI S2.21-1998 (R2002), Method for Preparation of a Standard Material for Dynamic Mechanical Measurements

Applies to the preparation of a standard material for calibration of instruments for measuring the dynamic mechanical properties of viscoelastic materials.

ANSI S2.22-1998 (R2002), Resonance Method for Measuring the Dynamic Mechanical Properties of Viscoelastic Materials

Defines a procedure for measurement and analysis of the dynamic properties of viscoelastic materials using a resonance method. The Standard applies to materials used in sound and vibration damping systems operating at frequencies from a f

ANSI S2.23-1998 (R2002), Single Cantilever Beam Method for Measuring the Dynamic Mechanical Properties of Viscoelastic Materials

Defines a procedure for measurement and analysis of the dynamic properties of viscoelastic materials using the single cantilever beam method. The Standard applies to materials used in sound and vibration damping systems operating at frequ

ANSI S2.24-2001, Graphical Presentation of the Complex Modulus of Viscoelastic Materials

Specifies the procedure for generating a graphical presentation of the frequency and temperature dependence of the complex modulus of viscoelastic materials. This Standard is the national counterpart of ISO 10112 Damping materials - Graphical presentation of the complex modulus.

ANSI S2.25-2004, Guide for the Measurement, Reporting, and Evaluation of Hull and Superstructure Vibrations in Ships

Contains guidelines for limiting the hull and superstructure vibration of ships for the purposes of habitability and mechanical suitability. The mechanical suitability guidelines result in a suitable environment for installed equipment and preclude many major vibration problems, such as unbalance, misalignment, and other damage to the propulsion system. To obtain data to compare with the guidelines, this standard also specifies data acquisition and processing procedures

ANSI S2.26-2001, Mechanical Vibration - Vibration Testing Requirements and Acceptance Criteria for Shipboard Equipment

Defines vibration test requirements for shipboard equipment and machinery components. The tests are intended to locate resonances of the equipment and impose endurance tests at these frequencies, if any. The frequency range of the tests is 4 Hz to 50 Hz (100 Hz for mast-mounted equipment). This standard is applicable to the following shipboard equipment:

control and instrumentation, navigation and communication, mast-mounted equipment, machinery components.

For special machinery, equipment and installations such as antennae, large machinery items and certain unusual designs, it may be necessary to deviate from this standard, subject to approval by the parties concerned.

The maximum size and mass of equipment and machinery that can be tested in

ANSI S2.27-2002, Mechanical Vibration - Guidelines for the Measurement and Evaluation of Ship Propulsion Machinery Vibration

Contains guidelines for the measurement and evaluation of ship propulsion system vibration, including limits for acceptability. It is applicable to all ocean-going ships and inland vessels. Test conditions, instrumentation, data analysis and evaluation, and reporting requirements are described.

ANSI S2.28-2003, Guide for the Measurement and Evaluation of Vibration of Shipboard Machinery

Contains procedures for the measurement and evaluation of the mechanical vibration of non-reciprocating machines, as measured on non-rotating parts. It contains criteria for evaluating new machines and for vibration monitoring. This second public review relates to a proposed change in the last paragraph of Clause 3.1 which is shown below.

ANSI S2.29-2003, Guide for the Measurement and Evaluation of Vibration of Machine Shafts on Shipboard Machinery

This standard contains procedures for the measurement and evaluation of the mechanical vibration of non-reciprocating machines, as measured on non-rotating shafts. It contains criteria for evaluating new machines and for vibration monitoring. This American National Standard is related to the ISO 7919 series that provides guidelines for the evaluation of different types of machines. The type of machinery covered in this part is shipboard machinery. This is a new ANSI standard, and there is, at present, no International Standards Organization version of this standard.

ANSI S2.31-1979 (R2004), Methods for the Experimental Determination of Mechanical Mobility, Part I: Basic Definitions and Transducers

This document provides basic definitions with comments and identifies the calibration tests, environmental tests, and physical measurements necessary to determine the suitability of impedance heads, force transducers, and accelerometers for use in measuring mechanical mobility.

ANSI S2.32-1982 (R2004), Methods for the Experimental Determination of Mechanical Mobility, Part II: Measurements Using Single-Point Translation Excitation

The scope of this standard includes measurement of mobility, acceleration, or dynamic compliance, either as a driving point measurement, or as a transfer measurement. It also applies to the determination of the arithmetic reciprocals of those ratios as free effective mass. Although excitation is applied at a single point, there is no limit on the number of points at which simultaneous measurements of the motion response may be made. Multiple response measurements are required, for example, for modal analyses.

ANSI S2.34-1984 (R2005), Guide to the Experimental Determination of Rotational Mobility Properties and the Complete Mobility Matrix

This guide delineates the methods and procedures which may be used to determine the structural mobility properties, translational and rotational, of a system of points on a structure. This guide is to be used for guidance only, since the state of the art is still in flux.

ANSI S2.4-1976 (R2004), Method for Specifying the Characteristics of Auxiliary Analog Equipment for Shock and Vibration Measurements

This standard applies to the auxiliary equipment used between a shock or vibration transducer and the final indicator, recorder, or signal processor. This document presents a standard format for indicating pertinent characteristics but does not in any respect become a standard on the performance of the equipment. Since this standard was prepared to cover a wide variety of equipment in considerable detail, not all items will be pertinent to a specific piece of equipment. Also, it is not the intent of this standard to establish an ironclad rule as to which of the characteristics should be included although in many cases important characteristics are emphasized.

ANSI S2.41-1985 (R2001), Mechanical Vibration of Large Rotating Machines with Speed Range from 10 to 200 rev/s – Measurement and Evaluation of Mechanical Vibration Severity in situ

Presents the measurement and evaluation of vibration severity of large rotating machinery in situ and is the U.S. counterpart of ISO 3945-1977. This standard, which is in complete technical agreement with ISO 3945-1977, is not applicable to reciprocating machinery. The values of vibration severity recommended as limits in this standard are intended to serve as standard values for machines of similar type, when measured in accordance with the procedures described herein. The recommended vibration limits may be used for acceptance standards or for monitoring the satisfactory performance of the machine during service operations.

ANSI S2.42-1982 (R2004), Procedures for Balancing Flexible Rotors

This American National Standard classifies rotors into groups in accordance with their balancing requirements, establishes methods of assessment of final unbalance, and gives initial guidance on the establishment of balance quality grades so that, ultimately, balance quality grades can be established for all types of rotors.

ANSI S2.43-1984 (R2005), Criteria for Evaluating Flexible Rotor Balance

Specifies two methods for evaluating the quality of balance of a flexible rotor in a balancing facility before machine assembly, with the aim that the rotor will run satisfactorily after machine assembly and installation on site. The criteria specified are those to be met when the rotor is tested in the balancing facility, but they are derived from those specified for the complete machine, when installed, or from values known to ensure satisfactory running of the rotor when it is installed.

ANSI S2.46-1989 (R2005), Characteristics to be Specified for Seismic Transducers

This standard specifies rules for the presentation of important characteristics for electro-mechanical shock and vibration transducers (seismic pick-ups), the electrical outputs of which are known functions of the uniaxial, multiaxial, or angular accelerations, velocities, or displacements of objects the motions of which are being measured.

ANSI S2.47-1990 (R2001), Vibration of Buildings – Guidelines for the Measurement of Vibrations and Evaluation of Their Effects on Buildings

Provides guidelines for the measurement of building vibrations and evaluation of their effects on buildings. It is the U.S. counterpart of the International Standard ISO 4866-1990. It is intended to establish the basic principles for carrying out vibration measurement and processing data, with regard to evaluating vibration effects on buildings. The evaluation of the effects of building vibration is primarily directed at structural response, and includes appropriate analytical methods where the frequency, duration and amplitude can be defined.

ANSI S2.48-1993 (R2001), Servo-Hydraulic Test Equipment for Generating Vibration – Methods of Describing Characteristics

Provides a method for specifying the characteristics of servo-hydraulic test equipment for generating vibration and serves as a guide to the selection of such equipment. It applies to servo-hydraulic vibration generators and power amplifiers, both individually and in combination. The standard provides means to assist a prospective user to calculate and compare the performance of equipment provided by two or more manufacturers, even if the vibration generator and the power amplifier are from different manufacturers.

ANSI S2.60-1987 (R2005), Balancing Machines – Enclosures and Other Safety Measures

Specifies requirements for enclosures and other safety measures used to minimize hazards associated with the operation of balancing machines under a variety of rotor and balancing conditions. It defines different classes of protection that enclosures and other protective features have to provide, and describes the limits of applicability for each class of protection.

ANSI S2.61-1989 (R2005), Guide to the Mechanical Mounting of Accelerometers

Describes the mounting characteristics of accelerometers to be specified by the manufacturer and makes recommendations to the user for mounting accelerometers. The application of this standard is limited to the mounting of electromechanical transducers of the type that are attached on the surface of the structure in motion. It does not cover other types, such as relative motion pickups. This standard is in general accordance with ISO 5348-1987.

ANSI S2.7-1982 (R2004), Balancing Terminology

This Standard on terminology contains a collection of terms and definitions relating to balancing procedures and equipment. The terms are grouped into seven major categories covering the subjects of 1. Machines, 2. Rotors, 3. Unbalance, 4. Balancing, 5. Balancing Machines and Equipment, 6. Flexible Rotors, and 7. Rotating Rigid Free-Bodies (i.e., aerospace vehicles). An alphabetical index follows at the end.

ANSI S2.8-1972 (R2001), Resilient Mountings, Guide for Describing the Characteristics of

Sets forth suggestions as to subject matter and format for describing resilient mountings, so that there will be a clear understanding by both the user and the manufacturer. Since the intention of this standard is to encourage better communication between the manufacturer and the user, the material set forth herein should be regarded as a guide rather than a rigid specification.

ANSI S2.9-1976 (R2001), Nomenclature for Specifying Damping Properties of Materials

Presents standard nomenclature to improve communications among the many technological fields concerned with material damping.

ANSI S3.1-1999 (R2003), Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms

Specifies maximum permissible ambient noise levels (MPANLs) allowed in an audiometric test room that produce negligible masking (<2 dB) of test signals presented at reference equivalent threshold levels specified in ANSI S3.6-1996. The MPANLs are specified from 125 to 8000 Hz in octave and one-third octave band intervals for two audiometric testing conditions (ears covered and ears not covered) and for three test frequency ranges (125 to 8000 Hz, 250 to 8000 Hz, and 500 to 8000 Hz).

ANSI S3.13-1987 (R2002), Mechanical Coupler for Measurement of Bone Vibrators

This Standard specifies requirements for mechanical couplers used for calibrating bone-conduction audiometers and making measurements on bone vibrators and bone-conduction hearing aids. Specific design features are given for the mechanical coupler when driven by a vibrator with a prescribed plane circular tip area and applied with a specific static force. An appendix provides an example of a specific construction of a mechanical coupler.

ANSI S3.14-1977 (R1997), Rating Noise with Respect to Speech Interference

Defines a simple numerical method for rating the expected speech-interfering aspects of noise using acoustical measurements of the noise. The relevant acoustical characteristics of the noise are summarized in terms of a single-valued index known as the speech-interference level.

ANSI S3.18-1979 (R1999), Whole-Body Vibration, Guide for the Evaluation of Human Exposure to

Provides a guide for the evaluation of human exposure to whole body vibration.

ANSI S3.18-2002, ISO 2631-1-1997, Mechanical vibration and shock - Evaluation of human exposure to whole body vibration - Part 1: General requirements

This part of ISO 2631 defines methods for the measurement of periodic, random and transient whole-body vibration. It indicates the principal factors that combine to determine the degree to which a vibration exposure will be acceptable. Informative annexes indicate current opinion and provide guidance on the possible effects of vibration on health, comfort and perception and motion sickness. The frequency range considered is - 0.5 Hz to 80 Hz for health, comfort and perception, and - 0.1 Hz to 0.5 Hz for motion sickness. Although the potential effects on human performance are not covered, most of the guidance on whole-body vibration measurement also applies to this area. This part of ISO 2631 also defines the principles of preferred methods of mounting transducers for determining human exposure. It does not

ANSI S3.18-2003, Part 4 ISO 2631-4-2001, Mechanical vibration and shock -- Evaluation of human exposure to whole-body vibration -- Part 4: Guidelines for the evaluation of the effects of vibration and rotational motion on passenger and crew comfort in fixed-guideway transport systems

Provides guidance on the application of ANSI S3.18 ISO 2631 to evaluation of the effects of mechanical vibration on the comfort of passengers and crew in fixed-guideway systems. Establishes methods for the evaluation of relative comfort between systems, as opposed to absolute levels of comfort. This part of ANSI S3.18 is applicable to people in normal health exposed to rectilinear vibration along their x-, y- and z-axes, as well as rotational vibration about these (body-centered) axes. Provides guidance on the assessment of comfort as a function of motions along and about vehicle axes.

ANSI S3.2-1989 (R1999), Method for Measuring the Intelligibility of Speech over Communications System

Provides a guide for measuring the intelligibility of speech over communications systems.

ANSI S3.20-1995 (R2003), Bioacoustical Terminology

Provides definitions for a wide variety of terms used in human bioacoustics, including hearing, speech, psychoacoustics, and physiological acoustics. It is intended to supplement ANSI S1.1-1994 American National Standard Acoustical Terminology in which more-generally-used terms in acoustics are defined, including a number of terms from physiological and psychological acoustics and music. Those terms from ANSI S1.1-1994 that are related to bioacoustics are included in this standard as annexes.

ANSI S3.21-2004, Manual Pure-Tone Threshold Audiometry, Method for

This Standard provides a procedure for pure-tone audiometry that will serve the needs of persons conducting threshold measurements in industry, schools, medical settings, and other areas where valid audiometric threshold measurements are needed.

ANSI S3.22-2003, Specification of Hearing Aid Characteristics

Air conduction hearing-aid measurement methods suitable for specification and tolerance purposes. Includes output sound pressure level (SPL) with a 90-dB input SPL, full-on gain, frequency response, harmonic distortion, equivalent input noise, current drain, induction-coil sensitivity, and static and dynamic characteristics of automatic gain control hearing aids. Configurations given for measuring the input SPL to a hearing aid. Allowable tolerances in relation to values specified by the manufacturer are given for certain parameters. Three appendices.

ANSI S3.25-1989 (R2003), Ear Simulator, Occluded

The physical configuration and acoustical performance of an occluded ear simulator are specified. This device is designed to simulate the acoustical behavior of that portion of the ear canal between the tip of an earmold and the eardrum, including the acoustic impedance at the eardrum of a median adult human ear over the frequency range from 100 Hz – 10 kHz. The occluded ear simulator is suitable especially for transducers that are sensitive to acoustic load. Specific physical realizations of the ear simulator are described.

ANSI S3.29-1983 (R2001), Guide to the Evaluation of Human Exposure to Vibration in Buildings

Reactions of humans to vibrations of 1 to 80 Hz inside buildings are assessed in this Standard by use of degrees of perception and associated vibration levels and durations. Accelerations or velocities inside buildings may be measured to assess perceptibility and possible adverse reactions from those inside. A variety of building types and situations are covered by the use of multiplying factors applied to the basic curves. Responses are related to the event durations, frequencies of vibrations, and body orientation with respect to the vibration. Adherence to the vibration magnitudes corresponding to the perceptibility threshold will insure minimum discomfort and annoyance. The "acceptability" of a given magnitude of vibration above the perception threshold will be influenced by the interference of the vibrations in the activities of individuals and

ANSI S3.34-1986 (R1997), Human Exposure to Vibration Transmitted to the Hand, Guide for Measurement and Evaluation of

Specifies the recommended method for the measurement, data analysis, and reporting of human exposure to hand-transmitted vibration. A standard format is established for measurement, data analysis, and reporting of hand-transmitted vibration, periodic or random, in up to three orthogonal axes, in the frequency range from 5.6 Hz to 1400 Hz. Three Appendices, which are not part of the standard, provide information for the assessment of exposure to hand-transmitted vibration, on the latent period for the development of symptoms due to hand-transmitted vibration, and on further publications on the subject.

ANSI S3.35-2004, Methods of Measurement of Performance Characteristics of Hearing Aids Under Simulated In-Situ Working Conditions

Describes techniques to measure hearing aids under simulated conditions of real ear use. For the purpose of these measurements, a suitable manikin and ear simulator are used to represent a typical hearing aid wearer. Acoustical requirements of the test space as well as how the manikin is positioned with respect to the sound source are given. Two methods are presented by which to control the level of the incident sound field at the location of the hearing aid on the manikin during the testing.

ANSI S3.36-1985 (R2001), Specification for Manikin for Simulated in situ Airborne Acoustic Measurements

Describes a manikin for airborne acoustic measurements. It comprises a head with external ears and ear canals, and a torso that simulate a median human adult. It is intended primarily as an instrument for measuring the acoustic gain of hearing aids under simulated in situ conditions. Both geometric and acoustical response descriptions are given.

ANSI S3.37-1987 (R2002), Preferred Earhook Nozzle Thread for Postauricular Hearing Aids

This Standard describes a preferred thread for earhook nozzles on postauricular hearing aids. The need for such a standard arises from the wide array of earhooks that hearing aid dispensers are required to keep in inventory to utilize different postauricular hearing aids from several manufacturers.

ANSI S3.39-1987 (R2002), Specifications for Instruments to Measure Aural Acoustic Impedance and Admittance (Aural Acoustic Immittance)

This Standard provides specifications for instruments designed to measure acoustic impedance, acoustic admittance, or both quantities, within the human external ear canal. Terms that apply to these instruments and to related measurements are defined. Four types of instruments are classified. Characteristics, specifications, and recommended calibration procedures then are provided. Material within this standard is intended both for users and for manufacturers of instruments that measure aural acoustic impedance and admittance.

ANSI S3.4-2005, Procedure for the Computation of Loudness of Steady Sounds

Specifies a procedure for calculating the loudness of steady sounds as perceived by a typical group of listeners with normal hearing, based on the spectra of the sounds. The possible sounds include simple and complex tones (both harmonic and inharmonic) and bands of noise. The spectra can be specified exactly, in terms of the frequencies and levels of individual spectral components, or approximately, in terms of the levels in 1/3 octave bands covering center frequencies from 50 to 16000 Hz. Sounds can be presented in free field with frontal incidence, in a diffuse field, or via headphones.

ANSI S3.40-2002; ISO 10819:1996, Guide for the Measurement and Evaluation of Gloves which Are Used to Reduce Exposure to Vibration Transmitted to the Hand

This European Standard specifies a method for the laboratory measurement, the data analysis and reporting of the Vibration transmissibility of gloves in terms of Vibration transmission from a handle to the palm of the hand in the frequency range from 31,5 Hz to 1250 Hz. The Standard is intended to define a screening test for the Vibration transmission through gloves. It is recognized that many factors influence the transmission of Vibration through gloves. Therefore the transmissibility value according to this Standard is not sufficient to assess the health risk due to Vibration. The transmissibility of Vibration is measured and reported for two input spectra, which are representative of the Vibration of some tools, and may be reported as a function of frequency.

ANSI S3.41-1990 (R2001), Audible
Emergency Evacuation Signal

Conforms with the international standard. There has been growing interest in the development of an international audible signal which, when heard, would unequivocally mean "evacuate the building immediately." Consequently, an international standard, ISO-8201, entitled "Audible Emergency Evacuation Signal" was approved by ISO and published in December, 1987. In searching for an appropriate audible signal, it was considered that levels of background noise and frequency patterns are so variable, particularly in industry, that no signalling device would be able to "penetrate" all background noises and frequency patterns. For this reason it seemed prudent to select the kind of sound best able to "penetrate" audibly a particular background noise pattern in a given building and then to make that sound unique and understandable by

ANSI S3.42-1992 (R2002), Testing Hearing
Aids with a Broad-Band Noise Signal

This Standard describes techniques for characterizing the steady-state performance of hearing aids with a broad-band noise signal. The need for such a standard arises from the importance of assessing the performance of hearing aids in environments more nearly representing their real-world use. The noise test signal specified herein has been employed by the National Bureau of Standards for over 20 years in testing hearing aids. Among the tests described are noise saturation sound pressure level, noise gain, frequency response, family of frequency response curves and output versus input characteristic. Additionally, the appendix recommends use of the coherence function to indicate the validity of frequency response measures and distinguishes between use of random and pseudo-random noise and asynchronous versus synchronous analysis.

ANSI S3.44-1996 (R2001), Determination of
Occupational Noise Exposure and
Estimation of Noise-Induced Hearing
Impairment

Presents, in statistical terms, the relationship between noise exposures and changes in hearing threshold levels for a noise-exposed population. This standard can also be applied to the calculation of the risk of incurring hearing handicap from sustained daily exposure to noise. Guidance is provided as to the measurement of noise exposure. The standard is an adaptation of the international standard ISO 1999:1990 (E) of the same name. Unlike the international standard, this standard allows assessment of noise exposure using a time/intensity trading relation other than a 3-decibel increase per halving of exposure time.

ANSI S3.45-1999, Procedures for Testing
Basic Vestibular Function

Defines procedures for performing and reporting a battery of tests for the evaluation of human vestibular function. Six tests are specified. Stimuli are presented to evoke eye movement by a subject whose response is determined by measurement of electrical signals generated by the eye movements. The standard specifies test procedures, measurements, data analysis, and data reporting requirements. These tests, including the data analysis and reporting procedures, are called the Basic Vestibular Function Test Battery. Test interpretation is not a part of this standard. This is the second public review for this standard. It first appeared in the May 9, 1997 issue of Standards Action and is being resubmitted now due to substantive changes to the text.

ANSI S3.46-1997 (R2002), Methods of
Measurement of Real-Ear Performance
Characteristics of Hearing Aids

This Standard provides definitions for terms used in the measurement of real-ear performance characteristics of hearing aids, provides procedural and reporting guidelines and identifies essential characteristics to be reported by the manufacturer of equipment used for this purpose. Acceptable tolerances for the control and measurement of sound pressure levels are indicated. Where possible, sources of error have been identified and suggestions provided for their management.

ANSI S3.5-1997 (R2002), Methods for the
Calculation of the Articulation Index

This Standard defines a method for computing a physical measure that is highly correlated with the intelligibility of speech as evaluated by speech perception tests given a group of talkers and listeners. This measure is called the Speech Intelligibility Index, or SII. The SII is calculated from acoustical measurements of speech and noise. This Standard is not a substitute for ANSI S3.2-1989 (R1999) American National Standard Method for Measuring the Intelligibility of Speech over Communication Systems.

ANSI S3.6-2004, Specification for
Audiometers

The audiometers covered in this specification are devices designed for use in determining the hearing threshold level of an individual in comparison with a chosen standard reference threshold level. This standard provides specifications and tolerances for pure tone, speech, and masking signals and describes the minimum test capabilities of different types of audiometers.

ANSI S3.7-1995 (R2003), Method for Coupler
Calibration of Earphones

The physical configuration and acoustical performance of couplers for calibration of supra-aural and insert earphones are specified. The standard which is a revision of S3.7-1973, describes a family of 6.0 cm³ and 2.0 cm³ couplers, and provides information on the methods for coupler calibration of the respective supra-aural and insert earphones.

**ASABE (American Society of
Agricultural and Biological**

ANSI/ASAE D241.4-FEB93 (RAPR2003),
Density, Specific Gravity, and Weight
Moisture Relationships of Grain for Storage

Provide recommendations for density, specific gravity and moisture for grain storage.

ANSI/ASAE EP282.2-SEP93 (RFEB04),
Design Values for Emergency Ventilation
and Care of Livestock and Poultry

Provides data and guidelines to assist designing emergency ventilation, feeding, watering, and lighting systems for livestock and poultry.

ANSI/ASAE EP302.4-AUG93 (RAPR2003),
Design and Construction of Surface
Drainage Systems on Agricultural Lands in
Humid Areas

Engineering Practice is intended to improve the design, construction and maintenance of surface drainage systems which are adapted to modern farm mechanization.

ANSI/ASAE EP364.2-AUG98 (RAPR2003),
Installation and Maintenance of Farm
Standby Electric Power

Provide information to assist installers, maintenance personnel, operators and others in installation, operation, and maintenance of farm standby electrical systems.

ANSI/ASAE EP389.2-JAN94 (R2005), Auger
Flighting Design Considerations

This Engineering Practice is a guide for designing conveyor augers using steel helicoid flighting and for specifying helicoid flighting as generally used in agricultural equipment.

ANSI/ASAE EP403.3-JUL99 (RFEB04),
Design of Anaerobic Lagoons for Animal
Waste Management

Describes the minimum criteria for design and operation of anaerobic animal waste lagoons located in predominantly rural or agricultural areas.

ANSI/ASAE EP406.4-2003, Heating,
Ventilating, and Cooling Greenhouses

This Engineering Practice presents design information for heating, ventilating and cooling greenhouses. Generally accepted methods of heating, ventilating and cooling are presented and the important design features of typical systems are indicated.

ANSI/ASAE EP411.4-2002, Guidelines for Measuring and Reporting Environmental Parameters for Plant Experiments in Growth Chambers

Sets forth guidelines for the measurement of environmental parameters that characterize the aerial and root environment in a plant growth chamber and establishes criteria that will promote a common basis for environmental measurements for the research community and the commercial plant producer.

ANSI/ASAE EP433-SEP91 (RJUNE00), Loads Exerted by Free-Flowing Grain on Bins

Presents methods of estimating grain pressures within centrally loaded and unloaded bins used to store grain.

ANSI/ASAE EP446.2-DEC95 (RJAN01), Loads Exerted by Irish Potatoes in Shallow Bulk Storage Structures

Provides guidelines that designers may calculate loads on vertical and inclined walls, partitions, bin fronts, ducts, that are to resist pressure of potatoes stored in bulk.

ANSI/ASAE EP455-JUL91 (RAPR2003), Environmental Considerations in the Development of Mobile Agricultural Electrical/Electronic Components

Provides an environmental guideline to aid in the design of electrical /electronic components used on mobile agricultural equipment .

ANSI/ASAE EP484.2-AUG98 (RAPR2003), Diaphragm, Design of Metal-Clad Post-Frame Rectangular Buildings

Engineering Practice is a consensus document for the analysis and design of metal-clad wood-frame buildings using roof and ceiling diaphragms, alone or in combination.

ANSI/ASAE EP486.1-OCT00 (R2005), Shallow Post Foundation Design

The purpose of this Engineering Practice is to present a design procedure for shallow post foundations that resist moments and lateral and vertical forces acting on them. The design procedure provides necessary definitions, material requirements, and design equations for post foundations. A commentary on the practice is also included.

ANSI/ASAE EP502-AUG92 (RMAR98), Adjusting Forage Harvester Test Data for Varying Crop Moisture

Provides empirical equations to adjust forage harvester feed rates and specific energy measurements to a common crop moisture level of 65% wet basis.

ANSI/ASAE EP545-FEB96 (R2005), Loads Exerted by Free-Flowing Grain on Shallow Storage Structures

This Engineering Practice presents methods of estimating the grain pressures within shallow storage structures used to store free-flowing, agricultural whole grains.

ANSI/ASAE EP559-FEB97 (RAPR2003), Design Requirements and Bending Properties for Mechanically Laminated Posts

Engineering Practice is to establish guidelines for designing and calculating allowable bending properties of mechanically laminated columns.

ANSI/ASAE S201.4-DEC82 (RAPR2003), Agricultural Tractors and Trailing-Type Agricultural Implements, Application of Hydraulic Remote Control Cylinders to

Standard establishes common mounting and clearance dimensions for hydraulic remote control cylinders and trailing type agricultural implements .

ANSI/ASAE S229.6-DEC82 (RAPR2003), Baling Wire for Automatic Balers

Specification covers annealing baling wire for automatic balers.

ANSI/ASAE S261.7-OCT96 (RJAN01), Design and Installation of Nonreinforced Concrete Irrigation Pipe Systems

Provides a guide in the design and installation of low or intermediate concrete irrigation pipelines.

ANSI/ASAE S276.6-JAN05, Slow-Moving Vehicle Identification Emblem

This Standard establishes specifications that define a unique identification emblem to be used only for slow-moving vehicles when operated or traveling on highways. It establishes emblem dimensional specifications, performance requirements, related test procedures, and mounting requirements. The emblem shall be used only on slow-moving vehicles and does not replace warning devices such as tail lamps, reflectors, or flashing lights.

ANSI/ASAE S277.2-1992 (R2003), Mounting Brackets and Socket for Warning Lamp and Slow-Moving Vehicle (SMV) Identification Emblem

Standard defines mounting devices for use with warning lamps and SMV emblems.

ANSI/ASAE S278.7-2003, Attachment of Implements to Agricultural Wheel Tractors Equipped with Quick-Attaching Coupler

This Standard sets forth the requirements for the attachment of three-point hitch implements or equipment to the rear of agricultural wheel tractors equipped with quick-attaching couplers. It is intended to establish those dimensions which are necessary to assure adequate clearance between components and to assure proper functioning of the tractor-implement combination when the implement is attached to the tractor by means of quick-attaching coupler. Design of the latching mechanism and individual components of the coupler not restricted by this Standard are left to the discretion of the manufacturer.

ANSI/ASAE S279.13-DEC05, Lighting and Marking of Agricultural Field Equipment on Highways

This standard provides specifications for lighting and marking of agricultural equipment whenever such equipment is operating or is traveling on a highway.

ANSI/ASAE S289.2-FEB98 (RFEB04), Concrete Slip-Form Canal Linings

Provides standards and specifications for the installation of concrete slip-form canal linings in the interest of reducing costs and assuring quality control.

ANSI/ASAE S296.5-2003, General Terminology for Traction of Agricultural Tractors, Self-Propelled Implements, and Traction and Transport Devices

This terminology is to assist in the standardized reporting of information on traction and transport devices and vehicles. When it is not possible for data to be reported using this terminology, it is recommended that new terms be clearly defined. Unless otherwise indicated, all definitions refer to individual traction or transport devices or vehicles operating on a horizontal surface.

ANSI/ASAE S304.7-JUN00, Graphical Symbols for Operator Controls on Agricultural Equipment

Presents graphical symbols for use on operator controls and other displays on agricultural equipment as defined in ASAE S390.

ANSI/ASAE S315.3-2002, Automatic Balers, Twine for

Provides uniform sisal and polyolefin agricultural twine specifications which will insure satisfactory performance in a properly adjusted baler knoter and have adequate durability in normal storage and handling of the baled material. This standard covers twines manufactured for use in small square and large square automatic tie balers. The intention of this Standard is to allow freedom in the use of materials and manufacturing processes.

ANSI/SAE S318.15-DEC02, Agricultural Equipment

This Standard is a guide to provide a reasonable degree of personal safety for operators and other persons during the normal operation and servicing of agricultural field equipment. This Standard does not apply to skid steer loaders, permanently installed grain dryers, and agricultural equipment covered by other safety standards, such as but not limited to permanently installed farmstead equipment, portable grain augers, and storage structures, except where specifically referenced by other standards.

ANSI/SAE S319.3 JUL97 (RAPR2003), Method of Determining and Expressing Fineness of Feed Materials by Sieving

Determine fineness of feed ingredients where yields are spherical or cubical and define test procedure for the fineness of feed ingredients and method of expressing the particle size of the material.

ANSI/SAE S323.2-MAY89 (R2005), Definitions of Powered Lawn and Garden Equipment

The purpose of this Standard is to classify and define various types of machines and terms so that these definitions may be used in future SAE Standards and to aid in clear-cut communication.

ANSI/SAE S331.5-DEC82 (R2005) , Implement Power Take-Off Driveline Specifications

The purpose of this Standard is to establish eight categories of universal joint drivelines with two subsets of connecting members each, one heavy duty, HD, and one regular duty, RD. The intended use of the drivelines is between tractor power take-off shafts and implement input shafts, or any universal joint application within the implement. The universal joint driveline from the tractor power take-off shaft to the implement shaft is considered a part of the implement. This Standard does not provide for dimensional interchangeability from one implement to another.

ANSI/SAE S338.4-NOV97 (RAPR2003), Equipment for Agriculture – Safety Chain for Towed Equipment

Specification for attaching system to retain a connection between towing and towed machines in the event of separation of the primary attaching system. Applies to all combinations of agricultural towing and towed equipment when traveling on highways.

ANSI/SAE S343.3-1991(RFEB04), Terminology for Combines and Grain Harvesting

Establishes terminology pertinent to grain combine design and performance. It is intended to improve communication among engineers and researchers and to provide a basis for comparative listing of machine specifications.

ANSI/SAE S351-DEC82 (RMAR98), Hand Signals for Use in Agriculture

Provides for hand signals to be used in agricultural operations especially when noise or distance precludes the use of normal voice communication. The purpose of the hand signals is to provide an easy means of communication particularly in the interest of safety.

ANSI/SAE S354.5-2006, Safety for Farmstead Equipment

Provides a reasonable degree of personal safety for operators and other persons during normal operation and servicing of farmstead equipment. It does not apply to agricultural field equipment nor to self-propelled mobile equipment such as motor vehicles, all terrain vehicles, skid-steer loaders, or farmstead equipment covered by other ASABE safety standards unless it is specifically referenced by these standards.

ANSI/SAE S362.2-APR88 (R2005), Wiring and Equipment for Electrically Driven or Controlled Irrigation Machines

This Standard provides detailed information for the application of electrical apparatus to electrically driven or controlled irrigation machines. The purpose of this Standard is to improve the degree of personal safety in operation and application of products and materials under a reasonable range of conditions. This Standard covers all electrical equipment, apparatus, components, and wiring necessary for electrically driven or controlled irrigation machines, from the point of connection of electric power to the machine. Provisions of this Standard apply to electrical equipment for use on circuits operating at voltages between 30 and 600 V.

ANSI/SAE S366.2 JUN04/ISO 5675:1992, Agricultural tractors and machinery - General purpose quick-action hydraulic couplers

Specifies the essential interface dimensions and the operating requirements for hydraulic couplers employed to transmit hydraulic power from agricultural tractors to agricultural machinery and is identical to the ISO standard scope except for the inclusion of: 1. The 15 degree angle to accommodate dust protection; 2. Detailed location for the couplings on the tractor; 3. All of the coupler performance specifications.

ANSI/SAE S370.4-AUG01, 2000-RPM Power Take-Off for Lawn and Garden Ride-On Tractors

Proposes a change to the spline fit for PTO drivelines for L&G tractors in order to keep the vibration levels & wear of the PTO system to a minimum.

ANSI/SAE S375.2 JUL97 (RFEB04), Capacity Ratings and Unloading Dimensions for Cotton Harvester Baskets
Provides a uniform method of expressing the following information relative to cotton strippers and cotton pickers: Capacity of basket, Unloading height of basket, Lip height of raised basket, Unloading angle of basket, Maximum basket height, Working height, Transport height.

ANSI/SAE S376.2-JAN98 (RFEB04), Design, Installation, and Performance of Underground Thermoplastic Irrigation Pipelines

Applies to underground, thermoplastic pipelines used in the conveyance of irrigation water to the point of distribution and may or may not apply to potable water systems.

ANSI/SAE S377-APR90 (R2005), Application of Remote Linear Control Devices to Lawn and Garden Ride-on Tractor Attachments and Implements

The purpose of this Standard is to establish common mounting and clearance dimensions for remote linear control devices as applied to lawn and garden ride-on tractor attachments and implements with such other specifications as are necessary to accomplish permitting the use of any make or model of attachment or implement adapted for control by a remote linear control device and to facilitate changing the remote linear control device from one attachment or implement to another.

ANSI/SAE S385.5-APR93 (RAPR2003), Combine Harvester Tire Loading and Inflation Pressures

Establishes loading and inflation pressures for agricultural type tires when used on self-propelled, hillside, and pull-type combine harvesters.

ANSI/SAE S390.4-2004, Definitions and Classifications of Agricultural - Field Equipment

The purpose of this Standard is to provide classifications and definitions of agricultural field equipment designed primarily for use in agricultural operations for the production of food and fiber. This Standard is intended to establish uniformity in terms used for agricultural field equipment in standards, technical papers, specifications and in general usage.

ANSI/SAE S392.2-2005, Cotton Module Builder and Transporter Standard

The purpose of this Standard is to provide uniform equipment size guidelines for manufacturers that produce cotton module builders and transporters. Standardization will allow harvesting equipment, module builders, transporters, and module covers from various manufacturers to be used compatibly throughout the cotton industry and so avoid problems caused by incompatible equipment dimensions. This Standard also promotes consideration of safety in equipment operation and transport, and in the transporting of seed cotton modules on highways.

ANSI/SAE S395-SEP91 (RJUNE00), Safety for Self-Propelled, Hose-Drag Agricultural Irrigation Systems

Improves safety for operators and others during application, operation and service of self-propelled, hose-drag agricultural irrigation systems.

ANSI/SAE S396.2-JAN91(RFEB04), Combine Capacity and Performance Test Procedure

Provides the basic requirements for uniform procedures for measuring and reporting combine capacity. Because crop conditions are variable and uncontrollable, the procedure provides only for the comparative testing of one combine, or one combine configuration, relative to another, in a particular crop condition. This Standard is also provides the basic requirements for evaluating the uniformity of material spread from harvest residue spreading or chopping device(s).

ANSI/SAE S397.2-FEB93 (RAPR2003), Electrical Service and Equipment for Irrigation

Provide a common document for those involved in electrical irrigation systems; such as electricians, power suppliers, well drillers, irrigation dealers and manufacturers, extension specialists and irrigators.

ANSI/SAE S401.2-AUG93 (RAPR2003), Guidelines for Use of Thermal Insulation in Agricultural Buildings

Establishes guidelines for evaluating and specifying the type, amount, and manner of installation of thermal insulation in agricultural buildings, including consideration of burning characteristics, insulation values, and proper installation and protection of insulating materials.

ANSI/SAE S422-MAR95 (R2005), Mapping Symbols and Nomenclature for Erosion and Sediment Control Plans for Land Distributing Activities

The purpose of this Standard is to establish a list of standard mapping symbols for use in erosion and sediment control plan development. This Standard facilitates the use and review of such plans by contractors and other professionals. This Standard will not restrict creation of additional symbols as required for practices not included here. This Standard does not imply that these practices are suitable for erosion or sediment control in any or all applications. The symbols are intended only to facilitate communications.

ANSI/SAE S423-FEB93 (RMAR98), Thermal Performance Testing of Solar Ambient Air Heaters

Provides a method for testing the thermal efficiency of solar air heaters used exclusively for heating ambient air.

ANSI/SAE S424.1-SEP92 (RMAR98), Method of Determining and Expressing Particle Size of Chopped Forage Materials by Screening

Defines a test procedure to determine the particle size distribution of chopped forage materials and a method of expressing the particle length of the material. The determined particle size distribution can be used to evaluate forage physical length in animal feeding trials.

ANSI/SAE S430.1-FEB96 (RAPR2003), Agricultural Equipment Tire Loading and Inflation Pressures

Establishes loadings and inflation pressures for agricultural type tires used in agricultural equipment service.

ANSI/SAE S436.1-OCT97 (RMAR01), Test Procedure for Determining the Uniformity of Water Distribution of Center Pivot, Corner Pivot, and Moving Lateral Irrigation Machines Equipped with Spray or Sprinkler Nozzles

Defines a method for characterizing the uniformity of water distribution of sprinkler packages installed on center pivots and lateral move irrigation machines.

ANSI/SAE S448.1-JUL01, Thin-Layer Drying of Agricultural Crops

Provides a unified procedure for determining and presenting the drying characteristics of agricultural crops.

ANSI/SAE S459-FEB93 (RMAR 98), Shear and Three-Point Bending Test of Animal Bones

Determines the mechanical properties of animal bones such as the ultimate shear strength, ultimate bending strength, apparent modulus of elasticity, and fracture energy.

ANSI/SAE S472-MAR 88 (RMAR98), Terminology for Forage Harvesters and Forage Harvesting

Establishes terminology and specifications pertinent to forage harvester design and performance. It is intended to improve communication among engineers and researchers and to provide a basis for comparative listing of machine specifications.

ANSI/SAE S478-MAR96 (R2005), Roll-over Protective Structures (ROPS) for Compact Utility Tractors

The purpose of this Standard is to establish the test and performance requirements of a roll-over protective structure, ROPS, designed for compact utility tractors to minimize the frequency and severity of crushing injury to the operator resulting from accidental tractor upset. It applies to compact utility tractors and doesn't preclude the use of extendable or foldable ROPS as long as these ROPS meet the performance requirements of this Standard. Selfpropelled implements are excluded. This Standard does not apply to tractors with mass greater than 1800 kg. This Standard does not apply to tractors generally designed for mowing lawns and gardening work.

ANSI/SAE S483.1-NOV05, Rotary Mower Blade Ductility Test

The purpose of this standard is to identify production blade lots from which samples are subjected to destructive testing.

ANSI/SAE S493.1-2003, Guarding for Agricultural Equipment

This Standard provides guarding guidelines to minimize the potential for personal injury from hazards associated with agricultural equipment. This Standard applies to agricultural equipment as identified in ASAE Standard S390, Classifications and Definitions of Agricultural Equipment.

ANSI/SAE S515-JAN94 (RAPR2003), Pallet Load Transfer System for Vegetable Harvesters, Shuttle Vehicles and Road Trucks

Standard is to ensure compatibility between all vehicles used in palletized load transfer systems for vegetables. Applies to vegetable harvesters, field shuttle vehicles, trailers, over-the-road trucks, and yard facilities

ANSI/SAE S521-FEB93 (RMAR98), Method of Determining Peanut Blanchability

Establishes uniformity and consistency in terms used to describe the blanchability of peanuts.

ANSI/SAE S522.1-JAN05 (ISO 5674-2004), Tractors and machinery for agricultural and forestry - Guards for power take-off (PTO) drive shafts - Strength and wear tests and acceptance criteria

0.2 This standard specifies laboratory tests for determining the strength and wear resistance of guards for power take-off (PTO) drive-shafts on tractors and machinery used in agriculture and forestry, and their acceptance criteria. It is intended to be used in combination with ISO 5673. It is applicable to the testing of PTO drive-shaft guards and their restraining means. It is not applicable to the testing of guards designed and constructed to be used as steps.

ANSI/SAE S525-1.2-2003, Agricultural Cabs – Environmental Air Quality – Definitions, Test Methods, and Safety Practices

This Standard provides a quantitative method of establishing an engineering control including definitions, performance criteria, and test procedures for cabs (enclosures) used on agricultural tractors and self-propelled machines. This standard should only be used as part of a managed program of occupational health and safety as defined by applicable regulations when the machines operate in an environment where agricultural pesticides are present.

ANSI/SAE S525.2-MAY98 (R2003), Agricultural Cabs - Environmental Air Quality - Part 2: Pesticide Vapor Filters - Test Procedure and Performance Criteria

Provides procedure for testing and demonstrating capacity and efficiency of gas and vapor air purifying devices under laboratory conditions. May yield an estimation of the service life under field conditions.

ANSI/SAE S539-OCT95 (RAPR2003), Media Filters for Irrigation – Testing and Performance Reporting

Defines collection of irrigation media filter test data. Provide procedures to classify and characterize media filter test data from manufacturers and independent testing laboratories.

ANSI/SAE S547-DEC 2002, Tip-Over Protective Structure (TOPS) for Front Wheel Drive Turf and Landscape Equipment

Establishes test procedures and performance requirements of a tip-over protective structure.

ANSI/SAE S553-MAR01, Collapsible Emitting Hose (Drip Tape) - Specifications and Performance Testing

Specifies testing methods, performance requirements, and data to be supplied by the manufacturer for collapsible emitting hose products.

ANSI/SAE S574-AUG00 (R2005), Instructional Seat for Agricultural Tractors

The purpose of this Standard is to provide the minimum design and performance requirements for an instructional seat and restraint designed for limited use by a trainer or trainee inside an enclosed cab on self-propelled agricultural equipment. The instructional seat is not intended or designed for use by children. Information and training should emphasize proper use, and discourage use by those for whom the instructional seat is not intended.

ANSI/SAE S584-JAN05, Agricultural Equipment Speed Identification Symbol (SIS)

The scope of this standard is primarily directed to identifying agricultural equipment (implements of husbandry) that have been designed in their original equipment configuration for specified ground speeds greater than 40 km/h (25 mile/h) but under 65 km/h (40 mile/h).

ANSI/SAE/ISO 5687-2004, Equipment for harvesting - Combine harvesters - determination and designation of grain tank capacity and unloading device performance

This International Standard specifies a method for determining and designating the capacity and unloading rate of combine harvester grain tanks and unloading systems. Replaces ANSI/SAE S312.2-APR93 (RJUNE00)

ANSI/SAE/ISO 9190-2002, Lawn And Garden Ride-On (Riding) Tractors - Drawbar

Specifies dimensions and location requirements for drawbars on lawn and garden ride-on (riding) tractors.

ANSI/SAE/ISO 9191-2002, Lawn And Garden Ride-On (Riding) Tractors - Three-Point Hitch

Specifies requirements for the connection of implements or attachments to the rear of lawn and garden ride-on (riding) tractors by means of a three-point free link hitch in association with a power lift.

ANSI/SAE/ISO 9192-2002, Lawn And Garden Ride-On Tractors - One-point Tubular Sleeve Hitch

Specifies requirements for the connection of implements or attachments to the rear of lawn and garden ride-on (riding) tractors by means of a one-point (single pin connection) hitch in association with a manual or power lift system.

ASB (American Society of Baking)

ANSI ASB Z50.1-2006, Bakery Equipment – Safety Requirements

Changes are not significant in nature and include changing ASB office address and adding references to Z50.2-2003 and robotics standard.

ANSI/BISSC Z50.2-2003, Bakery Equipment - Sanitation Standard

The standard will serve as a guide to the design and construction of bakery machinery and equipment which can be readily maintained in a clean and sanitary condition. It is based on the BISSC Sanitation Standards

ASC (Accredited Standards Committee X9, Incorporated)

ANSI X9.100-10-2006, Paper Specifications for MICR Documents

This standard establishes paper specifications for the MICR documents that are used in the US Payments System. While checks and deposit tickets are the primary documents considered in these specifications, users of MICR/OCR E-13B font readers will be well served by applying these specifications to internal documents, when intended for use in reader/sorters.

ANSI X9.100-111-2004, Specifications for Check Endorsements Including Legibility

This standard provides for the legibility and uniformity of the endorsement process. It specifies the parameters for the design elements on the back of the check and the placement and data content of endorsements. This standard includes an informative annex that provides a method for measuring the legibility of endorsements with the use of a legibility gauge. This standard is not intended to modify existing MICR standards for checks.

ANSI X9.100-120-2004, Specifications for Bank Deposit Tickets

Specifies certain deposit ticket parameters to provide for the processing of personal size and business size deposit tickets through conventional bank deposit and imaging processes. While this standard does not establish a specific design, orientation and layout for bank deposit tickets, it does provide specifications for a range within which key design elements shall be placed. Other bank specific information is excluded from this specification.

ANSI X9.100-140-2004, Specifications for an Image Replacement Document (IRD)

This standard establishes the construction, layout, data elements, data content and printing specifications for Image Replacement Documents (IRD). An IRD is a substitute image copy of a check or a replacement for a previous IRD that includes a machine readable MICR line. An IRD that may under certain legal arrangements be the practical and legal equivalent of the original paper check or a previous IRD. An IRD conforming to these specifications may be used as a Substitute Check in conformance with the Check Clearing for the 21st Century Act. This standard does not address operational, implementation or settlement issues.

ANSI X9.100-151-1998 (R2004), Check Strip Extension

This standard covers the design and the functional characteristics of the strip extension ("strip") as affixed to a check. These strips provide a new MICR clear band area used to modify or correct the MICR line of items for forward collection, returns, rejects, or other banking interchange systems.

ANSI X9.100-160 Part 1-2004, Placement and Location of Magnetic Ink Printing (MICR) - Part 1

Part 1 of this standard covers only design considerations that apply to placement and location of magnetic ink printing on checks, drafts, and other documents intended for automated processing among depository institutions. Other types of documents such as internal control forms are not covered. A complete understanding of MICR printing requires reference to other standards and technical guidelines listed in Clause 2.

ANSI X9.100-160 Part 2-2004, Placement and Location of Magnetic Ink Printing (MICR) - Part 2: EPC Field Use

Part 2 of this standard establishes external processing code (EPC) assignments and management, and specifies the MICR characters approved for use in the U.S. Payments System.

ANSI X9.100-161-2004, Creating MICR Document Specification Forms

This standard specifies the contents for MICR Document Specification Forms. It may be used to create specifications for the design and manufacture of checks and deposit tickets, as well as other financial institution MICR documents. The standard is sufficient.

ANSI X9.100-170-2004, Fraud Deterrent Icon Standard

This standard establishes the design and usage requirements of the padlock icon for visually communicating the presence of security features on a check. The standard specifies characteristics of security features that meet the requirements for use of the padlock icon.

ANSI X9.100-171-2005, Specifications for Automated Identification of Security Features

This Standard defines a structure to properly identify security features using automation. The Standard enables the incorporation of standard and proprietary security features into the original check by providing a trigger and identification structure. The Standard provides a means of registering security features for use within this Standard, however it does not specify the aspects of security features.

ANSI X9.101/ISO 6166-2003, Securities and related financial instruments – International securities identification numbering systems (ISIN)

Provides a uniform structure for international securities identification numbers (ISINs). It is intended for use in any application in the trading and administration of securities and other financial instruments.

ANSI X9.103-2004, Motor Vehicle Retail Sales and Lease: Electronic Contracting

The scope of this standard begins at the time of signing the Contract, inclusive of signature capture, and includes the creation, storage and assignment of Electronic Chattel Paper where the assignment will involve establishing control of the Electronic Chattel Paper.

ANSI X9.104, Part 1-2004, Financial Transaction Card Originated Messages - Card acceptor to acquiring host messages Part 1: Message, data elements and code values

Part 1 of X9.104 defines a common interface for the exchange of information between point of sale systems or terminal devices located in a retail establishment and the acquiring host transaction processing system(s). This part of X9.104 is applicable to all aspects of payment processing required by these retail facilities, including the reporting of specific products that are part of a purchase.

ANSI X9.104 Part 2-2004, Financial transaction card originated messages - Card acceptor to acquiring host messages Part 2: Convenience store and petroleum marketing industry

This part of X9.104 provides example of messages used in the convenience store and petroleum marketing industry based on the message formats defined in X9.104 part 1. This part of X9.104 also defines data elements and code values for use in this environment.

ANSI X9.105 Part 3-2003, Financial transaction card originated messages - Interchange messages specifications - Part 3: Maintenance procedures for messages, data elements and code values

This part of ISO 8583 establishes the role of the maintenance agency (MA) and specifies the procedures for adding messages and data elements to ISO 8583-1 and to codes listed in Annex A of ISO 8583-1. The responsibilities of the MA relate to all message type identifiers and classes, data elements and subelements, dataset identifiers and codes within ISO 8583-1, with the exception of Institution Identification Codes.

ANSI X9.105-1/ ISO 8583-1-2003, Financial transaction card originated messages - Interchange message specifications - Part 1: Messages, data elements and code values

It specifies a common interface by which financial transaction card-originated messages can be interchanged between acquirers and card issuers. It specifies message structure, format and content, data elements and values for data elements. The method by which settlement takes place is not within the scope of this part.

ANSI X9.106-2003/ISO 18245, Retail Financial Services - Merchant Category Codes

This Standard defines code values used to enable the classification of merchants into specific categories based on the type of business, trade or services supplied. Values are specified only for those merchant categories that are generally expected to originate retail financial transactions. It also establishes the procedures for a Registration and Maintenance Management Group (RMMG), which considers requests for new code values, and a Maintenance Agency (MA), which provides the administrative procedures required to maintain an up-to-date list of codes.

ANSI X9.107-2003/ISO 4909, Bank cards-Magnetic stripe data content for track 3

Establishes specifications for cards issued by or acceptable to the banking industry and is intended to permit interchange based on the use of magnetic stripe encoded information. It specifies the data content and physical location of read/write information on track 3. This replaces ANSI X9.1-1996.

ANSI X9.12-1991 (R1998), Municipal Securities, Specifications for Fully Registered

Defines the physical characteristics and format of a municipal security including certificate size, content, and layout. The specific language regarding provisions of the instrument is defined by the issuing authority and is not prescribed in the body of this standard. At a minimum, this standard is intended for use in the issuance of all fully registered municipal securities.

ANSI X9.14-1983 (R2001), Securities Transaction Interchange Forms, Specifications for

Establishes uniform formats for frequently used paper forms to convey information by the securities industry. The objective of this standard is to maintain efficiency where paper forms are still used.

ANSI X9.20-1998, Securities – Institutional Delivery System

Describes the formats to be used by all institutions professionally engaged in the securities business, in particular banks, brokers, investment managers, and money managers for purposes of processing security transactions through the National Institutional Delivery system operated by a Clearing Corporation or Depository. The standardized input format will provide for a more efficient computer processing for all parties involved in a securities transaction.

ANSI X9.24 Part 1-2004, Retail Financial Services - Symmetric Key Management - Part 1: Using Symmetric Techniques

This part of ANS X9.24-2003 covers both the manual and automated management of keying material used for financial services such as point-of-sale (POS) transactions (debit and credit), automated teller machine (ATM) transactions, messages among terminals and financial institutions, and interchange messages among acquirers, switches and card issuers. This part of ANS X9.24-2003 deals exclusively with management of symmetric keys using symmetric techniques. Additional parts may be created in the future to address other methods of key management.

ANSI X9.24 Part 2-2006, Retail Financial Services Symmetric Key Management Part 2: Using Asymmetric Techniques for the Distribution of Symmetric Keys

This part of ANS X9.24 covers the management of keying material used for financial services such as point of sale (POS) transactions, automatic teller machine (ATM) transactions, messages among terminals and financial institutions, and interchange messages among acquirers, switches and card issuers.

ANSI X9.27-2000, Print and Test Specifications for Magnetic Ink Printing (MICR)

Presents the numeric character set "E-13B", which can be read by certain magnetic ink character recognition (MICR) and optical character recognition (OCR) systems. The character set includes numerals 0 through 9 and four special symbols. The standard also specifies the shape, dimensions, and tolerances for printed MICR "E-13B" characters and specifications regarding print quality. This standard was last refined in 1995 and was originally published as American National Standard for Print Specifications for Magnetic Ink Character Recognition in 1988.

ANSI X9.30.1-1997, Public Key Cryptography for the Financial Services Industry - Part 1: The Digital Signature Algorithm (DSA)

Defines a method for digital signature generation and verification for the protection of messages and data using the Digital Signature Algorithm (DSA). This standard is used in conjunction with the hash function, as defined in American National Standard for Public Key Cryptography – Part 2: The Secure Hash Algorithm (SHA-1), BSR X9.30.2. In addition, this standard provides the criteria for the generation of public and private keys that are required by the algorithm and the procedural controls required for the secure use of the algorithm. Specific sections include definitions and common abbreviations, application, the DSA, Generation of Primes for the DSA, Random Number Generation for the DSA.

ANSI X9.30.2-1997, Public Key Cryptography for the Financial Services Industry - Part 2: The Secure Hash Algorithm (SHA-1)

Produces a 160-bit representation of the message, called the message digest, when a message with a bit length less than 2 to 64th power is input. The message digest is used during the generation of a signature for the message. The message digest is computed during the generation of a signature for the message. The SHA-1 is also used to compute a message digest for the received version of the message during the process of verifying the signature. Any change to the message in transit will, with a very high probability, result in a different messages digest, and the signature will fail to verify. The Secure Hash Algorithm (SHA-1) described in this standard is required for use with the Digital Signature Algorithm and may be used whenever a secure hash algorithm is required.

ANSI X9.31-1998, Digital Signatures Using Reversible Public Key Cryptography for the Financial Services Industry (rDSA)

Covers both the manual and automated management of keying material using both asymmetric and symmetric key cryptography for the wholesale financial services industry.

ANSI X9.32-1998, Data Compression in Wholesale Financial Telecommunications

Establishes a method for the compression, decompression, and related control functions associated with the electronic transmission of wholesale financial data. Also provided are techniques to allow for the optimization of the compression function, to detect errors in the process, and to prevent expansions of data.

ANSI X9.37-2001, Specification for Electronic Check Exchange

Provides the financial industry with a format necessary to perform electronic check exchange (ECE). The format supports forward presentment, posting, return notification, and return requests, as well as existing customer information reporting products. The standard also supports multiple check clearing alternatives, e.g., bank-to-bank, bank-to-switch.

ANSI X9.42-2003, Public Key Cryptography for the Financial Services: Agreement of Symmetric Keys Using Discrete Logarithm Cryptography

Partially adapted from ISO 11770-3, specifies schemes for the agreement of symmetric keys using Diffie-Hellman and MQV algorithms. It covers methods of domain parameter generation, domain parameter validation, key pair generation, public key validation, shared secret value calculation, key derivation, and test message authentication code computation for discrete logarithm problem based key agreement schemes. These methods may be used by different parties to establish a piece of common shared secret information such as cryptographic keys. The shared secret information may be used with symmetrically-keyed algorithms to provide c

ANSI X9.45-1999, Enhanced Management Controls Using Digital Signatures and Attribute Certificates

Defines strategies for reducing the security and financial risks associated with electronic business systems using digital signatures. Attribute certificates would be used to convey authorizations and restrictions that inform verifiers when an entity's signature would be considered valid. Attributes might include specified dollar amounts, cosignature requirements, preapproved counterparties, confirm to (address), and time of day. The benefits of this standard are cost reduction, enhanced security, greater manageability, and greater flexibility for business transactions. This standard was first listed for public review in the June 5, 1998 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI X9.49-1998, Secure Remote Access to Financial Services for the Financial Industry

Defines the minimum security requirements for a secure and protected exchange of information between a user and a financial service provider. The protection offered will provide integrity for a message during transmission; provide secrecy of the message during transmission; identify the rightful user and financial service provider prior to and during data transmission; and prevent repudiation of a message or transaction by either party.

ANSI X9.5-1988 (R2001), Financial Institution Numbering System (FINS)

Provides a six-digit number that is used to track lost or stolen physical securities in the United States.

ANSI X9.52-1998, Triple Data Encryption Algorithm Modes of Operation

Defines triple-DES algorithm for use in both wholesale and retail financial applications. As part of this definition, related standards that should be modified to accommodate the use of this algorithm on an optional basis are also identified. (NOTE: The Public Review of the draft document listed in the July 3, 1998 issue of Standards Action is withdrawn from consideration and a new document is hereby submitted in its place.)

ANSI X9.55-1997, Public Key Cryptography for the Financial Services Industry: Extensions to Public Key Certificates and Certificate Revocation Lists

Specifies extensions to the definitions of public-key certificates and certificate revocation lists in Public Key Cryptography for the Financial Services Industry: Certificate Management, BSR X9.57. These extensions are in the following areas: the keys involved, including key identifiers for subject and issuer keys, indicators of intended or restricted key usage, and indicators of certificate policy; name forms for a certificate subject, a certificate issuer, or a CRL issuer, and additional attribute information about a certificate subject; included in CA-certificates, i.e., certificates for CAs issued by other CAs, to facilitate the automated processing of certification paths when multiple certificate policies are involved, e.g., when policies vary for different applications in an environment or when interoperation with external environments

ANSI X9.57-1997, Public Key Cryptography for the Financial Services Industry: Certificate Management

Defines certificate management procedures and data elements. This is the second public review for this standard. It first appeared in the December 22, 1995 issue of Standards Action. It is being resubmitted due to substantive changes made to the original submittal.

ANSI X9.58-2002, Financial Transaction Messages - Electronic Benefits Transfer (EBT) - Food Stamps

Provides all parties involved in Electronic Benefits Transfer (EBT) transactions for Food Stamps with technical specifications for exchanging financial transaction messages between an acquirer and EBT card issuer processor. It specifies message structure, format and content, data elements and values for data elements used in the Food Stamp program. The method by which settlement takes place is not within the scope of this standard.

ANSI X9.6-1991 (R1998), Securities Identification

This standard provides specifications for uniquely identifying an eligible securities issue. It will serve as the common denominator in communications among users for completion of transactions and exchange of information. It specifies both the configuration of the number and the meaning attached to each portion.

ANSI X9.62-2005, Public Key Cryptography for the Financial Services Industry : The Elliptic Curve Digital Signature Algorithm (ECDSA)

This Standard defines methods for digital signature (signature) generation and verification for the protection of messages and data using the Elliptic Curve Digital Signature Algorithm (ECDSA). ECDSA is the elliptic curve analogue of the Digital Signature Algorithm (ANS X9.30). The ECDSA shall be used in conjunction with an Approved hash function, as specified in the X9 Registry Item 00003, Secure Hash Standard (SHS). This ECDSA Standard provides methods and criteria for the generation of public and private keys that are required by the ECDSA and the procedural controls required for the secure use of the algorithm with these keys.

ANSI X9.63-2001, Key Agreement and Key Management Using Elliptic Curve-Based Cryptography

Specializes ISO/IEC 15946-3 "Cryptographic Techniques Based on Elliptic Curves - Part 3: Key Establishment" for use by the financial services industry. This standard defines key establishment schemes that employ asymmetric cryptographic techniques. The arithmetic operations involved in the operation of the schemes take place in the algebraic structure of an elliptic curve over a finite field. Both key agreement and key transport schemes are specified. Supporting mathematical definitions and examples are also provided.

ANSI X9.64-2001, Specifications for Universal Interbank Batch/Bundle Tickets

Specifies a batch document that can be used by all financial institutions. The work effort resulted in a new US Payments System document that will decrease back-office preparation and provide audit trails in check processing. This standard is intended to facilitate the use of a Universal Interbank Batch/Bundle Ticket as a replacement for non-standard batch tickets and bundle dividers. The Universal Interbank Batch/Bundle Ticket may be used by both a sending and receiving financial institution. A standardized ticket streamlines check processing operations by eliminating the need to replace a sending bank's bundle divider tickets with the receiving bank's batch tickets.

ANSI X9.65-2004, Triple Data Encryption Algorithm (TDEA), Implementation Standard

Specifies methodologies for the implementation of ANSI X9.52, Triple Data Encryption Algorithm (TDEA) Modes of Operations for the enhanced cryptographic protection of digital information. The modes of operation defined in ANSI X9.52 are specified for both enciphering and deciphering operations. These modes provide a means of extending the effective key space of the ANSI X3.92 Data Encryption Algorithm (DEA). ANSI X9.52 provides multiple modes of operation. This standard will assist system integrators to select and implement the appropriate mode for their organizations.

ANSI X9.68-2001, Digital Certificates for Mobile/Wireless and High Transaction Volume Financial Systems: Part 2: Domain Certificate Syntax

Defines syntax for a more compact certificate than that defined in ISO 15782-1 and X.509. This syntax is appropriate for use in environments with constraints imposed by mobility and/or limited bandwidth (e.g., wireless communications with personal digital assistants), high volumes of transactions (e.g., Internet commerce), or limited storage capacity (e.g., smart cards). This syntax is also geared towards use in account-based systems such as X9.59.

ANSI X9.69-1998, Framework for Key Management Extensions

Adds new technology to the financial community's suite of security mechanisms. The new technology will provide a more flexible and granular means for controlling the production and usage of keys. The Key Management scheme proposed in this new work item provides flexible and secure methods for handling keys. The "Key Establishment" portion of key management allows designated groups of users to establish keys via a key derivation procedure, thus avoiding key distribution in the usual sense. The "Key Usage Control" portion of the key management allows users to control the usage of key, where the keys are either stored or transmitted within a cryptographic system.

ANSI X9.7-1999, Bank Check Background and Convenience Amount Field

Specifies the location and background design of essential check data fields and is intended for all business size and personal checks.

ANSI X9.73-2003, Cryptographic Message Syntax

The Standard specifies a cryptographic message syntax that can be used to protect financial transactions and other documents from unauthorized disclosure and modification.

ANSI X9.79-2001, Public Key Infrastructure (PKI) Practices and Policy Framework

Defines the components of a PKI and sets a framework of practices and policy requirements for a PKI. The standard draws a distinction between PKI systems used in open, closed and network environments. It further defines the operational practices relative to industry accepted information systems control objectives. PKI practices implementing this standard can support multiple policies that incorporate the use of digital signature technology. This standard allows for the implementation of operational, baseline PKI practices that satisfy industry accepted information systems control objectives.

ANSI X9.8 Part 1-2003, Banking - Personal Identification Number Management and Security - Part 1: PIN protection principles and techniques for online PIN verification in ATM & POS systems

X9.8 2003 Part 1 covers the basic principles & techniques which provide the minimum security measures required for effective international PIN management. These measures are applicable to those institutions responsible for implementing techniques for the management and protection of PINs. PIN protection techniques applicable to financial transaction card originated transactions in an online environment and a standard means of interchanging PIN data. These techniques are applicable to those institutions responsible for implementing techniques for the management and protection of the PIN at Automated Teller Machines and acquirer sponsored Point-of-Sale (POS) terminals.

ANSI X9.80-2005, Prime Number Generation, Primality Testing, and Primality Certificates

In the current state of the art in public key cryptography, all methods require, in one way or another, the use of prime numbers as parameters to the various algorithms. This document presents a set of accepted techniques for generating primes. This standard defines methods for generating large prime numbers as needed by public key cryptographic algorithms. It also provides testing methods for testing candidate primes presented by a third party.

ANSI X9.83-2002, Specifications for Electronic Check Adjustments

This standard establishes the file sequences, record types, and field formats to be used for the electronic exchange of check adjustment messages. The standard format supports check related adjustment notices and requests for individual checks, bundles of checks and check cash letters. It supports the full range of adjustment types currently in use by financial institutions. The standard may be used whether or not the particular check, bundle of checks or cash letter was presented via paper or via an electronic check exchange file.

ANSI X9.84-2003, Biometric Information Management and Security

This Standard specifies the minimum security requirements for effective management of biometric data. Within the scope of this Standard the following topics are addressed: Security for the collection, distribution, and processing, of biometric data, encompassing data integrity, authenticity, and non-repudiation; Management of biometric data across its life cycle comprised of the enrollment, transmission and storage, verification, identification, and termination processes; Usage of biometric technology, including one-to-one and one-to-many matching, for the identification and authentication of banking customers and employees; Application of biometric technology for internal and external, as well as logical and physical access control; Encapsulation of biometric data; Techniques for the secure transmission and storage of

ANSI X9.93-2-2004, Financial transaction messages - Electronic Benefits Transfer (EBT) Part 2 Files

Provides all parties involved in Electronic Benefits Transfer (EBT) transactions with technical specifications for exchanging financial transaction files for the Women, Infants, and Children (WIC) program and the framework for adding other EBT files and detail records in the future. The document standardizes file formats and thereby maximizes EBT productivity for all stakeholders in the industry.

ANSI X9.93-2002, Financial Transaction Messages - Electronic Benefits Transfer (EBT) - Part 1: Messages ; Part 2: Files

Part 1: Messages - Provides all parties involved in (EBT) transactions with technical specifications for exchanging financial transaction messages. The document standardizes message formats based on the ISO 8583:1993 standard and thereby maximizes EBT productivity for all stakeholders in the industry. Part 2: Files - Provides all parties involved in (EBT) transactions with technical specifications for exchanging financial transaction files for the Women, Infants, and Children (WIC) program and the framework for adding other EBT files and detail records in the future.

ANSI X9.95-2005, Trusted Time Stamp Management and Security

This standard specifies the minimum security requirements for the effective use of time stamps in a financial services environment.

ANSI X9.96-2004, XML Cryptographic Message Syntax (XCMS)

Specifies a text based Cryptographic Message Syntax (CMS) represented using XML 1.0 encoding that can be used to protect financial transactions and other documents from unauthorized disclosure and modification.

ANSI X9.99-2004, Privacy Impact Assessment Standard

This standard recognizes that a Privacy Impact Assessment (PIA) is an important management tool that should be used within an organization or by third parties to identify and mitigate privacy issues and risks associated with processing consumer data using automated, networked information systems. This PIA Standard scope: • provides references to educate the reader on privacy topics and financial privacy in particular • describes the privacy impact assessment activity, in general • defines the common components of a PIA regardless of business system affecting financial institutions, and • explains how to improve the quality of business-system s

ASCE (American Society of Civil Engineers)

ANSI/ASCE 7-1995, Minimum Design Loads for Buildings and Other Structures

This standard provides minimum load requirements for the design of buildings and other structures that are subject to building code requirements. Loads and appropriate load combinations, which have been developed to be used together, are set forth for strength design and allowable stress design. For design strengths and allowable stress limits, design specifications for conventional structural materials used in buildings and modifications contained in this standard shall be used.

ASHRAE (American Society of Heating, Refrigerating and

ANSI/ASHRAE 105-1984 (R1999), Building Energy Performance, Methods of Measuring and Expressing

Provides a consistent method of measuring and expressing the energy performance of buildings and aids in the formation of a building energy performance database. Establishes minimum requirements for a database used in establishing energy performance standards. Fosters a commonality in the reporting of the energy performance of existing or proposed buildings to facilitate comparison, design and operation improvements, and development of building energy performance standards. Specifies techniques for measuring and expressing the energy performance of buildings. Also defines minimum requirements of the database required for use in building energy performance standards and provides a consistent, uniform method of reporting predicted or measured energy used to determine energy performance.

ANSI/ASHRAE 109-1986 (R2003), Methods of Testing to Determine the Thermal Performance of Flat Plate Solar Collectors Containing a Boiling Liquid

The purpose of this standard is to provide test methods for determining the thermal performance of flat-plate solar energy collectors that use boiling fluids for thermal energy transfer. It applies to flat-plate collectors in which some of the fluid entering the collector boils and some fraction of it leaves as a saturated vapor. It does not apply to collectors in which the thermal storage or condenser unit is integral with the collector

ANSI/ASHRAE 113-2005, Method of Testing for Room Air Diffusion

This proposed revision updates ASHREA Standard 113-1990, which defines a method of testing air diffusion performance in the occupied zone of spaces such as offices or similar buildings.

ANSI/ASHRAE 118.1-2003, Method of Testing for Rating Commercial Gas, Electric, and Oil Service Water Heating Equipment

The purpose of this standard is to provide test procedures for rating directly heated commercial service water heating equipment. This standard provides test procedures for determining the efficiency and hot water delivery capability. This standard applies to electric resistance, electric air-source heat pump, gas-fired, and oil-fired water heating equipment, including hot water supply boilers, with input ratings less than 12,500,000 Btu/h and greater than: Electric Resistance 12 kW, Electric Heat Pump 6 kW, Gas-Fired 75,000 Btu/h, Oil-Fired 105,000 Btu/h.

ANSI/ASHRAE 118.2-2006, Method of Testing for Rating Residential Water Heaters

This proposed revision of ASHRAE Standard 118.2 - 1993, Method of Testing for Rating Residential Water Heaters, incorporates various changes to improve clarity and consistency. Some material was moved to appendices. Other changes were to require one pre-draw, to require a 24 hour soak-in period before the test, and to handle recovery periods that are preceded by multiple draws. The tolerances allowed in some measurements were reduced and the references were updated.

ANSI/ASHRAE 119-1988 (R2004), Air Leakage Performance for Detached Single-Family Residential Buildings

Establishes performance requirements for air leakage of residential buildings with the goal of reducing the air infiltration load. It provides a method of classifying the air tightness of residential buildings. It does not address the potential conflicts with adequate indoor air quality, ventilation, and combustion air.

ANSI/ASHRAE 120-1999, Methods of Testing to Determine Flow Resistance of HVAC Air Ducts and Fittings

Determines the change in total pressure resulting from air flow in HVAC ducts and fittings. Test results can be used to determine duct flow losses in pressure loss per unit length. Fitting losses are reported as local loss coefficients.

ANSI/ASHRAE 125-1992 (R2000), Method of Testing Thermal Energy for Liquid Streams in HVAC Systems

Provides a method of testing factory-assembled thermal energy meters used to measure the thermal energy added to or extracted from a liquid stream supplying an HVAC system. The test methods, procedures and facility descriptions in this standard are intended for use in determining measurement accuracy, pressure losses, service flow rate limits, temperature difference limits, and reliability effects of mounting attitude.

ANSI/ASHRAE 127-2001, Method of Testing for Rating computer and Data Processing Room Unitary Air Conditioners

ANSI/ASHRAE 128P-2001, Methods of Rating Unitary Spot Air Conditioners

Establishes a uniform set of requirements for rating unitary spot air conditioners. This Standard applies to unitary air conditioners that cool a zone within a space and discharge the rejected heat back into that space. Air leaving the evaporator and condenser is discharged into the same space and there is no physical boundary separating those discharges. This Standard does not apply to the rating and testing of individual assemblies, such as condensing units or direct expansion fan coil units for separate use, nor does it apply to air conditioners which are computer and data processing room air conditioners or are covered by American National Standard for Unitary Air-Conditioning and Air-Source Heat Pump Equipment, ANSI/ARI 210/240-94.

ANSI/ASHRAE 129-1997 (R2002), Measuring Air-Change Effectiveness

This standard prescribes a method for measuring air-change effectiveness in mechanically ventilated spaces and buildings that meet specified criteria. The air-change effectiveness is a measure of the effectiveness of outdoor air distribution to the breathing level within the ventilated space. 2.1 The method of measuring air-change effectiveness compares the age of air where occupants breathe to the age of air that would occur throughout the space if the indoor air were perfectly mixed. 2.2 The standard includes measurement procedures and criteria for assessing the suitability of the test space for measurements of air-change effectiveness.

ANSI/ASHRAE 130-1996, Methods of Testing for Rating Ducted Air Terminal Units

2.1 The methods of test in this standard apply to air control and distribution devices used in air distribution systems for commercial buildings. These devices provide control of air volume with or without temperature control by one or more of the following means, and may or may not include a fan: --(a) fixed or adjustable vanes, --(b) pressure dependent volume dampers or shutoff valves (including air introduction nozzles and dampers), --(c) pressure compensated volume dampers or shutoff valves (including air induction nozzles and dampers), --(d) heat exchange, --(e) on/off fan control, or --(f) variable speed fan control 2.2 This standard covers test methods for use in determining the following performance characteristics: --(a) sound power, --(b) temperature mixing and stratification, --(c) minimum operating pressure, --(d) air leakage,

ANSI/ASHRAE 133P-2001, Method of Testing Direct Evaporative Air Coolers

Establishes a uniform method of laboratory testing for rating packaged and component direct-evaporative air coolers. This standard was originally listed for public review in the November 7, 1997 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ASHRAE 134-2005, Graphic Symbols for Heating, Ventilating, Air-Conditioning and Refrigerating Systems

Provides a comprehensive set of symbols for use in drawings and documents relating to the design of HVAC&R systems. In a survey of governments and standards organizations from around the world, the project committee found agreement in some areas of symbol usage and practice but wide variation in others. This standard aims to establish a common symbol language in order to standardize HVAC&R drawings & make them more accessible for the growing number of international users.

ANSI/ASHRAE 135-1995, BACnet – A Data Communication Protocol for Building Automation and Control Networks

This protocol provides a comprehensive set of messages for conveying encoded binary, analog, and alphanumeric data between devices including: ___(a) hardware binary input and output values, ___(b) hardware analog input and output values, ___(c) software binary and analog values, ___(d) text string values, ___(e) schedule information, ___(f) alarm and event information, ___(g) files, and ___(h) control logic. This protocol models each building automation and control computer as a collection of data structures called objects, the properties of which represent various aspects of the hardware, software, and operation of the device. These objects provide a means of identifying and accessing information without requiring knowledge of the details of the device's internal design or configuration.

ANSI/ASHRAE 135.1-2003, Method of Testing Conformance to BACnet

To define a standard method for verifying that an implementation of the BACnet protocol provides each capability claimed in its Protocol Implementation Conformance Statement (PICS) in conformance with the BACnet standard.

ANSI/ASHRAE 135a-2005, BACnet - A Data Communication Protocol for Building Automation and Control Networks

As currently defined, the Life Safety Zone and Life Safety Point object types are not adequate for simulating/testing when Out_Of_Service is TRUE (see rationale for details). The proposed solution: make the Tracking_Value of both object types a required property and writable when Out_Of_Service is TRUE. Instead of the Present_Value, the Tracking_Value is decoupled from input(s) or process when Out_Of_Service is TRUE. The Present_Value shall not be writable in out-of-service operation.

ANSI/ASHRAE 135b-2001, BACNET - A Data Communication Protocol for Building Automation and Control Networks

The proposed change is to remove UTC timestamps from Trend Logs and guarantee Trend Log record ordering.

ANSI/ASHRAE 135c-2004 , BACnet--A Data Communication Protocol for Building Automation and Control Networks

Makes the modes supported by Life Safety objects network visible, adds Unsilence Options to the LifeSafetyOperation Service, specifies the relationship between the Event_Type and Event_Parameter properties, adds a new Accumulator Object Type, adds a new Pulse Converter Object Type, standardizes event notification priorities, defines Abort reason when insufficient segments are available, and adds new Error Codes and specifies their usage.

ANSI/ASHRAE 135d-2004 , BACnet--A Data Communication Protocol for Building Automation and Control Networks

Adds clauses describing BACnet-EIB/KNX mapping. EIB/KNX is a prominent communication protocol that is widely used for Home and Building Electronic Systems for field-level residential and non-residential controls in lighting, shading, HVAC, energy management and security applications. The proposed addition to normative Annex H, Combining BACnet Networks with Non-BACnet Networks, standardizes the interface between BACnet and EIB/KNX systems.

ANSI/ASHRAE 135e-2001, BACnet - A Data Communications Protocol for Building Automation and Control Networks

Presents a number of proposed substantive changes for public review. These modifications are the result of change proposals made pursuant to the continuous maintenance procedures contained in the Manual for Processing ASHRAE Standards and of deliberations within Standing Standard Project Committee 135. The proposed changes are as follows: (1) Define the PTP connection status when the half-router can and cannot re-establish the connection; (2) Add Object Profiles and Extensions; and (3) Add the capacity for devices to advertise the maximum number of segments of a segmented APDU that they can receive.

ANSI/ASHRAE 136-1993 (R2002), A Method of Determining Air Change Rates in Detached Dwellings

Correction to paragraph 4.4, The Combination of Ventilation by Infiltration and Mechanical Ventilation and Tables 1.4 Combined effective air change for all eight combinations and 2.4 Combined effective air change for all eight combinations in Appendix B. This standard was listed for public review in the 3/13/1998 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

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Send comments (with copy to BSR) to: Manager of Standards, ASHRAE, Inc.: public.review.comment@ashrae.org

ANSI/ASHRAE 137-1995 (R2004), Methods of Testing for Efficiency of Space-Conditioning/Water-Heating Appliances that Include a Desuperheater Water Heater

This standard covers electric, air-to-air, space-conditioning appliances that include a refrigerant-to-water desuperheater and have rated cooling capacities of less than 65,000 Btu/h.

ANSI/ASHRAE 138P-2005, Method of Testing for Rating Ceiling Panels for Sensible Heating and Cooling

This third public review draft has been revised to modify the temperature ranges in some definitions and procedures, to relax the accuracy and precision limits for some test variables, to modify the minimum test panel surface area and provide a new equation for easily calculating the minimum number of test panels, to allow the test room to be directly air-conditioned and not have a test chamber (with certain provisions), and to replace propylene glycol in hydronic circuits with plain water.

ANSI/ASHRAE 139-1998, Methods of Testing for Rating Desiccant Dehumidifiers Utilizing Heat for the Regeneration Process

Provides test methods for determining the moisture removal capacity of heat-regenerated desiccant dehumidifiers as well as the co-incident energy performance so that comparative evaluations of capacity and performance can be made irrespective of the type or make of the device. This is the second public review for this standard. It first appeared in the December 8, 1995 issue of Standards Action and is being resubmitted now due to substantive changes to the text.

ANSI/ASHRAE 140-2001, Method of Test for the Evaluation of Building Energy Analysis Computer Programs

Specifies test procedures for evaluating the technical capabilities and ranges of applicability of computer programs that calculate the thermal performance of buildings and their HVAC systems.

ANSI/ASHRAE 140a-2004, Method of Test for the Evaluation of Building Energy Analysis Computer Programs

ANSI/ASHRAE Standard 140-2001 currently includes tests for the evaluation of building energy analysis computer program models that calculate building envelope and thermal fabric loads. Addendum A adds tests for the evaluation of building energy analysis computer program models that calculate unitary space-cooling mechanical equipment performance based on manufacturer design data presented as empirically derived performance maps.

ANSI/ASHRAE 143P-2000, Methods of Testing for Rating Indirect Evaporative Coolers

ANSI/ASHRAE 146-1998, Method of Testing for Rating Pool Heaters

Provides methods of testing for rating pool heaters. Provides methods of testing for heating capacity and energy efficiency. Applies to heaters operated by gas, oil or electricity, including heat pumps using outdoor ambient air as a heat source. This standard was first listed for public review in the January 20, 1995 issue of Standards Action. It is being resubmitted due to substantive changes to the text

ANSI/ASHRAE 147-2002, Reducing Emission of Fully Halogenated Chlorofluorocarbon (CFC) Refrigerants in Refrigeration and Air-Conditioning Equipment and Applications

Establishes practices and procedures that will reduce inadvertent release of halogenated refrigerants. The practices and procedures in this standard cover release reduction of halogenated hydrocarbon and halogenated ether refrigerants (a) from stationary refrigeration, air-conditioning, and heat-pump equipment and systems and (b) during manufacture, installation, testing, operation, maintenance, repair, and disposal of equipment and systems. This standard was listed for public review in the 2/11/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ASHRAE 149-2000 (R2005), Laboratory Methods of Testing Fans Used to Exhaust Smoke in Smoke Management Systems

Establishes uniform methods of laboratory testing for exhaust fans, fan components, and accessories that are to be permanently installed in smoke management systems. It excludes portable, mechanical-draft, circulating, attic, and non-electrically driven fans. The tests cover aerodynamic performance, operation at the specified elevated temperature, reversal, and damper tests.

ANSI/ASHRAE 15-2001, Safety Code for Mechanical Refrigeration
8/23/1994

This code applies to refrigerating systems and heat pumps used in the occupancies defined in Section 3. It does not apply where water is the primary refrigerant. Application: This Code shall apply to refrigerating systems installed subsequent to its adoption and to parts replaced and components added after its adoption. Equipment listed by an approved nationally recognized testing laboratory is deemed to meet the design, manufacture, and factory test requirements section of this Code, for the refrigerant or refrigerants for which such equipment is designed. Exceptions: In cases of practical difficulty or unnecessary hardship, the authority having jurisdiction may grant exceptions from the literal requirements of this Code or permit the use of other devices, materials or methods, but only when it is clearly evident that

ANSI/ASHRAE 150P-2000 (R2004), Method of Testing the Performance of Cool Storage Systems

Prescribes a uniform set of testing procedures for determining the cooling capacities and efficiencies of cool storage systems. In addition to the testing procedures, this standard identifies the test equipment required, the data required, the calculations used, and defines terminology. The standard does not cover testing of the air side distribution.

ANSI/ASHRAE 151P-2002, Practices for Measurement, Testing, Adjusting and Balancing Shipboard Heating, Ventilation, Air Conditioning and Refrigeration Systems

Provides uniform and systematic practices for making measurements in testing, analyzing, balancing, and reporting the performance of the heating, ventilation, air-conditioning and refrigeration (HVAC&R) systems on board ships. Describes methods for evaluating shipboard HVAC&R systems. Applies to all air-moving equipment, hydronic equipment, and HVAC heat-transfer equipment, refrigeration equipment, HVAC electrical power, and control equipment. Describes methods for measuring temperature, humidity, enthalpy, current, wattage, voltage, rotation, fluid flow, heat flow, pressures, sound and vibration levels in HVAC&R systems. Includes the following:
(a.) Minimum system configuration requirements to ensure the system can be tested

ANSI/ASHRAE 152P-2004, Method of Test for Determining the Design and Seasonal Efficiencies of Residential Thermal Distribution Systems.

This third public review of proposed Standard 152 incorporates changes resulting from the previous review. It changes several definitions, revises some of the nomenclature, refines instrument specifications, revises the geographic climate conditions table, deletes unneeded language and equations used for determining delivery effectiveness, relaxes the precision of the building pressure measurement, updates references, and corrects several minor errors.

ANSI/ASHRAE 154-2003, Ventilation for Commercial Cooking Operations

Incorporates several independent substantive changes resulting from comments from the prior review. It reduces the minimum velocity for grease hood ductwork from 1500 to 500 fpm, removes the limits for maximum velocity, removes the exhaust-discharge requirements relating to neighboring properties and property lines, makes an editorial clarification, and updates a revised reference.

ANSI/ASHRAE 158.1-2004, Methods of Testing Capacity of Refrigerant Solenoid Valves

Provides a means of accurately measuring the refrigerant mass flow capacity of solenoid valves. The flow capacity may be expressed in terms of refrigerating effect with various refrigerants by performing simple thermodynamic computations. It is anticipated that the Air Conditioning & Refrigeration Institute (ARI) will revise its Standard 760, entitled Solenoid Valves for Use With Volatile Refrigerants, to require that this standard be used as a method of test for capacity.

ANSI/ASHRAE 15a-2004, Safety Standard for Refrigeration Systems

This proposed addendum corrects an omission when republishing the standard in 2001 and clarifies wording in selected sections as suggested in Continuous Maintenance submissions. The changes include adding A2 and A3 refrigerants to Section 7.5.2, adding a new Section 7.5.3 for Higher Flammability Refrigerants, clarifying the wording of Section 9.7.2.3, combining Section 9.7.2.4 into Section 9.7.2.3, and updating reference information in Appendices D and E.

ANSI/ASHRAE 15b-2001, Safety Code for Mechanical Refrigeration

Proposes the following changes: (a) add water as a refrigerant, (b) include absorption refrigeration machines in the standard, and (c) clarify the wording in selected sections as a result of the Continuous Maintenance submissions. This addendum eliminates several of the unnecessary references (informative and normative). This standard specifies safe design, construction, installation, and operation of refrigeration systems. It establishes safeguards for life, limb, health, and property, and prescribes safety requirements.

ANSI/ASHRAE 15c-2000, Safety Code for Mechanical Refrigeration

This standard specifies safe design, construction, installation, and operation of refrigerating systems.

2.1 This code establishes safeguards for life, limb, health, and property; and prescribes safety standards.

2.2 This code applies to the following new installations and to modifications of existing installations made after adoption of this code: (a) to mechanical refrigerating systems and heat pumps used in the occupancies defined in Section 4, (b) to parts or components added, (c) to parts or components replaced only if they are not identical in function, and (d) to substitution of a refrigerant having a different number designation. ANSI/ASHRAE Standard 34 provides refrigerant number designations.

2.3 This code does not apply where water is

ANSI/ASHRAE 15d-2000, Safety Code for Mechanical Refrigeration

This addendum deletes the requirement for Self-Contained Breathing Apparatus (SCBA).

ANSI/ASHRAE 16-1983 (R1999), Room Air Conditioners and Packaged Terminal Air Conditioners, Method of Testing for Rating

Establishes a uniform method of testing for obtaining rating data; specifies types of test equipment for performing such tests; specifies data required and calculations used; and lists and defines the terms used in testing. This standard prescribes a method of testing for obtaining cooling capacities and air flow quantities for rating room conditioners and packaged terminal air conditioners.

ANSI/ASHRAE 169-2006, Weather Data for Building Design Standards

This proposed new standard is intended as a comprehensive source of climate data for those involved in building design. It provides a variety of climatic information used in the design, planning and sizing of buildings' energy systems and equipment and should be a valuable resource available for referencing in building design standards. The weather data has been compiled from ANSI/ASHRAE/IESNA Standard 90.1-2004, ANSI/ASHRAE Standard 90.2-2004, and the 2005 ASHRAE Handbook--Fundamentals.

ANSI/ASHRAE 17-1998 (R2003), Capacity Rating of Thermostatic Refrigerant Expansion Valves, Method of Testing for

Prescribes a method of testing the capacity of thermostatic refrigerant expansion valves for use in vapor-compression air-conditioning and refrigeration systems. It is applicable to thermostatic expansion valves, expansion valves of the direct-acting type but not the pilot-operated type, and many currently used refrigerants deemed available and suitable according to ANSI/ASHRAE Standards 15 and 34.

ANSI/ASHRAE 18-1987 (R1997), Method of Testing for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration Systems

Applies to self-contained, mechanically-refrigerated, drinking-water coolers as follows: (a) water coolers that are supplied with water under pressure from a piped system; (b) water coolers that require a bottle or reservoir to store supply of water to be cooled; or (c) water coolers that provide additional utility described by any one of the following: (1) a refrigerated storage compartment with or without provision for making ice; (2) a means for the heating of potable water; or (3) a connection that may be used to supply cooled water to remote dispensing means.

ANSI/ASHRAE 20-1997, Methods of Testing for Rating Remote Mechanical-Draft Air-Cooled Refrigerant Systems

This standard provides: (a) uniform methods of testing for obtaining performance data, (b) definition of terms, (c) specification of data to be recorded and calculation formulas, (d) test limits and tolerances, and (e) testing of applicable inlet air evaporative precooling options. This standard does not cover: (a) methods of test for production or field use, (b) liquid-cooled condensers, (c) heat reclaim condensers using less than full refrigerant liquid condensing.

ANSI/ASHRAE 22-2003, Methods of Testing for Rating Water-Cooled Refrigerant Condensers

This standard has received two prior public reviews, but it has now been determined that substantive changes are needed. Because substantive changes are not permissible in a reaffirmation, this draft has been revised so that it is essentially the same as the current (1992) standard. Because its ANSI approval has expired, this standard will be resubmitted for ANSI approval and published as a revised standard. A new committee will address the substantive changes that are needed in the near future.

ANSI/ASHRAE 23-2005, Methods of Testing for Rating Positive Displacement Refrigerant Compressors and Condensing Units

Adds zeotropic alternative refrigerants, excludes emerging supercritical refrigerants like CO₂ (which require a new test standard), provides six test methods for determining refrigerant mass flow rates, permits the same test method for the primary and confirming tests under certain conditions, includes test methods that properly account for the effects of liquid refrigerant injection, and adds compressor-efficiency computations to the test requirements.

ANSI/ASHRAE 24-2000 (R2005), Methods of Testing for Rating Liquid Coolers

Prescribes methods of testing for rating liquid coolers. It classifies the types of liquid coolers, defines the terms for rating them, and establishes the methods of test that shall be used to obtain liquid-cooler ratings.

ANSI/ASHRAE 25-2001, Methods of Testing Forced Convection and Natural Convection Air Coolers for Refrigeration

Prescribes methods of testing the cooling capacities and air flow rates of forced convection and natural convection air coolers for refrigeration. It does not include air coolers of the recalculated primary liquid refrigerant type. It does not include air-conditioning units for which testing methods are given in other standards.

ANSI/ASHRAE 26-1996, Mechanical Refrigeration and Air-Conditioning Installations Aboard Ship

Provides the minimum general requirements for the design, construction, installation, operation, inspections, and maintenance of mechanical refrigerations and air-conditioning equipment aboard ships to permit the safe, efficient, and reliable operation of such systems. This standard was listed for public comment in the December 4, 1992 issue of Standards Action. It is being resubmitted for public review owing to substantive changes.

ANSI/ASHRAE 28-1996 (R2002), Method of Testing Flow Capacity of Refrigerant Capillary Tubes

Provides uniform methods for laboratory testing the flow capacity of refrigerant capillary tubes. This standard prescribes two test methods, a traditional method and an alternative method, for determining the flow capacity of capillary tubes such as are used for refrigerant metering in refrigeration systems. Both methods use dry nitrogen and provide comparable results, but the alternative method is more convenient if electronic devices are used. The results obtained by the prescribed procedures are indicative of the refrigerant flow characteristics of the tube but are not intended to represent the actual refrigerant flow characteristics in a refrigerating cycle.

ANSI/ASHRAE 29-1988 (R2005), Methods of Testing Automatic Ice Makers

This standard prescribes the methods of testing automatic ice makes. The automatic ice maker may comprise one or more sections for shipping purposes. This standard does not include automatic ice makes installed in household refrigerators, combination refrigerators-freezers, and household freezers.

ANSI/ASHRAE 32.1-2004, Methods of Testing and Rating Bottled and Canned Beverage Vendors and Coolers

This proposed revision updates the standard to include vending machines for other types of sealed containers besides bottles and cans. This 2nd public review draft increases the tolerance of instruments and systems for measuring electrical energy, adds a requirement to conduct the energy consumption test at 75°F ambient, rewords the provision regarding the measurement of beverage temperature in the recovery test, and specifies how to conduct an energy consumption test in tropical conditions.

ANSI/ASHRAE 32.2-2003, Methods of Testing Pre-Mix and Post-Mix Soft Drink Vending and Dispensing Equipment

Prescribes a uniform method for testing and rating the capacity and efficiency of pre-mix and post-mix beverage dispensing equipment. It is a revision of an earlier version of the standard published in 1997. Due to changes in the industry, the scope of the standard has been made more specific to include equipment types that are appearing on the market and exclude those that have disappeared from the market.

ANSI/ASHRAE 33-2001, Methods of Testing Forced Circulation Air Cooling and Air Heating Coils

Prescribes laboratory methods of testing forced-circulation air-cooling coils for application under nonfrosting conditions and forced-circulation air-heating coils to assure uniform performance information for establishing ratings. This standard (a) describes and specifies testing instruments and apparatus, laboratory test methods and procedures, the test data to be recorded, and the calculations to be made from test data; (b) defines the terms used in testing; and (c) specifies standard thermodynamic properties. This standard does not specify the types of tests used for production or field testing.

ANSI/ASHRAE 34-2001, Number Designation and Safety Classification of Refrigerants 4/24/1992

This standard is intended to establish a simple means of referring to common refrigerants instead of using the chemical name, formula, or trade name. It also establishes a uniform system for assigning reference numbers and safety classifications to refrigerants.

ANSI/ASHRAE 34a-2002, Number Designation and Safety Classification of Refrigerants

Adds an A1 safety classification to Table 1 for R-C318. This safety classification was removed from Table 1 by ANSI/ASHRAE Addendum c to ANSI/ASHRAE 34-1992.

ANSI/ASHRAE 34b-2003, Number Designation and Safety Classification of Refrigerants

This proposed addendum adds a designation of R-415A to the blend R-22/152a (82.0/18.0) with tolerances of ($\pm 1.0/\pm 1.0$) and a safety classification of A2.

ANSI/ASHRAE 34c-2003, Number Designation and Safety Classification of Refrigerants

This proposed addendum adds a designation of R-418A to the blend R-290/22/152a (1.5/96.0/2.5) with tolerances of ($\pm 0.5/\pm 1.0/\pm 0.5$) and a safety classification of A2.

ANSI/ASHRAE 34d-2003, Designation and Safety Classification of Refrigerants

This proposed addendum further defines the term "refrigerant" as it applies to ANSI/ASHRAE Standard 34-2001, Designation and Safety Classification of Refrigerants.

ANSI/ASHRAE 34e-2003, Designation and Safety Classification of Refrigerants

This proposed addendum further defines the method for designation of refrigerant blends. It provides additional guidance on the specification of blend compositions and composition tolerances.

ANSI/ASHRAE 34f-2003, Designation and Safety Classification of Refrigerants

Adds a designation of R-E170 for dimethyl ether and a safety classification of A3.

ANSI/ASHRAE 34g-2003, Designation and Safety Classification of Refrigerants

Adds a designation of R-419A to the blend R-125/134a/E170 (77.0/19.0/4.0) with tolerances of ($\pm 1.0/\pm 1.0/\pm 1.0$) and a safety classification of A2.

ANSI/ASHRAE 34h-2003, Designation and Safety Classification of Refrigerants

Adds a designation of R-415B to the blend R-22/152a (25.0/75.0) with tolerances of ($\pm 1.0/\pm 1.0$) and a safety classification of A2.

ANSI/ASHRAE 34i-2004, Designation and Safety Classification of Refrigerants

This proposed addendum adds a designation of R-420A to the blend R-134a/142b (88.0/12.0) with tolerances of (+1.0, -0.0/+0.0, -1.0) and a safety classification of A1.

ANSI/ASHRAE 34j-2004, Designation and Safety Classification of Refrigerants

The purpose of this addendum is to cite current ASTM test methods for flammability testing of refrigerants. ASTM E681 has undergone significant changes to improve the repeatability of results. The replacement of the kitchen match head as the ignition source with the ASTM spark ignition electrode along with other revised ASTM E681 test methods has long been accepted by SSPC-34 as significant improvements for increasing repeatability of test results.

ANSI/ASHRAE 34k-2005, Designation and Safety Classification of Refrigerants

This second public review of proposed addendum k adds a designation of R-601 for pentane. The first public review of the proposed addendum added a designation of R-601a for 2-methylbutane (isopentane) and a safety classification of A3.

ANSI/ASHRAE 34I-2004, Number Designation and Safety Classification of Refrigerants (Addendum I)

This proposed addendum modifies the definition for the term Lower Flammability Limit (LFL) by deleting the conversion factor from the definition. Conversion factors vary with pressure and temperature. The inclusion of one conversion factor for one specific temperature and pressure in the definition might lead the reader to believe that it is applicable to all temperatures and pressures.

ANSI/ASHRAE 34m-2004, Number Designation and Safety Classification of Refrigerants (Addendum m)

This proposed addendum deletes Table B1 from Appendix B. The deleted material is informatory in nature and compares the current safety classifications of refrigerants to those used in the 1989 version of the standard. Although this information had value when the current safety classification system was first introduced in the 1992 edition of the standard, it has little relevance today.

ANSI/ASHRAE 34o-2005, Designation and Safety Classification of Refrigerants

This proposed addendum adds a designation of R-421A to the blend R-125/134a (58.0/42.0) with tolerances of (1.0/ 1.0) and a safety classification of A1.

ANSI/ASHRAE 34p-2005, Designation and Safety Classification of Refrigerants

Proposed addendum p revises the refrigerant flammability classification and specifies the flammability and fractionation testing procedures. Flammability (as determined by flame propagation in air) is now to be tested at 100°C for single-compound refrigerants. For refrigerant blends, two separate tests at 100 °C and 60 °C are to be conducted at compositions corresponding to the WCF and WCFF (see draft for definitions), respectively. In the current standard these tests are conducted at 21–23 °C.

ANSI/ASHRAE 34q-2005, Designation and Safety Classification of Refrigerants

This proposed addendum adds a designation of R-422A to the blend R-125/134a/600a (85.1/11.5/3.4) with tolerances of (±1.0/ ±1.0/+0.1, -0.4) and a safety classification of A1.

ANSI/ASHRAE 34r-2005, Designation and Safety Classification of Refrigerants

This proposed addendum adds a designation of R-421B to the blend R-125/134a (85.0/15.0) with tolerances of (±1.0/ ±1.0) and a safety classification of A1.

ANSI/ASHRAE 34s-2005, Designation and Safety Classification of Refrigerants

This proposed addendum adds a designation for R-227ea for 1,1,1,2,3,3,3-heptafluoropropane and a safety classification of A1.

ANSI/ASHRAE 37-2005, Methods of Testing for Rating Electrically Driven Unitary Air-Conditioning and Heat Pump Equipment

In this 2nd public review draft the Reynolds number equation was re-written in a different format (Section 6.3.3), the description of the duct losses (Section 7.3.3.3) was also re-written to more accurately represent a method for calculating these losses, and all references were updated to show their latest revised versions. All other changes were editorial, such as ensuring consistency in the use of words or phrases to agree with the terminology presented in the ASHRAE Fundamentals Handbook.

ANSI/ASHRAE 40-2002, Heat Operated Unitary Air-Conditioning Equipment for Cooling, Methods of Testing for Rating

Provides test methods for determining the heating and cooling output capacities and energy inputs of unitary air-conditioning and heat pump equipment that is heat-operated. These test methods may be used as a basis for rating such equipment, but it is not the purpose of this standard to specify methods of establishing ratings.

ANSI/ASHRAE 41.1-1986 (R2001), Temperature Measurement, Standard Method for

Sets forth recommended practices and procedures for temperature measurements and provides adequate and consistent measurement procedures for reference in other standards. The procedures described herein are intended for use in testing heating, refrigerating, and air-conditioning equipment and components. The media in which temperature measurements are made include air, water, brine, and volatile or non-volatile refrigerants, under both steady state and transient conditions between -40°F and 400°F (-40°C and 204°C).

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ANSI/ASHRAE 41.10-2003, Flowmeter Test Methods for Mass Flow Measurements of Volatile Refrigerants

This standard provides recommended practices for the measurement of mass flow rate of volatile refrigerants using flowmeters.

a) This standard applies where the entire flow stream of the volatile refrigerant enters and exits either as a "vapor only" or "liquid only" state.

b) This standard covers all refrigerants listed in the 2001 ASHRAE Handbook - Fundamentals and ANSI/ASHRAE Standard 34-1997, Designation and Safety Classification and Refrigerants.

ANSI/ASHRAE 41.4-1996 (R2006), Method for Measurement of Proportion of Lubricant in Liquid Refrigerant

This standard provides a method for measurement of proportion of lubricant in liquid refrigerant.

ANSI/ASHRAE 41.6-1994 (R2001), Method for Measurement of Moist Air Properties

Sets forth recommended practices and procedures for measurement and calculation of moist air properties in order to promote accurate measurement methods for specific use in the preparation of other ASHRAE standards. This standard recommends procedures for measurement of moist air properties in connection with: the establishment of the desired moist air environment for tests of heating, refrigerating, humidifying, dehumidifying, and other air-conditioning equipment, and the determination of the quantity of moisture in air streams moving through or within such equipment or spaces. This standard covers methods appropriate for the use in ASHRAE standard methods of test for rating, and for determining compliance with ASHRAE environmental standards.

ANSI/ASHRAE 41.7-1984 (R2006), Standard Method for Measurement of Flow of Gas

This standard provides flow-measuring techniques for volatile refrigerant, gaseous phase and air under conditions where the method for flow measurement set forth in ASHRAE Std41.2 are inconvenient or unsatisfactory.

ANSI/ASHRAE 41.9-2000, A Standard Calorimeter Test Method for Flow Measurement of a Volatile Refrigerant

Sets forth recommended practices for the measurement of the flow rate of volatile refrigerants using a calorimeter as a primary flow measuring instrument.

ANSI/ASHRAE 51-2001, ANSI/AMCA 210-2001, Addendum A, Laboratory Methods of Testing Fans for Aerodynamic Performance Rating

In revising the 1984 edition, one revision produced Note 4 of Figure 4A. The intended result of the revision was to specify a dimensional measurement location that would be suitable for checking by a state-of-the-art measurement device. The unintended effect of this revision was the tightening of the tolerance on that dimension beyond that which is possible to achieve by existing and customary commercial fabrication processes. This went unnoticed during the review process. To rectify this oversight, it is necessary to revert to the requirement as given in the 1985 edition.

ANSI/ASHRAE 51/AMCA 210-1999,
Laboratory Methods of Testing Fans for
Rating

This standard was first listed in the April 14, 1995 issue of Standards Action. IT is being resubmitted due to substantive changes which are listed below in their entirety: Change reference [4] as shown below. ASHRAE Standard 41.5-75(1975) Standard Measurement Guide Guideline 2-1986 (RA90), Engineering Analysis of Experimental Data

Remove the first sentence in Figure 6 as shown below.

To avoid excessive pressure drop through the flow straightener, careful attention to construction tolerances and details is important. Cell sides shall be flat and straight. Where $y \geq 3 \text{ mm}$ (0.125 in.), the leading edge of each segment shall have a chamfer of 1.3 mm (0.05 in.) per side. The method of joining cell segments (such as tack welds) shall be kept to the minimum required

ANSI/ASHRAE 52.2-1999, Method of Testing
General Ventilation Air-Cleaning Devices
for Removal Efficiency by Particle Size

Establishes a test procedure for evaluating the performance of air-cleaning devices as a function of particle size. Describes a method of laboratory testing to measure the performance of general ventilation air cleaning devices. This is the third public review for this standard. It previously appeared in the April 12, 1996 and November 8, 1996 issues of *Standards Action*. It is being resubmitted now due to substantive changes made to the original submittal.

ANSI/ASHRAE 55P-2004, Thermal
Environmental Conditions for Human
Occupancy

This fourth draft of Standard 55 contains independent substantive changes (ISC) to the third public review draft. Primary changes include the replacement of the 3 classes of thermal comfort with a single minimum set of requirements, deletion of references to responsible parties, clarifications to the method of compliance, and the addition of an input/output table to Addendum D. Only the indicated parts of the standard are open for comment.

ANSI/ASHRAE 58-1986 (R1999), Rating
Room Air Conditioner and Packaged
Terminal Air Conditioner Heating Capacity,
Method of Testing for

Prescribes test methods for determining the heating capacities and air flow quantities for room air conditioners and packaged terminal air conditioners equipped with means for room heating. This standard establishes a uniform method of testing for obtaining rating data; specifies test equipment for performing such tests; specifies data required and calculations to be used; and lists and defines the terms used in testing.

ANSI/ASHRAE 62.1-2004, Ventilation for
Acceptable Indoor Air Quality
Last Final Action 5/16/1991

ANSI/ASHRAE 62.2a-2004, Ventilation and
Acceptable Indoor Air Quality in Low-Rise
Residential Buildings, Addendum a

This addendum eliminates the backdrafting test in Appendix A. Based on the best industry-accepted method found in the National Fuel Gas Code, the backdrafting test has always raised questions about how to apply it to solid fuel-burning appliances. Also, it cannot be performed until the home is completed, placing any remedial balancing at a difficult stage of construction or sale. As a remedy, this addendum proposes 15 cfm/100 square feet as the upper limit for minimizing backdrafting potential.

ANSI/ASHRAE 62.2b-2004, Ventilation and
Acceptable Indoor Air Quality in Low-Rise
Residential Buildings

This proposed addendum replaces the term "severe cold climate," which is defined as a climate that has more than 8000 °F degree-days, with the term "very cold climate," which is defined as a climate that has more than 9000 °F degree-days. With the change, Standard 62.2 climate definitions will be more consistent with the proposed revisions to the ICC climate zone definitions, which will simplify implementation of 62.2 into code. For the main impact of this change, refer to the foreword to 62.2b.

ANSI/ASHRAE 62.2P-2003, Ventilation and
Acceptable Indoor Air Quality in Low-Rise
Residential Buildings

This draft of Standard 62.2 focuses on a key issue from prior reviews. For the 2nd review the sound rating for intermittent exhaust fans was set at 1.5 sone maximum. In response to commenters in the home building industry, the requirement was limited to kitchen fans in the 3rd review. It has now been found that building a 1.5-sone fan is more costly than previously thought, so this draft proposes a requirement of 3 sone for both kitchen and bathroom fans. Fans larger than 400 cfm are exempt.

ANSI/ASHRAE 62aa-2004, Ventilation for
Acceptable Indoor Air Quality

This addendum converts requirements related to outdoor air intake location and intake protection into mandatory and enforceable language. This 3rd public review draft deletes the separation distance requirement for general building exhaust in Table 5.2, it allows the use of the National Fuel Gas Code and other established standards instead of the separation distance for combustion vents in Table 5.2, and it revises the requirements related to the limitation of rain penetration such that they relate more closely to industry practice for testing and specifying louvers.

ANSI/ASHRAE 62ae-2003, Ventilation and
Acceptable Indoor Air Quality

This addendum addresses a number of distinct issues that have not been dealt with by previous addenda. It adds definitions of the terms indoor air, cognizant authority and industrial space. It modifies or deletes several existing definitions in an attempt to clarify language and to delete a term that is not used in the standard.

ANSI/ASHRAE 62af-2003, Ventilation and
Acceptable Indoor Air Quality in
Commercial, Institutional, and High-Rise
Residential Buildings, Addendum af

This addendum implements changes to the Purpose and Scope of the standard that are contained in the approved Target, Title Purpose and Scope of the standard. These changes address how the standard relates to new and existing buildings, clarifies its coverage of industrial and laboratory spaces, and adds a caveat concerning situations where outdoor air quality may be poor.

ANSI/ASHRAE 62d-1999, Ventilation for
Acceptable Indoor Air Quality

Contains requirements for commercial, institutional, and residential building spaces intended for human occupancy and principles contained in this standard may also be applied to other spaces intended for human occupancy.

Considers chemical, physical, and biological contaminants, as well as factors such as moisture and temperature, that can affect human health and perceived air quality. Addendum 62d adds Subsection 2.4 from the June 1997 approved scope with only editorial modification.

ANSI/ASHRAE 62e-1999, Ventilation for
Acceptable Indoor Air Quality

Contains requirements for commercial, institutional, and residential building spaces intended for human occupancy and principles contained in this standard may also be applied to other spaces intended for human occupancy.

Considers chemical, physical, and biological contaminants, as well as factors such as moisture and temperature, that can affect human health and perceived air quality. Addendum 62e deletes the words "and a moderate amount of smoking" from the footnote to Table 2 of 6.1.3. Also, it deletes a related comment from Table 2 related to Conference Rooms.

ANSI/ASHRAE 62f-1999, Ventilation for Acceptable Indoor Air Quality

Contains requirements for commercial, institutional, and residential building spaces intended for human occupancy and principles contained in this standard may also be applied to other spaces intended for human occupancy.

Considers chemical, physical, and biological contaminants, as well as factors such as moisture and temperature, that can affect human health and perceived air quality. Addendum 62f changes Table 2, 6.1.3, 6.2.1 and Appendix D references in order to clarify several misunderstandings regarding CO₂ as a contaminant in buildings and its use as an indicator of acceptable indoor air quality.

ANSI/ASHRAE 62h-2003, Ventilation for Acceptable Indoor Air Quality, Addenda h

This 4th public review of Addendum 62h addresses concerns raised in the last review draft, which added an allowance for compliance with the Indoor Air Quality Procedure through an "equivalency" with the IAQ conditions by use of the Ventilation Rate Procedure. The allowance concerned some commenters, especially its potential use in smoking areas. The committee deleted the allowance, noting that the IAQ Procedure as now worded in the addendum already allows such "alternative" design approaches.

ANSI/ASHRAE 62i-2002, Ventilation for Acceptable Indoor Air Quality (Addenda i)

Replaces material in sections 4 and 6 regarding the use of the IAQ Procedure. It describes situations in which the IAQ procedure can or must be used, and it does so in mandatory and enforceable language. It does not tell one how to use this procedure, only when. (Addendum 62h addresses the former issue.) This is the second Public Review for this standard. It was originally listed in the November 6, 1998 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ASHRAE 62j-2001, Ventilation for Acceptable Indoor Air Quality, Addenda j

Replaces the current performance requirement for natural ventilation systems with a prescriptive requirement that is similar to many model building codes. The existing section is difficult for designers to understand and to use (see interpretations 62-1989-8 and 62-1989-14) and it is difficult to enforce. This is the second Public Review for this standard. It was originally listed in the November 6, 1998 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ASHRAE 62k-2002, Ventilation for Acceptable Indoor Air Quality, Addenda k

Deletes the current Section 4 (Classification) and adds a new informative appendix addressing application of the standard in new and existing buildings. The current Section 4 discusses the two procedures for determining design ventilation rates, but contains no requirements and is therefore inconsistent with a standard in code-intended language. The new appendix attempts to address the issue of application of the standard in new and existing buildings. The appendix contains informative guidance on when the standard applies in new and existing buildings. It also contains a code-language version of these requirements that could be adopted, with or without modification, by jurisdictions that do not have a building code. Earlier versions of this addendum attempted to make this material part of the standard (in Section 4), but it was pointed out that this could create

ANSI/ASHRAE 62l-2001, Ventilation for Acceptable Indoor Air Quality, Addenda l

Creates a new section on construction and ventilation system start-up, recognizing that acceptable indoor air quality is impacted by more than simply the design of the HVAC system. Requirements include such measures as ventilation system balancing.

ANSI/ASHRAE 62m-2001, Ventilation for Acceptable Indoor Air Quality, Addenda m

Creates a new section on operating and maintenance procedures, recognizing the importance of these procedures on acceptable indoor air quality. Requirements include such measures as frequency of system inspection and air cleaner maintenance.

ANSI/ASHRAE 62n-2004, Ventilation and Acceptable Indoor Air Quality in Commercial, Institutional, and High-Rise Residential Buildings, Addenda n

This 3rd public review of Addendum 62n (a proposed revision of the Ventilation Rate Procedure) tries to satisfy unresolved commenters from prior reviews. It revises the definition of "zone," presents simple approaches for determining outdoor air intake rates for single-zone and 100% outdoor air systems, revises the tables of default values of zone and system ventilation efficiencies, and revises the normative appendix presenting a detailed methodology for determining ventilation efficiencies.

ANSI/ASHRAE 62o-2003, Ventilation for Acceptable Indoor Air Quality

Contains minimal normative guidance for ventilation of areas containing environmental tobacco smoke (ETS), simply stating that additional ventilation shall be provided relative to a similar ETS-free area. In informative language, it contains a method for determining this additional ventilation based upon chamber studies of occupant perception from the 1980s.

ANSI/ASHRAE 62p-2001, Ventilation for Acceptable Indoor Air Quality, Addenda p

Independently addresses combustion processes, since all designers may not be subject to building codes and since building code content can change from minimum mandatory requirements. Combustion processes consume oxygen from combustion air and produce water vapor, carbon dioxide and other contaminants. Many building codes already adequately and appropriately address the proper indoor use of fuel-burning appliances, in terms of both combustion air and venting of combustion products.

ANSI/ASHRAE 62q-2001, Ventilation for Acceptable Indoor Air Quality, Addenda q

Modifies several definitions for clarity. In addition, several definitions that are adequately defined in standard dictionaries are deleted for brevity, as are others that are not used in the body of the standard.

ANSI/ASHRAE 62r-2003, Ventilation and Acceptable Indoor Air Quality in Commercial, Institutional, and High-Rise Residential Buildings, Addenda r

This addendum addresses outdoor air-quality assessment and air-cleaning requirements. The current standard requires outdoor air assessment and recommends outdoor cleaning but does not require it. The section where outdoor air cleaning is currently discussed (Section 5.9) is replaced with a new Section 4, which requires outdoor air-quality assessment for all ventilation systems. Documented assessment is expected to lead to informed decisions related to the location of intakes and outdoor air-cleaning measures.

ANSI/ASHRAE 62s-2001, Ventilation for Acceptable Indoor Air Quality, (Addenda s)

Expands and clarifies requirements for equipment-related particle filtration. These requirements are intended to lower the level of particulate matter in the ventilation system where wet surfaces are present, thereby reducing the rate of dirt accumulation on ventilation system components, including ductwork.

ANSI/ASHRAE 62t-2002, Ventilation for Acceptable Indoor Air Quality

Replaces section 5.11. In so doing, it clarifies and codifies requirements for drain pan design, carryover from cooling coils, access for inspection and cleaning, and requirements related to the proper application of humidifiers and water spray devices within the air distribution system. Recognizing that liquid water within the air distribution system increases the likelihood of microbial growth, the requirements in this addendum seek to prevent standing water in drain pans, limit water droplet carryover, and minimize stagnant water in humidifier and water spray sumps.

ANSI/ASHRAE 62u-2002, Ventilation for Acceptable Indoor Air Quality

Adds requirements related to the control of ventilation systems. An improperly controlled system is unlikely to deliver ventilation air at design minimum levels. This addendum does not cover optional demand controlled ventilation requirements. It specifically addresses VAV system controls for outdoor air intake airflow. The intake control requirements recognize that, at low supply volumes, sufficient outdoor airflow may not be maintained if a fixed outdoor air intake damper position is used. In most cases, an active outdoor air control system must be provided to ensure minimum intake rates are maintained.

ANSI/ASHRAE 62v-2002, Ventilation for Acceptable Indoor Air Quality, Addenda v

ANSI/ASHRAE 62w-2001, Ventilation for Acceptable Indoor Air Quality, Addenda w

Defines performance criteria for air stream surface materials in ventilation system equipment, ducts and plenums. Conformance with these criteria is intended to minimize the potential for microbial growth and dissemination through the air distribution system. Installation provisions are intended to minimize internal insulation material from becoming loose, damaged, or collecting dirt at joints and seams.

ANSI/ASHRAE 62x-2003, Ventilation for Acceptable Indoor Air Quality

Revises the humidity control requirements currently described in Section 5.10. Building pressurization requirements to minimize the infiltration of moist outdoor air (which can cause condensation on building surfaces during cooling operation) have also been added. This addendum has had four public reviews and the independent substantive changes in this draft respond to recent public review comments. Proposed additions are underlined and deletions are struck through.

ANSI/ASHRAE 62y-2004, Ventilation for Acceptable Indoor Air Quality

This proposed addendum classifies air with respect to contaminant and odor intensity and limits the recirculation of lower-quality air into spaces with air of higher quality. This 5th public review adds a sentence to the Class 2 Note under 5.x.1 to address concerns raised by the restaurant/hospitality industry and changes some classifications from 3 to 2 because of the restrictive requirement that class 3 air can only be recirculated to the space from which it comes.

ANSI/ASHRAE 62z-2003, Ventilation and Acceptable Indoor Air Quality in Commercial, Institutional, and High-Rise Residential Buildings, Addenda z

This addendum addresses air-cleaning requirements for ozone. The current standard requires outdoor air assessment, and recommends outdoor cleaning for contaminants of concern, but it does not require cleaning for ozone. This addendum requires gaseous air cleaning when the outdoor ozone concentration is high, but it does not require air cleaning for other gaseous contaminants.

ANSI/ASHRAE 63.1-1995 (R2002), Methods of Testing Liquid Line Refrigerant Driers

Prescribes test methods for determining flow capacity and water capacity performance characteristics of liquid line refrigerant driers. This standard applies only to those driers which employ a desiccant as defined in the Definitions Section. A desiccant's performance varies with respect to its activation. The water capacity test method prescribed in this standard can be used to test a drier either "as received," or after being reactivated in accordance with the manufacturer's recommendations. This standard applies only to liquid line driers for use in systems employing halocarbon refrigerants which have an atmospheric boiling point below 20°C(68°F).

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ANSI/ASHRAE 63.2-1996, Method of Testing Liquid Line Filter-Drier Filtration Capability

Prescribes a laboratory test method for evaluating the filtration capability of filters and filter-driers used in liquid lines of refrigeration systems.

ANSI/ASHRAE 64-2005, Methods of Testing Remote Mechanical-Draft Evaporative Refrigerant Condensers

This proposed revision modifies the title, purpose, and scope of the standard to make it clear that the standard is intended to be a laboratory method of test. As now modified, the standard prescribes methods of laboratory testing remote mechanical draft evaporative refrigerant condensers. Following this standard, different laboratories should produce equivalent results on the same equipment.

ANSI/ASHRAE 68-1997, ANSI/AMCA 330-1997, Laboratory Method of Testing In-Duct Sound Power Measurement Procedure for Fans (also designated ANSI/AMCA 330-86)

Determines by test the sound power radiated into an anechoically terminated duct on the supply and/or return side of air handling equipment.

ANSI/ASHRAE 72-2005, Method of Testing Commercial Refrigerators and Freezers

Makes independent substantive changes to the previous draft in order to clarify or modify the testing conditions and reporting of results as suggested by commenters. In addition, informative Appendix A is added to show test results typically needed for various rating programs such as performance certifications. In general, this standard combines Standard 72-1998 for open refrigerators and Standard 117-2002 for closed refrigerators.

ANSI/ASHRAE 78-1985 (R2003), Method of Testing Flow Capacity of Suction Line Filters and Filter-Driers

Establishes a method for measuring the flow capacity of refrigerant suction line filters and filter-driers. It is intended for use on both sealed and replaceable element type suction line filters and filter-driers of all types. The test method is based on using air as the testing medium and calculating the results to refrigerant gas flow under various conditions.

ANSI/ASHRAE 79-2002, Methods of Testing for Rating Room Fan-Coil Air Conditioners

Prescribes laboratory methods of testing room fan-coil air conditioners to assure uniform performance data for establishing ratings.

This standard includes procedures that:

- (1) describe and specify test instruments and apparatus
- (2) describe and specify laboratory test methods and procedures
- (3) describe and specify test data to be recorded
- (4) describe and specify calculations to be made from test data
- (5) define terms used in testing
- (6) specify standard thermodynamic properties.

This standard was listed for public review in the 8/16/1996 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ASHRAE 86-1994 (R2002), Method of Testing the Floc Point of Refrigeration Grade Oil

Provides a method for measuring the waxing tendency of refrigeration grade oils. The test for floc point is intended to determine the waxing tendency of refrigeration grade oils at low temperatures. The test is based on evaluation of the wax precipitation tendency of a mixture containing 90% Refrigerant 12 and 10% by volume of the oil being tested. The results can be used to compare several different oils.

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ANSI/ASHRAE 87.2-2002, In-Situ Method of Testing Propeller Fans for Reliability

Establishes a method of testing propeller fans to measure those dynamic characteristics that are essential in the proper selection and application of such fans to minimize the potential for fatigue failure. This standard applies to propeller fans used in heating, ventilation, refrigeration and air conditioning equipment which:

- (a) are built-up or monolithic construction,
- (b) may include a slinger ring or hub, or both, and
- (c) are direct or belt driven.

This test method characterizes the fan in the application for which it is intended.

ANSI/ASHRAE 87.3P-2001, Method of Testing Propeller Fan Vibration - Diagnostic Test Methods

Establishes laboratory and on-site diagnostic test methods for identifying causes of vibration problems involving direct-driven propeller fans for condenser cooling in air-conditioning units, heat pumps, and chillers.

ANSI/ASHRAE 90.1n-2003, Energy Standard for Buildings Except Low-Rise Residential Buildings

Updates the normative references. These changes affect the testing procedures for determining the building material thermal properties and assembly U-factors of Sections A9.3.1 and A9.3.2 of Normative Appendix A. Test procedure ASTM C1363 replaces ASTM C236 and ASTM C976 for these properties. Also, where credit is taken for a low-emissivity coating for skylights, the coating emissivity shall now be determined in accordance with NFRC 300-2001 instead of NFRC 301-1993.

ANSI/ASHRAE 90.2-2001, Energy Efficient Design of New Low-Rise Residential Buildings

7/24/1995

This Standard covers new residential dwelling units for human occupancy. For purposes of this Standard, residential dwelling units include single family houses and multi-family structures of three stories (above grade) or fewer including manufactured housing and mobile homes, and does not include transient housing such as hotels, motels, nursing homes, jails and barracks. This Standard covers building envelope, heating and air-conditioning equipment and systems, and provisions for overall building design alternatives and trade-offs. This Standard does not cover specific procedures for the operation, maintenance and use of residential buildings. This Standard does not cover portable products such as appliances and heaters. This Standard does not cover residential electric service wiring or lighting

ANSI/ASHRAE 90.2a-1995, Energy Efficient Design of New Low-Rise Residential Buildings

Updates and corrects eight references and expands the table of metal stud correction factors to be consistent with those in ASHRAE/IES 90.1-1989 as changed by publication of Addendum 90.1g-1993.

ANSI/ASHRAE 90.2a-2003, Energy Efficient Design of Low-Rise Residential Buildings

Pertains to ANSI/ASHRAE Standard 90.2-1993, "Energy Efficient Design of New Low-Rise Residential Buildings," which was approved in 1993. A complex fenestration load change equation was included in the standard and was required to be used for determining compliance when glass area exceeded 125 ft². A number of objections were raised concerning this equation. To assist the user in determining compliance for buildings with greater fenestration, a simple set of prescriptive requirements has been developed and is proposed in this addendum. The prescriptive requirements in this addendum were derived under the following conditions: to not exceed the energy use requirements for a residence built in accordance to the requirements of Standard 90.2-1993 with 18% fenestration area (conditioned floor space) equally oriented in

ANSI/ASHRAE 90.2b-1994, Energy Efficient Design of New Low-Rise Residential Buildings

Revises the coefficients for vertical glazing and adds skylights to the fenestration tradeoff equation.

ANSI/ASHRAE 90.2b-2003, Energy Efficient Design of New Low-Rise Residential Buildings

Pertains to changes to Section 5.2.2.1.4 and Table 5-1, which reflect modifications to the text to accurately depict the material under consideration in Table 5-1. This is accomplished in part by substituting the word "Steel" for "Metal". The modifications to Table 5-1, by changing one category to "Nominal Stud Size" and deleting "Gauge of Stud," are necessary as a matter of coordination and consistency with steel industry standard terminology and dimensional designations as well as coordination with the national model building codes and standards. The changes to the note below Table 5-1 remove the inconsistency that was present between the note and the category "Gauge of Stud" and insert in its place language that is consistent with current industry standards and terminology. This standard was listed for

ANSI/ASHRAE 90.2c-1997, Energy Efficient Design of New Low-Rise Residential Buildings

Proposes to a) clarify certain provisions related to the application of the thermal envelope criteria; b) clarify and enhance provisions related to heat traps and hot water piping insulation and delete shower flow requirements which are addressed by preemptive Federal law; c) provide enhancements to the heating and air-conditioning equipment and systems provisions, most notably revising the acceptable processes for documenting and verifying equipment efficiency; d) revise requirements related to calculation of thermal properties of building envelope components; e) reference the 1989 edition of the ASHRAE Handbook-Fundamentals to provide consistency for the technical basis of Standard 90.2 and the framing factor criteria in the Handbook.

ANSI/ASHRAE 90.2c-2003, Energy Efficient Design of New Low-Rise Residential Buildings

Contains requirements for the reference building to which the actual building design must be compared. In Section 8.7.1, the ducts assumed for the reference building must be completely within the conditioned space. In much of the country where ducts are commonly located in unconditioned spaces, this requirement represents a disincentive to use the performance path of Section 8. The prescriptive requirements for buildings with ducts in unconditioned spaces are more stringent than those for buildings with ducts in the interior. Given the current understanding of the issue, the prescriptive requirements cannot be assumed to reflect the real impact of duct losses. To provide an incentive to move ducts indoors, the performance path must acknowledge the reality that ducts are commonly located in unconditioned spaces. The change will

ANSI/ASHRAE 90.2d-2003, Energy Efficient Design of New Low-Rise Residential Buildings (Addendum d)

Pertains to structural damage that has resulted in areas of heavy termite infestation traveling through or behind slab edge insulation. SSPC 90.2 did not consider this risk in the economic optimization that was used to derive the original slab edge insulation requirements.

ANSI/ASHRAE 90.2e-2003, Energy Efficient Design of New Low-Rise Residential Buildings

Proposes to define framing factor assumptions required in American National Standard for Energy Efficient Design of New Low-Rise Residential Buildings, ANSI/ASHRAE 90.2-1993.

ANSI/ASHRAE 90.2f-2003, Energy Efficient Design of New Low-Rise Residential Buildings

Allows a residential structure to consider the use of high-albedo roofs in hot and hot and humid climates in order to reduce air-conditioning energy use, and in turn contribute to reducing the heat island effect in or near urban centers.

ANSI/ASHRAE 90.2g-2004, Energy-Efficient Design of Low-Rise Residential Buildings

This proposed addendum deletes all provisions, tables, figures and references that are solely associated with manufactured housing. SSPC 90.2 recommends this action because the energy regulations governing manufactured housing are controlled by the HUD Code (The HUD Code, 24 CFR 3280) and the Manufactured Housing Institute recognizes only the Federally Mandated HUD Code. In addition, Standard 90.2-2001 is less stringent than the HUD Code for six states.

ANSI/ASHRAE 90.2h-2004, Energy-Efficient Design of Low-Rise Residential Buildings

This proposed addendum adds a roofing product rating program developed by the Cool Roof Rating Council (CRRC) as a credible and readily available means to determine radiative energy performance and to establish compliance with the standard. The test procedure is considered comparable to the ASTM solar reflectance test methods currently cited. A roofing product can be verified by a label placed on it (or its container or technical literature) or through the CRRC's web site directory.

ANSI/ASHRAE 90.2i-2004, Energy-Efficient Design of Low-Rise Residential Buildings

The revisions proposed in this second public review draft clarify the intent of Section 6.7 in the first public review draft while adding a new exception for packaged air-conditioning/electric furnace units that were previously not addressed by this requirement. This second public review draft also makes extensive changes to Tables 5-2 and 5-11, responding to commenters who recommended further simplification of the tables.

ANSI/ASHRAE 90.2j-2004, Energy-Efficient Design of Low-Rise Residential Buildings

This proposed addendum provides clarification that all combinations of cooling and heat pump equipment must have rated capacity and efficiency performance data consistent with federal law.

ANSI/ASHRAE 90.2k-2004, Energy-Efficient Design of Low-Rise Residential Buildings

This proposed addendum revises the piping insulation requirements in ASHRAE Standard 90.2 to be consistent with the requirements in ASHRAE Standard 90.1-2001.

ANSI/ASHRAE 90.2l-2001, Energy Efficient Design of New Low-Rise Residential Buildings

Changes the 90.2 title, purpose and scope to be consistent with that of the 90.1 standard but also makes it clear that there are no requirements for additions or alterations to existing buildings in the 90.2 Standard.

ANSI/ASHRAE 93-2003, Solar Collectors, Method of Testing to Determine the Thermal Performance of

Provides test methods for determining the thermal performance of solar energy collectors that use single-phase fluids and have no significant internal energy storage. It applies to non-concentrating and concentrating solar collectors in which a fluid enters the collector through a single inlet and leaves the collector through a single outlet. For additional information on the applicability of this standard, refer to the scope section in the standard itself.

ANSI/ASHRAE 94.1-2002, Method of Testing Active Latent-Heat Storage Devices Based on Thermal Performance

The purpose of this standard is to provide a standard procedure for determining the thermal performance of latent heat thermal energy storage devices used in heating, air-conditioning, and service hot water systems. This standard applies to latent heat thermal energy storage devices in which a transfer fluid enters the device through a single inlet and leaves the device through a single outlet. This standard is not applicable to those configurations in which there is simultaneous flow into the storage device through more than one inlet or simultaneous flow out the storage device through more than one outlet. The transfer fluid can be either a liquid or a noncondensing gas. This standard does not include factors relating to cost, life, or reliability. It anticipates a variety of energy sources, but does not consider the interfacing requirements of any specific heating or

ANSI/ASHRAE 94.2-1989 (R2002), Devices with Electrical Input and Thermal Output Based on Thermal Performance, Methods of Testing

The purpose of this standard is to provide a standard procedure for determining the energy performance of electrically charged thermal energy storage devices used in heating systems. This standard applies to thermal storage devices that are charged electrically and discharged thermally. The energy may be stored as latent heat or as sensible heat or as a combination of the two. The device is charged by electric-resistance heating, and the electric-resistance mechanism is an integral part of, or is located inside, the storage device. The device is discharged by a heat-transfer fluid that enters the device through a single inlet and leaves the device through a single outlet. Storage devices having more than one inlet and/or outlet may be tested according to this standard, but each flow configuration

ANSI/ASHRAE 94.3-1986 (R2002), Active Sensible Thermal Energy Storage Devices, Method of Testing Based on Thermal Performance

The purpose of this standard is to provide a standard procedure for determining the thermal performance of sensible thermal energy storage devices used in heating, air-conditioning, and service hot water systems. This standard applies to sensible-heat-type thermal energy storage devices in which a transfer fluid enters the device through a single inlet and leaves the device through a single outlet. Storage devices having more than one inlet and/or outlet may be tested according to this standard, but each flow configuration involving a single inlet and single outlet must be tested separately. This standard is not applicable to those configurations in which there is simultaneous flow into the storage device through more than one inlet and/or simultaneous flow out of the storage device through no more than one

ANSI/ASHRAE 97-1999 (R2003), Sealed Glass Tube Method to Test the Chemical Stability of Materials for Use Within Refrigerant Systems

Establishes a means of testing the various materials used in hermetic and non-hermetic refrigerant systems. The test is primarily intended as an accelerated screening tool and can provide valuable information on the chemical stability of system materials. The test involves charging sealed glass tubes with the material, aging the tubes, and then analyzing the results by various means.

ANSI/ASHRAE 99-2006, Refrigeration Oil Description

First published in 1981 and reaffirmed in 1987, Standard 99 provides a uniform means of identifying particular refrigeration oils without resorting to commercial names or designations by utilizing common laboratory tests that are well recognized by those concerned with the use of the oil. This proposed revision of the standard expands its scope to include synthetic lubricants, especially those used with HFC refrigerants.

ANSI/ASHRAE Standard 116-1995 (R2005), Methods of Testing for Rating Seasonal Efficiency of Unitary Air Conditioners and Heat Pumps

This standard covers electrically driven, air-cooled air conditioners and heat pumps used in residential applications with cooling and heating capacity of 65,000 Btu/b and less. The methods of test in this standard are broadly applicable, but this standard provides cooling and heating hours in temperature bins for only the contiguous states of the continental USA. Equipment with single-speed, multiplespeed, variable-speed, unloading, or multiple compressors for ducted and ductless systems are included. Standard does not apply to room air conditioners.

ANSI/ASHRAE/IESNA 100-1995, Including Addendum 100a-1996, Energy Conservation in Existing Buildings

Constructive comments are invited on the independent substantive changes made since the first public review of this standard. The text of the public review appears in its entirety. Proposed additions are indicated by underlining and proposed deletions by strikethroughs. The marked changes only are open to review and comment. When responding to this public review, please identify yourself as a public review commenter. Backgrounds and Forewords are introductory remarks, not part of the standard. The prefix BSR refers to Board of Standards Review and indicates that the document will be proposed to the American National Standards Institute for approval. This standard was listed for public review in the August 21, 1992, October 15, 1993, and March 4, 1994 issue of Standards Actions. It is being resubmitted owing to substantive

ANSI/ASHRAE/IESNA 100b-1997, Energy Conservation In Existing Buildings

Proposes to make changes to Section 7.5 Electric Motors and Subsection 7.8.2.6 relating to total connected lighting power (CLP)

ANSI/ASHRAE/IESNA 90.1-2001, Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings (Including Addenda B, C, D, E, F, G, I and M)

4/4/2000
The Purpose of this standard (hereafter referred to as code) is to provide minimum requirements for the energy-efficient design of buildings except low-rise residential buildings.

This code provides:

(a) minimum energy-efficient requirements for the design and construction of;

1. New buildings and their systems,
2. New portions of buildings and their systems, and
3. New systems and equipment in existing buildings.

(b) criteria for determining compliance with these requirements.

2.2 The provisions of this code apply to:
(a) the envelope of buildings provided that the enclosed spaces are:

ANSI/ASHRAE/IESNA 90.1a-2003, Energy Standard for Buildings Except Low-Rise Residential Buildings

Requirements for transformers were deleted from a prior draft of the Standard, and Section 4.4.7 was inadvertently not deleted at the same time transformer requirements were deleted. Without the transformer requirements in Section 8, or any sort of ind

ANSI/ASHRAE/IESNA 90.1aa-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Indicates that the connected load is not always the sizing method used in electrical design. Having the voltage drop sizing criteria different from the other aspects of the sizing is inappropriate.

ANSI/ASHRAE/IESNA 90.1aa-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This Addendum updates the references in Section 12 to the current referenced material. Some of the references were deleted because they are no longer referenced by the standard, some were updated to reflect the correct reference, and others were changed to reflect the most current document.

ANSI/ASHRAE/IESNA 90.1ab-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies that the additional power allowances apply to any lighted area that meets the criteria for additional lighting power allowance. This change does not change the intent or practical stringency of the section.

ANSI/ASHRAE/IESNA 90.1ab-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed addendum modifies exception d to Section 6.3.6.1 to define commercial kitchen hoods per IMC (International Mechanical Code). IMC defines a Type 1 hood as a kitchen hood for collecting and removing grease vapors, and smoke. The change was made because the project committee discovered that NFPA 96 does not contain a Type 1 classification for kitchen hoods as stated in exception d. And since the wording is now the same as that in the IMC, there is no need to reference it.

ANSI/ASHRAE/IESNA 90.1ac-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Provides the designer with more flexibility in determining the load of the system.

ANSI/ASHRAE/IESNA 90.1ac-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This addendum as a whole proposes modifications to Section 11, the Energy Cost Budget (ECB) Method, in order to incorporate items from Appendix G that apply. This second public review draft includes several independent substantive changes to the first public review draft to incorporate improvements suggested by reviewers. The changes are intended to add clarity and specificity to a number of different paragraphs.

ANSI/ASHRAE/IESNA 90.1ad-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Provides clarification and adds missing applications to Section 6. This involves numerous changes including the 0.2 reduction in Tables 6.2.1 A and B, damper requirements in 6.2.3.2.4, 6.3.1.1.4 and 6.3.2.2.3, valve requirements for hydronic heat pumps, insulation requirements in 6.2.4, adds a "buried" column to Table 6.2.4.2B, economizer requirements in 6.3.1 and 6.3.1.1.3, adds ARI rating standard references to Table 6.1.3, and provides additional requirements for variable air volume fan control.

ANSI/ASHRAE/IESNA 90.1ad-2005, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed addendum adds a roofing product rating program developed by the Cool Roof Rating Council (CRRC) as a credible and readily available means to determine radiative energy performance and to establish compliance with the standard. The test procedure is considered comparable to the ASTM solar reflectance test methods currently cited. A roofing product can be verified by a label placed on it (or its container or technical literature) or through the CRRC's web site directory.

ANSI/ASHRAE/IESNA 90.1ae-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This second public review draft of proposed addendum ae further modifies the occupancy sensor control requirement to provide exemptions for spaces with multi-scene control where control conflicts may arise, for shop and lab classrooms where safety issues may arise, and for preschool through twelfth-grade classrooms where occupancy is generally constant and therefore less energy savings is available.

ANSI/ASHRAE/IESNA 90.1af-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Modifies the requirements for alterations to existing buildings in Section 4. These modifications include alterations to the envelope, HVAC, and service water heating portions of existing buildings.

ANSI/ASHRAE/IESNA 90.1ag-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed revision of the retail "sales area" LPD value is a correction of the previously approved Addendum g. When the initial table of space-by-space method LPDs was prepared for Addendum g public review, the "Retail Sales area" was inadvertently left at the previous 90.1-2001 value of 2.1 W/ft² (23 W/m²). This addendum revises this value to the correct value produced by the applicable space type models of 1.7 W/ft² (18 W/m²).

ANSI/ASHRAE/IESNA 90.1ah-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Changes 9.3.1.1 to allow the building area method to be used for all buildings.

The original text does not work for the most common downtown building. It suggests that a building with 10 stories of office, 1 floor with a cafeteria, 1 ground level retain story, and 2 floors of below-grade parking would use 1.3 Watts per square foot for all areas including the cafeteria, retail, and parking garage.

The proposed text is written to parallel that of the space-by-space method in 9.3.1.2.

ANSI/ASHRAE/IESNA 90.1ah-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This addendum is intended to add weather data for 9 new locations, including the District of Columbia (to remedy an earlier omission) plus 6 locations in the US Territories and a new location in the Philippines. These additions do not impact the stringency of the standard but simply increase its usability. The omission of DC from the current list of weather locations surfaced during training sessions about 90.1-1999/2001 compliance that were presented in the region near Washington, DC.

ANSI/ASHRAE/IESNA 90.1ai-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies Table 9.3.1.1 with regard to building type by providing a footnote for multiple listed spaces.

ANSI/ASHRAE/IESNA 90.1ai-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This addendum proposes that Section 9.2.3 be revised so that internally illuminated exit signs shall not exceed 5 watts per face. The existing standard has no wattage limitation for exit signs, only an efficiency requirement for luminaries operating at greater than 20 watts. The foreword to this addendum shows that, with exits signs generally available today, the 5-watt maximum is both possible and economical.

ANSI/ASHRAE/IESNA 90.1ak-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Changes all of the U-factors in the SI edition of Tables B-1 to B-26, Building Envelope Requirements, by multiplying the I-P edition U-factors by 5.678, to correct for previous errors in converting from I-P to SI units.

ANSI/ASHRAE/IESNA 90.1ak-2005, Energy Standard for Buildings Except Low-Rise Residential Buildings

This second public review draft of proposed Addendum ak makes several independent substantive changes to the first draft: it removes Note d from the table and updates two references. The main purpose of Addendum ak is to restore the testing requirements (CTI STD-201) that were removed by Addendum b to Standard 90.1-2001, in effect canceling most of the changes that were made to the standard by Addendum b.

ANSI/ASHRAE/IESNA 90.1al-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Deletes certain requirements for system balancing in 6.2.5.3. Also, in Section 3, modify the definition of "pump system energy demand (pump system power)", change "mechanical refrigeration" to "mechanical cooling", and add new definitions for air and hydronic balancing.

ANSI/ASHRAE/IESNA 90.1al-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed addendum updates some of the references that relate to Section 11, specifically those that concern building energy simulation software programs and annual weather data. All of these references are found in Informative Appendix E.

ANSI/ASHRAE/IESNA 90.1am-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This addendum proposes to reduce the number of climate zones from 26 to 8. The effect of this proposed change would be to reduce the size of 90.1 and simplify compliance. In addition, this change would make 90.1 more consistent with other standard and code documents in its treatment of climate zones.

ANSI/ASHRAE/IESNA 90.1an-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Presents change to Section 11.4.2, Building Envelope, which coordinates 11.4.2 with 4.1.2.1, for additions to existing buildings, and 4.1.2.2, for alterations to existing buildings.

ANSI/ASHRAE/IESNA 90.1ao-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Presents change to Section 5, Building Envelope, which consists of moving Table 5-3 closer to the beginning of the section, moving "Semi-heated spaces" into exceptions, moving Details of Mandatory Provisions to the end of the section, and outline "Map" added at the beginning to Opaque Areas, 5.3.1. The purpose is to make the section easier to understand and to use, especially for the first-time reader.

ANSI/ASHRAE/IESNA 90.1ap-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies the rules for air and water economizers for budget building design.

ANSI/ASHRAE/IESNA 90.1b-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Includes additional ASTM test methods, which will improve access by the public to testing facilities, which are currently quite limited, and will facilitate the testing of existing roofs under a wider range of conditions.

ANSI/ASHRAE/IESNA 90.1b-2002, Energy Standard for Buildings Except Low-Rise Residential Buildings

Provides an editorial clarification on how the exception in 5.3.1.1 is applied. The proposed text revision and inclusion of Equation 5-1 does not change the stringency of the Standard, nor does it change the application of this exception. The criteria for which roofs qualify for the reduction are based on text previously identified as requirements 1 and 2 in the Standard. Because of the magnitude of the text change and the addition of the equation, the Project Committee felt that providing this change as an addendum was the most appropriate way to present the clarification.

ANSI/ASHRAE/IESNA 90.1b-2005, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed addendum corrects problems found in addendum d, which established single-package vertical air conditioners (SPVAC) and heat pumps (SPVHP) as new product classes and established test procedures and standards for these products. DOE's examination of Addendum d revealed some deficiencies with the test procedures (ARI Standard 390-2001) and with the minimum efficiency standards, which were inconsistent with current federal regulations. This addendum corrects these deficiencies.

ANSI/ASHRAE/IESNA 90.1c-2002, Energy Standard for Buildings Except Low-Rise Residential Buildings

Pertains to residential wood framed walls where a fire-rated assembly with a fire resistance rating from both sides is required, and where there is no approved fire rated assembly, continuous insulation for the second rated R-value of insulation is not required. This exception is intended to clarify the application of the standard to a wood-framed exterior wall construction that is common in four-story multi-family residential buildings with corridors and breezeways open to the exterior.

ANSI/ASHRAE/IESNA 90.1c-2005, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed addendum revises the definition of building entrance to include vestibules and clarifies the envelope requirements and exceptions for vestibules in Section 5.4.3.4. The reasoning for each exception is provided in the foreword to this addendum.

ANSI/ASHRAE/IESNA 90.1d-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies what F-factors should be used for trade-offs in the calculation procedures for slab-on-grade insulation in Section 5.3.1.5.

ANSI/ASHRAE/IESNA 90.1d-2002, Energy Standard for Buildings Except Low-Rise Residential Buildings

Exempts spaces specifically designed for the residents of senior housing facilities. These spaces have unique lighting requirements, which are detailed in the Illuminating Engineering Societies Recommended Practice, Lighting and the Visual Environment for Senior Living (RP-28-98).

ANSI/ASHRAE/IESNA 90.1d-2005, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed addendum updates the references cited in Standard 90.1, especially those applicable to the building envelope (Section 5), and deletes references that are not cited in the body of the standard.

ANSI/ASHRAE/IESNA 90.1e-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies Section A3, which currently states that heat capacity for above grade walls shall be taken from Tables A6 or A7. These tables cover only the heat capacities for concrete walls and floors and masonry walls. Some concrete or masonry wall assemblies may include other materials, like plaster or gypsum board finishes that contribute to the heat capacity of the assembly. This change makes clear that the calculation procedures in Section A9 can also be used for determining heat capacity of assemblies not covered in Tables A6 or A7. The provisions in new Section A9.4.4 specify that the unit weights and specific heat of any of the components used in the calculation for the assembly must be documented.

ANSI/ASHRAE/IESNA 90.1e-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

Contains several key revisions for the 2nd public review: (1) The non-regulated loads are now included to provide a more accurate accounting for the energy cost savings. (2) The baseline performance is now generated only by rotating the building four times and averaging the results; this eliminates the option to have equal areas in the cardinal directions. (3) The baseline now uses eight instead of six system types; the two new types are packaged DX VAV systems.

ANSI/ASHRAE/IESNA 90.1e-2005, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed addendum recognizes that track and busway type lighting systems can be limited by circuit breakers and permanently installed current limiters below a value of 30 W/lin ft (98 W/lin m). This wording allows these limits to be used to calculate installed power for these installed lighting systems.

ANSI/ASHRAE/IESNA 90.1f-2001, Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings

ANSI/ASHRAE/IESNA 90.1g-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Places the correct values into the criteria tables for the tables for the F-factor and R-values for heated slabs-on-grade.

ANSI/ASHRAE/IESNA 90.1g-2003, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed revision of Table 9.3.1.1 and replacement of Table 9.3.1.2 represents a complete update of the LPD values in the tables based on a comprehensive review of the inputs to the space and building models used to derive these values. The review incorporates recent research data on fluorescent fixture light loss factors and space type characteristics of new commercial construction, as well as revised lighting level recommendations as published in the IESNA Lighting Handbook 9th edition.

ANSI/ASHRAE/IESNA 90.1h-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies the intent of the supplemental heater control requirements. The additional exemption of NAECA regulated equipment is justified since the heat pump and controls are tested for the required functionality as part of the HSPF rating.

ANSI/ASHRAE/IESNA 90.1i-2003, Energy Standard for Buildings Except Low-Rise Residential Buildings

The existing language gives an unfair advantage to competing products when one of the products has a certification program in existence and the other does not. For example, there are small cooling towers that compete with air-cooled equipment. The cooling towers have an optional certification program, but no program exists for competing air-cooled equipment. The current language would force the added burden of certification on to all cooling towers, whereas no added burden would be place on air-cooled equipment. Additionally, the current language was adjusted to avoid conflict with Department of Energy certification requirements for equipment covered by the Federal Energy Policy Act (EPACT) of 1992. [see email for 30-day PR text]

ANSI/ASHRAE/IESNA 90.1j-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Corrects a discrepancy between Tables 6.2.1 C and H. Table 6.2.1 H values were corrected with the COP at standard rating condition equal to the COP in Table 6.2.1 C. Other values were adjusted accordingly.

ANSI/ASHRAE/IESNA 90.1j-2003, Energy Standard for Buildings Except Low-Rise Residential Buildings

The revision of section 9.2.1.2 makes it easier to understand the application of the provisions. Item b) is revised to apply to any installed time of day controls and not only those installed to meet this energy standard. Item c) has been changed to its own provision in order to provide accessibility of manual controls by occupants but not necessarily occupancy sensors or other automatic controls. The revision of exception n) in Section 9.3.1 makes clear the specific lights that are exempted.

ANSI/ASHRAE/IESNA 90.1k-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies the following exceptions: Exception (a) has been combined with exception (b) to clarify the intent that a separate perimeter system (zone) be provided for significant expanses of exterior wall with similar orientation, but that minor offsets in a different orientation can be included in that zone. Exception (c) has been reworded to be consistent with the terms used in other sections of the standard.

ANSI/ASHRAE/IESNA 90.1k-2002, Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings

ANSI/ASHRAE/IESNA 90.1m-2003, Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings

ANSI/ASHRAE/IESNA 90.1n-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Makes the wording consistent with the requirement found in Section 6.1.3(n). It allows gravity dampers for small exhaust and outdoor air intakes.

ANSI/ASHRAE/IESNA 90.1o-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Makes it clear that multiple control zones can be grouped into a single isolation area, and that the isolation areas shall not exceed 25,000 ft² nor shall they include more than one floor. There has been some confusion over the scope of this requirement. Many non-office occupancies such as terminals, large retail stores and others have large spaces which are operated on a common schedule. These occupancies are exempt from this requirement under the first sentence. The detailed performance requirements were stricken as they were considered redundant to the requirement for "stable system and equipment operation".

ANSI/ASHRAE/IESNA 90.1o-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

Exception d to Section 6.3.1 is being revised in this proposed addendum to clearly indicate that it applies only to heat recovery systems that are required by Section 6.3.6.2. This change is being made in response to a concern that the current wording of "d" would allow a misinterpretation that, by just having condenser heat recovery to preheat hot water without regard to how much energy was being recovered, the requirement for economizers in Section 6.3.1 could be avoided.

ANSI/ASHRAE/IESNA 90.1p-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

The Energy Cost Budget section requires the use of a building energy simulation program to estimate the energy cost difference between the design building model and a budget building model. Section 11.2.1 specifies the minimum capabilities of the program but not its minimum quality. This addendum starts to address this omission by requiring that the program be tested with ANSI/ASHRAE Standard 140-2001, Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs.

ANSI/ASHRAE/IESNA 90.1q-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Removes a requirement that was permissive and unenforceable. The requirement merely stated that garage fan ventilation controls shall be permitted by the code department. The committee recognized that any code department could determine that these controls endanger public health and prohibit them if they wanted to.

ANSI/ASHRAE/IESNA 90.1q-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This third public review draft of proposed Addendum q makes independent substantive changes to the previous draft. It adds some very specific applications to table 9.3.2 to remove the potential confusion that could occur in using the standard if these applications were absent from the table. Examples of the new applications are Lighting at ATM Machines, Lighting at Entrances and Gatehouse, and Lighting at Drive-up windows at Fast Food Restaurants. No LPD values have been revised in this draft.

ANSI/ASHRAE/IESNA 90.1r-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

Modifies Table 6.2.4.2B to make it clear that the return duct insulation requirements shown in Table 6.2.4.2A also apply to return ducts when combined heating and cooling supply ducts are used. The existing standard shows the return duct requirements only under Table 6.2.4.2A, creating some potential for confusion since that table is titled "Cooling and Heating Only Supply Ducts and Return Ducts."

ANSI/ASHRAE/IESNA 90.1s-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

Modifies exceptions (g) and (i) to Section 6.3.6.1. The change to (g) corrects an acknowledged typo. Exception (i) is revised to apply to systems requiring dehumidification that employ any series energy recovery technology. As currently written, exception (i) exempts only systems that require dehumidification and that use series-style energy recovery coils wrapped around the cooling coil. Series energy recovery can be accomplished by a variety of other technologies.

ANSI/ASHRAE/IESNA 90.1t-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Provides changes that address the concern that balancing of air and hydronic systems with variable flow controls may not be cost effective and therefore should not be required.

ANSI/ASHRAE/IESNA 90.1t-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed addendum expands the exceptions to the requirement for automatic shut-off of lighting to include lighting in spaces where patient care is rendered and spaces where they would endanger safety or security: critical maintenance areas and other areas with dangerous equipment or materials such as an elevator machine rooms, industrial processes, and hazardous materials storage.

ANSI/ASHRAE/IESNA 90.1u-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Adds values to show the test ratings using the ISO procedure that are equivalent to the current efficiency requirements that are based on ARI standards. ARI's industry-wide certification program for water-source, ground-water-source and ground-source heat pumps will begin using the ISO test procedure in the year 2000. Since the directory listings will be based on the ISO test procedure, it would be most helpful to code officials to have the Standard show requirements based on the ISO procedure.

ANSI/ASHRAE/IESNA 90.1u-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This proposed change to Tables 6.3.1.1.3.A and 6.3.1.1.3B of Standard 90.1 adds "dew point and dry bulb temperature" as a shutoff control type and adds the required high-limit values for this type of control.

ANSI/ASHRAE/IESNA 90.1v-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies the term "occupant intervention."

ANSI/ASHRAE/IESNA 90.1w-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies the intended use of additional interior lighting power allowance and provide editorial corrections.

ANSI/ASHRAE/IESNA 90.1x-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

The following addendum proposes off-hour controls for HVAC systems greater than 15,000 Btu/h (4.4kW). This is a change from the current 65,000 Btu/h (19 kW). Exceptions still apply for systems intended to operate continuously, and for hotel/motel guest rooms. The addendum adds a requirement for fan motors larger than ¾ hp (0.5 kW) to have automatic shut off controls, with an exception for fans intended to run continuously.

ANSI/ASHRAE/IESNA 90.1y-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies the definition of "General Low Bay" and "General High Bay" under the heading of Industrial Buildings, Table 9.

ANSI/ASHRAE/IESNA 90.1y-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This addendum changes the limitation on VAV fan motor requirements from 30 hp (22kW) to 15 hp (11kW). The reduction to 15 hp (11kW) from 30 hp (11kW) is justifiable since the cost of VFD's has decreased significantly over the past few years.

ANSI/ASHRAE/IESNA 90.1z-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings

Clarifies the language and intent of the standard. Requirements are unchanged.

ANSI/ASHRAE/IESNA 90.1z-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings

This change clarifies the language in the exception to Section 6.2.1. The modification was to clearly show that applications requiring secondary coolants (e.g.: glycol or brine) for freeze protection are excluded from the standard. This was previously implied in the labels of "Leaving Chiller Water Temperature, Entering Condenser Water Temperature and Condensing Water Temperature Rise", but has now been more clearly defined.

ANSI/ASHRAE/SMACNA 126-2000, Methods of Testing HVAC Air Ducts

Provides laboratory test procedures for the evaluation of HVAC air ducts. This standard may be used to determine HVAC air-duct structural strength, dimensional stability, durability and leakage characteristics.

ASIS (ASIS International)

ASME (American Society of Mechanical Engineers)

ANSI B1.20.3-1976 (R2003), Dryseal Pipe Threads (Inch)

Dryseal pipe threads are based on the USA (American) pipe thread, however, they differ from the USA (American) pipe thread in that they are designed to seal pressure tight joints without the necessity of using sealing compounds. This standard covers criteria for Dryseal Pipe Threads.

ANSI B16.18-2001 (R2005), Cast Copper Alloy Solder Joint Pressure Fittings

Cast copper alloy solder joint pressure fittings designed for use with copper water tube, establishes requirements for: pressure-temperature ratings, abbreviations for end connections, sizes and method of designating openings of fittings, marking, material, dimensions and tolerances, and tests.

ANSI B18.11-1961 (R2005), Miniature Screws

This Standard covers the complete general and dimensional data for slotted head miniature screws recognized as American National Standard.

ANSI B18.2.3.8M-1981 (R2005), Screws, Metric Hex Lag

This Standard covers the complete general and dimensional data for metric hex lag screws recognized as American National Standard

ANSI B18.2.4.4M-1982 (R2005), Nuts, Metric Hex Flange

This Standard covers the complete general and dimensional data for metric hex flange nuts recognized as American National Standard.

ANSI B18.22M-1981 (R2005), Washers, Metric Plain

This Standard covers general specifications and dimensions for flat, round hold washers, both soft (as fabricated) and hardened, intended for use in general purpose applications.

ANSI B27.6-1992 (R2005), General-Purpose Uniform Cross Section Spiral Retaining Rings

This Standard is intended to cover complete general and dimensional data for two series of general purpose uniform cross section spiral retaining rings, which may be used with the nominal size shafts and housings listed in the grooves of the recommended dimensions listed.

ANSI B27.7M-1977 (R2005), General Purpose Tapered and Reduced Cross Section Retaining Rings (Metric)

This Standard is intended to cover complete general and dimensional data for three series of general purpose tapered and reduced cross section retaining rings, which may be used with the nominal size shafts and housings listed in the grooves of the recommended dimensions listed.

ANSI B27.8M-1978 (R2005), General Purpose Tapered and Reduced Cross Section Retaining Rings (Metric): Type 3DM1 – Heavy Duty External Rings: Type 3EMI – Reinforced "E" Rings: Type 3FM1 – "C" Type Rings

This Standard is intended to cover complete general and dimensional data for three series of general purpose metric tapered and reduced cross section retaining rings, which may be used with the nominal size shafts and housings listed in the grooves of the recommended dimensions listed.

ANSI B32.100-2005, Preferred Metric Sizes for Flat, Round, Square, Rectangle, and Hexagon Metal Products

Establishes a preferred series of metric thicknesses, a preferred series of metric widths, and a preferred series of metric lengths for flat metal products of rectangular cross section. The thicknesses and widths shown in this Standard are also applicable to base metals that may be coated in later operations. This Standard also establishes a preferred series of metric sizes for round, square, rectangular and hexagonal metal products.

ANSI B32.100-2005, Preferred Metric Sizes for Flat, Round, Square, Rectangle, and Hexagon Metal Products

Establishes a preferred series of metric thicknesses, a preferred series of metric widths, and a preferred series of metric lengths for flat metal products of rectangular cross section. The thicknesses and widths shown in this Standard are also applicable to base metals that may be coated in later operations. This Standard also establishes a preferred series of metric sizes for round, square, rectangular and hexagonal metal products.

ANSI B94.21-1968 (R2003), Gear Shaper Cutters

Covers types, sizes, tolerances, marking and nomenclature for ground, finishing type gear shaper cutters for generating involute spur and helical gears, splines, and serrations. It also covers ground, finishing type involute herringbone gear shaper cutters for generating herringbone gears.

ANSI B94.7-1980 (R2005), Hobs

This standard covers types, sizes, tolerances, marking and nomenclature for hobs of one-piece construction used for generating involute gears, involute splines, parallel side splines, involute serrations and roller chain sprockets.

ASME A112.1.2-2004, Air Gaps in Plumbing Systems

Identifies methods of providing protection against backsiphonage through means of an air gap and establishes physical requirements and methods of testing of air gaps for plumbing fixtures and water receptors.

ASME A112.1.3-2000 (R2005), Air Gap Fittings for Use with Plumbing Fixtures, Appliances and Appurtenances

This Standard establishes physical requirements and methods of testing for air gap fittings for protecting against back siphonage and back pressure backflow.

ASME A112.14.1-2003, Backwater Valves

Establishes requirements for dimensions, performance requirements, connections, materials and finishes, testing and marking of backwater valves. Types of backwater valves covered in this Standard include horizontal backwater valves, combination horizontal backwater valves and manual gate valves, terminal backwater valves, combination floor drains with backwater valves, vertical or 90° backwater valve and related products.

ASME A112.14.3M-2000 (R2004), Grease Interceptors

This Standard covers general product requirements as well as the performance criteria for the testing and rating of grease interceptors, whose rated flows are 100 gpm (380 L/m) or less.

ASME A112.14.4-2001, Grease Removal Devices

Establishes requirements for grease interceptors that are equipped with automatic grease removal devices (GRD). It includes testing requirements and performance criteria designed to assure conformance with this standard. This standard was listed for public review in the 5/21/1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.
NOTE: 30-day PR with Published changes in separate e-mail

ASME A112.18.1-2005/CSA B125.1-2005, Plumbing Fixture Fittings

Applies to plumbing supply fittings and accessories located between the supply line stop and the terminal fitting, inclusive, as follows: (a) automatic compensating valves for individual wall-mounted showering systems; (b) bath and shower supply fittings; (c) bidet supply fittings; (d) clothes washer supply fittings; (e) drinking fountain supply fittings; (f) humidifier supply stops; (g) kitchen, sink, and lavatory supply fittings; (h) laundry tub supply fittings; (i) lawn and sediment faucets; (j) metering and self-closing supply fittings; and (k) supply stops.

ASME A112.18.2/CSA B125.2-2005, Plumbing Fixture Waste Fittings

This Standard applies to plumbing waste fittings NPS-2 and smaller.

ASME A112.18.3-2002, Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings

Addresses functional performance and requires physical characteristics of devices and systems, which provide backflow protection consistent with the level of risk associated with the plumbing fixture fitting application. The Standard establishes specific performance criteria and provides the test methods to prove compliance. It is applicable to all plumbing fixture fittings with outlets not protected by an air gap.

ASME A112.18.6-2003, Flexible Water Connectors

This Standard establishes requirements for flexible water connectors used in potable water systems under continuous pressure and in accessible locations only. It covers physical and performance requirements, test methods, materials, connections, and other significant properties, in addition to a general description of materials used. Certain features of construction of the finished product are given, together with the method of marking and identification.

ASME A112.18.7M-1999 (R2004), Deck Mounted Bath/Shower Transfer Valves with Internal Backflow Prevention

This Standard establishes requirements for deck mounted, bath/shower transfer valves with integral backflow protection on the secondary outlets.

ASME A112.19.10-2003, Dual Flush Devices for Water Closets

Covers physical and performance requirements and test methods pertaining to dual flush devices that are installed within water closet tanks which use 3.5 gal per flush (13.2 Lpf) or greater volume to reduce total volumetric water consumption.

ASME A112.19.12-2000 (R2004), Wall Mounted and Pedestal Mounted, Adjustable and Pivoting Lavatory and Sink Carrier Systems

This Standard establishes physical, mechanical, material, testing, marking, and documentation requirements for wall mounted and pedestal mounted adjustable and pivoting lavatories and sink carrier systems intended to facilitate use by individuals who have impaired physical mobility.

ASME A112.19.13-2001, Electrohydraulic Water Closets

Establishes performance, electrical/electronic conformance, temperature, life cycle, marking and identification requirements for electrohydraulic water closets. This standard was originally listed for public review in the January 29, 1999 issue of Standards Action. It is being resubmitted due to substantive changes in the text.

ASME A112.19.14-2001, Six Liter Water Closets Equipped with Dual Flushing Device

Establishes physical, material, testing, and marking requirements for six liter water closets that incorporate a water conserving dual flushing feature into the design of the fixture. This standard was listed for public review in the 7/14/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ASME A112.19.14a-2003, Six-Liter Water Closets Equipped With A Dual Flushing Device

It is proposed to change the reduced flush Dye Test requirement dilution ratio from 50:1 to 17:1.

ASME A112.19.15-2005, Bathtub/Whirlpool Bathtubs with Pressure Sealed Doors

Establishes material, mechanical, electrical, marking, and testing requirements for bathtubs/whirlpool bathtubs with doors that are made water tight by the use of a pressure seal. It addresses the functional performance and physical characteristics for a pressure sealed door of a bathtub/whirlpool bathtub. The door is intended to allow for entry into the fixture when the tub is empty, and maintains water tightness when the tub is full.

ASME A112.19.17-2002, Manufactured Safety Vacuum Release Systems for Residential and Commercial Swimming Pool, Spas, Hot Tub and Wading Pool Suction Systems

Establishes general requirements, dimensions and tolerances, materials, installation instructions, testing requirements, and markings and identification for SVRS Devices. SVRS Devices are intended to be utilized on pool, spa, hot tub, and or therapy unit suction systems. SVRS Devices covered under this standard are designed to prevent high vacuum occurrences that cause human body or body part suction entrapment. Demonstration of compliance with this Standard is merely an indication that the product meets the performance requirements and specifications contained in this Standard. The responsibility for verification of the device's performance on any circulation system shall be the responsibility of the design professional. The provisions of this Standard are not intended to prevent the use of any alternate material or method of

ASME A112.19.1M Supplement 1-1998 (R2004), Enamel Cast Iron Plumbing Fixtures

This Standard applies to enameled cast iron plumbing fixtures and includes requirements for materials, construction, inspection, testing, marking, and definitions.

ASME A112.19.1M Supplement 2-2000 (R2004), Enameled Cast Iron Plumbing Fixtures

This Standard applies to enameled cast iron plumbing fixtures and includes requirements for materials, construction, inspection, testing, marking, and definitions.

ASME A112.19.1M-1994 (R2004), Enameled Cast Iron Plumbing Fixtures

This Standard applies to enameled cast iron plumbing fixtures and includes requirements for materials, construction, inspection, testing, marking, and definitions.

ASME A112.19.2-2003, Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals

This Standard establishes requirements and test methods pertaining to materials, significant dimensions and functional performance for vitreous china plumbing fixtures. The sanitary performance requirements and test procedures apply to all types of water closets and urinals that discharge into gravity waste systems in permanent buildings and structures independent of occupancy. Fixtures referenced in this Standard include water closets, lavatories, urinals, bidets, service sinks, drinking fountains, and institutional application fixtures.

ASME A112.19.3-2000 (R2004), Stainless Steel Plumbing Fixtures (Designed for Residential Use)

This Standard establishes the requirements for the types, thicknesses, and finish of stainless steel metal to be used for the fixtures and certain features of construction designed for residential use. Also given are definitions, inspection methods, and means for identification of fixtures complying with this Standard.

ASME A112.19.4M-1994 (R2004), Porcelain Enameled Formed Steel Plumbing Fixtures

This Standard covers materials, methods of inspection, dimensions, testing, and identification of porcelain enameled formed steel plumbing fixtures, such as bathtubs, sinks, and lavatories, which are in general use and demand.

ASME A112.19.4M-Supplement 1-1998 (R2004), Porcelain Enameled Formed Steel Plumbing Fixtures

Adds a revision to paragraph 4.2.2 relating to "Lavatory Overflows" and adds a new paragraph, 5.4 "Lavatory Overflow Test." to the previously submitted revision to paragraph 3.3.6. This is the second public review for this standard. It was originally listed in the February 13, 1998 issue of Standards Action. It is being resubmitted now due to substantive changes.

ASME A112.19.4M-Supplement 2-2000 (R2004), Porcelain Enameled Formed Steel Plumbing Fixtures

Revises lavatory overflow requirements.

ASME A112.19.5-2005, Trim for Water-Closet Bowls, Tanks and Urinals

This Standard establishes criteria for those items of trim for water-closet bowls, tanks, and urinals known as spuds, locknuts for spuds, flush valves, and flush elbows. Requirements for fill valves (ballcocks) are defined in ANSI/ASSE 1002. This Standard does not address the compatibility of materials. Nothing stated herein shall preclude the production of special design flush valves with unique non-standard features for use in low consumption plumbing fixtures.

ASME A112.19.7-2006, Hydromassage Bathtub Appliances

Establishes performance criteria for whirlpool and air jetted bathtub appliances and suction fittings used in whirlpool bathtub appliances. It is intended for use by, but not limited to, manufacturers, distributors, retailers, architects, engineers, plumbing contractors, jetters, installers, regulatory agencies, and users.

ASME A112.19.8M-1987 (R2005), Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances

This Standard establishes criteria for suction fittings for whirlpools, spas and hot tubs.

ASME A112.19.9M-1991 (R2002), Non-Vitreous Ceramic Plumbing Fixtures

Covers physical requirements and test methods pertaining to material, grading, dimensions, certain features of construction, and types and sizes of plumbing fixtures of non-vitreous ceramic currently in general use and demand. Also given are definitions, inspection methods, and tests, which establish generally acceptable quality standards. Fixtures included in this Standard are water closet tanks, lavatories, urinals without integral trap, bidets, bathtubs, shower receptors, kitchen and bar sinks, service sinks, and drinking fountains.

ASME A112.20.1-2004, Qualification of Installers of High Purity Piping Systems

Establishes minimum training and performance criteria, identified by industry consensus, for high purity piping system installers. It applies to any individual who installs high purity piping systems, which are typically specified for critical clean applications in the semiconductor, pharmaceutical, biotechnology, chemical, fiber optics, food, and dairy industries.

ASME A112.20.2-2004, Qualification of Installers of Firestop Systems and Devices for Piping Systems

Establishes minimum requirements, identified by industry consensus, for the training and qualification of installers of firestop systems and devices for piping systems. The qualifications under this Standard are restricted to those that are required by this standard, the model building and plumbing codes requirements for firestopping developed by NFPA, ICBO, SBCCI, BOCA, ICC and IAPMO, and consensus standards for piping system penetrations of fire resistance rated walls, partitions, floors, floor/ceiling assemblies, roof/ceiling assemblies or shaft enclosures.

ASME A112.21.3M-1976 (R2001), Hydrants for Utility and Maintenance Use

Establishes requirements for hydrants including nonfreeze wall, ground post, and floor types and moderate climate wall and floor types, which are used in buildings and grounds as water supply terminals, employed principally for lawn and flower bed watering hoses and normal building maintenance functions. It covers definitions, connection, materials, variations, testing and operation, and general requirements for the hydrant types included in the scope.

ASME A112.3.4-2000 (R2004), Macerating Toilet Systems and Related Components

This Standard establishes physical, performance, and testing requirements applicable to macerating toilet systems and related components.

ASME A112.36.2M-1991 (R2002), Cleanouts

Covers cleanouts including floor and wall types used in concealed piping in and adjacent to commercial, industrial, institutional, and other buildings open to public use.

ASME A112.4.1-1993 (R2002), Water Heater Relief Valve Drain Tubes

Covers the test methods and performance requirements applicable to water heater relief valve drain (or runoff) tubes for use with listed relief valves having a steam rating of 100,000 BTU per hour (Btuh) or less.

ASME A112.4.14-2004, Manually Operated, Quarter-Turn Shutoff Valves for Use in Plumbing Systems

Establishes requirements for manually operated, quarter turn valves in nominal sizes (NPS) $\frac{1}{2}$. These valves are intended for indoor installation as potable water shutoff valves between the meter and the supply stop. Valves governed by this Standard are intended for service at temperatures between 34 °F (1 °C) and 180 °F (82 °C), with an allowable working pressure rating not less than 125 psi (862 kPa).

ASME A112.4.2-2003, Water Closet Personnel Hygiene Devices

This Standard establishes general and performance requirements, test methods and marking requirements for bidet sprays and other optional features as applied to water closets, water closet seats and other retrofit devices. Products covered by this standard are intended to be supplied with cold water only.

ASME A112.4.3M-1999 (R2004), Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System

This Standard establishes physical, performance, and testing requirements applicable to the joint that connects a water closet to the sanitary drain piping of a plumbing system.

ASME A112.4.7-2002, Point of Use and Branch Water Sub-metering Systems

Establishes the physical and accuracy requirements, and test methods which pertain to point of use and branch sub-metering systems applied in the plumbing system downstream of the main utility meter at the point of use or in a branch line serving a single residence.

ASME A112.6.1M-1997 (R2002), Supports for Off-the-Floor Plumbing Fixtures for Public Use

Applies to floor-affixed supports for off-the-floor plumbing fixtures, including combinations carriers and waste fittings for water closets, and carriers for urinals, lavatories, sinks, and water coolers.

ASME A112.6.2-2000 (R2004), Framing-Affixed Supports for Off-the-Floor Water Closets with Concealed Tanks

This Standard establishes minimum performance requirements for framing-affixed supports for off-the-floor water closets with concealed tanks.

ASME A112.6.3-2001, Floor Drains

Establishes design requirements for floor, area, adjustable floor, and trench drains which are used inside of, or outside and immediately adjacent to, building structures which are typically other than residential. It includes definitions, nomenclature, outlet types and connections, grate free area, top loading classification, materials and finishes, and variations in product design. This standard was listed for public review in the 4/21/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text, which are listed here in their entirety.

ASME A112.6.4-2003, Roof, Deck, and Balcony Drains

Establishes minimum design requirements for roof drains including general purpose, gutter and cornice, parapet and promenade, balcony or deck types, which convey rainwater from the roof area of building structures. It includes definitions, nomenclature outlet types and connections, dome or grate free area, top loading classifications, materials and finishes, and accessories. This standard was listed for public review in the 4/21/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ASME A112.6.7-2001, Enameled and Epoxy Coated Cast Iron and PVC Plastic Sanitary Floor Sinks

Applies to enameled and epoxy coated cast iron and PVC plastic sanitary floor sinks and include requirements for mater construction, inspection, testing and marking. This standard was listed for public review in the 7/28/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ASME A112.6.9-2005, Siphonic Roof Drains

Establishes minimum requirements and provides guidelines for the proper design, installation, examination, and testing of siphonic roof drains and siphonic roof drainage piping systems. It includes definitions of terms and parameters involved in the proper design of siphonic drainage systems.

ASME A120.1-2001, Safety Requirements for Powered Platforms for Building Maintenance

Establishes safety requirements for powered platforms for buildings where window cleaning and related services are accomplished by means of suspended equipment in heights in excess of 11 m (35ft.) above a safe surface.

ASME A120.1b-1999, Safety Requirements for Powered Platforms for Building Maintenance

Establishes safety requirements for powered platforms (scaffolds) for buildings where window cleaning and related services are accomplished by means of suspended equipment at heights in excess of 35 ft. (11m) above a safe surface.

ASME A13.1-1996 (R2002), Scheme for the Identification of Piping Systems

This standard establishes a common system to assist in identification of hazardous materials conveyed in piping systems and their hazards when released in the environment.

ASME A17.1-2004, Elevators and Escalators, Safety Code for

Covers safety requirements for elevators, escalators, dumbwaiters, moving walks and material lifts.

ASME A17.1a-1997, Safety Code for Elevators and Escalators

Covers safety requirements for elevators, escalators, dumbwaiters, moving walks, material lifts and dumbwaiters with automatic transfer devices, wheelchair lifts, and stairway chairlifts. This standard was first listed in the May 23, 1997 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ASME A17.1a-2002, Safety Code for Elevators and Escalators

Covers safety requirements for elevators, escalators, dumbwaiters, moving walks and material lifts.

ASME A17.1a-2002, Safety Code for Elevators and Escalators

Covers safety requirements for elevators, escalators, dumbwaiters, moving walks and material lifts.

ASME A17.1a-2005, Safety Code for Elevators and Escalators

Covers safety requirements for elevators, escalators, dumbwaiters, moving walks and material lifts.

ASME A17.1b-2003, Safety Code for Elevators and Escalators

Covers safety requirements for elevators, escalators, dumbwaiters, moving walks and material lifts.

ASME A17.1S-2005, Supplement to ASME A17.1-2004 Safety Code for Elevators and Escalators

Covers safety requirements for electrica and hydraulic elevators.

ASME A17.2-2004, Guide for Inspection of Elevators, Escalators, and Moving Walks

Covers recommended inspection and testing procedures for electric and hydraulic elevators, escalators, and moving walks required to conform to the Safety Code for Elevators and Escalators, A17.1-1955 and later editions and the Safety Code for Existing Elevators and Escalators, A17.3. This Guide also addresses some requirements from editions of A17.1 prior to 1955. Note: This Guide may not reflect the latest requirements in the current A17.1 and A17.3 Codes.

ASME A17.3-2005, Safety Code for Existing Elevators and Escalators

The Code covers requirements for existing elevators, escalators, and their hoistways.

ASME A17.3a-2000, Safety Code for Existing Elevators and Escalators

Covers retroactive requirements for existing elevators and escalators. The purpose of this Code is to establish minimum requirements that will provide a reasonable degree of safety for the general public.

ASME A17.4-1999, Guide for Emergency Evacuation of Passengers from Elevators

Guide for evacuation of passengers from stalled elevators.

ASME A17.5-2004, Elevator and Escalator Electrical Equipment

Applies to the electrical equipment for elevators, escalators, moving walks, dumbwaiters, material lifts, and elevating devices for persons with physical disabilities (platform lifts and stairway chairlifts): (a) motor controllers; (b) motion controllers; (c) operation controllers; (d) operating devices; and (e) all other electrical equipment not listed/certified and labelled/arked to another product safety standard or code.

ASME A18.1-2005, Safety Standard for Platform Lifts and Stairway Chairlifts

This safety Standard covers the design, construction, installation, operation, inspection, testing, maintenance, and repair of inclined stairway chairlifts and inclined and vertical platform lifts intended for transportation of a mobility impaired person only.

ASME A18.1a-2001, Safety Standard For Platform Lifts and Stairway Chairlifts

Covers the design, construction, installation, operation, inspection, testing, maintenance, and repair of inclined stairway chairlifts and vertical and inclined platform lifts intended for transportation of a mobility impaired person only.

ASME A18.1b-2001, Safety Standard for Platform Lifts and Stairway Chairlifts

Covers the design, construction, installation, operation, inspection, testing, maintenance, and repair of inclined stairway chairlifts and vertical and inclined platform lifts intended for transportation of a mobility impaired person only.

ASME A90.1-2003, Safety Standard for Belt Manlifts

Applies to the manufacture, installation, maintenance, inspection, and operation of continuous belt manlifts.

ASME A90.1a-1999, Safety Standard for Belt Manlifts

Applies to the manufacture, installation, maintenance, inspection, and operation of manlifts. Manlifts covered by this scope consist of steps (platforms) and accompanying handholds mounted on, or attached to, an endless belt operating vertically in one direction only and being supported by, and driven through, pulleys at the top and bottom. These manlifts are intended for conveyance of persons only

ASME A90.1b-2001, Safety Standard for Belt Manlifts

Applies to the manufacture, installation, maintenance, inspection, and operation of continuous belt manlifts

ASME AG-1-2003, Nuclear Air and Gas Treatment, Code on

This Code provides requirements for design, fabrication, inspection, and testing of air cleaning and conditioning components and appurtenances, as well as air cleaning components used in engineering safety systems in nuclear facilities.

ASME AG-1a-2004, Code on Nuclear Air and Gas Treatment

Provides requirements for design, fabrication, inspection, and testing of air cleaning and conditioning components and appurtenances, as well as air cleaning components used in engineering safety systems in nuclear facilities.

ASME B1.1-2003, Unified Inch Screw Threads (UN and UNR Thread Form)

This Standard specifies the thread form, series, class, allowance, tolerance, and designation for unified screw threads. (In order to emphasize that unified screw threads are based on inch modules, they may be denoted unified inch screw threads.) Several variations in thread form have been developed for unified threads; however, this Standard covers only UN and UNR thread forms. For easy reference, a metric translation of this Standard has been incorporated as APPENDIX C. Appendices A through E contain useful information that is supplementary to the sections of this Standard.

ASME B1.10M-2004, Unified Miniature Screw Threads

Specifies the thread form, series, tolerance, and designation for the Unified Miniature Screw Threads. The series covers a diameter range of 0.30 mm to 1.40 mm, extending the metric M-Profile and unified thread series that begin at 1.6 mm.

ASME B1.11-1958 (R2001), Microscope Objective Thread

Covers the screw thread used for mounting the objective assembly to the body or lens turret of microscopes. It is based on, and intended to be interchangeable with, the screw thread introduced and adopted many years ago by the Royal Microscopical Society of Great Britain, generally known as the "RMS thread" and now almost universally accepted as the basic standard for microscope objective mountings. Formal recognition, however, has been extremely limited.

ASME B1.12-1987 (R2003), Screw Threads – Class 5 Interference – Fit Thread

Provides dimensional tables for external and internal plastic flow interference-fit (Class 5) threads of modified National thread form in the coarse thread series (NC) in sizes 0.250 in. through 1.500 in. This is not the ANSI B1.1 UN thread form. It is intended that designs conforming with this Standard will provide adequate torque conditions which fall within the limits shown in Table 8. The minimum torques are intended to be sufficient to insure that externally threaded members will not loosen in service; the maximum torques establish a ceiling below which seizing, galling, or torsional failure of the externally threaded components is reduced. This Standard provides for the maximum allowable interference.

ASME B1.13M-2005, Metric Screw Threads – M Profile

This Standard contains general metric standards for a 60 deg symmetrical screw thread with a basic ISO 68-1 profile designated M profile. The M profile threads of tolerance class 6H/6g are intended for metric applications where inch class 2A/2B have been used. At the minimum material limits, the 6H/6g results in a looser fit than the 2A/2B. Tabular data is also provided for a tighter tolerance fit external thread of class 4g6g, which is approximately equivalent to the inch class 3A but with an allowance applied. Formulation and tolerancing data is included for applications requiring other fits.

ASME B1.16M-1984 (R2001), Gages and Gaging for Metric M Screw Threads

Provides essential specifications and dimensions for the gages used on M series metric screw threads, and covers the specifications and dimensions for the thread gages and measuring equipment listed in Tables 1 and 2. The basic purpose and use of each gage are also described.

ASME B1.2-1983 (R2001), Gages and Gaging for Unified Screw Threads

Provides essential specifications and dimensions for the gages used on Unified Inch screw threads (UN and UNR thread form), and covers the specifications and dimensions for the thread gages and measuring equipment listed in Tables 1 and 2. The basic purpose and use of each gage are also described.

ASME B1.20.1-1983 (R2001), Pipe Threads, General Purpose (Inch)

Covers dimensions and gaging of pipe threads for general purpose applications.

ASME B1.20.5-1991 (R2004), Gaging for Dryseal Pipe Threads (Inch)

Provides information regarding practical dry seal thread inspection methods and commonly used gages for production evaluation purposes. All dimensions are in inches unless otherwise specified.

ASME B1.20.7-1991 (R2003), Hose Coupling Screw Threads – Inch

Provides standards for application to the threaded parts of hose couplings, valves, nozzles, and all other fittings used in direct connection with hose intended for domestic, industrial, and general service in nominal sizes of 1/2, 3/8, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2, 3, 3 1/2, and 4 in.

ASME B1.21M-1997 (R2003), Metric Screw Threads – MJ Profile

Establishes the basic triangular profile for the MJ thread form; provides a system of designations; lists the standard series of diametredpitch combinations for diameters from 1.6 to 200 mm; and specifies limiting dimensions and tolerances. It specifies the characteristics of the MJ metric series of threads having a minimum 0.1501 1P radius at the root of the external thread, and also having the minor diameter of the external and internal threads increased above the ASME B 1.13M thread form to accommodate the external thread root radius.

ASME B1.22M-1985 (R2001), Gages and Gaging Practice for "MJ" Series Metric Screw Threads

Provides essential specifications and dimensions for the gages used on MJ series metric screw threads, and covers specifications and dimensions for the thread gages and measuring equipment. The basic purpose and use of each gage are also described.

ASME B1.30M-2002, Screw Threads – Practice for Calculating and Rounding Dimensions

The purpose of this Standard is to establish uniform and specific practices for calculating and rounding the numeric values used for inch and metric screw thread design data dimensions only. No attempt is made to establish a policy of rounding actual thread characteristics measured by the manufacturer or user of thread gages. Covered is the Standard Rounding Policy regarding the last figure or decimal place to be retained by a numeric value and the number of decimal places to be retained by values used in intermediate calculations of thread design data dimensions. Values calculated to this standard for inch and metric screw thread design data dimensions may vary slightly from values shown in existing issues of ASME B1 screw thread standards and are to take precedence in all new or future revisions of ASME B1 standards as applicable except

ASME B1.3M-1992 (R2001), Screw Thread Gaging Systems for Dimensional Acceptability – Inch and Metric Screw Threads (UN, UNR, UNJ, M, and MJ)

Presents screw thread gaging systems suitable for determining the acceptability of UN, UNR, UNJ, M, and MJ screw threads on externally and internally threaded products. It establishes the criteria for screw thread acceptance when a gaging system is used.

ASME B1.5-1997 (R2004), Acme Screw Threads

This standard provides specifications, formulas, and tables relating to Acme screw threads.

ASME B1.7M-1984 (R2001), Screw Threads, Nomenclature, Definitions, and Letter Symbols for

Establishes uniform practices for standard screw threads with regard to the following: (a) screw thread nomenclature, and (b) letter symbols for designating features of screw threads for use on drawings, in tables of dimensions which set forth dimensional standards and in other records, and for expressing mathematical relationship. This Standard consists of a glossary of terms, an illustrated table showing the application of symbols, and a table of thread series designations. Many of the terms and symbols specified in this Standard vary considerably from those of previous issues because ISO terms and symbols have been adopted where the intended definition is the same.

ASME B1.8-1988 (R2001), Stub Acme Screw Threads

Pertains to screw threads. When formulated prior to 1895, regular Acme screw threads were intended to replace square threads and a variety of threads of other forms used chiefly for the purpose of producing traversing motions on machines, tools, etc. For current information on Acme threads, see the latest edition of ASME/ANSI B1.5.

The Stub Acme thread came into being early in the 1900's. Its use has been generally confined to those unusual applications where a coarse-pitch thread of shallow depth is required due to mechanical or metallurgical considerations.

Federal Government Use: When this Standard is approved by the Department of Defense and Federal Agencies and is incorporated into FED-STD H28/13, Screw Thread Standards for Federal Services, Section 13, the use of this Standard by the

ASME B1.9-1973 (R2001), Buttress Inch Screw Threads

Relates to screw threads of buttress form and provides:

- (a) A form of 7 deg /45 deg buttress thread with 0.6p basic height of thread engagement
- (b) A table of preferred diameter-pitch combinations
- (c) A formula for calculating pitch diameter tolerances
- (d) Tolerances for major and minor diameters
- (e) A system of allowances between external and internal threads
- (f) Recommended methods of measuring and gaging
- (g) Dimensional acceptability of buttress product

ASME B107.1-2002, Socket Wrenches, Hand (Inch Series)

This Standard is intended to cover the complete general and dimensional data for provides dimensional, performance, and safety requirements for detachable socket wrenches with square drive for hand use. Inclusion of dimensional data in this Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

ASME B107.10-2005, Handles and Attachments for Hand Socket Wrenches

This Standard provides dimensional, performance, and safety requirements for the more generally used handles and attachments utilized by mechanics in repair and maintenance of vehicles, machinery, and other items. Inclusion of dimensional data in this Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production size s.

ASME B107.11M-2002, Pliers, Diagonal Cutting, and Nippers, End Cutting

This Standard covers the dimensional and functional characteristics of pliers suitable for cutting wire. Pliers shall have cutting edges diagonal to or at right angles to their longitudinal axis.

Inclusion of dimensional data in this standard is not intended to imply that all of the pliers described herein are stock production sizes. Consumers should consult with manufacturers concerning list of stock production sizes.

ASME B107.12-2004, Nut Drivers (Spin Type, Screwdriver Grip) (Inch Series)

This standard provides performance and safety requirements for nutdrivers with an integral socket and shaft that utilize a screwdriver-type hand grip.

ASME B107.13M-2003, Pliers – Long Nose, Long Reach

Provides performance and safety requirements for long nose, long reach pliers. Inclusion of dimensional and functional data in this Standard is not intended to imply that all products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes. This Standard may be used as a guide by state authorities and other regulatory bodies in the formulation of laws or regulations. It is also intended for voluntary use by establishments that use or manufacture the tools covered.

ASME B107.14-2004, Hand Torque Instruments (Mechanical)

This Standard provides performance and safety requirements for manually operated torque instruments, commonly used for mechanical measurement of torque for control of the tightness of threaded fasteners. It is not intended to describe products infrequently utilized or those designed for special purposes.

ASME B107.15-2002, Flat-Tip and Phillips Screwdrivers

This Standard covers the straight handle-type screwdrivers of flat tip design intended for manual operation in driving or removing screws with slotted recesses. The screwdrivers are of the types normally used by cabinetmakers, carpenters, sheet metal workers, production workers, mechanics, etc. The intention is to specify performance rather than design detail.

Inclusion of dimensional data in the Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

Using a screwdriver as a pry bar or striking it with a hammer are clearly misuses of the tool, and nothing in this Standard shall be

ASME B107.16M-1998 (R2004), Shears (Metal Cutting, Bench, and Hand)

This standard covers hand shears used for cutting metal.

ASME B107.17M-1997 (R2002), Gages, Wrench Openings, Reference

This Standard establishes final inspection gage sizes for wrench openings, and spark plug wrench openings for inch and metric sizes. This Standard does not cover every available size, but only those most commonly manufactured.

ASME B107.18M-2003, Pliers (Wire Twister)

Intended to cover the general dimensional and functional characteristics for wire twister pliers, which are used primarily for twisting safety wires (lock wire) on critical equipment on aircraft, automotive equipment, and for other similar applications. Inclusion of dimensional data in this Standard is not intended to imply that all products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes. This Standard may be used as a guide by state authorities or other regulatory bodies in the formulation of laws or regulations. It is also intended for voluntary use by establishments that use or manufacture the tools covered.

ASME B107.19-2004, Pliers, Retaining Ring

This Standard provides performance and safety requirements for ball peen hammers. Ball peen hammers have a striking face on one end of the head for use in striking punches and chisels, and a ball peen on the opposite end for use in riveting, shaping, and straightening unhardened metals. This Standard is intended to serve as a guide in selecting, testing, and using the hand tools covered herein. It is not the purpose of this Standard to specify the details of manufacturing.

ASME B107.2-2002, Socket Wrenches, Extensions, Adaptors, and Universal Joints, Power Drive (Impact) (Inch Series)

This Standard is intended to cover the complete general and dimensional data for detachable socket wrenches, extensions, adaptors, and universal joints for power drive impact use. Inclusion of dimensional data in this standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers or their representatives concerning lists of stock production sizes. All dimensions in this standard are in inches.

ASME B107.20M-2004, Pliers (Lineman's, Iron Worker's, Gas, Glass, and Fence)

Provides performance and safety requirements for pliers having gripping surfaces and/or cutting edges.

ASME B107.21-2005, Wrench, Crowfoot Attachments

Provides performance and safety requirements for crowfoot wrenches having a wrench component of the open end type or flare nut type. Each type is designed to receive the external drive end of a socket wrench handle. Inclusion of dimensional data in this Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

ASME B107.22M-1998 (R2004), Electronic Cutters and Pliers

This Standard covers the general dimensional and functional characteristics of electronic cutters having cutting edges diagonal to the cutters' longitudinal axis and cutters having cutting edges at right angles to the cutters' longitudinal axis.

ASME B107.23-2004, Pliers, Multiple Position, Adjustable

B107.23 provides performance and safety requirements for adjustable joint and slip joint pliers.

ASME B107.24M-2002, Locking Pliers

This Standard covers the dimensions and functional characteristics of locking pliers that are suitable for gripping and wrenching operations. Some of the locking wrench pliers are provided with cutters. Inclusion of dimensional and functional data in the Standard is not intended to imply that all products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

ASME B107.25M-2002, Pliers – Performance Test Methods

This Standard details the purpose, apparatus, procedures, and performance specifications for the functional testing of pliers. It is intended to be used by manufacturers, purchasers, and other persons involved with evaluating pliers products. Test procedures described herein are used to evaluate conformance to performance requirements.

ASME B107.27-2003, Pliers, Multi-Position, Electrical Connector

Provides performance and safety requirements for pliers (also known as Cannon Plug Pliers) that are used primarily for connecting or disconnecting threaded lock collars of electrical connectors. Inclusion of dimensional data in this Standard does not mean that all products described herein are stock production sizes. Consumers should consult with manufacturers concerning lists of stock production sizes. This Standard may be used as a guide by state authorities or other regulatory bodies in the formulation of laws or regulations. It is also intended for voluntary use by establishments that use or manufacture the tools covered.

ASME B107.28-2005, Electronic Torque Instruments

Provides performance and safety requirements for manually operated electronic torque instruments with integral or interchangeable heads. It includes requirements for endurance, torque value ranges, and accuracy for these torque instruments. It is not intended to describe products infrequently utilized or those designed for special purposes.

ASME B107.29-2005, Electronic Tester, Hand Torque Tools

This Standard provides performance and safety requirements for electronic torque testers used for checking manually operated hand held torque wrenches and torque screwdrivers.

ASME B107.30-2002, Cross Tip Screwdrivers

This Standard covers straight handle-type screwdrivers of PHILIPS®¹ and POZIDRIV®¹ design intended for manual operation in driving or removing screws with PHILIPS or POZIDRIV recesses. The screwdrivers are of the types normally used by cabinetmakers, carpenters, sheet metal workers, production workers, mechanics, etc. The intention is to specify performance rather design detail.

Inclusion of dimensional data in the Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

Using a screwdriver as a pry bar or striking it with a hammer are clearly misuses of the tool, and nothing in this Standard shall be

ASME B107.31M-1997 (R2002), Screwdriver, Cross Tip Gaging Standard

This Standard specifies two types of penetration gaging of Phillips (PH) and Pozidriv (PZ) screwdrivers and supplements the ASME blade and bit standards.

ASME B107.33M-2002, Socket Wrenches, Impact (Metric Series)

This Standard is intended to cover the complete general and dimensional data for detachable socket wrenches for impact use. Inclusion of dimensional data in the Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes. All dimensions in this Standard are in millimeters.

ASME B107.34M-2003, Socket Wrenches for Spark Plugs

Provides performance and safety requirements for wire strippers, and the cutting and stripping functions of multi-purpose tools, for use on solid and stranded copper wire. Inclusion of dimensional data in this Standard does not mean that all pliers described herein are stock production sizes. Consumers should consult with manufacturers concerning lists of stock production sizes. This standard may be used as a guide by state authorities or other regulatory bodies in the formulation of laws or regulations. It is also intended for voluntary use by establishments that use or manufacture the tools covered.

ASME B107.35M-1997, Nut Drivers (Spin Type, Screwdriver Grip) (Metric Series)

Covers the general and dimensional requirements for the commonly used metric nut drivers with an integral socket and shaft that utilizes a screwdriver-type hand grip.

ASME B107.36M-2002, Pliers - Locking, Clamp and Tubing Pinch - Off

This Standard covers dimensions and functional characteristics of locking clamp pliers and tubing pinch-off pliers suitable for clamping operations in assembly and repair work. Tubing pinch-off pliers are used to pinch off the flow of gas or other material flowing through rubber or soft copper tubing. Inclusion of dimensional and functional data in this Standard is not intended to imply that all products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

ASME B107.37M-2003, Pliers - Wire Cutters/Strippers

This Standard provides performance and safety requirements for wire strippers, and the cutting and stripping functions of multi-purpose tools, for use on solid and stranded copper wire. Inclusion of dimensional data in this Standard does not mean that all pliers described herein are stock production sizes. Consumers should consult with manufacturers concerning lists of stock production sizes. This standard may be used as a guide by state authorities or other regulatory bodies in the formulation of laws or regulations. It is also intended for voluntary use by establishments that use or manufacture the tools covered.

ASME B107.38M-200x (R2004), Electronic Pliers

Covers the dimensional and functional characteristics of electronic pliers suitable for gripping, holding, and/or manipulating small objects. Some pliers may also have cutting edges suitable for cutting small diameter wire. Inclusion of dimensional and functional data in this Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers should consult with manufacturers concerning a list of stock production sizes.

ASME B107.39-2002, Open End Wrenches (Inch and Metric Series)

This Standard provides the general, dimensional, performance, and safety requirements for open end wrenches, including but not restricted to Engineer's, angled, and tappet. Inclusion of dimensional data in this Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

ASME B107.40-2002, Flare Nut Wrenches (Inch and Metric Series)

This Standard provides the general, dimensional, performance, and safety requirements for flare nut wrenches, including combination, offset slotted box and open end. Inclusion of dimensional data in this Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

ASME B107.41M-2004, Nail Hammers – Safety Requirements

This Standard provides performance and safety requirements for ball peen hammers. Ball peen hammers have a striking face on one end of the head for use in striking punches and chisels, and a ball peen on the opposite end for use in riveting, shaping, and straightening unhardened metals. This Standard is intended to serve as a guide in selecting, testing, and using the hand tools covered herein. It is not the purpose of this Standard to specify the details of manufacturing.

ASME B107.42M-1997 (R2004), Hatchets – Safety Requirements

This Standard provides safety requirements for the design, construction, testing, and use of hatchets. Hatchets have a striking face on one end of the head for use in driving common (unhardened) nails or striking wood products or both; and a blade or bit on the opposite end for use in cutting, notching, and shaping wood products or wallboard products, or both; cutting, spacing, and aligning soft roofing products; and pulling common (unhardened) nails when the tool is provided with a nail slot

ASME B107.43-2002, Electronic Tester, Hand Torque Tools

This Standard provides performance and safety requirements for safety requirements for splitting wedges that are specifically for use in splitting wood. It is intended to serve as a guide in selecting, testing, and using the hand tools covered. It is not the purpose of this of this Standard to specify the details of manufacturing. This Standard is also meant to serve as a guide in developing manuals and posters and for training personnel in safe practices. This Standard may be used as a guide by state authorities or other regulatory bodies in the formulation of laws or regulations. It is also intended for voluntary use by establishments that use or manufacture the tools covered. The methods employed to ensure compliance with this Standard shall be determined by the proper regulatory or administrative authority.

ASME B107.43M-1998, Wood Splitting Wedges - Safety Requirements

Provides safety requirements for the design, construction, testing, and use of splitting wedges made of steel that are intended specifically for use in splitting wood.

ASME B107.44M-2002, Glaziers' Chisels and Wood Chisels - Safety Requirements

This Standard provides performance and safety requirements for glaziers' chisels and wood chisels. It is intended to serve as a guide in selecting, testing, and using the hand tools covered. It is not the purpose of this Standard to specify the details of manufacturing. This Standard is also meant to serve as a guide in developing manuals and posters, and for training personnel to work safely. This Standard may be used as a guide by state authorities or other regulatory bodies in the formulation of laws or regulations. It is also intended for voluntary use by establishments that use or manufacture the tools covered. The methods employed to ensure compliance with this Standard shall be determined by the proper regulatory or administrative authority.

ASME B107.45M-2002, Ripping Chisels and Flooring/Electricians' Chisels – Safety Requirements

This Standard provides performance and safety requirements for ripping chisels and flooring/electrician's chisels. These chisels are intended for use in cutting wood and light prying, such as cutting the tongue of installed flooring sections and raising and removing floor planks. This Standard is intended to serve as a guide in selecting, testing, and using the tools covered. It is not the purpose of this Standard to specify the details of manufacturing.

ASME B107.46M-2004, Stud, Screw and Pipe Extractors – Safety Requirements

This Standard provides performance and safety requirements for ball peen hammers. Ball peen hammers have a striking face on one end of the head for use in striking punches and chisels, and a ball peen on the opposite end for use in riveting, shaping, and straightening unhardened metals. This Standard is intended to serve as a guide in selecting, testing, and using the hand tools covered herein. It is not the purpose of this Standard to specify the details of manufacturing.

ASME B107.48-2005, Metal Chisels, Punches, and Drift Pins: Safety Requirements

Provides performance and safety requirements for hand-held and handled metal chisels, punches, and drift pins. Chisels are intended specifically for use in cutting and shaping metal objects. Punches and drift pins are intended specifically for use in marking metal, for driving and removing such things as pins and rivets, and for aligning holes in different sections of material. Power driven chisels, punches, and drift pins are excluded from this Standard. This Standard is intended to serve as a guide in selecting, testing, and using the hand tools covered. It is not the purpose of this Standard to specify the details of manufacturing. Inclusion of dimensional data in this standard does not mean that all products described herein are stock production sizes. Consumers should consult with manufacturers concerning lists of stock production sizes. This standard may be used

ASME B107.49M-2004, Nail Sets - Safety Requirements

This Standard provides performance and safety requirements for nail sets that are intended primarily for setting unhardened finishing nails below the surface of the material being nailed.

ASME B107.4M-2005, Driving and Spindle Ends for Portable Hand, Air, and Electric Tools

Applies to portable power tools for drilling, grinding, polishing, sawing, and driving threaded fasteners and hand tools for driving threaded fasteners. Other tools not classified as percussion tools belong in this category and may be added by revision or addition through the usual procedure. This Standard includes dimensions and tolerances for both driving and driven elements where such coordination is important and not established by reference to the pertinent American National Standards. All dimensions are in inches and millimeters.

ASME B107.50M-1998, Hand Tools – Brick Chisels and Brick Sets – Safety Requirements

Provides safety requirements for the design, construction, testing, and use of brick chisels and brick sets.

ASME B107.51-2001, Star Drills - Safety Requirements

Provides safety requirements for the design, construction, testing and use of hand-held star drills. These hand-held star drills are intended for use in drilling holes in brick, tile, concrete, or stone.
Single copy price: \$10.00
Order from: Silvana Rodriguez-Bhatti, ASME
Send comments (with copy to BSR) to: James Bird, M/S 20S2, ASME

ASME B107.52M-1998, Nail-Puller Bars - Safety Requirements

Provides safety requirements for the design, construction, testing and use of brick chisels and brick sets.

ASME B107.53M-2004, Hand Tools – Ball Peen Hammers – Safety Requirements

This Standard provides performance and safety requirements for ball peen hammers. Ball peen hammers have a striking face on one end of the head for use in striking punches and chisels, and a ball peen on the opposite end for use in riveting, shaping, and straightening unhardened metals. This Standard is intended to serve as a guide in selecting, testing, and using the hand tools covered herein. It is not the purpose of this Standard to specify the details of manufacturing.

ASME B107.54-2001, Heavy Striking Tools - Safety Requirements

Provides safety requirements for the design, construction, testing and use for: Blacksmiths' double -face sledges, hard drilling hammers, blacksmiths' cross peen sledges, wood chopper's maul, railroad spike maul, spalling hammers, stone sledge, bush hammers, boat mauls, lineman's or farriers' turning hammers.
Single copy price: \$10.00
Order from: Silvana Rodriguez-Bhatti, ASME
Send comments (with copy to BSR) to: James Bird, M/S 20S2, ASME

ASME B107.55M-2002, Axes – Safety Requirements

This Standard provides safety requirements for the design, construction, testing, and use of axes that are intended specifically for use in felling, trimming, and pruning trees; splitting and cutting wood; notching and shaping logs and timbers; driving wooden or plastic stakes; pulling unhardened nails when the tool is provided with a nail slot; or digging when the particular tool is provided with a digging blade.

ASME B107.56-1999 (R2005), Body Repair Hammers and Dolly Blocks: Safety Requirements

Provides safety requirements for the design, construction, testing, and use of body repair hammers and dolly blocks, both of which are intended specifically for the reshaping of sheet metal panels.

ASME B107.57-2005, Bricklayers' Hammers & Prospecting Picks

This Standard provides performance and safety requirements for bricklayers' hammers that are intended specifically for use in setting and cutting (splitting) bricks, masonry tile, chipping mortar from bricks, and also for prospecting picks that are intended specifically for use in pulling samples from the ground. It is intended to serve as a guide in selecting, testing, and using the hand tools covered. It is not the purpose of this Standard to specify the details of manufacturing. The Standard is also meant to serve as a guide in developing manuals and posters and for training personnel to work safely. This Standard may be used as a guide by state authorities or other regulatory bodies in the formation of laws or regulations. It is also intended for voluntary use by establishments that use or manufacture the tools covered. The methods employed to ensure compliance

ASME B107.58M-1998 (R2005), Riveting, Scaling, and Tinnners' Setting Hammers – Safety Requirements

Provides safety requirements for the design, construction, testing, and use of riveting, scaling and tinnners' setting hammers described below. The names given are those generally recognized; styles are not limited to those named or illustrated (see figures 1, 2, and 3). - Riveting hammers: Intended specifically for driving, spreading, and setting unhardened rivets in hardened materials (also called tinnners' or machinists' riveting hammers). - Scaling hammers: Intended specifically for removing scale, paint, welding flux, rust, or other similar flaking material from the surface of unhardened metal (also called chipping hammers). - Tinnners' setting hammers: Intended specifically for closing, forming, and peening of sheet metal (also called peening hammers).

ASME B107.59-2002, Slugging and Striking Wrenches

This Standard provides performance and safety requirements for slugging and striking wrenches that are intended for torquing of fasteners. It is intended to serve as a guide in selecting, testing, and using the hand tools covered herein. It is not the purpose of this Standard to specify the details of manufacturing. This Standard is also meant to serve as a guide in developing manuals and posters and for training personnel to work safely. This Standard may be used as a guide by state authorities or other regulatory bodies in the formulation of laws or regulations. It is also intended for voluntary use by establishments that use or manufacture the tools covered. The methods employed to ensure compliance with this standard shall be determined by the proper regulatory or administrative authority.

ASME B107.5M-2002, Socket Wrenches, Hand (Metric Series)

This Standard provides dimensional, performance, and safety requirements for detachable socket wrenches with square drive for hand use. Inclusion of dimensional data in this Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

ASME B107.6-2002a, Combination Wrenches (Inch and Metric Series)

This Standard provides dimensional, performance, and safety requirements for detachable socket wrenches with square drive for hand use. Inclusion of dimensional data in this Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

ASME B107.60-2004, Pry Bars

This Standard provides performance and safety requirements for pry bars that are intended for separating, prying, ripping, lifting, scraping, and aligning applications.

ASME B107.8M-2003, Adjustable Wrenches

Provides performance and safety requirements for open end adjustable wrenches, with rack and worm adjustment, generally used on both hexagonal and square bolts and nuts. Inclusion of dimensional data in this Standard is not intended to imply that all products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of production sizes.

ASME B107.9-2002, Wrenches, Box, Open End, Combination, and Flare Nut (Metric Series)

This Standard provides dimensional, performance, and safety requirements for box wrenches. Inclusion of dimensional data in this Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning list of stock production sizes.

ASME B133.7M-1985 (R2001), Fuels, Gas Turbine

Covers gas turbines designed to burn either gaseous or liquid, or both, with or without change over while under load.

ASME B133.8M-1977 (R2001), Installation Sound Emission, Gas Turbine

Gives methods and procedures for specifying the sound emissions of gas turbine installations for installations for industrial, pipeline, and utility applications. Included are practices for making field sound measurements and for reporting field data. This standard can be used by users and manufacturers to write specifications for procurement, and to determine compliance with specification after installation. Information is included, for guidance, to determine expected community reaction to noise.

ASME B133.9-1994 (R2001), Measurement of Exhaust Emissions from Stationary Gas Turbine Engines

Provides guidance in the measurement of exhaust emissions performance testing (source testing) of stationary gas turbines. This Standard applies to engines that operate on natural gas and liquid distillate fuels. Much of this Standard also will apply to engines operated on special fuels such as alcohol, coal gas, residual oil, or process gas or liquid.

ASME B15.1-2000, Safety Standard for Mechanical Power Transmission Apparatus,

The requirements of this Standard apply to any source of hazard to people from the operation of mechanical power transmission apparatus on machines, equipment, or systems that are stationary in their use, other than the point of operation.

ASME B16.1-2005, Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800

This Standard for Classes 25, 125, and 250 Cast Iron Pipe Flanges and Flanged Fittings covers: Pressure-temperature ratings, sizes and method of designating openings of reducing fittings, marking, minimum requirements for materials, dimensions and tolerances, bolt, nut, and gasket dimensions, and test.

ASME B16.10-2003, Face-to-Face and End-to-End Dimensions of Valves

This Standard covers face-to-face and end-to-end dimensions of straightway valves, and center-to-face and center-to-end dimensions of angle valves. Its purpose is to assure installation interchangeability for valves of a given material, type, size, rating class, and end connection.

ASME B16.11-200x, Forged Fittings, Socket-Welding and Threaded

This standard covers ratings, dimensions, tolerances, marking and material requirements for forged fittings, both socket-welding and threaded, as illustrated in the Tables contained in the standard.

ASME B16.11a-2001, Forged Fittings, Socket-Welding and Threaded

Covers ratings, dimensions, tolerances, marking and material requirements for forged fittings, both socket-welding and threaded, as illustrated in Tables 4 through 7 and A4 through A7, inclusive. Single copy price: \$10.00 Order from: Silvana Rodriguez-Bhatti, ASME Send comments (with copy to BSR) to: James Bird, M/S 20S2, ASME

ASME B16.12-1998, Cast Iron Threaded Drainage Fittings

Covers: (a) size and method of designating openings in reducing fittings; (b) marking; (c) materials; (d) dimensions and tolerances; (e) threading; (f) ribs; (g) coatings; and (h) face level.

ASME B16.15-1985 (R2004), Cast Bronze Threaded Fittings, Classes 125 and 250

Pertains primarily to cast Class 125 and Class 250 bronze threaded pipe fittings.

ASME B16.20-1998 (R2004), Metallic Gaskets for Pipe Flanges – Ring Joint, Spiral Wounds and Jacketed

This standard covers materials, dimensions, tolerances and markings for metal ring-joint gaskets, spiral-wound metal gaskets, metal-jacketed gaskets, and filler material.

ASME B16.20a-2000, Metallic Gaskets for Pipe Flanges; Ring-Joint, Spiral-Wound, and Jacketed

Covers materials, dimensions, tolerances, and markings for metal ring-joint gaskets, spiral-wound metal gaskets, metal-jacketed gaskets, and filler material. These gaskets are dimensionally suitable for use with flanges described in reference flange standards: American National Standard for Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24, ANSI/ASME B16.5-1996, American National Standard for Large Diameter Steel Flanges NPS 26 Through NPS 60, ANSI/ASME B16.47-1996, and American National Standard for Valves and Wellhead Equipment, ANSI/API Spec 6A-1989. This standard covers spiral-wound metal gaskets and metal-jacketed gaskets for use with raised-face and flat-face flanges.

ASME B16.21-2005, Nonmetallic Flat Gaskets For Pipe Flanges

Covers types, sizes, materials, dimensions, tolerances, and markings for nonmetallic flat gaskets. These gaskets are dimensionally suitable for use with flanges described in the referenced flange standards.

ASME B16.22-2001 (R2005), Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings

Establishes specifications for wrought copper and wrought copper alloy, solder-joint, seamless fittings, designed for use with seamless copper tube conforming to ASTM B 88, B 280, and B 819, as well as fittings intended to be assembled with soldering materials conforming to ASTM B 32, brazing materials conforming to AWS A5.8, or with tapered pipe thread conforming to ASME B1.20.1.

ASME B16.22a-1998, Wrought Copper and Copper Alloy Solder Joint Pressure Fittings

Covers wrought copper and wrought copper alloy solder joint seamless fittings, designed for use with copper water tube.

ASME B16.23-2002, Cast Copper Alloy Solder Joint Drainage Fittings – DWV

Establishes specifications designed for use in drain waste, and vent (DWV) systems. The Standard is allied with ASME B16.29 (Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV) and provides requirements for fitting ends suitable for soldering. The Standard also covers description, pitch (slope), abbreviations for end connections, sizes and method of designing openings for reducing fittings, marking, material, dimensions and tolerances.

ASME B16.24-2001, Cast Copper Alloy Pipe Flanges and Flanged Fittings

Covers pressure-temperature ratings, sizes and methods of designating openings for reduced fittings, marking, materials, dimensions, bolts, nuts, and gaskets, tolerances, and test.

ASME B16.25-2003, Buttwelding Ends

This standard covers the preparation of buttwelding ends of piping components to be joined into a piping system by welding. It includes requirements for welding bevels, for external and internal shaping of heavy-wall components, and for preparation of internal ends (including dimensions and tolerances). Coverage includes preparation for joints with the following: (a) no backing rings; (b) split or noncontinuous backing rings; (c) solid or continuous backing rings (d) consumable insert rings (e) gas tungsten arc welding (GTAW) of the root pass. Details of preparation for any backing ring must be specified in ordering the component.

ASME B16.29-2001, Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings – DWV

Covers description, pitch (slope), abbreviations for end connections, sizes and methods of designating openings for reduced fittings, marking, materials, dimensions and tolerances.

ASME B16.3-1998, Malleable-Iron Threaded Fittings

Covers: (a) pressure-temperature ratings; (b) size and method of designating openings of reducing fittings; (c) marking; (d) material; (e) dimensions and tolerances; (f) threading; and (g) coatings.

ASME B16.33-2002, Manually Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig

ASME B16.34-2004, Valves – Flanged, Threaded and Welding End

This standard applies to new construction and covers pressure-temperature ratings, dimensions, tolerances, materials, nondestructive examination requirements, testing and marking for cast, forged and fabricated flanged, threaded, and welding end and wafer or flangeless valves of steel, nickel base alloys and other alloys as listed in table 1 of the standard. Wafer or flangeless valves, bolted or through-bolt types, that are installed between flanges or against a flange are treated as flanged-end valves. Alternative rules for NPS 2 1/2 and smaller valves are given in Annex G of the standard.

ASME B16.36-1996, Orifice Flanges

Covers flanges (similar to those covered in BSR/ASME B16.5) that have orifice pressure differential connections. Coverage is limited to (a) welding neck flanges, Classes 300, 400, 600, 900, 1500, and 2500; and (b) slip-on and threaded flanges, Class 300.

ASME B16.38-1985 (R2005), Large Metallic Valves for Gas Distribution (Manually Operated, NPS 2 1/2 to 12, 125 psig Maximum)

This Standard covers only manually operated metallic valves in nominal pipe sizes 2-1/2 through 12, having the inlet and outlet on a common center line, which are suitable for controlling the flow of gas from open to fully closed, for use in distribution and service lines where the maximum gage pressure at which such distribution piping system may be operated in accordance with the Code of Federal Regulations (CFR), Title 49, Part 192, transportation of Natural and Other Gas by Pipeline; Minimum safety standards does not exceed 125 psi (8.6 bar). Valve seats, seals and stem packing may be nonmetallic.

ASME B16.39-1998, Pipe Unions, Malleable Iron Threaded

Provides requirements for the following: (a) design; (b) pressure-temperature ratings; (c) size; (d) marking; (e) materials; (f) joints and seats; (g) threads; (h) hydrostatic strength; (i) air pressure test; (k) sampling; (l) coatings; and (m) dimensions.

ASME B16.4-1998, Gray Iron Threaded Fittings

Covers: (a) pressure-temperature ratings; (b) size and method of designating openings of reducing fittings; (c) marking; (d) material (e) dimensions and tolerances; (f) threading; and (g) coating.

ASME B16.40-2002, Gas Shut-Offs and Valves in Gas Distribution Systems, Manually Operated Thermoplastic

Covers manually operated thermoplastic shutoffs and valves in sizes 1/2 through 6 which are suitable for use in thermoplastic distribution mains and service lines where the maximum pressure at which such distribution piping systems may be operated is in accordance with the Code of Federal Regulations (CFR) Title 49, Part 192, Transportation of Natural and Other Gas by Pipelines; Minimum Safety Standards, for temperature ranges of -20°F to 100°F (-29°C to 38°C). This standard sets forth the minimum capabilities, characteristics, and properties which a newly manufactured valve must possess in order to be considered suitable for use in piping systems indicated above with natural gas, manufactured gas, and liquefied petroleum gas.

ASME B16.42-1998, Ductile Iron Pipe Flanges and Flanged Fittings

Covers minimum requirements for Class 150 and 300 cast ductile iron pipe flanges and flanged fittings.

ASME B16.44-2002, Manually Operated Metallic Gas Valves for Use in House Piping Systems

This Standard applies to new valve construction and covers quarter turn manually operated valves in sizes NPS 1/4-4 and tubing sizes 1/4-1 O.D. These valves are intended for indoor installation as gas shutoff valves when installed in above ground fuel gas piping downstream of the gas meter outlet and upstream of the inlet connection to a gas appliance. The valves covered by this standard are intended for service at temperatures between 32°F (0°C) and 125°F (52°C) at pressure ratings not exceed 5 psi (0.34 bar). When so designated by the manufacturer, these valves may be installed for service outdoors and/or at temperatures below 32°F (0°C) and/or above 125°F (52°C).

ASME B16.44a-1997, Manually Operated Metallic Gas Valves for Use in House Piping Systems

Applies to new valve construction and covers quarter turn manually operated metallic valves in sizes NPS 1/2, which are intended for indoor installation as gas shutoff valves when installed in indoor gas piping between a gas meter outlet and the inlet connection to a gas appliance.

ASME B16.45-1998, Cast Iron Fittings for Sovernt@ Drainage Systems

Covers: (a) description; (b) sizes and methods for designating openings for reducing fittings; (c) marking; (d) material; (e) pitch; (f) design; (g) dimensions and tolerances; and (h) test.

ASME B16.47-1996, Large Diameter Steel Flanges NPS 26 Through NPS 60

Covers pressure-temperature ratings, materials, dimensions, tolerances, marking, and testing for pipe flanges in sizes NPS 26 through NPS 60 and ratings Classes 75, 150, 300, 400, 600, and 900. Flanges may be cast, forged, or plate (for blind flanges only) materials. Requirements and recommendations regarding bolting and gaskets are also included.

ASME B16.47a-1998, Large Diameter Steel Flanges, NPS 26 through NPS 60

Covers pressure-temperature ratings, materials, dimensions, tolerances, marking, and testing for pipe flanges in sizes NPS 26 through NPS 60 and ratings Classes 75, 150, 300, 400, 600, and 900. Flanges may be cast, forged, or plate (for blind flanges only) materials. Requirements and recommendations regarding bolting and gaskets are also included.

ASME B16.48-2005, Steel Line Blanks

Covers pressure-temperature ratings, materials, dimensions, tolerances, marking, and testing for operating line blanks in sizes NPS 1/2 through NPS 24 for installation between ASME B16.5 flanges in the 150, 300, 600, 900, 1500, and 2500 pressure classes.

ASME B16.49-2000, Factory-Made Wrought Steel Butt welding Induction Bends for Transportation and Distribution Systems

Covers design, material, manufacturing, testing, marking, and inspection requirements for factory-made pipeline bends of carbon steel materials having controlled chemistry and mechanical properties, produced by the induction bending process, with or without tangents.

ASME B16.5-2003, Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24

Covers pressure - temperature ratings, materials, dimensions, tolerances, marking, testing, and method of designating openings for pipe flanges and flanged fittings.

ASME B16.50-2001, Wrought Copper and Copper Alloy Braze-Joint Pressure Fittings

Establishes requirements for wrought copper and wrought copper alloy braze-joint seamless fittings designed for use with seamless copper tube conforming to ASTM Standard Specification, B 88 (Water and General Plumbing System), B 280 (Air conditioning and Refrigeration Service), and B 819 (Medical Gas Systems). This Standard covers joints assembled with brazing materials conforming to ANSI/AWS A5.8. Provides requirements for fitting-ends suitable for brazing and covers pressure-temperature ratings, abbreviations for end connections, size and method of designating openings of fittings, marking, material, dimensions and tolerances, and testing.

ASME B16.9-2003a, Factory-Made Wrought Steel Butt welding Fittings

Covers overall dimensions, tolerances, ratings, testing, and markings for wrought factory-made butt welding fittings in sizes NPS 1/2 through 48 (DN 15 through 1200).

ASME B17.1-1967 (R2003), Keys and Keyseats

This standard covers the size, type, and tolerances of parallel and taper keys and keyseats, and their relationship to shaft diameters and bore diameters. The sizes and tolerances are intended for single key application.

ASME B17.2-1967 (R2003), Woodruff Keys and Keyseats

This standard voers nomenclature, definitions, identification number, dimensions, and tolerances of woodruff keys and keyseats.

ASME B18.1.1-1972 (R2001), Small Solid Rivets (7/16 Inch Nominal Diameter and Smaller)

Covers complete general and dimensional data for those types of small solid rivets.

ASME B18.1.2-1972 (R2001), Large Rivets (1/2 Inch Nominal Diameter and Larger)

Covers complete general and dimensional data for those types of large solid rivets.

ASME B18.1.3M-1983 (R2001), Metric Small Solid Rivets

Covers complete general and dimensional data those types of metric small solid rivets.

ASME B18.10-1982 (R2005), Track Bolt and Nuts

This Standard covers the complete general and dimensional data for inch track bolts and nuts recognized as American National Standard.

ASME B18.12-2001, Mechanical Fasteners, Glossary of Terms for

Provides a summary of nomenclature and terminology currently used to define and/or describe mechanical fasteners, related characteristics, and the manufacturing processes which produce these products.

ASME B18.13-1996 (R2003), Screw and Washer Assemblies – SEMS (Inch Series)

Covers the general and dimensional data pertinent to the various types of screw and captive washer assemblies, otherwise known as sems.

ASME B18.13.1M-1998 (R2003), Screws and Washer Assemblies – SEMS (Metric Series)

Covers the general and dimensional data pertinent to the various types of screw and captive washer assemblies, otherwise known as sems.

ASME B18.13a-1998, SEMS Screw and Washer Assemblies

Covers general and dimensional data pertinent to the various types of screw and captive washer assemblies. This is a re-submittal owing to substantive changes in the text.

ASME B18.15-1985 (R2003), Forged Eyebolts

Limited to dimensions and capacities for forged threaded eyebolts intended primarily for lifting applications, and covers the following types and styles: Type 1 (Style A and B) and Type 2 (Style A and B).

ASME B18.15M-1998 (R2004), Metric Lifting Eyes

Covers dimensional and load requirements for forged metric lifting eyes and forged metric straight shank threaded lifting eyes, previously referred to as eyebolts, intended primarily for lifting applications. B18.15.M incorporates ANSI/ASME B18.15.1M-1998 & ANSI/ASME B18.15.2-1998

ASME B18.16M-2004, Prevailing-Torque Type Steel Metric Hex Nuts and Hex Flange Nuts

This standard will cover the complete general, dimensional, mechanical, and performance data for metric prevailing-torque hex nuts and hex flange nuts of property class 5, 9, and 10 as defined in ASTM A563M.

ASME B18.18.1M-1987 (R1999), General Purpose Fasteners, Inspection and Quality Assurance for

This standard outlines a quality assurance plan for internally and externally threaded fasteners and accessories or associated parts.

ASME B18.18.2M-1987 (R2005), Inspection and Quality Assurance For High-Volume Machine Assembly Fasteners

This Standard outlines a Quality Assurance Plan for internally and externally threaded fasteners and accessories or associated parts. Provisions are included for sampling plans, inspection frequencies, control procedures, and record keeping. Included in this plan are fasteners such as those where a more detailed inspection would enhance mass assembly operation. The quality assurance plan for these fasteners relies primarily on increased final inspection rather than on documented in-process control. This Standard will be used in conjunction with other accepted standards for product, testing, gaging, and material and, therefore, those provisions as well as packaging are not included herein.

ASME B18.18.3M (R2005), Inspection and Quality Assurance for Special Purpose Fasteners

This Standard outlines a Quality Assurance Plan for internally and externally threaded fasteners and accessories or associated parts. Provisions are included for sampling plans, inspection frequencies, control procedures, and record keeping. The basic structure of this plan outlines the quality assurance provisions for fasteners for special purpose applications requiring in-process controls. Included are fasteners produced by one manufacturing practice requiring records of in-process and final inspection which are maintained by the producer. This Standard will be used in conjunction with other accepted standards for product, testing, gaging, and material and, therefore, those provisions as well as packaging are not included herein.

ASME B18.18.4M-1987 (R2005), Fasteners for Highly Specialized Engineered Applications, Inspection and Quality Assurance for

Outlines a Quality Assurance Plan for internally and externally threaded fasteners and accessories or associated parts. Provisions are included for sampling plans, inspection frequencies, control procedures, and record keeping. The basic structure of this plan outlines the quality assurance provisions for fasteners for special purpose applications requiring in-process controls. Included are fasteners produced by one manufacturing practice requiring records of in-process and final inspection which are maintained by the producer. This Standard will be used in conjunction with other accepted standards for product, testing, gaging, and material and, therefore, those provisions as well as packaging are not included herein.

ASME B18.18.5M-1998 (R2003), Inspection and Quality Assurance Plan Requiring In Process Inspection and Controls

Outlines a Quality Assurance Plan for internally and externally threaded fasteners and accessories or associated parts. Provisions are included for sampling plans, inspection frequencies, control procedures, and record keeping. The basic structure of this plan outlines the quality assurance provisions for fasteners manufactured and processed using in-process controls. Included are fasteners produced by one manufacturing practice requiring records of in-process inspection and tests which are maintained by the producer. This Standard will be used in conjunction with other accepted standards for product, testing, gaging, and material, and, therefore, those provisions as well as packaging are not included herein.

ASME B18.18.6M-1998 (R2003), Quality Assurance Plan for Fasteners Produced in a Third Party Accreditation System

This plan is for a quality system that has been certified by a third party process utilizing independent audits under the provisions of a third party accreditation program administered by a consensus standards organization. It is intended to serve as a Quality Assurance Plan for externally and internally threaded fasteners and accessories or associated parts. It is to be used in conjunction with other part-specific quality plans which have been agreed to between manufacturer and purchaser. The Basic Plan Outline is included in Fig. 1. This Standard requires that manufacturers must be qualified under provisions of third party accreditation included in the referenced standards.

ASME B18.18.7M-1998 (R2003), Quality Assurance Plan for Fasteners Produced in a Customer Approved Control Plan

Based on the concept that a written control plan outlining the fastener manufacturing process and identification of its control points will provide an orderly procedure for controlling and minimizing process and product variation. Factors usually considered when developing a control plan include past history, machine capacity and capability, new or special customer requirement(s), and a PFMEA (potential failure mode and effects analysis). Typically the control plan identifies actions at each phase of the manufacturing process including receiving, in-process manufacturing, and out-going operations. Continuing versus periodic requirements are identified and strategies are provided for continued updating and improvement.

ASME B18.2.1-1996 (R2005), Square and Hex Bolts and Screws (Inch Series)

This standard covers the complete general and dimensional data for eight product types of inch series square and hex bolts recognized as American National Standard.

ASME B18.2.1a-1999, Square and Hex Bolts and Screws (Inch Series)

Covers the complete general and dimensional data of inch series square and hex bolts and screws. Heavy hex structural bolts are not covered in this standard.

ASME B18.2.2-1987 (R2005), Square and Hex Nuts (Inch Series)

This Standard is intended to cover the complete general and dimensional data for various types of inch series square and hex nuts recognized as American National Standard.

ASME B18.2.3.10M-1996 (R2003), Square Head Bolts (Metric Series)

Covers the general and dimensional data for standard metric series square head bolts.

ASME B18.2.3.1M-1999 (R2005), Metric Hex Cap Screws

This Standard covers the complete general and dimensional data for metric series hex cap screws recognized as American National Standard.

ASME B18.2.3.2M-2005, Metric Formed Hex Screws

This standard covers the complete general and dimensional data for metric formed hex screws recognized as American National Standard. Formed hex screws are cold formed products with fully upset (non-trimmed) heads. Formed hex screws are standard only in sizes M5 thru M24, with lengths up to 150 mm, or 10 times nominal screw size, whichever is shorter. The inclusion of dimensional data in this standard is not intended to imply that all of the sizes in conjunction with the various options described herein are stock items. Purchasers should consult with suppliers concerning lists of stock production formed hex screws.

ASME B18.2.3.3M-1979 (R2001), Screws, Metric Heavy Hex

Covers the complete and general data for metric heavy hex screws.

ASME B18.2.3.4M-2001, Screws, Metric Hex Flange

Covers the complete dimensional and general data for metric series hex flange screws.

ASME B18.2.3.5M-1979 (R2001), Bolts, Metric Hex

Covers the complete general and dimensional data for metric hex bolts.

ASME B18.2.3.6M-1979 (R2001), Bolts, Metric Heavy Hex

Covers the complete general and dimensional data for metric heavy hex bolts.

ASME B18.2.3.7M-1979 (R2001), Bolts, Metric Heavy Hex Structural

Covers the complete general and dimensional data for metric heavy hex structural bolts.

ASME B18.2.3.9M-2001, Metric Heavy Hex Flange Screws

Covers the complete dimensional and general data for metric series heavy hex flange screws.

ASME B18.2.4.1M-2002, Hex Nuts, Style 1, Metric

Covers the complete general and dimensional data for metric hex nuts, Style 1, recognized as American National Standard.

ASME B18.2.4.2M-2005, Hex Nuts, Style 2, Metric

This standard covers the complete general and dimensional data for metric hex nuts, Style 2, recognized as American National Standard. The inclusion of dimensional data in this standard is not intended to imply that all of the nut sizes in conjunction with the various options described herein are stock items. Purchasers should consult with suppliers concerning lists of stock production hex nuts, Style 2.

ASME B18.2.4.3M-1979 (R2001), Hex Nuts, Slotted, Metric

Covers the complete general and dimensional data for metric slotted hex nuts.

ASME B18.2.4.5M-1979 (R2003), Hex Jam Nuts, Metric

Covers the complete general and dimensional data for metric hex jam nuts recognized as American National Standard.

ASME B18.2.4.6M-1979 (R2003), Hex Nuts, Heavy, Metric

Covers the complete general and dimensional data for metric heavy hex nuts recognized as American National Standard.

ASME B18.2.6-1996 (R2004), Fasteners for Use in Structural Applications

<http://cstools.asme.org/publicreview>

ASME B18.2.6a-1999, Fasteners for Use in Structural Applications

Covers the complete general and dimensional data for four products in the inch series: heavy hex structural bolts; heavy hex nuts; hardened steel washers; and compressible washer-type direct tension indicators.

ASME B18.2.7.1M-2002, Metric 12-Spline Flange Screws

Covers the complete general and dimensional data for metric 12-spline flange screws recognized as American National Standard.

ASME B18.2.8-1999 (R2005), Clearance Holes for Bolts, Screws and Studs

This Standard covers the recommended clearance hole sizes for #0 through 1.5 inches and M1.6 through M100 metric fasteners in three classes of clearance using a close-, normal-, and loose-fit category.

ASME B18.21.1-1999 (R2005), Lock Washers (Inch Series)

This Standard covers the dimensions, physical properties, and methods of testing for helical spring- and tooth-lock washers.

ASME B18.21.2M-1999 (R2005), Lock Washers (Metric Series)

This Standard covers the dimensions, physical properties, and methods of testing for helical spring- and tooth-lock washers.

ASME B18.22.1-1965 (R2003), Plain Washers

Covers two types of general purpose plain washers designated as Type A and Type B.

ASME B18.24-2004, Part Identifying Number (PIN) Code System Standard for B18 Fastener Products

This addenda to ASME B18.24, paragraph 1.1.3 in the scope will be incorporated into the revision and consolidation of ANSI/ASME B18.24.1-1996, ANSI/ASME B18.24.1a-2002, ANSI/ASME B18.24.2-1998, ANSI/ASME B18.24.3-1998.

ASME B18.25.1M-1996 (R2003), Square and Rectangular Keys and Keyways

This Standard covers requirements for square and rectangular parallel keys and keyways intended for both alignment of shafts and hubs, and transmitting torque between the shafts and hubs.

ASME B18.25.2M-1996 (R2003), Woodruff Keys & Keyways

Covers requirements for square and rectangular parallel keys and keyways intended for both alignment of shafts and hubs, and transmitting torque between the shafts and hubs.

ASME B18.25.3M-1998 (R2003), Square and Rectangular Keys and Keyways - Width Tolerances and Deviations Greater than Basic Size

Covers requirements square and rectangular parallel keys and keyways intended for both alignment of shafts and hubs, and transmitting torque between shafts and hubs. Keys covered in this Standard have a relatively loose width tolerance.

ASME B18.27-2005, Tapered and Reduced Cross Section Retaining Rings (Inch Series)

This Standard covers complete general and dimensional data for tapered and reduced cross section retaining rings, which may be used with the nominal size shafts and housings listed in the grooves of the recommended dimensions listed.

ASME B18.29.1-1993 (R2002), Helical Coil Screw Thread Inserts – Free Running and Screw Locking (Inch Series)

Intended to delineate the dimensional data for the inch series helical coil screw thread insert and the threaded hole into which it is installed. Appendices that describe insert selection, STI (Screw Thread Insert) taps, gages and gaging, insert installation, and removal tooling are also included. The inclusion of dimensional data in this Standard is not intended to imply that all products described are stock sizes. Consumers should consult with manufacturers concerning availability.

ASME B18.29.2M-2005, Helical Coil Screw Thread Inserts - Free Running and Screw Locking (Metric Series)

This Standard delineates the dimensional, mechanical and performance data for the metric series helical coil screw thread insert and the threaded hole into which it is installed. Appendices that describe insert selection, STI (Screw Thread Insert) taps, insert installation, and removal tooling are also included.

ASME B18.3-2003, Socket Cap, Shoulder, and Set Screws (Inch Series)

Covers complete general and dimensional data for various types of hexagon and spline (fluted) socket cap screws, shoulder screws, setscrews, and hexagon and spline keys recognized as American National Standard. Also included are appendices that provide specifications for hexagon and spline socket gages and gaging, tables showing applicability of keys and bits to various socket screws types and sizes, drill and counterbore sizes for socket head cap screws, and formulas on which dimensional data are based. However, where questions arise concerning acceptance of product, the dimensions in the tables shall govern over recalculation by formula.

ASME B18.3.1M-1986 (R2002), Screws, Socket Head Cap (Metric Series)

Contains complete general and dimensional data for metric series hexagon socket head cap screws in sizes from 1.6 mm to 48 mm and for metric series spline socket head cap screw in sizes from 1.6 mm to 8 mm recognized as American National Standard. Also included are appendices covering drill and counterbore sizes (Appendix I), drilled head dimensions (Appendix II), formulas for dimensions (Appendix III), ISO dimensional variations (Appendix IV), part numbering system and preferred sizes for government use (Appendix V), and thread dimensions (Appendix VI).

ASME B18.3.2M-1979 (R2003), Keys and Bits, Hexagon (Metric Series)

Contains the complete dimensional, mechanical and performance requirements for Metric Series Hexagon Keys and Bits of nominal sizes from 0.7 mm to 36 mm recognized as "American National Standard". They are primarily intended to be used for tightening and loosening metric series hexagon socket screw products but may also be suitable for use on other products having metric hexagon socket wrenching provisions.

ASME B18.3.3M-1986 (R2002), Hexagon Socket Head Shoulder Screws (Metric Series)

Contains complete dimensional, mechanical, and performance requirements for Metric Series Hexagon Socket Head Shoulder Screws with nominal shoulder diameters from 6.5 mm to 25 mm recognized as American National Standard. Also included are appendices covering formulas for dimensions, part numbering system and preferred sizes for government use, and thread dimensions. The inclusion of dimensional data in this Standard is not intended to imply that all of the products described are stock production sizes. Consumers should consult with manufacturers concerning lists of stock production sizes.

ASME B18.3.4M-1986 (R2002), Screws, Hexagon Socket Button Head Cap (Metric Series)

Contains the complete general and dimensional requirements for Metric Series Hexagon Socket Button Head Cap Screws of nominal sizes from 3mm to 16mm recognized as an American National Standard. Also included are appendices covering formulas for dimensions, part numbering system and preferred sizes for government use, and thread dimensions.

ASME B18.3.5M-1986 (R2002), Hexagon Socket Flat Countersunk Head Cap Screws (Metric Series)

Contains complete general and dimensional requirements for Metric Series Hexagon Socket Flat Countersunk Head Cap Screws of nominal sizes from 3mm to 20mm recognized as American National Standard. Also included are appendices covering formulas for dimensions, part numbering system and preferred sizes for government use, and thread dimensions. This product is designed and recommended for applications where a flush seating socket head screw is desired. Wrenchability is limited by the socket size and key engagement. Because of the head configuration, this product is not recommended where maximum fatigue resistance is required.

ASME B18.3.6M-1986 (R2002), Screws, Hexagon Socket Set (Metric Series)

Contains complete general and dimensional requirements for metric series socket set screws of nominal sizes from 1.6mm to 24mm recognized as American National Standard. Also included are appendices covering formulas for dimensions (Appendix I), part numbering system and preferred sizes for government use (Appendix II), and thread dimensions (Appendix III). The inclusion of dimensional data in this Standard is not intended to imply that all of the products described are stock production sizes. Consumers should consult with manufacturers concerning lists of stock production sizes.

ASME B18.30.1M-2000 (R2005), Metric Break Mandrel Open End Blind Rivets

This Standard establishes the dimensional, mechanical, and performance requirements of open-end blind rivets with break mandrels (metric series)

ASME B18.31.1M-2005, Metric Continuous and Double End Studs

This standard covers the complete dimensional and general data for continuous thread and double end metric series studs recognized as American National Standard. The following configurations are covered: Continuous Thread Stud - Studs that are threaded over their complete length, Double End Stud (Clamping Type) - Studs with screw threads of the same length and configuration on each end, and Double End Stud (Tap End Type) - A stud designed to be installed in a tapped hole and usually with different threaded lengths on each end. The tap end studs covered by this standard have the same thread form on each end with the length of the tap end threads equal to approximately 1-1/2 times the nominal thread diameter.

ASME B18.5-1990 (R2003), Round Head Bolts (Inch Series)

Covers the complete general and dimensional data for various types of inch series bolts generally classified as round head bolts and recognized as American National Standard.

ASME B18.5.2.1M-1996 (R2003), Bolts, Metric Round Head Short Square Neck

Covers the general and dimensional data for metric series round head short square neck bolts recognized as American National Standard and intended primarily for applications in thin metals.

ASME B18.5.2.2M-1982 (R2005), Bolts, Metric Round Head Square Neck

This Standard covers the complete general and dimensional data for metric series round head square neck bolts recognized as American National Standard, and intended for general applications.

ASME B18.5.2.3M-1990 (R2003), Round Head Square Neck Bolts With Large Head (Metric)

Covers the complete general and dimensional data for metric series round head square neck bolts with large head recognized as American National Standard.

ASME B18.6.1-1981 (R2003), Wood Screws (Inch Series)

This standard covers the complete general and dimensional data for the various types of slotted and recessed head wood screws recognized as "American National Standard".

ASME B18.6.2-1998 (R2005), Slotted Head Cap Screws, Square Head Set Screws, and Slotted Headless Set Screws

This Standard covers the complete general and dimensional data for the various styles of slotted head cap screws and square head and slotted headless set screws recognized as American National Standard.

ASME B18.6.3-2003, Slotted and Recessed Head Machine Screws and Machine Screw Nuts

This standard is intended to cover the complete general and dimensional data for the various types of slotted and recessed head machine screws and machine screw nuts recognized as American National Standard.

ASME B18.6.4(a)-2000, Screws, Tapping and Metallic Drive, Inch Series, Thread Forming and Cutting

Lists changes to screw size 8, Types AB, A, B, BP, and C, maximum thickness of 0.1270 and minimum thickness of 0.1230.

ASME B18.6.4 (R2005), Screws, Tapping and Metallic Drive, Inch Series, Thread Forming and Cutting

This Standard covers the complete general and dimensional data for the various styles of slotted and recessed head tapping screws and metallic drive screws recognized as American National Standard.

ASME B18.6.5M (a)-2000, Metric Thread Forming and Thread Cutting Tapping Screws

Lists changes to screw size 4.2 X 1.4, for Types AB and B, maximum thickness of 3.22 and minimum thickness of 3.12.

ASME B18.6.5M-1999 (R2005), Metric Thread Forming and Thread Cutting Tapping Screws

This Standard covers the complete general and dimensional data for the various styles of slotted and recessed head metric tapping screws recognized as American National Standard.

ASME B18.6.7M-1999 (R2005), Metric Machine Screws

This Standard covers the complete general and dimensional data for metric flat countersunk, oval countersunk and pan slotted and recessed head machine screws, and metric hex and hex flange head machine screws recognized as American National Standard.

ASME B18.7-1972 (R2005), Semi-Tubular Rivets, Full Tubular Rivets, Split Rivets and Rivet Caps, General Purpose

This standard covers the complete general and dimensional data for semi-tubular rivets, full tubular rivets, split rivets and rivet caps for use in general purpose applications.

ASME B18.7.1M-1984 (R2005), Metric General Purpose Semi-Tubular Rivets

This standard covers the complete general and dimensional data for oval head semi-tubular rivets for use in general purpose applications.

ASME B18.8.1-1994 (R2005), Clevis Pins and Cotter Pins (Inch Series)

This Standard covers the complete dimensional and general data for clevis pins and cotter (split) pins recognized as American National Standard.

ASME B18.8.2-2000 (R2005), Taper Pins, Dowel Pins, Straight Pins, Grooved Pins, and Spring Pins (Inch Series)

This Standard is intended to cover the complete dimensional and general data for taper pins, dowel pins, straight pins, grooved pins, and spring pins recognized as American National Standard, which are widely used in general applications.

ASME B18.8.200M-2005, Cotter Pins, Headless Clevis Pins, and Headed Clevis Pins (Metric Series)

This Standard covers the complete dimensional and general data for metric series cotter (split) pins and two types, A and B, of headed and headless clevis pins intended for general applications and recognized as American National Standard. Type A clevis are without holes. Type B clevis pins specified herein are with holes intended for use with cotter pins; however, a means is provided to specify other hole sizes when required for use with other types of pins.

ASME B18.9-1996 (R2003), Plow Bolts (Inch Series)

Covers the complete general and dimensional data for inch series plow bolts recognized as American National Standard.

ASME B19.1-1995, Safety Standard for Air Compressor Systems

Addresses all aspects of air compressor systems, from the entrance to the inlet device, through the compressor and associated heat exchangers, dryers, and pulsation suppression devices, to the point of entry to the distribution system.

ASME B19.3-1991, Safety Standard for Compressors for Process Industries

Covers the requirements for safety devices and protective facilities to prevent compressor accidents as a result of excessive pressure, destructive mechanical failures, internal fires or explosions, and leakage of toxic or flammable fluids. General safety practices and hazards unique to compressors are also covered.

ASME B19.3a-1994, Safety Standard for Compressors for Process Industries

ASME B19.3b-1995, Safety Standard for Compressors for Process Industries

ASME B20.1-2003, Safety Standard for Conveyors and Related Equipment

This Standard applies to the design, construction, installation, maintenance, inspection, and operation of conveyors and conveying systems in relation to hazards.

ASME B29.100-2002, Precision Power Transmission, Double-Pitch Power Transmission, and Double-Pitch Conveyor Roller Chains, Attachments and Sprockets

The B29 Standards committee agreed to propose a draft standard to consolidate and revise the following three chain standards: ASME B29.1, ASME B29.3 & ASME B29.4. The new standard was designated ASME B29.100 and entitled Precision Power Transmission, Double - Pitch Power Transmission, and Double - Pitch Conveyor Roller Chains, Attachments And Sprockets.

ASME B29.10M-1997 (R2002), Heavy Duty Offset Sidebar Transmission Roller Chains and Sprocket Teeth

Covers the General Chain Dimensions, M.U.T.S., Strand Length, Measuring Load, Maximum and Minimum Controlling Link Dimensions for Interchangeable Chain Links, Chain Clearance Dimensions. This Standard also includes Sprocket Tooth Form Factors.

ASME B29.11M-2001, Combination Chains, Attachments, and Sprocket Teeth

Covers combinations chains which are a series of block links having barrels to contact the sprocket teeth, alternating with links composed of sidebars and pins that articulate in the barrels of the block link. Pins are fixed against rotation in sidebar pitch holes by mechanical locks, such as flats, or by interference fits, or both. Assembly of pins may be from either side or alternated, at the manufacturer's option.

ASME B29.12M-1997 (R2004), Steel Bushed Rollerless Chains, Attachments, and Sprocket Teeth

This standard covers nomenclature, general chain proportions and designations, chain and attachment dimensions for steel bushed rollerless chains, attachments and sprocket teeth

ASME B29.14M-2001, "H" Type Mill Chains, Attachments, and Sprocket Teeth

Covers "H" type mill chains which are a series of identical cast offset links having barrels to contact the sprocket teeth and pins that articulate in the barrels of the links. Pins are fixed in the sidebar pitch holes by either press fits and/or mechanical locks, such as flats, to prevent rotation of the pins in the sidebar pitch holes.

ASME B29.15M-1997 (R2003), Steel Roller Type Conveyor Chains, Attachments, and Sprocket Teeth

Covers the General Chain Dimensions, M.U.T.S., Dimensions for Chain Attachments, Strand Length, Measuring Load, Maximum and Minimum Controlling Link Dimensions for Interchangeable Chain Links. This standard also includes Maximum Eccentricity and Face Runout Tolerances for Sprockets Factors.

ASME B29.17M-1998 (R2004), Hinge Type Flat Top Conveyor Chains and Sprocket Teeth

This standard covers nomenclature, general chain proportions and designations, chain and attachment dimensions for Hinge-Type Flat Top Conveyor Chains and Sprocket Teeth.

ASME B29.200-2001, Welded Steel Type Mill Chains, Welded Steel Drag Chains, Attachments and Sprocket Teeth

Pertains to a series of identical welded offset links having barrels to contact the sprocket teeth, and pins which articulate in the barrels of the links. Pins are fixed in the sidebar pitch holes by either press fits and/or mechanical locks, such as flats, to prevent rotation of the pins in the sidebar pitch holes.

ASME B29.21M-2003, 700 Class Welded Steel and Cast Chains, Attachments, and Sprockets for Water and Sewage Treatment Plants

Developed to assure consistency with previous standards and does replace ANSI B29.13. It also contains a supplementary section which identifies Engineering Characteristics of 700 Class Welded Steel and Cast Chain including attachments and sprockets in common use for rectangular straight line collectors in water and sewage treatment tanks.

ASME B29.22-2001, Drop Forged Rivetless Chains, Sprocket Teeth Drive Chain/Drive Dogs

Pertains to Drop Forged Rivetless Chain, which has widespread use in many industries on trolley, scrapper flights, assembly and similar conveyors. Because materials do not tend to pack in its open structure, Drop Forged Rivetless Chain is used extensively for flight conveyors. Its design permits both horizontal and vertical operation over irregular routes, making it particularly acceptable for trolley conveyor service.

ASME B29.23M-1985 (R2004), Flexible Chain Couplings

Covers nomenclature, general chain proportions and designations, chain and attachment dimensions for Flexible Chain Couplings.

ASME B29.24M-2002, Roller Load Chains for Overhead Hoists

Covers specialized roller chains that are designed specifically as load chains for use in overhead hoists.

ASME B29.26M-2001, Fatigue Testing Power Transmission Roller Chain

Covers fatigue testing, in axial tension, of power transmission roller chains in ASME B29.1M and B29.3M, and nonstandard variants of those chains.

ASME B29.27-2002, Single-Pitch and Double-Pitch Hollow Pin Conveyor Chains and Attachments

This standard covers the dimensional limits required for chain interchangeability on sprockets. It does not provide for interconnectability of chains or individual links from different manufacturers.

ASME B29.2M-1982 (R2004), Inverted Tooth (Silent) Chains and Sprockets

This standard covers nomenclature, general chain proportions and designations, chain and attachment dimensions for Inverted Tooth (silent) Chains and Sprockets

ASME B29.300-1998, Agricultural, Detachable, and Pintle Chains, Attachments and Sprockets

This consolidated standard has been designed to integrate the following three types of agricultural type chains and provide their Chain Properties, Minimum Ultimate Tensile Strength (M.U.T.S.), Attachments and Sprockets Information: 1. Steel Detachable Link Chains, Attachments, 2. Sprockets Agricultural Roller Chains, Attachments, and Sprockets, 3. Open Barrel Steel Pintle Type Chains Attachments, and Sprockets.

ASME B29.300a-2004, Agricultural, Detachable, and Pintle Chains, Attachments and Sprockets

This consolidated standard has been designed to integrate the following three types of agricultural type chains and provide their Chain Properties, Minimum Ultimate Tensile Strength (M.U.T.S.), Attachments and Sprockets Information: 1. Steel Detachable Link Chains, Attachments, 2. Sprockets Agricultural Roller Chains, Attachments, and Sprockets, 3. Open Barrel Steel Pintle Type Chains Attachments, and Sprockets.

ASME B29.8-2002, Leaf Chain, Clevises, and Sheaves

A leaf chain consist of a series of link plates alternately assembled with pins in such a way that the joint is free to articulate between adjoining pitches. The Clevises section gives recommended design dimensions of terminal clevises for use with Type B leaf chains. Limiting dimensions herein established are for the purpose of assuring acceptance of chains built in accordance with foregoing standards.

ASME B30.1-2004, Jacks

ASME B30.1 applies to general purpose, portable jacks. Jacks designed for automotive service, trip-lowered jacks, and those that are an integral part of other equipment are not included in the scope of this standard. Devices designed for static support rather than lifting are also not included.

ASME B30.10-2005, Hooks

Applies to all types of hooks (shown in Figs. 1 through 21) used in conjunction with equipment described in other volumes of the B30 Standard.

ASME B30.11-2004, Monorails and Underhung Cranes

B30.11 applies to underhung cranes and monorail systems where load-carrying members, such as end trucks or carriers (trolleys), travel either on the external or internal lower flange of a runway track section, single monrail track, crane bridge girder, or jib boom.

ASME B30.11a-1999, Monorails and Underhung Cranes

Applies to underhung cranes and monorail systems where load-carrying members, such as end trucks or carriers (trolleys), travel either on the external or internal lower flange of a runway track section, single monorail track, crane bridge girder, or jib boom including all curves, switches, transfer devices, lift and drop sections, and associated equipment.

ASME B30.12-2001, Handling Loads Suspended from Rotorcraft

Applies to the protection of ground personnel working directly with or in the vicinity of rotorcraft when handling loads using a cargo sling, powered hoist, or other attaching means to lift, carry, pull, or tow a jettisonable load outside of the rotorcraft airframe. Applies to the protection of ground personnel working directly with or in the vicinity of rotorcraft when handling loads using a cargo sling, powered hoist, or other attaching means to lift, carry, pull, or tow a jettisonable load outside of the rotorcraft airframe. This standard was listed for public review in the 6/18/1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ASME B30.13-2003, Storage/Retrieval (S/R) Machines and Associated Equipment

Applies to construction, installation, inspection, testing, maintenance, and operation of storage/retrieval machines and associated equipment, such as aisle transfer cars and aisle equipment, and interfaces with other material handling equipment covered under other standards.

ASME B30.14-2004, Safety Standard for Side Boom Tractors

B30.14 applies to the construction, installation, operation, inspection, testing, and maintenance of side boom tractors powered by an internal combustion engine used for pipe laying or lifting operations, utilizing a lifting boom, drum, wire rope, and/or hydraulic cylinders.

ASME B30.16-2003, Overhead Hoists (Underhung)

Includes provisions that apply to the construction, installation, operation, inspection, and maintenance of hand chain operated chain hoists, and electric and air powered chain and wire rope hoists used for, but not limited to, vertical lifting and lowering of freely suspended, unguided loads, which consist of equipment and materials.

ASME B30.16a-2001, Overhead Hoists (Underhung)

Includes provisions that apply to the construction, installation, operation, inspection, and maintenance of hand chain operated chain hoists and electric and air powered chain and wire rope hoists used for, but not limited to, vertical lifting and lowering of freely suspended, unguided, loads which consist of equipment and materials.

ASME B30.17-2003, Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist)

Includes provisions that apply to the construction, installation, operation, inspection, and maintenance of hand-operated and power-driven overhead and gantry cranes that have a top-running single-girder bridge, with one or more underhung hoists operating on the lower flange of the bridge girder, used for vertical lifting and lowering of freely suspended, unguided loads.

ASME B30.18-2004, Stacker Cranes (Top or Under Running Bridge, Multiple Girder with Top or Under Running Trolley Hoist)

Applies to the construction, installation, operation, inspection, and maintenance of hand-powered and power-driven overhead and gantry cranes that have a top-running or under-running multiple girder bridge with a vertically guided carriage, with or without a top-running or under-running trolley.

ASME B30.19-2005, Cableways

Applies to all load transporting, hoisting, and lowering cable-supported systems operating on and supported from track cable(s). The standard does not apply to logging skyline systems or excavating slackline systems.

ASME B30.2-2005, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

B30.2 includes provisions that apply to the construction, installation, operation, inspection, and maintenance of hand-operated and power-driven overhead and gantry cranes that have a top running single-girder or multiple-girder bridge, with one or more top-running trolley hoists used for vertical lifting and lowering of freely suspended, unguided loads consisting of equipment and materials (see Figs. 1 through 5.) The requirements included in this Volume also apply to cranes having the same fundamental characteristics such as cantilever gantry cranes, semi-gantry cranes and wall cranes.

ASME B30.20-2003, Below-the-Hook Lifting Devices

Includes provisions that apply to the marking, construction, installation, inspection, testing, maintenance, and operation of below-the-hook lifting devices, other than slings, used for attaching loads to a hoist.

ASME B30.20a-2001, Below-the-Hook Lifting Devices

Includes provisions that apply to the marking, construction, installation, inspection, testing, maintenance, and operation of below-the-hook lifting devices, other than slings, used for attaching loads to hoist.

ASME B30.21-2005, Manually Lever Operated Hoists

B30.21 includes provisions which apply to the construction, installation, operation, inspection, and maintenance of ratchet and pawl and friction brake type manually lever operated chain, wire rope, and web strap hoists used for lifting, pulling, and tensioning applications.

ASME B30.22-2005, Articulating Boom Cranes

Includes provisions for cranes having articulating hydraulic cylinders which are powered by internal combustion engines or electric motors and are mounted on a mobile chassis or stationary installation.

ASME B30.23-2005, Personnel Lifting Systems

This volume establishes the design criteria, equipment characteristics, and operational procedures which are required when material handling equipment, as defined by the ASME B30 standard, is used to lift personnel.

ASME B30.25-2003, Scrap and Material Handlers

Applies to the construction, installation, operation, inspection, and maintenance of scrap handlers consisting of a base, a revolving upper structure with operator's station(s), and a front for lifting scrap or materials using attachments such as magnets and grapples, and any variations thereof in which the equipment retains the same fundamental characteristics.

ASME B30.25a-2001, Scrap and Material Handlers

Applies to scrap handlers consisting of a base, a revolving upper-structure with operator's station(s), and a front for lifting scrap or materials using attachments such as magnets and grapples, and any variations thereof in which the equipment retains the same fundamental characteristics.
Single copy price: \$10.00
Order from: Silvana Rodríguez-Bhatti, ASME
Send comments (with copy to BSR) to: James Bird, M/S 20S2, ASME

ASME B30.26-2004, Safety Standard for Rigging Hardware

B30.26 includes provisions that apply to the construction, installation, operation, inspection, and maintenance of detachable rigging hardware used for lifting purposes in conjunction with equipment described in other volumes of the B30 Standard. This hardware includes shackles, links, rings, swivels, turnbuckles, eyebolts, hoist rings, wire rope clips, wedge sockets, and rigging blocks. Use of the same hardware for purposes other than lifting is excluded from the provisions of this volume.

ASME B30.27-2005, Material Placement Systems

Volume B30.27 includes provisions that apply to the construction, installation, operation, inspection, and maintenance of mobile material placing booms, mobile telescoping boom conveyors, separate placing booms, and material placement accessories. This Volume does not apply to the pumping elements of a concrete pump, conveyors, mortar conveying or spraying machines, or dry mix shotcreting machines.

ASME B30.2b-1998, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Applies to overhead and gantry cranes with a top running bridge of single or multiple girder construction, utilizing a top running trolley, including polar, semigantry, cantilever gantry, wall cranes, and others having the same fundamental characteristics. This volume includes both power-driven and hand-operated equipment. These cranes are grouped because they all have top running trolleys and similar travel characteristics.

ASME B30.2c-2001, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Applies to overhead and gantry cranes with a top running bridge of single or multiple girder construction, utilizing a top running trolley, including polar, semigantry, cantilever gantry, wall cranes, and others. Includes both power-driven and hand-operated equipment.
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ASME B30.3-2004, Construction Tower Cranes

Applies to construction tower cranes powered by electric motors or internal combustion engines, including cranes that adjust operating radius by means of a boom luffing mechanism or by means of a trolley traversing a horizontal boom.

ASME B30.4-2003, Portal, Tower, and Pedestal Cranes

Includes provisions which apply to the construction, installation, operation, inspection and maintenance of electric motor or internal-combustion engine powered portal, tower, and pedestal cranes.

ASME B30.4a-1998, Portal, Tower, and Pedestal Cranes

Applies to portal, tower, and pedestal cranes and any variations thereof which retain the same fundamental characteristics.

ASME B30.4b-1999, Portal, Tower, and Pedestal Cranes

Applies to portal, tower, and pedestal cranes, and any variations thereof which retain the same fundamental characteristics.

ASME B30.5-2004, Mobile and Locomotive Cranes

Applies to crawler, locomotive and wheel-mounted cranes, and any variations thereof which retain the same fundamental characteristics.

ASME B30.5a-2002, Mobile and Locomotive Cranes

Applies to crawler cranes, locomotive cranes, wheel-mounted cranes, and any variations thereof which retain the same fundamental characteristics. Includes only cranes of the above types that are basically powered by internal combustion engines or electric motors.

ASME B30.6-2003, Derricks

Includes provisions which apply to the construction, installation, operation, inspection, testing, and maintenance of guy, stiffleg, basket, breast, gin pole, Chicago boom, shearleg, and A-frame derricks.

ASME B30.6a-1998, Derricks

Applies to guy, stiffleg, basket, breast, gin pole, Chicago boom, shearleg, and A-frame derricks of the stationary type, capable of handling loads at variable reaches and powered by hoists through systems of rope reeving used to perform lifting hook work.

ASME B30.6b-1999, Derricks

Applies to guy, stiffleg, basket, breast, gin pole, Chicago Boom, shearleg, and A-frame derricks of the stationary type, capable of handling loads at variable reaches and powered by hoists through systems of rope reeving used to perform lifting hook work. Derricks may be permanently installed or installed for temporary use as in construction work. The requirements of American National Standard for Derricks, ANSI/ASME B30.6-1995, also apply to any modification of these types that retain their fundamental features, except as specified for floating derricks in Floating Cranes and Floating Derricks, BSR/ASME B30.8.

ASME B30.6c-2001, Derricks

Applies to guy, stiffleg, basket, breast, gin pole, Chicago boom, shearleg, and A-frame derricks of the stationary type, capable of handling loads at variable reaches and powered by hoists through systems of rope reeving used to perform lifting hook work. Derricks may be permanently installed for temporary use as in construction work. Single copy price: \$10.00
Order from: Silvana Rodriguez-Bhatti, ASME
Send comments (with copy to BSR) to: James Bird, M/S 20S2, ASME

ASME B30.7-2001, Base Mounted Drum Hoists

Applies to base mounted drum hoists arranged for mounting on a foundation or other supporting structure for lifting or lowering loads, to derrick swingers, and to any variations which retain the same fundamental characteristics.

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ASME B30.8-2004, Floating Cranes and Floating Derricks

B30.8 applies to cranes and derricks mounted on barges or pontoons. The requirements of this volume are applicable only to floating cranes and floating derricks used for vertical lifting and lowering of freely suspended, unguided loads.

ASME B30.8a-2001, Floating Cranes and Floating Derricks

Applies to cranes and derricks mounted on barges or pontoons. Floating cranes are convertible for excavation service and other uses that are categorically not considered to be lifting service. Single copy price: \$10.00
Order from: Silvana Rodriguez-Bhatti, ASME
Send comments (with copy to BSR) to: James Bird, M/S 20S2, ASME

ASME B30.9-2003, Slings

Includes provisions that apply to the fabrication, attachment, use, inspection and maintenance of slings used for lifting purposes in conjunction with equipment described in other volumes of the B30 Standard.

ASME B30.9b-1998, Slings

Applies to slings for lifting purposes, made from alloy steel chain, sewn synthetic webbing, wire rope, metal mesh, and synthetic fiber rope used in conjunction with equipment described in other volumes of the B30 standard, except as specified in American National Standard for Handling Loads Suspended from Rotorcraft, ANSI/ASME B30.12-1992. Slings made from materials or constructions other than those detailed in this volume shall be used only in accordance with recommendations of the sling manufacturer.

ASME B30.9c-2000, Slings

Applies to slings for lifting purposes, made from alloy steel chain, sewn synthetic webbing, wire rope, metal mesh, and synthetic fiber rope used in conjunction with equipment described in other volumes of the B30 Standard, except as specified in Handling Loads Suspended from Rotorcraft, BSR/ASME B30.12. Slings made from materials or constructions other than those detailed in this volume shall be used only in accordance with recommendations of the sling manufacturer.

ASME B31.1-2001, Power Piping

Prescribes minimum requirements for the design, materials, fabrication, erection, test, and inspection of power and auxiliary service piping systems for electric generation stations, industrial and institutional plants, central and district heating plants, and distinct heating systems.

ASME B31.11-2002, Slurry Transportation Piping Systems

Prescribes requirements for the design, materials, construction, assembly, inspection, testing, operation, and maintenance of piping transporting aqueous slurries of nonhazardous materials, such as coal, mineral ores, concentrates, and other solid materials.

ASME B31.1a-2005, Power Piping

This code prescribes minimum requirements for the design, materials, fabrication, erection, test, and inspection of power and auxiliary service piping systems for electric generation station, industrial and institutional plants, central and district heating plants, and district heating systems.

ASME B31.1b-2004, Power Piping

Prescribes minimum requirements for the design, materials, fabrication, erection, test, and inspection of power and auxiliary service piping systems for electric generation station, industrial and institutional plants, central and district heating plants, and district heating systems.

ASME B31.3-2004, Process Piping

Rules for Process Piping reflects the kind of piping typically found in petroleum refineries, chemical, pharmaceutical, textile, paper, semiconductor and cryogenic plants, and related processing plants and terminals.

ASME B31.3a-2000, Process Piping

Prescribes requirements for materials, designs, fabrication, assembly, erection, examination, inspection and testing of piping within the boundaries of a chemical plant or petroleum refinery.

ASME B31.3b-2001, Process Piping

Prescribes requirements for materials fabrication, assembly, erection, examination, inspection and testing of piping within the boundaries of a chemical plant or petroleum refinery.

ASME B31.4-2006, Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols

This Code prescribes requirements for the design, materials, construction, assembly, inspection, and testing of piping transporting liquids such as crude oil, condensate, natural gasoline, natural gas liquids, liquefied petroleum gas, carbon dioxide, liquid alcohol, liquid anhydrous ammonia, and liquid petroleum products between producers facilities, tank farms, natural gas processing plants, refineries, stations, ammonia plants, terminal (marine, rail, and truck), and other delivery and receiving points.

ASME B31.5-2001, Refrigeration Piping

Provides requirements for the materials, design, fabrication, assembly, erection, test, and inspection of refrigerant, heat transfer components, and secondary coolant piping for temperatures as low as -320°F (-196°C).

ASME B31.5a-2004, Refrigeration Piping and Heat Transfer Components

This Code prescribes requirements for the materials, design, fabrication, assembly, erection, test, and inspection of refrigerant, heat transfer components, and secondary coolant piping.

ASME B31.8-2003, Gas Transmission and Distribution Piping Systems

This Code covers the design, fabrication, installation, inspection, and testing of pipeline facilities used for the transportation of gas. This Code also covers safety aspects of the operation and maintenance of those facilities.

ASME B31.8S-2004, Managing System Integrity of Gas Pipelines

This Standard applies to on-shore pipeline systems constructed with ferrous materials and that transport gas. Pipeline system means all parts of physical facilities through which gas is transported, including pipe, valves, appurtenances attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders and fabricated assemblies. The principles and processes embodied in integrity management are applicable to all pipeline systems. This Standard is specifically designed to provide the operator (as defined in section 13) with the information necessary to develop and implement an effective integrity management program utilizing proven industry practices and processes. The processes and approaches within this Standard are applicable to the entire pipeline system.

ASME B31.9-2004, Building Services Piping Code for Pressure Piping

Prescribes requirements for the design, materials, fabrication, installation, inspection, examination, and testing of piping systems for industrial, institutional, commercial, and public buildings, and multi-unit residences. It includes piping systems in the building or within the property limits.

ASME B31G-1991 (R2004), Manual for Determining the Remaining Strength of Corroded Pipelines

Includes all pipelines within the scope of the pipelines codes that are part of ASME B31 Code for Pressure Piping, i.e., ASME B31.4, Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols; ASME B31.8, Gas Transmission and Distribution Piping Systems; and ASME B31.11, Slurry Transportation Piping Systems. Parts 2, 3, and 4 are based on material included in ASME Guide for Gas Transmission and Distribution Piping Systems, 1983 Edition. This Manual is not applicable to new construction covered under B31 Code Sections. That is, it is not intended that this Manual be used to establish acceptance standards for pipe that may become corroded during fabrication and/or installation. This Manual is intended solely for the purpose of providing guideline information for the

ASME B32.5-1977 (R2004), Tubular Metal Products Other Than Pipe, Preferred Metric Sizes for

This Standard establishes preferred series of metric outside diameters, distances across flats, wall thicknesses and lengths for tubular metal products other than pipe. A companion standard, ANSI B32.6, establishes preferred metric equivalents for the most commonly used inch sizes.

ASME B36.10M-2004, Welded and Seamless Wrought Steel Pipe

Covers the standardization of dimensions of welded and seamless wrought steel pipe for high or low temperatures and pressures.

ASME B36.19M-2004, Stainless Steel Pipe

Covers the standardization of dimensions of welded and seamless wrought stainless steel pipe for high or low temperatures and pressures.

ASME B4.1-1967 (R2004), Preferred Limits and Fits for Cylindrical Parts

Presents definitions of terms applying to fits between plain (non-threaded cylindrical parts and makes recommendations on preferred sizes, allowances, tolerances, and fits for use wherever they are applicable.

ASME B4.2-1978 (R2004), Preferred Metric Limits and Fits

Describes the ISO system of limits and fits for mating parts as it is approved for general engineering usage in the United States of America.

ASME B4.3-1978 (R2004), General Tolerances for Metric Dimensioned Products

Shows how to specify the general tolerances for metric dimensions without tolerance designation.

ASME B40.100-2005, Pressure Gauges and Gauge Attachments

Provides design and testing criteria for a variety of pressure measuring devices, such as analog, dial-type gauges, mechanical separators utilizing diaphragms or bladders with a fill fluid, snubbers, pressure limiter valves, and digital gauges.

ASME B40.100a-2001, Pressure Gauges and Gauge Attachments (supplement)

Pertains to devices that protect pressure-sensing instruments from pressure sources in the event of system pressure rising above the adjusted closing pressure of the device. These devices are not pressure regulators. Pressure limiter valves are designed only to prevent the passage of excessive pressure to downstream pressure-sensing instruments. Hereafter, pressure limiter valves may be referred to as "devices."

ASME B40.2-2000, Diaphragm Seals

Describes mechanical separators utilizing diaphragms or bladders together with a fill fluid to transmit pressure from the medium to the pressure element assembly of pressure gauges or other pressure-measuring instruments such as transducers, transmitters, and switches.

ASME B40.200-2001, Thermometers, Direct Reading and Remote Reading

ASME B40.200a-2003, Thermometers, Direct Reading and Remote Reading

Confined to analog, liquid-in-glass Industrial type thermometers, for Industrial Applications that sense process temperature by means of the expansion of the liquid within the glass thermometer bulb. The liquid fill, based on the temperature to be measured may be mercury or organic liquid. This Standard does not include laboratory type ASTM Thermometers, (Specification Designation: ASTM E-1 - 86)Note: Thermowell Standard ASME B40.9, does not include dimensional information or drawings for the internally tapered thermowell described in this Standard. This internally tapered thermowell has been in continuous use since 1927. The dimensional information listed is to be considered critical to insure interchangeability within the industry, for both new and existing thermometers.

ASME B40.4-2000, Filled System Thermometers

Pertains to analog, dial-type filled system thermometers, utilizing elastic elements which enable the mechanically converted thermal energy to indicate temperature by means of a pointer moving over a scale.

ASME B40.5-2000, Snubbers

Covers shock-resistant, environmentally hardened devices that are installed between the pressure source and the pressure-sensing element and are used to minimize the effect of pressure surges on positive and negative pressure-sensing instruments.

ASME B40.6-2001, Pressure Limiter Valves

Pertains to devices that protect pressure-sensing instruments from pressure sources in the event of system pressure rising above the adjusted closing pressure of the device. These devices are not pressure regulators. Pressure limiter valves are designed only to prevent the passage of excessive pressure to downstream pressure-sensing instruments. Hereafter, pressure limiter valves may be referred to as "devices."

ASME B40.9-2001, Thermowells

Covers metallic thermowells for thermometers and electrical temperature sensors. Thermowells manufactured from nonmetallic materials are beyond the scope of this document. Thermowells permit the use of thermometers and sensors at higher pressure than could be safely applied to an unprotected bulb. Thermowells facilitate the removal and reinstallation of thermometers and sensors without creating a temporary leak and without requiring process shutdown. Thermowells protect bulbs from excessive temperatures, excessive pressures, and corrosive attack by the process medium, and against structural damage caused by fluid velocity induced vibration.

ASME B46.1-2002, Surface Texture (Surface Roughness, Waviness, and Lay)

Pertains to the geometric irregularities of surfaces. It defines surface texture and its constituents: roughness, waviness, and lay. It also defines parameters for specifying surface texture.

ASME B47.1-1988 (R2004), Gage Blanks

Covers standard designs for the following:

- (a) plain and thread plug gage blanks to 12.010 in. maximum gaging diameter
 - (b) plain and thread ring gage blanks to 12.260 in. maximum gaging diameter
 - (c) involute and serrated spline plug and ring gage blanks to 8.000 in. major diameter
 - (d) straight-sided spline plug and ring gage blanks to major diameters of 8.000 in. for plugs and 6.000 in. for rings
 - (e) machine taper plug and ring gage blanks to 5.000 in. gaging diameter
 - (f) adjustable snap gages to 12 in.
 - (g) adjustable length gages to any desired length
 - (h) master disks up to 8.010 in. in diameter
- Recommended general designs covering taper plug and ring gages for special applications, flush-pin gages, and flat plug gages are also included.

ASME B5.10-1994 (R2002, Machine Tapers (Self Holding and Steep Taper Series)

Establishes (1) American standard practice for the slope of self-holding and steep machine tapers, (2) the detailed dimensions for this type of taper tool shank, (3) the corresponding dimensions for the taper socket in the spindle of the machine, including the dimensions of the keyways. This, it is hoped, will serve as a guide for future designing of machines and related equipment utilizing tapers that come within the ranges specified in the various tables.

ASME B5.11-1964 (R2002, Spindle Noses and Adjustable Adapters for Multiple Spindle Drilling Heads

Provides the means for individual axis adjustment of drilling, reaming, and tapping tools, etc. in the spindles of single or multiple spindle heads

ASME B5.18-1972 (R2004), Spindle Noses and Tool Shanks for Milling Machines

This Standard provides detailed drawings and dimensions for SPINDLENOSES AND TOOL SHANKS FOR MILLING MACHINES.

ASME B5.1M-1985 (R2004), T-Slots – Their Bolts, Nuts, and Tongues

This Standard applies to T-slots as used on machine tools for the mounting of fixtures, attachments, and accessories; and to the bolts, nuts, and tongues used in screws such slots.

ASME B5.35-1983 (R2002), Machine Mounting Specifications for Abrasive Discs and Plate Mounted Wheels

Covers practice for location and size of bolt holes for mounting abrasive discs and plate mounted wheels.

ASME B5.40-1977 (R2002), Spindle Noses and Tool Shanks for Horizontal Boring Machines

Establishes (1) the American practice for the construction of spindle noses for horizontal boring machines by showing a number of types for such construction, (2) the important dimensions for self-holding and steep machine tapers as well as drive keys, draw bolts, drift and keeper key slots, bolt circles for face mounting of milling cutters, etc., (3) the corresponding dimensions for the taper shanks for construction of tools (boring bars, arbors, etc.) to fit the spindle nose tapers.

ASME B5.47-1972 (R2002), Milling Machine Arbor Assemblies

This standard is confined to milling machine arbors. The reason for confining this standard to this specified milling machine accessory is that through many years of development and general usage, there already exists good agreement on the structure and dimensions of milling machine arbors between competent manufacturers of such equipment here in the United States and abroad. This agreement is much better than for many other milling machine accessories and equipment. Already considerable interchangeability exists between the products of various suppliers of milling machine arbors.

ASME B5.48-1977 (R2002), Ball Screws

Covers definitions, classes of ball screws, recommended combinations of screw diameters and lead, recommended drawing format, and performance characteristics of ball screw and nut assemblies as applied to machine tools. The values stated in U.S. customary units are to be regarded as the standard. Metric values are converted from the customary values per recommendations of "ASME Guide SI-1, ASME Orientation and Guide for Use of SI (Metric) Units."

ASME B5.49-1998 (R2004), Press Terms, Glossary of Mechanical

This Standard provides a glossary of terms commonly used in the industries that manufacture or use mechanically and hydraulically powered presses.

ASME B5.50-1994 (R2003), V Flange Tool Shanks for Machining Centers with Automatic Tool Changers

This Standard pertains to the standardization of a basic tool holder shank and retention knob for numerically controlled machining centers with automatic tool changers. The requirements contained herein are intended to provide tool holder interchangeability between machining centers with automatic tool changers of various types. Dimensions for cone angle control are in accordance with the International Standard ISO-1947.

ASME B5.51M-1979 (R2002), Preferred SI Units for Machine Tools

Gives the preferred choice of selected SI units, multiples, submultiples and symbols for selected quantities for machine tool use. These preferred SI units, multiples, submultiples and symbols, are for use on engineering drawings, machine test documents, customer machine quotations, operator instruction plates, operator instruction manuals, machine tool specification catalogs and other related documents.

ASME B5.52-2003, Presses, General Purpose, Single Point, Gap Type, Mechanical Power (Metric)

This Standard applies to hydraulic and mechanical power presses having a one-piece frame that guides the slide and supports the bolster, adjustable bed, or horn. The frame is configured to provide unrestricted access to the front and sides of the die space. By means of dies or tooling attached to the slide and bolster or horn, these machines are used to shear, punch, form or assemble metal or other materials.

ASME B5.54-2005, Performance Evaluation of Computer Numerically Controlled Machining Centers, Methods for

Establishes methodology for specifying and testing the performance of CNC machining centers. In addition to clarifying the performance evaluation, this Standard facilitates performance comparisons between machines by unifying terminology, general machine classification, and the treatment of environmental effects. It provides a series of tests that should be used to perform acceptance testing (runoff) of new and reconditioned machines and could be used to verify continued capability of production machines, already in operation, through periodic testing. The set of acceptance tests and the specification limits for machine conformance shall be the subject of contractual agreement between the Supplier and the User. This standard is rather comprehensive; therefore for smaller and less expensive machines the conformance to

ASME B5.55M-1994 (R2002), Specification and Performance Standard, Power Press Brakes

The requirements of this Standard apply to those power operated press brakes that are used to form metal by bending. This Standard specifically excludes machines referred to as hand brakes (leaf brakes), folding brakes, tangent benders, apron brakes (box and pan), and swivel bending brakes.

ASME B5.56M-1994 (R2002), Specification and Performance Standard, Power Shears

The requirements of this Standard apply to power shears used to cut metal by shearing, utilizing a fixed lower knife(s) and a non-rotary, moving upper knife(s). This Standard applies to those shears commonly referred to as squaring, guillotine, gap, plate, pivot blade (swing beam), and slitting (non-rotary). This Standard specifically excludes machines referred to as right angle, alligator, cut to length, crop, slitting (rotary), nibblers, portable hand tools, coil slitters, rotary blade slitters, iron workers, angle, bar, beam, channel, notching, rotary drum, flying, and billet shears.

ASME B5.57-1998, Methods for Performance Evaluation of Computer Numerically Controlled Lathes and Turning Centers

Establishes requirements and methods for specifying and testing the performance of CNC lathes and turning centers.

ASME B5.60.1-2002, Workholding Chucks - Jaw Type Chucks, Part 1: General Description and Definitions of Terms

This part of the ASME B5.60 standard covers the General Description and Definitions of Terms related to jaw type workholding chucks.

ASME B5.60.4-2002, Workholding Chucks - Jaw Type Chucks, Part 4: Performance Testing

This part of the ASME B5.60 standard covers geometric test procedures for measuring accuracy of self-centering jaw-type chucks. It addresses the procedures for the inspection of rotational and axial accuracy, centering and repeatability of the chuck by using a qualified test piece.

Note: For specific limits and specifications, contact the chuck manufacturer.

ASME B5.60a-2005, Workholding Chucks - Jaw Type Chucks (Addenda)

The ASME B5.60 standard covers general information, description and definitions of Terms related to Jaw Type workholding Chucks.

ASME B5.61-2003, Power Presses - General Purpose Single Action Straight Side Type

This Standard applies to hydraulic and mechanical power presses commonly referred to by the metalworking industry as GENERAL PURPOSE, SINGLE ACTION, STRAIGHT SIDE TYPE POWER PRESSES that, by means of dies or tooling attached to the slide and bolster, are used to shear, punch, form or assemble metal or other materials.

ASME B5.8-2001, Chucks and Chuck Jaws

Pertains to chucks for use on engine lathes, tool room lathes, turret lathes and automatic lathes and fit American Standard Spindle Noses of ANSI B5.9-1967.

ASME B5.9-1967 (R2004), Spindle Noses for Tool Room Lathes, Engine Lathes, Turret Lathes, and Automatic Lathes

These spindlenoses are for use on engine lathes, tool room lathes, turret lathes and automatic lathes and may be used advantageously on other machines wherever chucks or fixtures must be mounted accurately and rigidly on revolving spindles. Complete dimensions for each size and type of nose, as well as for mating backs of chucks, face plates and fixtures, are given in the tables. Also given are dimensions of gages for checking the important dimensions on these spindlenoses and the backs of chucks, face plates and fixtures, to insure interchangeability between parts made by different manufacturers.

ASME B73.1M-2001, Horizontal End Suction Centrifugal Pumps for Chemical Process, Specifications for

Establishes requirements for centrifugal pumps of horizontal, end suction single stage, centerline discharge design. This Standard establishes requirements for centrifugal pumps of horizontal, end suction single stage, centerline discharge design. This standard was listed for public review in the 3/9/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ASME B73.2M-2003, Vertical In-Line Centrifugal Pumps for Chemical Process, Specifications for

Covers motor driven centrifugal pumps of vertical shaft, single stage design with suction and discharge nozzles in line. It includes dimensional interchangeability requirements and certain design features to facilitate installation and maintenance. It is the intent of this Standard that pumps of the same standard dimension designation, from all sources of supply, shall be interchangeable with respect to mounting dimensions and size and location of suction and discharge nozzles

ASME B73.3M-2003, Specification for Sealless Horizontal End Suction

This Standard covers sealless centrifugal pumps of horizontal end suction single stage and centerline discharge design. This Standard includes, dimensional interchangeability requirements and certain design features to facilitate installation and maintenance. It is the intent of this Standard that pumps of the same standard dimensional designation from all sources of supply shall be interchangeable with respect to mounting dimensions, size, and location of suction and discharge nozzles, input shafts, baseplates, and foundation bolt holes.

ASME B73.5M-1995 (R2001), Specification for Thermoplastic and Thermoset Polymer Material Horizontal End Suction Centrifugal Pumps for Chemical Process

Covers centrifugal pumps of horizontal, end-suction single-stage, centerline discharge design, the components of which are made of thermoplastic and thermoset polymer materials either reinforced or nonreinforced. It includes dimensional interchangeability requirements and certain design features to facilitate installation and maintenance.

ASME B89.1.10-2001, Dial Indicators (for Linear Measurements)

Provides the essential requirements for dial indicators as a basis for mutual understanding between manufacturers and consumers. Described in this standard are various types and groups of dial indicators used to measure a linear dimension or a variation from a reference dimension.

ASME B89.1.13-2001, Micrometers

Provides the essential requirements for micrometers as a basis for mutual understanding between manufacturers and consumers. Outside, inside and depth micrometers and described in the Standard.

ASME B89.1.17-2001, The Measurement of Threading Measuring Wires

Establishes uniform practices for the measurement of thread measuring wires. The standard includes methods for the direct measurement of both master and working wires, and methods for the comparison measurement of working wires. The standard includes requirements for geometric qualities of thread measuring wires, the important characteristics of the comparison equipment, environmental conditions, and the means to ensure that measurements are made with an acceptable uncertainty level. Wires covered by the standard include inch-series 60-degree, 29-degree Acme, 7/45-degree Buttress, and metric 60-degree threads. This standard was listed for public review in the 4/20/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ASME B89.1.5-1998 (R2004), Measurement of Plain External Diameters for Use as Master Discs or Cylindrical Plug Gages

Intended to establish uniform practices for the measurement of master discs or cylindrical plug gages to a given tolerance using vertical or horizontal comparators and laser instruments. The Standard includes requirements for geometric qualities of master discs or cylindrical plugs, the important characteristics of the comparison equipment, environmental conditions and the means to assure that measurements are made with an acceptable level of accuracy.

ASME B89.1.6M-2002, Rev.2, Qualified Plain Internal Diameters for Use as Master Rings and Ring Gages, Measurement of

This standard is intended to establish uniform practices for the measurement of master rings or ring gages using horizontal methods. The standard includes requirements for geometric qualities of master rings or ring gages, the important characteristics of the comparison equipment, environmental conditions, and the means to assure that measurements are made with an acceptable level of accuracy.

ASME B89.1.9M-1984 (R2002), Precision Gage Blocks for Length Measurement (through 20 Inches and 500 Millimeters)

Specifies the most important design and metrological characteristics of gage blocks with a rectangular or square cross-section and a nominal length 1h ranging from 0.5mm to 1,000 mm for metric sizes and 0.010 in to 40 in for inch sizes. It is not the intent of this Standard to preclude the use, by contractual agreement, of gage blocks of other shapes, grades or materials. Limit deviations and tolerances are stated for the calibration grade K and for the grades 00, 0, AS-1, and AS-2 for various measuring purposes. NOTE: To avoid confusing grades 1 and 2 with previous definitions, the prefix "AS", for "American Standard" should be used for all sets using the grade tolerances in this standard. This standard was listed for public review in the 1/12/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ASME B89.3.1-1972 (R2003), Out-of-Roundness, Measurement of

This Standard covers the specification and measurement of out-of-roundness of a surface of revolution by the evaluation of a typical cross-sectional profile in terms of its radial deviations from a defined center.

ASME B89.4.1-1997, Methods for Performance Evaluation of Coordinate Measuring Machines

Establishes requirements and methods for specifying and testing the performance of coordinate measuring machines (CMMs).

ASME B89.4.10-2000, Methods for Performance Evaluation of Coordinate Measuring System Software

Provides guidelines for evaluating the quality of solutions generated by CMS software and to define minimal documentation requirements for software providers. This Standard is concerned with testing the behavior of algorithm implementation, not the testing of algorithm themselves. It is not the intent of this document to endorse or rate any computational method or system.

ASME B89.4.19-2006, Performance Evaluation of Laser Based Spherical Coordinate Measurement Systems

Prescribes methods for the performance evaluation of laser based spherical coordinate measurement systems and provides a basis for performance comparisons among such systems. Definitions, environmental requirements, and test methods are included with emphasis on point-to-point length measurements. The specified test methods are appropriate for the performance evaluation of a majority of such instruments and are not intended to replace more complete tests that may be required for special applications. This Standard establishes requirements and methods for specifying and testing the performance of a class of spherical coordinate measurement systems called laser trackers¹. A laser tracker is an instrument that directs the light from a ranging device to a retroreflecting target (called a retroreflector) by means of a

ASME B89.4.1a, Part II-1998, Methods for Performance Evaluation of CMM's - Supplement to Appendix I

Provides guidance on interim testing of large CMMs, CMMs used in the duplex mode, and CMMs with high aspect ratios.

ASME B89.4.1b-2001, Methods for Performance Evaluation of Coordinate Measuring Machines

Establishes requirements and methods for specifying and testing the performance of coordinate measuring machines (CMMs) having three linear axes perpendicular to each other and up to one rotary axis positioned arbitrarily with respect to these linear axes. In addition to clarifying the performance evaluation of CMMs, this Standard seeks to facilitate performance comparisons among machines by unifying terminology, general machine classification, and the treatment of environmental effects.

ASME B89.4.22-2004, Methods for Performance Evaluation of Articulated Arm Coordinate Measuring Machines

Pertains to the performance evaluation of articulated arm CMM while any number of rotational joints can be evaluated, the Standard focuses on the more common configurations commercially available today, and is limited to seven joints.

ASME B89.6.2-1973 (R2003), Temperature and Humidity Environment for Dimensional Measurement

This standard is intended to fill industry's need for standardized methods of a. Describing and testing temperature-controlled environments for dimensional measurements, and b. Assuring itself that temperature control is adequate for the calibration of measuring equipment, as well as the manufacture and acceptance of work pieces.

ASME B89.7.2-1999 (R2004), Dimensional Measurement Planning

Ensures correctness and acceptability of dimensional measurements.

ASME B89.7.3.1-2001, Guidelines for Decision Rules: Considering Measurement Uncertainty in Determining Confirmation to Specification

Provides terminology and specifies the content that must be addressed when stating a decision rule used for deciding the acceptance or rejection of a product according to specification. This Standard provides terminology and specifies the content that must be addressed when stating a decision rule used for deciding the acceptance or rejection of a product according to specification. This standard was listed for public review in the 8/10/2001 issue of Standards Action. The entirety of the revisions are being resubmitted due to the following changes to the text.

ASME B89.7.3.3-2002, Guidelines for Assessing the Reliability of Dimensional Measurement Uncertainty Statements

The objective of this report is to provide guidance in assessing the reliability of a statement of measurement uncertainty in question, that is, in judging how well that stated uncertainty can be trusted to include the values that could reasonably be attributed to the measured quantity with which that stated uncertainty is associated.

ASME B94.19-1997 (R2003), Milling Cutters and End Mills

Covers high speed steel milling cutters and end mills of one piece construction as listed in Tables 1 to 62. It also includes general definitions, sizes and tolerances

ASME B94.2-1995 (R2005), Reamers

Covers the American National Standard for Reamers-nomenclature, definitions, types, sizes, and tolerances.

ASME B94.33-1996 (R2005), Jig Bushings

This standard covers the American National Standard practice for sizes, types, tolerances, and identification of Jig Bushings and locking devices used for securing the bushings in the jig or bushing plate. 2 PURPOSE 2.1 The purpose of this standard is to provide the necessary information for the design, procurement and installation of Jig Bushings.

ASME B94.33.1-1997 (R2005), Metric Jig Bushings

This Standard covers the American National Standard practice for sizes, types, tolerances and Identification of Metric Jig Bushing and locking devices used for securing the bushing in the jig or bushing plate.

ASME B94.35-1972 (R2005), Drill Drivers – Split-Sleeve, Collet-Type

This Standard covers the American National Standard practice for sizes, types, tolerances and identification of Drill Drivers, Split-Sleeve, Collet Type.

ASME B94.49-1975 (R2005), Spade Drill Blades and Spade Drill Holders

This Standard covers nomenclature, definitions, sizes and tolerances for spade drill blades and spade drill holders insofar as the holder locates and holds the spade drill blade. All dimensions are in inches. Conversion tables from inch to mm are given in App.A.

ASME B94.50-1975 (R2003), Single-Point Cutting Tools, Basic Nomenclature and Definitions for

Covers nomenclature, definitions, sizes and tolerances for spade drill blades and spade drill holders insofar as the holder locates and holds the spade drill blade.

ASME B94.51M-1999 (R2005), Specifications for Band Saw Blades (Metal Cutting)

This Standard provides a useful criterion of practice in production, distribution, and use of metal cutting band saw blades. It was developed to provide blades that will meet all normal requirements of consumers. Section 3, definitions, indicates the specific types in common usage and also defines the various elements. This Standard covers tooth shape, sizes, and tolerances for regular, skip tooth, and hook tooth band saw blades; and it also sets out the determination of: (a) band saw blade dimensions; (b) tooth form and set; (c) blade flatness and minimum hardness characteristics.

ASME B94.52M-1999 (R2005), Specifications for Hacksaw Blades

This Standard provides a useful criterion of practice in production, distribution and use of hacksaw products. It was developed to provide blades that will meet all normal requirements of consumers. Section 3 definitions indicates the specific types in common usage and also defines the various elements. This Standard covers tooth shape, sizes, and tolerances for hand and power hacksaw blades in all types of materials; and it also sets out the determination of: (A) Hacksaw blade dimensions in all types of steel (B) Tooth form and set and, (C) Blade straightness and minimum hardness characteristics.

ASME B94.54-1999 (R2005), Specifications for Hole Saws, Hole Saw Arbors, and Hole Saw Accessories

This Standard provides a useful criterion of practice in the production, distribution, and of high-speed steel, grit edge, and carbide-tipped nonadjustable hole saws and their accessories. This Standard covers definitions, standard sizes, dimensions, tolerances, tooth configuration, and quality requirements for the hole saws and their accessories covered by this Standard.

ASME B94.55M-1985 (R2003), Tool Life Testing with Single-Point Turning Tools

Establishes specifications for the following factors of tool life testing with single - point turning tools: workpiece, tool, cutting fluid, cutting conditions, tool wear and tool life, equipment, test procedures, recording and reporting and presentation of results.

ASME B94.6-1984 (R2003), Knurling

Covers knurling tools with standardized diametral pitches and includes dimensional relations with stock in the production of straight, diagonal, and diamond knurling on cylindrical surfaces having teeth of uniform pitch parallel to the axis of the cylinder or at an angle not exceeding 45 deg. with axis of work. Such knurling is made by displacement of the material on the surface then rotated under pressure against a knurling tool.

ASME B94.9-1999, Taps, Cut and Ground Threads

Covers various designs of taps, nomenclature, and definitions, the standard system of marking, and dimensions and tolerance tables for Standard Straight Thread, Pipe-Taper Thread, Pipe-Straight Thread, Pulley, Screw Thread Insert, and Thread Forming Taps.

ASME BPE-2005, Bioprocessing Equipment

This Standard provides the requirements applicable to the design of equipment used in the bioprocessing, pharmaceutical, and personal care product industries, including aspects related to sterility and cleanliness, materials, dimensions and tolerances, surface finish, material joining, and seals.

ASME BPEa-2004, Bioprocessing Equipment

Provides the requirements applicable to the design of equipment used in the bioprocessing, pharmaceutical, and personal care product industries, including aspects related to sterility and clean ability, materials, dimensions and tolerances, surface finish, material joining, and seals.

ASME BPVC Revision-2005, ASME Boiler and Pressure Vessel Code (9/3/04 Meeting)

Establishes safety rules covering the design, fabrication and inspection (during construction) of boilers, pressure vessels and nuclear power plant components and containment in order to afford protection of life and property and to provide a margin of deterioration in service so as to give a reasonably long, safe period of usefulness. Both the 5/14/04 and 9/3/04 Meetings are singly subject to comments.

ASME BPVC Revision-2005, ASME Boiler and Pressure Vessel Code (12/17/04 Meeting)

This Standard establishes safety rules covering the design, fabrication and inspection (during construction) of boilers, pressure vessels and nuclear power plant components and containment in order to afford protection of life and property and to provide a margin of deterioration in service so as to give a reasonably long, safe period of usefulness.

ASME BPVC Revision-2005, ASME Boiler and Pressure Vessel Code (3/04/05 Meeting)

Establishes safety rules covering the design, fabrication and inspection (during construction) of boilers, pressure vessels and nuclear power plant components and containment in order to afford protection of life and property and to provide a margin of deterioration in service so as to give a reasonably long, safe period of usefulness.

ASME BPVC Revision-2005, ASME Boiler and Pressure Vessel Code (05/13/05 Meeting)

This Standard establishes safety rules covering the design, fabrication and inspection (during construction) of boilers, pressure vessels and nuclear power plant components and containment in order to afford protection of life and property and to provide a margin of deterioration in service so as to give a reasonably long, safe period of usefulness.

ASME BTH-1-2005, Design of Below-the-Hook Lifting Devices

This standard provides minimum structural and mechanical design and electrical component selection criteria for ASME B30.20 below-the-hook lifting devices.

ASME CSD-1-2004, Controls and Safety Devices for Automatically Fired Boilers

The rules of this Code cover requirements for the assembly, maintenance, and operation of controls and safety devices installed on automatically operated boilers directly fired with gas, oil, gas-oil, or electricity.

ASME HPS-2003, High Pressure Systems
Provides guidance relative to the design and application of high pressure components.

ASME HST-1M-1999 (R2004), Performance Standard for Electric Chain Hoists

Establishes performance requirements for electric chain hoists for vertical lifting service involving material handling of freely suspended (unguided) loads using load chain of the roller or welded link types with one of the following types of suspension:(1) lug;(2) hook or clevis;(3) trolley.

ASME HST-2M-1999 (R2004), Performance Standard for Hand Chain Manually Operated Chain Hoists

Establishes performance requirements for and chain manually operated chain hoists for vertical lifting service involving material handling of freely suspended (unguided) loads using welded link type load chain as a lifting medium with one of the following types of suspension:

- (1) hook or clevis;
- (2) trolley.

ASME HST-3M-1999 (R2004), Performance Standard for Manually Lever-Operated Chain Hoists

Establishes performance requirements for manually lever operated chain hoists used for lifting, pulling, and tensioning-type applications.

The specifications and information contained in this Standard apply to manually lever operated chain hoists of the following types:

- (1) ratchet and pawl operation with:
 - (a) roller-type load chain;
 - (b) welded link-type load chain.

ASME HST-4M-1999 (R2004), Performance Standard for Overhead Electric Wire Rope Hoists

Establishes performance requirements for electric wire rope hoists for vertical lifting service involving material handling of freely suspended (unguided) loads using wire rope with one of the following types of suspension:(1) lug;(2) hook;(3) trolley;(4) base or deck mounted (does not include base mounted drum hoists of the type covered by ASME B30.7);(5) wall or ceiling mounted (does not include base mounted drum hoists of the type covered by ASME B30.7).

ASME HST-5M-1999 (R2004), Air Chain Hoists

Establishes performance requirements for air powered chain hoists for vertical lifting service involving material handling of freely suspended (unguided) loads using load chain of the roller or welded link types with one of the following types of suspension:

- (1) lug;
- (2) hook or clevis;
- (3) trolley.

ASME HST-6M-1999 (R2004), Performance Standard for Air Wire Rope Hoists

Establishes performance requirements for air wire rope hoists for vertical lifting service involving material handling of freely suspended (unguided) loads using wire rope as the lifting medium with one of the following types of suspensions:(1) lug;(2) hook or clevis;(3) trolley;(4) base or deck mounted (does not include base mounted drum hoists of the type covered by ASME B30.7);(5) wall or ceiling mounted (does not include base mounted drum hoists of the type covered by ASME B30.7).

ASME MC88.1-1972 (R1995), Dynamic Calibration of Pressure Transducers, Guide for

Contains a guide to preferred techniques and practices.

ASME MC88.2-1974 (R1995), Bench Calibration of Tank Level Gaging Tapes and Sounding Rules, Procedure for (formerly designated as ANSI B88.2)

Applies to any gaging tape or sounding rule using a graduated scale to determine the level of liquid in tanks. Procedures for both linear and nonlinear scales are provided.

ASME MFC-10M-2000, Method for Establishing Installation Effects on Flowmeters

Establishes methods for determining the influence of installation conditions or flow patterns on the performance of flowmeters in closed conduits (i.e., pipe, ducts, etc). This standard also addresses: (a) means and terminology for defining a reference condition for flow calibration of a particular flowmeter and (b) guidelines for extrapolation and interpolation of installation effects to untested piping conditions.

ASME MFC-11M-2003, Measurement of Fluid Flow by Means of Coriolis Flowmeters

Gives guidelines for the selection, installation, calibration, and operation of Coriolis meters for the determination of mass flow, density, volume flow and other related parameters of flowing fluids. It also gives appropriate considerations regarding the fluids to be measured. The content of this Standard is primarily applied to the metering of liquids. This standard also gives guidance, within specified limits, to the metering of other fluids, mixtures of solids or gas in liquids, and mixtures of liquids. Although Coriolis meters may be used for gas measurement, specific guidance for gas measurement is not within the scope of this standard.

ASME MFC-14M-2003, Measurement of Fluid Flow Using Small Bore Precision Orifice Meters

Specifies the geometry and method of use for orifice meters of 6 mm to 40 mm line size when they are inserted in a conduit running full. It also gives necessary information for calculating flow rate and its associated uncertainty.

ASME MFC-16M-1995 (R2001),
Measurement of Fluid Flow in Closed
Conduits by Means of Electromagnetic
Flowmeters

Applies to AC and pulsed-DC type industrial electromagnetic flowmeters with either wetted or non-wetted electrodes, and to the application of these flowmeters to the measurement of the volumetric flow-rate of electrically conducting and electrically homogeneous liquids or slurries flowing in a completely filled closed conduit.

ASME MFC-18M-2001, Measurement of Fluid
Flow in Pipes Using Variable Area Meters

Describes the common variable area flowmeter. The variable area flow meter is composed of a body and "float" which is free to move in the body to a position related to the flow rate. This Standard addresses only those meters based on a vertical tapered tube of round or a modified round cross section. Specifically omitted are the various vane meters, meters with horizontal flow or which are based on spring deflection.

ASME MFC-1M-2003, Measurement of Fluid
Flow, Glossary of Terms Used in the

This standard consists of a collection of definitions of those terms which pertain to the measurement of fluid flow in pipes. Only those terms of general usage have been included. Terms having unique meaning when applied to specific meters should be included in a glossary within the specific flow meter standard.

ASME MFC-3M-1-2004, Measurement of fluid
Flow in Pipes Using Orifice, Nozzle, and
Venturi-Part 1-General

This Standard specifies the geometry and method of use (installation and operating conditions) for pressure differential devices (including, but not limited to, orifice plates, flow nozzles, and venturi tubes) when installed in a closed conduit running full and used to determine the flow-rate of the fluid flowing in the conduit. This Standard applies to pressure differential devices in which the flow remains subsonic throughout the measuring section and where the fluid is considered as single-phase. The Standard is limited to single-phase Newtonian fluid flow in which the flow can be considered sufficiently free from pulsation effects. It gives information for calculating the flow-rate and the associated uncertainty when each of these devices is used within specified limits of pipe size and Reynolds number.

ASME MFC-3M-2-2004, Measurement of fluid
Flow in Pipes Using Orifice, Nozzle, and
Venturi-Part 2-Orifice Plates

This part of MFC-3M specifies the geometry and method of use (installation and operating conditions) of orifice plates when they are inserted in a conduit running full to determine the flow rate of the fluid flowing in the conduit.

ASME MFC-3M-3-2004, Measurement of
Fluid Flow in Pipes Using Orifice, Nozzle,
and Venturi-Part 3 - Nozzles and Venturi
Nozzles

This part of MFC-3M-2004 specifies the geometry and method of use (installation and operating conditions) of nozzles and venturi nozzles when they are inserted in a conduit running full to determine the flow-rate of the fluid flowing in the conduit.

ASME MFC-3M-4-2004, Measurement of
Fluid Flow in Pipes Using Orifice, Nozzle,
and Venturi - Part 4 - Venturi Meters

This part of MFC-3M-2004 specifies the geometry and method of use (installation and operating conditions) of venturi tubes when they are inserted in a conduit running full to determine the flow rate of the fluid flowing in the conduit.

ASME MFC-4M-1986 (R2003), Measurement
of Gas Flow by Turbine Meters

This standard applies to: 1) axial full-flow turbine meters with mechanical and/or electrical outputs whose rotating member is driven by a compressible fluid; 2) the measurement of gas by a turbine meter; the meter's construction, installation, operation, performance characteristics, data computation and presentation, calibration, field checking, and other related considerations of the meter.

ASME MFC-5M-1985 (R2001), Liquid Flow in
Closed Conduits Using Transit-Time
Ultrasonic Flow Meters, Measurement of

Applies only to ultrasonic flowmeters that base their operation on the measurement of transit times of acoustic signals. Further, this Standard concerns only the application of such meters when used to measure the volumetric flow rate of a liquid exhibiting homogeneous acoustic properties and flowing in a completely filled closed conduit.

ASME MFC-6M-1998 (R2005), Fluid Flow in
Pipes Using Vortex Flow Meters,
Measurement of

This Standard:
(a) describes vortex shedding flowmeters in which alternating vortices are shed from one or more bluff bodies installed in a closed circular conduit;
(b) describes how the frequency of the vortex pairs is a measure of the fluid velocity; how volume, mass, and standard volume flow rate is determined; and how the total fluid that has flowed through the meter in a specified time interval can be measured;
(c) applies only to fluid flow that is steady or varies only slowly with time, is considered single-phased, and when the closed conduit is full;
(d) provides only generic information on vortex shedding flowmeters, including a glossary and a set of engineering equations useful in specifying performance;
(e) describes the physical components of

ASME MFC-7M-1987 (R2001), Gas Flow by
Means of Critical Flow Venturi Nozzles,
Measurement of

Specifies the geometry and method of use (installation and operating conditions) of critical flow venturi nozzles inserted in a system to determine the mass flow rate of the gas flowing through the system. It also gives necessary information for calculating the flow rate and its associated uncertainty.

ASME MFC-8M-2001, Fluid Flow in Closed
Conduits – Connections for Pressure Signal
Transmission Between Primary and
Secondary Devices

Describes means whereby a pressure signal from a primary device can be transmitted by known techniques to a secondary device in such a way that the value of the signal is not distorted or modified.

ASME MH1(b) Part IX-2000, Wood Pallets for
U.S. Government Use

ASME MH1(b) Part X-2000, Performance
Specification for Pallets To Be Used in
Automated Unit-Load Material Handling
Equipment

ASME MH1-2005, Pallets, Slip Sheets, and
Other Bases for Unit Loads

This Standard provides the following information: definitions and terminology covering pallets and related structures, sizes of wood pallets, wood pallets, export pallets, driven fasteners for assembly of pallets and related structures, protocol for measuring quality of pallet nails and staples, determination of durability of wood pallets and related structures, testing procedures for pallets and related structures, slip sheets, wood pallets for military use, and performance specification for pallets to be used in automated unit-load material handling equipment.

ASME MH1.1.2-1996, Definitions and
Terminology Covering Pallets and Related
Structures

Provides definitions and terminology associated with the construction and use of pallets and related structures, such as skids and pallet containers.

ASME MH1.4.1M-1996, Procedures for
Testing Pallets

Provides pallet manufacturers and users with test procedures to determine anticipated performance of pallets when used in industry, transport, and service.

ASME MH1.6-1996, Standard Procedures for
Determination of Durability of Wooden
Pallets and Related Structures

Provide a procedure for the determination of the anticipated durability, that is, the life and cost of use, of wood pallets and related structures.

ASME MH1.7M-1996, Driven Fasteners for Assembly of Pallets and Related Structures

Covers nails and staples used for the assembly of pallets and related structures made of wood and wood-base materials.

ASME MH1a-Part II-1998, Pallet Sizes

Provides a series of the most common sizes of wood pallets recommended as bases for assembling, storing, stacking, handling, and transporting goods as unit loads. This revision of ANSI/ASME MH1.2.2M-1989 (R1996) will be redesignated, consolidated, and published at a later date under the designation ASME MH1.

ASME MH1a-Part III-1998, Wood Pallets

Applies to all lumber-deck pallets either new or repaired. This standard is also in three parts. Part I is the Prescriptive Standard, which concerns the manufacture of the pallet. Part II is the Performance Standard, which concerns the functionality of the pallet. Part III covers the Quality Assurance Auditing Program. All parts of the MH1 standard will be merged at a later date and will be given the designation of ASME MH1.

ASME MH1a-Part IV-1998, Export Pallets

This standard presents background information which provides minimum phytosanitary requirements for wood and wood-based products used in the manufacture of pallets.

ASME MH1a-Part IX-1999, Wood Pallets for U.S. Government Use

Applies to light- and heavy-duty, limited- and multiple-use wood pallets used by the Department of Defense and DOD-contractors. ASME MH1a-Part VIII will be redesignated, consolidated and published at a later date under the designation ASME MH1.

ASME MH1a-Part VIII-1998, Slip Sheets

Defines terms, sizes, materials, testing and specific characteristics relevant to slip sheets. This revision of ANSI/ASME MH1.5M-1993 will be redesignated, consolidated, and published at a later date under the designation ASME MH1.

ASME N509-2002, Nuclear Power Plant Air Cleaning Units and Components

Covers requirements for the design, construction, and qualification and acceptance testing of the air-cleaning units and components which make up Engineered Safety Feature and other high efficiency air and gas treatment systems used in nuclear power plants.

ASME N626-1990, Qualifications and Duties for Authorized Nuclear Inspection Agencies and Personnel

Contains changes to ANSI/ASME N626.0-1982, Authorized Inspection Agencies, Nuclear Inspectors and Supervisors, Qualifications and Duties for; ANSI/ASME N626.1-1982, Authorized Inspection Agencies, Nuclear Inservice Inspectors and Supervisors, Qualifications and Duties for; and ANSI/ASME N626.2-1982, Authorized Inspection Agencies, Nuclear Inspectors and Supervisors (Concrete), Qualifications and Duties for, which address qualifications and duties for authorized inspection agencies and their personnel as used in the ASME Boiler and Pressure Vessel code, Section III, Divisions 1 and 2; and Section XI. It is intended to incorporate these proposed revisions into a 1985 edition. The 1985 edition will package the three standards under a single cover, in order to place the

ASME NOG-1-2004, Overhead and Gantry Cranes (Top Running Bridge, Multiple Girder), Rules for Construction of

Covers electric overhead and gantry multiple girder cranes with top running bridge cranes with top running bridge and trolley used at nuclear facilities and components of cranes at nuclear facilities.

ASME NQA-1-2004, Quality Assurance Requirements for Nuclear Facility Applications

This Standard reflects industry experience and current understanding of the quality assurance requirements necessary to achieve safe, reliable, and efficient utilization of nuclear energy, and management and processing of radioactive materials. The Standard focuses on the achievement of results, emphasizes the role of the individual and line management in the achievement of quality, and fosters the application of these requirements in a manner consistent with the relative importance of the item or activity.

ASME NQA-1a-2005, Quality Assurance Requirements for Nuclear Facility Applications

This Standard reflects industry experience and current understanding of the quality assurance requirements necessary to achieve safe, reliable, and efficient utilization of nuclear energy, and management and processing of radioactive materials. The Standard focuses on the achievement of results, emphasizes the role of the individual and line management in the achievement of quality, and fosters the application of these requirements in a manner consistent with the relative importance of the item or activity.

ASME NUM-1-2004, Rules for Construction of Cranes, Monorails, and Hoists (with Bridge or Trolley or Hoist of the Underhung Type)

Covers underhung cranes, top-running bridge and gantry cranes with trolleys, traveling wall cranes, jib cranes, monorail systems, overhead, and hoists with integral trolleys used in nuclear facilities.

ASME NUM-1a-2002, Rules for Construction of Cranes, Monorails and Hoists

Covers underhung cranes, top-running bridge and gantry cranes with trolleys, traveling wall cranes, jib cranes, monorail systems, overhead, and hoists with integral trolleys used in nuclear facilities.

ASME NUM-1b-2002, Rules for Construction of Cranes, Monorails, and Hoists

This Standard covers underhung cranes, top-running bridge and gantry cranes with trolleys, traveling wall cranes, jib cranes, monorail systems, overhead, and hoists with integral trolleys used in nuclear facilities.

ASME OM Code-2004, Code for Operation and Maintenance of Nuclear Power Plants

Establishes the requirements for preservice and in service testing and examination of certain components to assess their operational readiness in light water reactor power plants.

ASME OM-S/G-2003, Standards and Guides for Operation and Maintenance of Nuclear Power Plants

Provides standards and guidelines for preservice and in-service testing of components and systems in light water reactor power plants.

ASME OM-S/Ga-2004, Standards and Guides for Operation and Maintenance of Nuclear Power Plants

This Code establishes the requirements for preservice and inservice testing and examination of certain components to assess their operational readiness in light water reactor power plants.

ASME OMa Code-2005, Code for Operation and Maintenance of Nuclear Power Plants

This Code establishes the requirements for preservice and inservice testing and examination of certain components to assess their operational readiness in light water reactor power plants.

ASME Omb-S/G-2005, Standards and Guides for Operation and Maintenance of Nuclear Power Plants

This document provides standards and guidelines for preservice and inservice testing of components and systems in light water reactor power plants.

ASME PALD-2005, Portable Automotive Lifting Devices

The standardization of safety and performance requirements for portable automotive lifting equipment.

ASME PALD-b-2002, Portable Automotive Lifting Devices

Covers the standardization of safety and performance requirements for portable automotive lifting equipment.

ASME PALDa-2000, Portable Automotive Lifting Devices

Provides the standardization of safety and performance requirements for portable automotive lifting equipment. The standard may include requirements for safety, health, design, production, construction, maintenance, performance, operation, and/or qualification of personnel.

ASME PCC-1-2005, Guidelines for Pressure Boundary Bolted Flange Joint Assembly

The bolted flange joint assembly (BFJA) guidelines described in this document apply to pressure-boundary flanged joints with ring-type gaskets that are entirely within the circle enclosed by the bolt holes and with no contact outside the circle. By selection of those features suitable to the specific service or need, these guidelines may be used to develop effective joint assembly procedures for the broad range of sizes and service conditions normally encountered in the process industries.

ASME PTC 1-2004, Performance Test Codes – General Instructions

This document provides direction to users of Performance Test Codes. Code users shall consider it as part of each test. The objectives of this document are: 1. Define the purpose and scope of ASME Performance Test Codes; 2. List major industry applications where PTCs can be used; 3. Provide direction on the use of equipment Performance Test Codes concerning the planning, preparation, implementation, and reporting of test results.

ASME PTC 10-1998 (R2003), Performance Test Code – Compressors and Exhausters

To provide test procedures to determine the thermodynamic performance of axial or centrifugal compressors or exhausters doing work on a gas of known or measurable properties under specified conditions.

ASME PTC 11-1984 (R2003), Fans

This Code provides standard procedures for conducting and reporting tests on fans, including those of the centrifugal, axial, and mixed flow types. The principal quantities that can be determined are (a) fan mass flow rate, or alternatively, fan volume flow rate; (b) fan specific energy, or alternatively, fan pressure; and (c) fan input power. This Code provides the rules for testing fans to determine performance under actual operating conditions and additional rules for converting measured performance to that which would prevail under specified operating conditions.

ASME PTC 12.1-2000 (R2005), Performance Test Code – Closed Feedwater Heaters

This Standard provides procedures, direction and guidance for determining the performance of a closed feedwater heater with regard to several measures of performance. This Standard applies to all horizontal and vertical heaters except those with partial-pass drain cooling zones.

ASME PTC 12.2-1998, Steam Surface Condensers

Provides standard directions and rules for conducting and reporting performance tests of water-cooled steam surface condensers.

ASME PTC 12.3-1997 (R2004), Deaerators

Provides procedures for conducting tests and analyses to determine the performance of deaerating heaters and deaerators equipped with either shell-and-tube or direct-contact, vent-condensing sections.

ASME PTC 12.4-1992 (R2004), Moisture Separator Reheaters

This Code provides the procedures, direction, and guidance for the accurate testing of Moisture Separator Reheaters (MSR), which includes moisture separation and steam reheating components located between the high pressure and low pressure steam turbines. The purpose of the Code is to determine the performance of the MSR and to provide guidance in the evaluation of its performance effect on the turbine cycle heat rate.

ASME PTC 12.5-2000 (R2005), Single Phase Heat Exchangers

This Standard includes description of instruments, calculation techniques, and methods to determine the steady state performance of single-phase heat exchangers at both test conditions and reference conditions.

ASME PTC 17-1973 (R2003), Performance Test Code – Reciprocating Internal-Combustion Engines

Provides rules for testing, and for the computation & tabulation of the results of tests, for all types of reciprocating internal combustion engines, in order to determine power & fuel consumption

ASME PTC 18-2002, Hydraulic Turbines and Pump - Turbines

This Code defines procedures for field performance and acceptance testing of hydraulic turbines and pump-turbines operating with water in either the turbine or pump mode.

ASME PTC 19.1-2005, Test Uncertainty

The Scope of PTC 19.1 is to specify procedures for evaluation of uncertainties in test parameters and methods, and for propagation of those uncertainties into the uncertainty of a test result.

ASME PTC 19.11-1997 (R2004), Steam and Water Sampling, Conditioning and Analysis in the Power Cycle

This Standard provides information on methods and instrumentation for testing boiler make-up and feedwater, steam and condensate in relation to performance testing or monitoring of cycle chemistry, including sample selection, collection, conditioning and analysis, as well as data analysis.

ASME PTC 19.2-2004, Pressure Measurement Instruments and Apparatus – Part 2

This Standard provides performance and safety requirements for ball peen hammers. Ball peen hammers have a striking face on one end of the head for use in striking punches and chisels, and a ball peen on the opposite end for use in riveting, shaping, and straightening unhardened metals. This Standard is intended to serve as a guide in selecting, testing, and using the hand tools covered herein. It is not the purpose of this Standard to specify the details of manufacturing.

ASME PTC 19.22-1986 (R1998), Instruments and Apparatus – Digital Systems Techniques

This document defines the scope and application of digital system techniques for implementing data acquisition, calculations and results presentation for use with ASME Performance Test Codes.

ASME PTC 19.3-1974 (R2004), Performance Test Code – Temperature Measurement

Provides information on instrumentation and procedures for the measurement of temperature.

ASME PTC 19.5-2004, Flow Measurement

The object of this Supplement is to define and describe the proper measurement of any flow required or recommended by any of the Performance Test Codes. Flow measurements performed as specified herein satisfy the requirements of all relevant ISO flow measurement standards in effect at the publication. This Supplement describes the techniques and methods if all flow measurements required of recommended by the Performance Test Codes. Newer flow measurement techniques of comparably high accuracy are included in order to provide alternative flow measurements for special situations in which deviations from the requirements of a code are agreed to be necessary. This is a supplementary document which does not supersede the mandatory requirements of any code unless such an agreement has been expressed in writing

ASME PTC 2-2001, Definitions and Values

Presents precise definitions of terms and exact values of constants employed in the various Performance Test Codes.

ASME PTC 22-2005, Performance Test Code on Gas Turbines

Provides for the testing of gas turbines supplied with gaseous or liquid fuels (or solid fuels converted to liquid or gas prior to entrance to the gas turbine). Tests of gas turbines with emission control and/or power augmentation devices, such as injection fluids and inlet air treatment, are included. It may be applied to gas turbines in combined cycle plants or with other heat recovery systems. This Code provides for comparative (back to back) tests designed to verify performance differentials of the gas turbine, primarily for testing before and after modifications, up rates, or overhauls.

ASME PTC 23-2003, Atmospheric Water Cooling Equipment

Provides uniform test methods for conducting and reporting thermal performance characteristics of wet mechanical draft, natural draft, wet-dry cooling towers, closed circuit evaporative (wet) coolers, and wet surface air-cooled steam condensers. This Code also provides directions and rules for conducting and reporting plume abatement of wet-dry cooling towers and water consumption of any cooling tower. This Code provides explicit test procedures to yield results of the highest levels of accuracy consistent with the best engineering knowledge and practice currently available. The purpose of this Code is to provide rules for monitoring thermal performance or for conducting acceptance tests on all of the cooling equipment referenced above. It provides rules for monitoring plume abatement and conducting plume-abatement

ASME PTC 25-2001, Pressure Relief Devices

Provides standards for conducting and reporting tests on reclosing and nonreclosing pressure relief devices normally used to terminate an abnormal internal or external rise in pressure above a predetermined design value in boilers, pressure vessels, and related piping equipment. This Code covers the methods and procedures to determine relieving capacity and additional operating characteristics which may be required for certification or other purposes by other codes.

ASME PTC 25a-1998, Pressure Relief Devices

Addresses the testing and determination of flow resistance characteristics of rupture disk devices.

ASME PTC 29-2005, Speed Governing Systems for Hydraulic Turbine Generators Units

The objective of this Code is to provide uniform test methods and procedures to determine the performance and operational characteristics of a hydraulic turbine speed governor. This Code may be used to conduct factory acceptance testing or to evaluate the current characteristics of an installed speed governor. Not all of the possible results that can be determined by application of this Code need be part of every test. Prior to testing, the parties to the test shall agree whether the Code shall be used in whole or in part to satisfy individual test objectives.

ASME PTC 30-1991 (R2005), Air Cooled Heat Exchangers

The object of this Code is to provide uniform methods and procedures for testing the thermodynamic and fluid mechanical performance of air cooled heat exchangers and for calculating adjustments to the test results to design conditions for comparison with the guarantee as defined in para. 5.9.4. Excluded from the scope of this Code are evaporative type coolers (wet cooling towers) and any cooling equipment that combines evaporative and convective air cooling (wet/dry type). This Code does apply to wet/dry type heat exchangers when, by mutual agreement, the heat exchanger can be operated and tested as a dry type unit.

ASME PTC 36-2004, Measurement of Industrial Sound

Includes measurement of procedures in a variety of acoustical environments including outdoor settings influenced by ambient sound. Generally, sound pressure levels and/or sound power levels in prescribed frequency bands are used to quantify sound emissions of industrial equipment.

ASME PTC 39.1-2005, Steam Traps

This Code covers steam traps which are devices used in removing condensate and non-condensibles from steam systems.

ASME PTC 4-1998, Fired Steam Generators

Provides standard test procedures, which can yield results giving the highest level of accuracy consistent with current engineering knowledge and practice.

ASME PTC 4.2-1969 (R2003), Performance Test Code – Coal Pulverizers

Establishes procedures for conducting performance tests to determine: 1.1.1 Capacity 1.1.2 Fineness of product 1.1.3 Raw coal feed 1.1.3.1 Grindability 1.1.3.2 Moisture 1.1.3.3 Sizing 1.1.4 Power Consumption 1.1.5 Effect of changes in raw coal characteristics on product fineness, pulverizer capacity, and power consumption. 1.1.6 Effect of changes in pulverizer component settings on product fineness, pulverizer capacity, and power consumption. 1.2 Scope. This Code applies to the pulverizing system as a whole, including all the component parts necessary to take the raw coal, hot air and tempering air at the system inlet, and deliver pulverized coal in proper mixture with air and/or flue gas at the desired temperature at the outlet of the system. This Code applies to the most commonly used systems. displacement compressors, uniformly accurate methods of

ASME PTC 4.4-1981 (R2002), Gas Turbine Heat Recovery Steam Generators

The purpose of this Code is to establish procedures for the conduct and report of tests of heat recovery steam generators (HRSG) employed in combined cycle installations. Combined cycle, as used herein, shall be interpreted as a gas turbine exhausting into an HRSG, which may or may not be arranged for supplemental firing. This Code provides standard test procedures which will yield results having the highest level of accuracy consistent with current engineering knowledge and practice.

ASME PTC 42-1988 (R2004), Wind Turbines

Specifies the methods, procedures, and instrumentation for the field testing and reporting of wind-turbine performance. These procedures and practices were specifically compiled for wind turbines of 100 kW or more, but are applicable to all sizes.

ASME PTC 46-1996, Overall Plant Performance

Provides uniform test methods and procedures for the determination of the thermal performance and electrical output of heat-cycle electric power plants and cogeneration facilities. Provides explicit procedures for the determination of the following results: Corrected Net Power, Corrected Heat Rate, and Corrected Heat Input.

ASME PTC 50-2002, Fuel Cell Power Systems Performance

Provides test procedures, methods and definitions for the performance characterization of fuel cell power systems. Fuel cell power systems include all components required in the conversion of input fuel and oxidizer into output electrical and thermal energy. Performance characterization of fuel systems includes evaluating system energy inputs and electrical and thermal outputs to determine fuel-to-electrical energy conversion efficiency and where applicable the overall thermal effectiveness. These efficiencies will be determined to an absolute uncertainty of less than $\pm 2\%$ at a 95% confidence level. (For example, for a calculated efficiency of 40%, the true value lies between 38% and 42%.)

ASME PTC 6-2004, Performance Test Code 6 on Steam Turbines

This code may be used for testing of steam turbines operating either with a significant amount of superheat in the initial steam (typically fossil fueled units) or predominantly within the moisture region (typically nuclear fueled units). This code contains rules and procedures for the conduct and reporting of steam turbine testing, including mandatory requirements for pretest arrangements, instruments to be employed, their application and methods of measurement, testing techniques, and methods of calculation of test results. The performance parameters which may be determined from a Code test include: (a) heat rate, (b) generator output; (c) steam flow, (d) steam rate, (e) feedwater flow. It also contains procedures and techniques required to determine enthalpy values within the moisture region and modifications necessary to permit testing within the restrictions of

ASME PTC 6.2-2004, Steam Turbines in Combined Cycles

This Code may be used for testing steam turbines in combined cycles with or without supplementary firing and in cogeneration applications. Within these categories of combined and cogeneration cycles, this Code is applicable to condensing and to non-condensing steam turbines, to reheat and to non-reheat steam turbines, and to induction/extraction steam turbines. The variety of cycles presents challenges in writing a code that addresses all issues encountered for all cycle configurations. PTC 6 is the appropriate code for testing steam turbines in nuclear and fossil-fired regenerative feedwater heater cycles. This Code is applicable only to turbines in cycles in which steam is the working fluid.

ASME PTC 6A-2000, Performance Test Code – Steam Turbines, Appendix

Facilitates the calculation and correction of turbine test results by furnishing numerical examples of the procedures outlined in the Test Code for Steam Turbines (PTC 6-1996). The feedwater heating cycles and gland leakoff systems have been simplified by avoiding unnecessarily long or repetitive calculations while still demonstrating the basic principles involved.

ASME PTC 6R-1985 (R1997), Performance Test Code – Steam Turbines, Guidance for Evaluation of Measurement Uncertainty

Provides guidance for parties to the test to establish the degree of uncertainty of the test results when there are deviations from the requirements of ANSI/ASME PTC 6.

ASME PTC 6S-1988 (R2003), Performance Test Code – Steam Turbines, Simplified Procedures for Routine Tests

The test procedures of this Report are intended for periodic turbine tests and do not supplant the Code (PTC 6) as the basic procedure for turbine acceptance tests. The Code is used for the accurate testing of steam turbines to obtain performance level with minimum uncertainty. Sections 3 through 5 of this Report present general recommendations for instrumentation and test planning. These recommendations are based on current industry practice for the periodic determination of turbine-cycle performance. Section 6 discusses interpretation of test results and shows typical plots of test data for analysis of turbine performance. Sections 7 through 12 present test procedures for selected types of turbine cycles. Each of these procedures contains specific recommendations for instrumentation and method for testing a selected turbine type.

ASME PVHO-1-2002, Safety Standard for Pressure Vessels for Human Occupancy

Provides requirements for the design, fabrication, inspection, testing, marking, and stamping of pressure vessels for human occupancy, hereafter called PHVOs or chambers. This Standard also provides requirements for the design, fabrication, inspection, testing, cleaning and certification of piping systems for PVHOs. A PVHO is a pressure vessel that encloses a human being within its pressure boundary while it is under internal or external pressure, regardless of the pressure magnitude. PVHOs include, but are not limited to, submersibles, diving bells, personnel transfer capsules, hyperbaric chambers, high altitude chambers and medical hyperbaric oxygen facilities. This does not include nuclear reactor containments, pressurized airplane and aerospace vehicle cabins, and caissons.

ASME PVHO-1b-2000, Safety Standard for Pressure Vessels for Human Occupancy

Provides requirements for the design, fabrication, inspection, testing, marking, and stamping of pressure vessels for human occupancy, hereafter called PHVOs or chambers. This standard also provides requirements for the design, fabrication, inspection, testing, cleaning and certification of piping systems for PVHOs. A PVHO is a pressure vessel that encloses a human being within its pressure boundary while it is under internal or external pressure, regardless of the pressure magnitude. PVHOs include, but are not limited to, submersibles, diving bells, personnel transfer capsules, hyperbaric chambers, high-altitude chambers, and medical hyperbaric oxygenation facilities. This does not include nuclear reactor containments, pressurized airplane and aerospace vehicle cabins, and caissons.

ASME PVHO-2-2003, Safety Standard for Pressure Vessel for Human Occupancy In-Service Guidelines for PVHO Acrylic Windows

Provides technical criteria and guidelines for the in-service inspection, care, repair or replacement, testing, and re-certification of PVHO acrylic windows in Pressure Vessels for Human Occupancy. It is intended to be used only with acrylic windows designed, constructed, tested and certified in accordance with the requirements of ANSI/ASME PVHO-1 Safety Standard for Pressure Vessels for Human Occupancy.

ASME QEI-1-2004, Qualification of Elevator Inspectors

Applies to the qualification and duties of inspectors and inspection supervisors engaged in the inspection and testing of equipment to determine compliance with the requirements of ASME A17.1, ASME A17.3, CAN/CSA B44.1/ASME A17.5, and ASME A18.1. It also includes requirements for accreditation of organizations that certify inspectors and inspection supervisors. This Standard does not cover personnel engaged in engineering and type testing as covered in Section 8.3 of ASME A17.1, Section 8 of ASME A18.1, and CAN/CSA B44.1/ASME 17.5, including inspection by laboratories in association with these tests.

ASME QFO-1-1998 (R2003), Qualification of High Capacity Fossil Fuel Fired Plant Operators

Specifies the requirements leading to certification as a fossil combustion operator of a high capacity fossil fuel fired plant as appropriate to the Clean Air Act as amended in 1990, for a fossil fuel fired boiler with an input equal to or greater than $10E + 06$ Btu/hr ($10,550 E + 06$ J/hr). It does not cover plants (boilers) exclusively firing: wood, wood residue, industrial waste, municipal waste, or combustion turbine exhaust. It provides a procedure for qualification, examination, and certification of the operator. Due to the diversity of size, operation, and process of the organizations and plants affected, this Standard does not identify which specific position(s) or which individual(s) will be certified.

ASME QHO-1-2004, Qualification and Certification of Hazardous Waste Incinerator Operators

This Standard covers the qualification and certification of operators of a hazardous waste incinerator.

ASME QME-1-2002, Qualification of Active Mechanical Equipment for Nuclear Power Plants

This proposed revision is for the addition of 2 new sections - QV Guide and QDR, and for the addition of SI units in parenthesis to the primary US Customary Units.

ASME QME-1b-1997, Qualification of Active Mechanical Equipment Used in Nuclear Power Plants

Describes the requirements and guidelines for qualifying active mechanical equipment used in nuclear power plants. Qualification is intended to confirm the adequacy of the equipment to function over the expected range of service conditions, design-basis event and post design-basis event conditions as well as in-service inspection and test conditions.

ASME QRO-1-2005, Qualification and Certification of Resource Recovery Facility Operators

This Standard covers the certification of persons who perform, or direct, operations of facilities that combust municipal solid waste (MSW).

ASME RA-S-2002, Probabilistic Risk Assessment for Nuclear Power Plant Applications

This Standard sets forth requirements for probabilistic risk assessments (PRAs) used to support risk-informed decisions for commercial nuclear power plants, and prescribes a method for applying these requirements for specific applications.

ASME RA-Sa-2003, Probabilistic Risk Assessment for Nuclear Power Plant Applications

This Standard sets forth requirements for probabilistic risk assessments (PRAs) used to support risk-informed decisions for commercial light water reactor nuclear power plants, and prescribes a method for applying these requirements for specific applications (additional or revised requirements may be needed for other reactor designs).

ASME RA-Sb-2005, Probabilistic Risk Assessment for Nuclear Power Plant Applications

This Standard sets forth requirements for probabilistic risk assessments (PRAs) used to support risk-informed decisions for commercial light water reactor nuclear power plants, and prescribes a method for applying these requirements for specific applications (additional or revised requirements may be needed for other reactor designs).

ASME RTP-1-2005, Reinforced Thermoset Plastic Corrosion Resistant Equipment

This Standard applies to stationary vessels used for the storage, accumulation, or processing of corrosive or other substances at pressures not exceeding 15 psig external and/or 15 psig internal above any hydrostatic head.

ASME STS-1-2000, Steel Stacks

Includes sizing of gas passage in diameter and height; and drop in gas temperature as heat is transferred through the stack wall. Methods for calculating draft, draft losses, and heat losses are given. Differential expansion of stack components is discussed. Design considerations for stack appurtenances are established.

ASME STS-1a-2003, Steel Stacks

Mechanical design includes sizing of the gas passage, both in diameter and height; and the drop in gas temperature as heat is transferred through the stack wall. Methods for calculating draft, draft losses, and heat losses are given. Differential expansion of stack components is discussed. Design considerations for stack appurtenances are established.

ASME TDP-1-1998, Recommended Practices for the Prevention of Water Damage to Steam Turbines Used for Electric Power Generation

The recommended practices are concerned primarily with the prevention of water damages to steam turbines used for fossil fuel fired electric power generation. The practice covers design, operation, inspection, testing and maintenance of those aspects.

ASME Y14.1-2005, Decimal Inch Drawing Sheet Size and Format

Defines decimal inch sheet sizes and formats for engineering drawings.

ASME Y14.100-2004, Engineering Drawing Practices

Establishes the essential requirements and reference documents applicable to the preparation and revision of engineering drawings and associated lists.

ASME Y14.13M-1981 (R2003), Engineering Drawing and Related Documentation Practices – Mechanical Spring Representation

This Standard establishes uniform methods for specifying end product data on drawings for mechanical springs. A mechanical spring is defined as anelastic body whose mechanical function is to store energy when deflected by a force and to return the equivalent amount of energy upon being released.

ASME Y14.1M-2005, Metric Drawing Sheet Size and Format

Defines metric sheet sizes and formats for engineering drawings.

ASME Y14.24M-1999 (R2004), Types and Applications of Engineering Drawings

This Standard defines the types of engineering drawings most frequently used to establish engineering requirements. It describes typical applications and minimum content requirements.

ASME Y14.2M-1992 (R2003), Line Conventions and Lettering

This Standard establishes the line and lettering practices for use in the preparation of engineering drawings, including the recognition of the requirements for CAD and manual preparation for their reduction and reproduction.

ASME Y14.32.1M-1994 (R2005), Chassis Frames – Passenger Car and Light Truck – Ground Vehicle Practices

Establishes minimum requirements for the preparation of engineering drawings for passenger car and light truck chassis frames. This Standard does not apply to heavy truck, trailer, tractor, and off-the-road vehicle chassis frames.

ASME Y14.34M-1996 (R2002), Associated Lists

Establishes the minimum requirements for the preparation and revision of parts lists, application lists, data lists, and index lists.

ASME Y14.35M-1997 (R2003), Revision of Engineering Drawings and Associated Documents

This Standard defines the practices for revising drawings and associated documentation and establishes methods for identification and recording revisions. The revision practices of this Standard apply to any form of original drawing and associated documentation.

ASME Y14.36M-1996 (R2002), Surface Texture Symbols

Establishes the method to designate controls for surface texture of solid materials. It includes methods for controlling roughness, waviness, and lay by providing a set of symbols for use on drawings, specifications or other documents.

ASME Y14.38-1999, Abbreviations for Use on Drawings and in Text

The intent of this standard is to allow the use of approved abbreviations in lieu of the use of complete words or terminology.

ASME Y14.38a-2002, Abbreviations and Acronyms

This addenda updates the lists of abbreviations and acronyms.

ASME Y14.3M-2003, Multiview and Sectional View Drawings

This Standard establishes the requirements for creating orthographic views for item description. The topics covered include the multiview system of drawing, selection, and arrangement of orthographic views, auxiliary views, sectional views, details, and conventional drawing practices. Space geometry and space analysis and applications are included in the appendices for informational purposes.

ASME Y14.41-2003, Product Definition Data Set Practices - Digital

This Standard establishes requirements and reference documents applicable to the preparation and revision of product definition data using digital data sets, hereafter referred to as data sets.

ASME Y14.42-2002, Digital Approval Systems

Provides the minimum requirements for the development of a digital approval system for engineering documentation.

ASME Y14.43-2003, Dimensioning and Tolerancing Principles for Gages and Fixtures

Presents the design practices for dimensioning and tolerancing of gages and fixtures used for the verification of Maximum Material Condition (MMC) size envelopes and Virtual Condition boundaries generated by Geometric Tolerances controlled at Maximum Material Condition. These practices focus on the design of receiver-type gages, which collect attribute data when used for the verification of workpieces dimensioned and toleranced in accordance with ASME Y14.5M-1994. For gaging and fixturing principles and practices, see Sections 2 through 6.

ASME Y14.4M-1989 (R2004), Pictorial Drawing

This Standard establishes definitions for and illustrates the uses of various kinds of three-dimensional view pictorial mechanical drawings. It also addresses the kinds of pictorial views commonly used on engineering drawings.

ASME Y14.5.1M-1994 (R2004), Mathematical Definition of Dimensioning and Tolerancing Principles

This Standard presents a mathematical definition of geometrical dimensioning and tolerancing consistent with the principles and practices of ASME Y14.5M-1994, enabling determination of actual values.

ASME Y14.5M-1994 (R2004), Dimensioning and Tolerancing

This Standard establishes certification requirements for a Geometric Dimensioning and Tolerancing Professional (GDTP). Certification will be based upon the current edition of the Y14.5 Dimensioning and Tolerancing

ASME Y14.6-2001, Screw Thread Representation

Establishes requirements for the pictorial representation, specification, and dimensioning of screw threads on drawings.

ASME Y14.7.1-1971 (R2003), Gear Drawing Standards – Part 1, for Spur, Helical, Double Helical, and Rack

This standard sets forth methods to be followed for specifying drawing data for gears operating on axes which are parallel.

ASME Y14.7.2-1978 (R2004), Gear and Spline Drawing Standards – Part 2, Bevel and Hypoid Gears

This standard establishes methods to be followed in specifying drawing data for gears with intersecting axes (bevel gears), and non-parallel, nonintersecting axes (hypoid gears). It also discusses the method of specifying matched sets on a gear drawing.

ASME Y14.8M-1996 (R2002), Castings and Forgings

Covers definitions and terms and features unique to casting and forging technologies with recommendation for their uniform description and inclusion on engineering drawings and related documents.

ASME Y32.18-1972 (R2003), Mechanical and Acoustical Elements as Used in Schematic Diagrams, Symbols for

This document presents standard symbols and definitions that may be used in constructing schematic diagrams for mechanical and acoustical systems whose performances are describable by finite sets of scalar variables.

ASME Y32.4-1977 (R2004), Plumbing Fixtures for Diagrams Used in Architecture and Building Construction, Graphic Symbols for

This standard presents graphic symbols for plumbing fixtures for use on drawings created by architects, engineers and plumbing contractors. Included in Section 5 are symbols for the more common fixtures found in the average building. Included in Section 6 are symbols for the special types of fixtures utilized in hospitals and institutions.

ASME Y32.7-1972 (R2004), Railroad Maps and Profiles, Graphic Symbols for

Provides graphic symbols for railroad maps and profiles.

ASNT (American Society for Non-Destructive Testing)

ANSI/ASNT CP-189-2001, Qualification and Certification of Nondestructive Testing Personnel

Specifies requirements for employer qualification and certification of NDT personnel, including examination specifications and procedures, training outlines, minimum experience and training requirements. This standard was listed for public review in the 7/28/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text. [see email for text of changes]

ANSI/ASNT ILI-PQ-2005, In-Line Inspection Personnel Qualification and Certification Standard

Provides a standard means for employers to qualify and certify nondestructive testing personnel using in-line inspection technologies on oil and gas pipelines to include levels of qualification, education, training, and experience requirements, examinations, certification, and recertification.

ASQ (American Society for Quality)

ANSI/ASQ E4-2004, Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs

Specifies requirements for a quality system to enable an organization to formulate policies and procedures to plan and implement sufficient and adequate quality management practices for environmental programs. This standard is applicable to any organization that wishes to: Implement, maintain and improve a quality system for environmental programs; Specify quality requirements when contracting for work; Assure itself of its conformance with its stated quality policy; and Demonstrate such conformance to others. All the requirements in this standard are intended to be incorporated into quality systems supporting environmental programs involving environmental data and environmental technology. The extent of the application will depend on the environmental policy of the organization, the nature of its environmental programs, and the conditions

ANSI/ASQ Z1.13-1998, Quality Systems Guidelines for Research

Aids in the development of a quality system for basic and applied research.

ANSI/ASQ Z1.4-2003, Sampling Procedures and Tables for Inspection by Attributes

Sampling Procedures and Tables for Inspection by Attributes is an acceptance sampling system to be used with switching rules on a continuing stream of lots for AQL specified. It provides tightened, normal, and reduced plans to be applied for attributes inspection for percent nonconforming or nonconformities per 100 units.

ANSI/ASQC B1, B2, B3-1985 (R1996), Guide for Quality Control Charts, Method of Analyzing Data, and Controlling Quality during Production

Outlines the control chart method of identifying and eliminating causes of trouble in repetitive production processes in order to reduce variation in the quality of manufactured products and materials.

ANSI/ASQC C1-1985 (R1996), Quality Program, General Requirements for a

Establishes a quality program by a contractor to ensure compliance with contract requirements in the areas of quality management, design information, procurement, manufacture, acceptance, and documentation.

ANSI/ASQC D1160-1995, Formal Design Review

This standard makes recommendations for the implementation of design review and procedures as a means of stimulating product and/or process improvement.

ANSI/ASQC E1-1989 (R1996), Quality Program Guidelines for Project Phase of Non-Nuclear Power Generation Facilities

Provides quality program guidelines for the segment of the electrical power generation industry that is not covered by mandatory nuclear quality standards or other industry quality documents.

ANSI/ASQC E2-1984 (R1995), Inspection Planning, Guide to

ANSI/ASQC M1-1987 (R1996), Calibration Systems

Spells out the requirements for calibration and standards laboratories to control calibrations and measurements according to measurement assurance or conventional methods.

ANSI/ASQC S1-1987 (R1995), An Attribute Skip-Lot Sampling Program

Provides a procedure for reducing the inspection effort on products submitted by those suppliers who have demonstrated their ability to control in an effective manner all facets of product quality and consistently produce superior quality material. The skip-lot program is designed to be used with attribute lot-by-lot plans described in ANSI/ASQC Z1.4-1981.

ANSI/ASQC S2-1995, Introduction to Attribute Sampling

Section one gives general information on methods of acceptance sampling inspection with particular reference to the sampling procedures and table for inspection by attributes given in ANSI/ASQC Z1.4, Z1.9, Q3, and S1 as well as ISO 8422. This document explains the terms used, describes the various schemes and plans, gives practical advice on sampling inspection and discusses some of the theoretical aspects. Section two extends the introduction to acceptance sampling in Section one and amplifies the introductory text and instructions contained in ANSI/ASQC Z1.4, by giving detailed comments and examples to assist in using the method of sampling inspection that constitutes the ANSI/ASQC Z1.4 sampling system.

ANSI/ASQC Z1.11-1996, Quality Assurance Standards – Guidelines for the Application of ANSI/ISO/ASQC Q9001 or Q9002 to Education and Training Institutions

Provides guidance for a quality management system where an education or training organization needs to demonstrate its capability to provide consistent instruction and support services. The quality management system is aimed primarily at satisfying stakeholders' concerns and the continual improvement of instructional design, instruction, assessment of students, and reliability of support services. The quality management system provides a basic foundation for accrediting and certifying bodies that include stakeholders' satisfaction and continual improvement in their requirements.

ANSI/ASQC Z1.9-2003, Sampling Procedures and Tables for Inspection by Variables for Percent Nonconforming

Sampling Procedures and Tables for Inspection by Variables for Percent Nonconforming is an acceptance sampling system to be used on a continuing stream of lots for AQL specified. It provides tightened, normal, and reduced plans to be used on measurements which are normally distributed. Variation may be measured by sample standard deviation, sample range, or known standard deviation. It is applicable only when the normality of the measurements is assured.

ANSI/IEC/ASQ D1070-1997, Compliance Test Procedures for Steady State Reliability

Specifies techniques for availability performance measures used in either steady-state availability or steady-state unavailability.

ANSI/IEC/ASQ D1078-1997, Analysis Techniques for Dependability - Reliability Block Diagram Method

Describes procedures for modelling the dependability of a system and for using the model in order to calculate reliability and availability measures.

ANSI/IEC/ASQ D1123-1997, Reliability Testing - Compliance Test Plans for Success Ratio

Specifies procedures for applying and preparing compliance test plans for success ratio or failure ratio.

ANSI/IEC/ASQ D1164-1997, Reliability Growth - Statistical Test and Estimation Methods

Gives modules and numerical methods for reliability growth assessments based on failure data from a single system which were generated in a reliability improvement program. The procedures deal with growth estimation, confidence intervals for system reliability and goodness-of-fit test.

ANSI/IEC/ASQ D1165-1997, Application of Markov Techniques

Provides guidance on the application of Markov techniques to dependability analysis.

ANSI/IEC/ASQ D300-3-1-1997, Dependability Management Part 3: Application Guide Section 1: Analysis Techniques for Dependability: Guide on Methodology

Gives an overview of commonly used dependability analysis procedures. It describes the usual methodologies, the advantages and disadvantages, data input, and other requirements for the various techniques.

ANSI/IEC/ASQ D300-3-2-1997, Dependability Management Part 3: Application Guide Section 2: Collection of Dependability Data from the Field

Provides guidelines for the collection of data relating to reliability, maintainability, availability, and maintenance support performance of items operating in the field. It deals in general terms with the practical aspects of data collection and presentation and briefly explores the related topics of data analysis and presentation of results.

ANSI/ISO 14010-1996, Guidelines for Environmental Auditing – General Principles

Provides the general principles of environmental auditing that are applicable to all types of environmental audits. Any activity defined as an environmental audit in accordance with this standard should satisfy the recommendations given in this standard.

ANSI/ISO 14011-1996, Guidelines for Environmental Auditing – Audit Procedures – Auditing of Environmental Management Systems

Establishes audit procedures that provide for the planning and performance of an audit of an EMS to determine conformance with EMS audit criteria.

ANSI/ISO 14012-1996, Guidelines for Environmental Auditing – Qualification Criteria for Environmental Auditors

Provides guidance on qualification criteria for environmental auditors and lead auditors. It is applicable to both internal and external auditors.

ANSI/ISO/ASQ 9000-2-1997, Quality Management and Quality Assurance Standards-Part 2: Generic Guidelines for the Application of ISO 9001, ISO 9002 and ISO 9003

Gives guidance for the application of ISO 9001, ISO 9002, and ISO 9003. To facilitate cross reference to those standards, has the same clause structure as ISO 9001, ISO 9002, and ISO 9003.

ANSI/ISO/ASQ E14001-2004, Environmental Management Systems – Specification with Guidance for Use

This International Standard specifies requirements for an environmental management system to enable an organization to develop and implement a policy and objectives which take into account legal requirements and other requirements to which the organization subscribes, and information about significant environmental aspects. It applies to those environmental aspects that the organization identifies as those which it can control and those which it can influence. It does not itself state specific environmental performance criteria.

ANSI/ISO/ASQ E14004-2004, Environmental Management Systems – General Guidelines on Principles, Systems and Supporting Techniques

This International Standard provides guidance on the establishment, implementation, maintenance and improvement of an environmental management system and its coordination with other management systems.

ANSI/ISO/ASQ Q10006-1997, Quality Management – Guidelines to Quality in Project Management

Provides guidance on quality system elements, concepts and practices which are important to the achievement of quality in project management and supplement the guidance given ISO 9004-1.

ANSI/ISO/ASQ Q10015-1999, Quality Management - Guidelines for Training

Covers the development, implementation, maintenance, and improvement of strategies and systems for training that affect the quality of the products supplied by an organization. This International Standard applies to all types of organizations. It is not intended for use in contracts, regulations, or for certification. It does not add to, change, or otherwise modify requirements for the ISO 9000 series. This International Standard is not intended to be used by training providers delivering services to other organizations.

NOTE The main source of reference for training providers should be ISO 9004-2:1991 Quality Management and quality system elements-Part 2: Guidelines for services, until superseded by ISO 9004:2000 Training providers may use this International Standard when addressing the training needs of the

ANSI/ISO/ASQ Q9000-2000, Quality Management Systems - Fundamentals and Vocabulary

Provides fundamentals for quality management systems as described in the ISO 9000 family (informative); and specifies quality management terms and their definitions (normative). This standard was originally listed for public review in the May 7, 1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ISO/ASQ Q9000-3-1997, Quality Management and Quality Assurance Standards - Guidelines for the Application of ANSI/ISO/ASQC 9001 to the Development, Supply and Maintenance of Software

Provides guidance in applying the requirements of ISO 9000:1994 where computer software design, development, installation and maintenance are an element of the business of a supplier: a) as part of a commercial contract with an external organization; b) as a product available for a market sector, c) in support of the business processes of the supplier, d) as software embedded in a hardware product. It identifies issues that need to be addressed and is independent of the technology, life cycle models, development processes, sequence of activities, or organization structure used by a supplier.

ANSI/ISO/ASQ Q9001-2000, Quality Management Systems - Requirements

Presents requirements for a quality management system. The application of this standard can be used by an organization to demonstrate its capability to meet customer requirements for products and/or services, and for assessment of that capability by internal and external parties. This standard was originally listed for public review in the May 7, 1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ISO/ASQ Q9004-2000, Quality Management Systems - Guidelines for Performance Improvements

Provides guidance on quality management, and the continual improvement of processes that contribute to the satisfaction of an organization's customers and interested parties. This International standard is based on quality management principles to provide understanding of quality management and its application to enhancing the internal performance of an organization. Consequently, it is not a guideline for implementing ISO 9001, and is not intended for certification, regulatory or contractual use. The selection of the appropriate quality-related processes described in this International standard and the extent to which these processes are adopted and applied by an organization depends upon factors such as the market being served, the operational processes and resource requirements. This standard was originally listed for public review

ANSI/ISO/ASQ QE19011S-2004, Guidelines for Quality and/or Environmental Management Systems Auditing - US Version with Supplemental Guidance Added

Provides additional guidance to users to augment the International Standard. In particular, additional guidance is provided for small organizations that may wish to consider its application to the full range of audit activities (i.e., first, second, and third-party audits) and for any users that wish to apply the standard to internal (first-party) audits and external supplier (second-party) audits. Since the definition of small organizations may vary, the concept of a small organization in this Supplement does not only relate to the size of the organization but also to the complexity of the management system, complexity of the product and processes, the organization's regulatory environment, and the effectiveness of communications within the organization. Therefore, the guidance given for small organizations may also apply to larger organizations with simple management

ANSI/ISO/ASQC A3534-1-1993, Statistics – Vocabulary and Symbols – Probability and General Statistical Terms

BSR/ISO/ASQC A3534.1 defines probability and general statistical terms which may be used in the drafting of other ANS's. In addition, it defines symbols for a limited number of these.

ANSI/ISO/ASQC A3534-2-1993, Statistics – Vocabulary and Symbols – Statistical Quality Control

Defines statistical quality control terms which may be used in the drafting of American National Standards.

ANSI/ISO/ASQC Q10007-1995, Quality Management – Guidelines for Configuration Management

ANSI/ISO/ASQC Q10013-1995, Guidelines for Developing Quality Manuals

This standard provides guidelines for the development, preparation and control of quality manuals tailored to the specific needs of the user. The resultant quality manuals will reflect documented quality systems procedures required by the ISO 9000 Family.

ANSI/ISO/ASQC Q9000-2-1993, Quality Management and Quality Assurance Standards - Generic Guidelines for the Application of ANSI/ISO/ASQC Q9001, Q9002, and Q9003

Will provide guidance to enable users to have improved consistency, precision, clarity and understanding when applying the requirements of the quality system standards, ANSI/ISO/ASQC Q9001, 9002, and 9003.

ANSI/ISO/ASQC Q9004-2-1991, Quality Management and Quality Assurance Elements - Guideline for Service

This part of ANSI/ISO/ASQC 9004 can be applied in the context of developing a quality system for a newly offered or modified service. It can also be applied directly when implementing a quality system or an existing service.

ANSI/ISO/ASQC Q9004-3-1993, Quality Management and Quality System Elements - Guidelines for Processed Materials

This part of ANSI/ISO/ASQC Q9004 gives guidance on the application of quality management to processed materials.

ANSI/ISO/ASQC Q9004-4-1993, Quality Management and Quality Elements - Guidelines for Quality Improvement

Gives management guidelines for implementing continuous quality improvement within an organization.

ASSE (American Society of Safety Engineers)

ANSI A10.10-1990 (R2004), Safety Requirements for Temporary and Portable Space Heating Devices and Equipment

Provides minimum safety requirements for the selection, installation, operation and maintenance of space heating devices and equipment of temporary and portable design. Covers the heater unit and its integral parts through to their connection for fuel, but does not cover separate supply tanks or valving.

ANSI A10.11-1989 (R1998), Safety Requirements for Safety Nets

Establishes safety requirements for the selection, installation, and use of personnel and debris nets during construction, repair, and demolition operations.

ANSI A10.12-1998 (R2005), Safety Requirements for Excavation

Establishes standards for the prevention of deaths, injuries and damage during or related to excavation operations.

ANSI A10.13-2001, Safety Requirements for Steel Erection

Establishes safety requirements for the erection, handling, fitting, fastening, reinforcing and dismantling of structural steel, plate steel, steel joist, and metal deck at a final, in-place field site during construction, maintenance, and dismantling operations.

ANSI A10.15-1995 (R2005), Safety Requirements for Dredging

Applies to the operation, inspection, and maintenance of any vessel fitted with machinery for the purpose of removing or relocating of material from or in a body of water.

ANSI A10.16-1995 (R2001), Construction and Demolition Operations - Safety Requirements for Tunnels, Shafts, and Caissons

Establishes safety requirements pertaining to the construction of tunnels, shafts, and caissons. The requirements set forth in this standard cover environmental control; related facilities; fire prevention; hoisting; haulage; and electrical, drilling and blasting, and compressed-air work. This standard is not intended for application to mining or quarrying operations.

ANSI A10.17-1997, Safe Operating Practices for Hot Mix Asphalt (HMA) Construction

Applies to hot mix asphalt operations for construction and resurfacing. This standard was administratively withdrawn, and is being resubmitted as a new standard.

ANSI A10.17-2006, Safe Operating Practices for Hot Mix (HMA) Construction

Applies to those operations involving hot mix asphalt (bituminous) mixtures and materials for construction and resurfacing. Safe work practices are included for the protection of workers and the public and are to be considered the vital safety requirements for designers, manufacturers and installers of such equipment and materials.

ANSI A10.18-1996, Safety Requirements for Temporary Floors, Holes, Wall Openings, Stairways and Other Unprotected Edges in Construction and Demolition Operations

This standard prescribes rules and establishes safety requirements for the protection of employees and the public from hazards arising out of or associate with temporary floor holes and wall openings, stairs and other unprotected edges including low slope roofs during, construction and demolition activities

ANSI A10.20-2005, Safety Requirements for Ceramic Tile, Terrazzo, and Marble Work

Establishes safety requirements for construction operations and equipment used in the handling and installation of ceramic tile, terrazzo, and marble. The types of construction are not listed. The standard is intended to apply to buildings of all kinds and to heavy construction, such as work in tunnels.

ANSI A10.22-1990 (R1998), Rope-Guided and Nonguided Worker's Hoists - Safety Requirements

Establishes minimum safety requirements for temporary personnel hoisting systems used for the transportation of persons to and from working elevations during normal construction and demolition operations, including maintenance, and is restricted to use in special situations.

ANSI A10.24-2006, Roofing - Safety Requirements for Low-Sloped Roofs

Establishes safe operating practices for the installation, maintenance and removal of membrane roofing that is seamed or seamless on low-sloped roofs with a maximum slope of four (4) and twelve (12). These types of roofs include but are not necessarily limited to hot and cold built-up roofing, single-ply roofing, polyurethane foam (PUF) roofing, liquid-type roofing (Hypalon, polyurethane, etc.), modified bitumen's. NOTE: This standard does not apply to composition or wood shingles, slate, tile and metal roofs that are normally installed on roofs with slopes four (4) and twelve (12) or greater.

ANSI A10.27-1998 (R2005), Safety Requirements for Hot Mix Asphalt Facilities

Provides recommendations concerning the design, manufacture, operating processes, and equipment associated with the production of hot asphalt mixing (HMA) facilities. Included are raw material handling and storage, equipment operation to produce asphalt mixtures and the delivery of mixes into vehicles for transport to users. Routine maintenance housekeeping and allied functions are included.

ANSI A10.28-1998 (R2004), Work Platforms Suspended from Cranes or Derricks – Safety Requirements

Applies to platforms suspended from the load lines of cranes or derricks in order to (1) perform work at elevations that cannot normally be reached by other types of scaffolds or aerial work platforms or (2) transport personnel to elevations where other means of access are unsafe or impractical because of design or worksite conditions. Safe use of such equipment is dependent upon the user following all provisions contained herein. A competent person shall perform a job analysis on all equipment to be used to suspend platforms from cranes and derricks including the platforms. A copy of the job analysis shall be maintained at the jobsite.

ANSI A10.32-2004, Personal Fall Protection Safety Requirements for Construction, Demolition Operations

Establishes performance criteria for personal fall protection equipment and systems and provides guidelines, recommendations for their use and inspection. It includes, but is not limited to: fall arrest, restraint, positioning, climbing, descending, rescue, escape and training activities.

ANSI A10.33-1992 (R2004), Safety and Health Program Requirements for Multi-Employer Projects

Sets forth the minimum elements and activities of a program that defines the duties and responsibilities of construction project where a single Project Constructor supervises and controls the project.

ANSI A10.34-2001 (R2005), Protection of the Public on and Adjacent to Construction Sites

This standard provides the recommended elements and activities on construction projects to provide protection for the Public.

ANSI A10.37-1996, Construction and Demolition Operations - Debris Net Systems Used During Construction and Demolition Operations

This standard establishes safety requirements for the design, selection, installation and use of debris net systems during construction, demolition operations, and for the temporary containment of debris from deteriorating structures.

ANSI A10.38-2000, Basic Elements of a Program to Provide a Safe and Healthful Work Environment

Establishes the minimum elements of a program for protecting the safety and health of employees involved in construction activities.

ANSI A10.39-1996 (R2005), Construction Safety and Health Audit Program

Identifies the minimum performance elements that when properly utilized will allow for a competent evaluation of a construction safety and health program. Further, it will identify those areas where systems, records and performance elements are required in order to produce a quality audit.

ANSI A10.4-2004, Safety Requirements for Personnel Hoists and Employee Elevators

Applies to the design, construction, installation, operating, testing, maintenance, alterations and repair of hoists and elevators that :
(1) are not an integral part of buildings, (2) are installed inside or outside buildings or structures during construction, alteration, demolition or operation and (3) are used to raise and lower workers and other personnel connected with or related to the structure. These personnel hoists and employee elevators may also be used for transporting materials.

ANSI A10.42-2000, Rigging Qualifications and Responsibilities in the Construction Industry

This standard establishes minimum criteria of knowledge and performance requirements for a qualified rigger in the construction industry. It is designed to assist in achieving reasonable safety of all persons and materials during the process of or as the result of rigging, lifting, or movement of loads.

ANSI A10.6-1990 (R1998), Demolition, Safety Requirements for

Applies to the demolition of buildings and other structures. This standard is intended to be complete in itself, except that any device, equipment and activity incidental to demolition operations shall be conducted, installed, inspected, maintained, and operated in accordance with requirements in American National Standards for Safety in Construction and Demolition Operations A10 Series, other American National Standards listed in Section 2 of this standard, and other appropriate standards.

ANSI A10.7-1998 (R2005), Commercial Explosives and Blasting Agents - Safety Requirements for Transportation, Storage, Handling and Use

Provides the construction industry with reasonable minimum recommendations for establishing and maintaining a level of health and safety with regard to the transportation, storage, handling, and use of commercial explosives and blasting agents.

ANSI A10.8-2001, Safety Requirements for Scaffolding

Establishes safety requirements for the construction, operation, maintenance, and use of scaffolds used in the construction, demolition and maintenance of buildings and structures.

ANSI A10.9-1997, Concrete and Masonry Work Safety Requirements

Establishes safety requirements pertaining to concrete construction and masonry work in construction. Covers all on-site concrete construction and masonry work including design, erection, operation, and maintenance of aggregate processing plants, concrete mixing plants, and conveyances. Also contains safety requirements pertinent to the specialty concrete operations of prestressing by pretensioning or post tensioning, lift-slab construction, tilt-up construction, and slip forms.

ANSI A10.9-1997 (R2004), Concrete and Masonry Work Safety Requirements

Establishes safety requirements pertaining to concrete construction and masonry work in construction. Covers all on-site concrete construction and masonry work including design, erection, operation, and maintenance of aggregate processing plants, concrete mixing plants, and conveyances. Also contains safety requirements pertinent to the specialty concrete operations of prestressing by pretensioning or post tensioning, lift-slab construction, tilt-up construction, and slip forms.

ANSI A1264.1-1995 (R2002), Safety Requirements for Workplace Floor and Wall Openings, Stairs, and Railing Systems

Sets forth safety requirements in industrial and workplace situations for protecting persons in areas/ places where danger exists of persons or objects falling through floor or wall openings, or from platforms, runways, ramps and fixed stairs, in normal, temporary, and emergency conditions.

ANSI A1264.2-2001, Provision of Slip Resistance on Walking/Working Surfaces

Sets forth provisions for protecting persons where there is potential for slipping and falling as a result of surface characteristics or conditions. This is the second Public Review for this standard. It was originally listed in the January 17, 1997 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI Z117.1-2003, Safety Requirements for Confined Spaces

Provides minimum safety requirements to be followed while entering, exiting and working in confined spaces at normal atmospheric pressure.

ANSI Z244.1-2003, Lock Out/Tag Out of Energy Sources, Safety Requirements for the

Establishes requirements and performance objectives for procedures, techniques, designs and methods that protect personnel where injury can occur as a result of the unexpected release of hazardous energy. Unexpected release of hazardous energy can include any unintended motion, energization, start-up or release of stored energy, deliberate or otherwise, from the perspective of the person(s) at risk.

ANSI Z359.1-1992 (R1999), Safety Requirements for Personal Fall Arrest Systems, Subsystems, and Components

Establishes requirements for the performance, design, marking, qualification, instruction, training, inspection, use, maintenance, and removal from service of connectors, full body harnesses, lanyards, energy absorbers, anchorage connectors, fall arresters, vertical lifelines, and self-retracting lanyards comprising personal fall arrest systems for users within the capacity range of 130 to 310 pounds (59 to 140 kg).

ANSI Z390.1-1995 (R2001), Accepted Practices for Hydrogen Sulfide (H2S) Safety Training Programs

This standard sets forth accepted practices for hydrogen sulfide (H2S) safety training and instruction of affected personnel to include, but not be limited to, the following: minimum informational content of the course; recommended exercises and drills; refresher training requirements; H2S Safety Instructor qualifications; properties and characteristics of H2S; sources of H2S and areas of potential exposure; typical site-specific safe work practices associated with H2S operations; detection methods for H2S; selection, use and care of personal protective equipment appropriate for atmospheres containing H2S concentrations above the Threshold Limit Value-Time Weighted Average (TLV-TWA); rescue techniques and first aid procedures for victims of H2S exposure.

ANSI Z490.1-2001, Accepted Practices for Safety, Health, and Environmental Training

Establishes voluntary criteria for safety, health, and environmental training programs, including development, delivery, evaluation and program management. The purpose of this Standard is to provide accepted practices for safety, health, and environmental training. This Standard is recommended for voluntary application by training providers of safety, health, and environmental training. If any of the provisions of this Standard are deemed to not be applicable, the other requirements or recommendations of the Standard shall still apply. This Standard applies to all safety, health, or environmental training, whether separate or a portion of other training. This standard was listed for public review in the 7/14/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI/ASSE A10.5-2006, Safety Requirements for Material Hoists

This standard applies to material hoists used to raise or lower materials during construction, alteration or demolition. It is not applicable to the temporary use of permanently installed personnel elevators as material hoists.

ANSI/ASSE Z15.1-2006, Safe Practices for Motor Vehicle Operations

This standard sets forth practices for the safe operation of motor vehicles and operations.

ANSI/ASSE Z590.2-2003, Criteria For Establishing the Scope and Functions of the Professional Safety Position

Establishes the scope and functions of the professional safety position to consolidate in a clear and consistent manner an objective assessment of the position.

ASSE (American Society of Sanitary Engineering)

ANSI/ASSE 1001-2001, Pipe-Applied Atmospheric-Type Vacuum Breakers

Applies to devices classified as atmospheric type vacuum breakers that are single pipe-applied (does not apply to tank ball cocks or similar devices that depend on float operated valves to control flow). The purpose of these devices is to provide protection of the potable water supply against pollutants or contaminants that enter the system due to backsiphonage through the outlet. Under backsiphonage conditions, a small amount of water is permitted to exit through the air ports. The device shall: 1) Be installed downstream of the last control valve; 2) Not be subjected to backpressure 3) Not be subjected to more than twelve (12) hours of continuous water pressure; and 4) Be installed with its critical level (CL) not less than 150 mm (6 inches) above the flood level rim of the fixture or appliances served; or deck mounted/equipment mounted atmospheric

ANSI/ASSE 1003-2001, Performance Requirements for Water Pressure Reducing Valves

The purpose of a water pressure reducing valve is to reduce static and flowing pressures in water distribution systems. Devices covered by this standard are self-contained, direct acting, single diaphragm types. Devices shall be permitted to have an integral strainer, separate strainer connected to the valve inlet, or be without strainer. Devices shall be permitted to be with or without an integral by-pass relief valve.

ANSI/ASSE 1010-2004, Performance Requirements for Water Hammer Arresters

This standard applies only to those devices classified as water hammer arresters having a permanently sealed cushion of water or gas isolated from the water way, and designed to provide continuous protection, without maintenance, against detrimental surge pressures within the water distribution system.

ANSI/ASSE 1011-2004, Hose Connection Vacuum Breakers

Hose Connection Vacuum Breakers shall provide protection of the potable water supply against pollutants or contaminants that can enter the system through backpressure equal to from an elevated hose equal to or less than 10.0 feet (3.0 meters) in height [4.3 psi (29.9 kPa)] and backsiphonage through the hose threaded outlets.

ANSI/ASSE 1012-2002, Performance Requirements for Backflow Preventer with Intermediate Atmospheric Vent

Backflow Preventers with Intermediate atmospheric Vent are installed in the plumbing to prevent backflow in potable water supply lines due to the creation of back pressure or back-siphonage in which reversal of the normal direction of flow could cause or allow pollutants to enter the potable water supply system. The devices covered by this standard are those which have functional capabilities for preventing both backsiphonage and back pressure backflow in the water supply lines, and which can operate under continuous or intermittent pressure conditions. These devices have two independently operating check valves separated by an intermediate chamber with a means for automatically venting it to the atmosphere. The check valves re force loaded to a normally closed position and the venting means is force loaded to a normally

ANSI/ASSE 1013-2005, Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers

The purpose of an RP and an RPF is to keep contaminated water from flowing back into a potable water distribution system. They consist of 2 independently-acting check valves separated by an intermediate chamber in which there is an hydraulically operated relief means for venting to atmosphere. These assemblies are designed to operate under continuous pressure conditions. This standard also applies to Manifold RPs That consist of two or more complete RPs in parallel.

ANSI/ASSE 1014-2005, Performance Requirements for Backflow Prevention Devices for Hand-Held Showers

These devices provide backflow protection against backsiphonage and backpressure in handheld showers. They are separate devices or integral with wall or deck mounted tub fillers, flexible hoses, or components that are attached to shower arms.

ANSI/ASSE 1015-2005, Performance Requirements for Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies

The purpose of a DC and a DCF is to keep contaminated water from flowing back into a potable water distribution system. They consist of 2 independently-acting check valves, 2 shut-off valves and test cocks. These assemblies are designed to operate under continuous or intermittent pressure conditions. This standard also applies to Manifold DCs That consist of two or more complete DCs in parallel.

ANSI/ASSE 1016-2005, Performance Requirements for Automatic Compensating Valves for Individual Showers and Showers in Tub/Shower Combinations

Automatic compensating valves for individual showers and tub/shower combinations are intended to control the water temperature to wall mounted shower heads either in individual shower or tub/shower combination fixtures to reduce the risk of scalding and thermal shock. They are installed at the point-of-use, where the bather has access to flow and final temperature control mechanisms, and where the water temperature cannot be adjusted downstream of the device.

ANSI/ASSE 1017-1999, Performance Requirements for Temperature Actuated Mixing Valves for Primary Domestic Use

Covers temperature actuated mixing valves for primary domestic hot water applications, used for controlling water temperatures across the normal range of domestic usage from 37.8 degree celcius (100 degree F) to 60 degree celcius (140 degree F).

ANSI/ASSE 1018-2002, Trap Seal Primer Valves - Potable Water Supplied

Devices covered by this standard are designed primarily to supply water to drain traps which have infrequent use and in which water evaporation would allow sewer gas to enter the premises. This type of device is located in the domestic water distribution system and is designed to supply potable water to a drain trap to maintain the water seal. A means for the prevention of backsiphonage shall be incorporated as part of the device.

ANSI/ASSE 1019-2004, Performance Requirements for Vacuum Breaker Wall Hydrant, Freeze Resistant Automatic Draining Type

This standard establishes design and performance requirements for water-supply system, wall hydrant devices. These devices shall supply potable water to hose connections without danger of freezing, and shall have a permanent means, including atmospheric vent(s) by to prevent backflow due to backsiphonage, backpressure, or both.

ANSI/ASSE 1020-2004, Pressure Vacuum Breakers Assembly

Pressure Vacuum Breaker Assemblies are for installation in water supply lines to prevent the entrance of non-potable material into the potable water supply by backsiphonage only. It is not for use in any system where backpressure can be applied to the device.

ANSI/ASSE 1022-2003, Performance Requirements for Backflow Preventers for Beverage Dispensing Equipment

This standard covers a backflow prevention device designed to protect the potable water supply serving beverage dispensing equipment. These devices are intended for use under continuous or intermittent pressure conditions. These devices shall consist of two independently acting check valves biased to a normally closed position. An atmospheric port shall be located between the check valves and shall be biased to a normally open position. The port shall vent liquids, gases, or both, under backflow conditions.

ANSI/ASSE 1024-2004, Dual Check Valve Type Backflow Preventers

This standard applies to devices classified as dual check backflow preventers. The purpose of this device is to keep polluted water from flowing back into the potable water system, when pressure is temporarily higher in the polluted part of the system than in the potable water piping. The devices are intended to protect the potable water supply from low hazard pollution at residential service lines and individual outlets; and are intended for cold water service under continuous or intermittent pressure conditions.

ANSI/ASSE 1035-2002, Laboratory Faucet Backflow Preventer

Laboratory Faucet Backflow Preventers are designed to protect the potable water supply from pollutants or contaminants entering the system due to back siphonage or back pressure. They are designed for installation on laboratory faucets on the discharge side of the last shutoff valve. They are not for use under constant pressure conditions. They consist of two independently acting check valves, biased to a normally closed position, and between the check valves a means for automatically venting to atmosphere, biased to normally open position.

ANSI/ASSE 1044-2002, Trap Seal Primer Devices - Drainage Types and Electronic Design Types

Devices covered by this performance standard are designed primarily to supply water to floor drain traps which have infrequent use and in which water evaporation would allow sewer gas to enter the premises. The type of device covered by this standard is designed to supply water to a drain trap to provide and maintain its water seal using a supply from a fixture drainline, ballcock, or flushometer valve tailpiece or an electronic primer device. The rate of water flow to the trap shall be permitted to be fixed or adjustable. The devices are of four (4) types: Those which are installed on waste line tail pieces from fixtures, such as lavatories, sinks and similar fixtures where grease is not normally generated; those which are used in conjunction with ballcock assemblies; those which receive flow from flushometer valves; and those electronics devices which

ANSI/ASSE 1047-2005, Reduced Pressure Detector Assembly Backflow Preventer

RPDFs keep contaminated water from fire protection systems from flowing back into a potable water distribution system when the pressure in the fire sprinkler system is higher than the pressure in the potable water system. They detect low rates of flow up to 2 GPM within the sprinkler system caused by leakage or unauthorized use. They consist of 2 check valves separated by an intermediate chamber with venting to atmosphere, and a bypass line. This standard applies to Manifold RPDFs that consist of 2 or more complete RPDFs in parallel.

ANSI/ASSE 1048-2005, Double Check Detector Assembly Backflow Preventor

DCDFs keep contaminated water from fire protection systems from flowing back into a potable water distribution system when the pressure in the fire sprinkler system is higher than the pressure in the potable water system. They detect low rates of flow up to 2 GPM within the sprinkler system caused by leakage or unauthorized use. They consist of 2 check valves, 2 shutoff valves and test cocks and a bypass line. This standard applies to Manifold DCDFs that consist of 2 or more complete DCDFs in parallel.

ANSI/ASSE 1051-1998, Air Admittance Valves for Plumbing Drainage Systems

Establishes physical requirements, basic performance requirements and test procedures for type A and type B Air Admittance Valves (AAV) used in plumbing drainage systems.

ANSI/ASSE 1052-2004, Performance Requirements for Hose Connection Backflow Preventers

This standard establishes design requirements, basic performance requirements and test procedures for hose connection backflow preventers. This device is designed to be installed on the discharge side of a hose threaded outlet on a potable water system. This two-check device protects against backflow, due to backsiphonage or low-head backpressure, and is field testable to certify protection under the high hazard conditions present at a hose threaded outlet. This device shall only be used on systems where the low-head backpressure does not exceed that generated by an elevated hose equal to or less than 10 feet (3.0 m) in height. These devices shall not be subjected to continuous water pressure.

ANSI/ASSE 1056-2002, Back Siphonage Backflow Vacuum Breakers

Spill Resistant Vacuum Breakers (herein referred to as "device") are installed in the potable water supply lines to prevent the backflow of non-potable water supply caused by back-siphonage only. They are not for use in any system where back pressure is applied to the device. When the system is pressurized the vent closes to prevent a flow through the upstream check valve, and to eliminate vent spillage. This standard applies only to those devices classified as Spill Resistant Vacuum Breakers - SVB. These devices are designed for installation in those portions of the domestic potable water systems that are normally under continuous pressure conditions. The device includes one (1) check valve force-loaded closed and an air inlet vent valve force loaded open to atmosphere, positioned downstream of the check valve, and located between and

ANSI/ASSE 1064-2002, Backflow Prevention Assembly Field Test Kits

Portable backflow prevention assembly field test kits (herein referred to as ("BFTK")) shall be used in testing the performance of backflow prevention assemblies. This standard covers the performance requirements, and accuracy of a BFTK. This standard is confined to analog dial type and digital instrumentation. Duplex gauges are not a part of this standard. BFTK's shall be of a design making them portable. They shall be designed to indicate the operation of a backflow prevention assembly to preestablished testing procedures. The backflow field test kit shall include all gauges, hoses, valves and fittings as required for testing purposes.

ANSI/ASSE 1069-2005, Performance Requirements for Automatic Temperature Control Mixing Valves

These devices control the water temperature to individual or multiple fixtures to reduce the risk of scalding and thermal shock. Shutoffs downstream of the device are permitted. They are installed where the bather does not have access to the temperature adjustment means, and where there is no further mixing of water downstream.

ANSI/ASSE 1070-2004, Water Temperature Limiting Devices

Water Temperature Limiting Devices shall control and limit the water temperature to fittings for fixtures such as sinks, lavatories or bathtubs and are intended to reduce the risk of scalding.

ANSI/ASSE 6000-2002, Professional Qualification Standard for Medical Gas Systems Installers, Inspectors and Verifiers

This standard applies to any individual who installs, inspects, verifies, or maintains medical gas and vacuum systems; or anyone who trains/ teaches installers, inspectors, verifiers or maintains medical gas and vacuum systems. Medical gas systems and equipment covered in this standard include health care facilities and laboratories within the scope of NFPA 99 Standard for Health Care Facilities or NFPA 99C Gas and Vacuum Systems. Medical gas pipeline systems include vacuum piping. Installers include anyone who works on or installs piping or components, including brazers. The purpose of this standard is to provide minimum performance criteria, identified by industry consensus, for Medical Gas System Installers, Inspectors, Verifiers, Maintenance Personnel, and Instructors to assure compliance with the standard.

ANSI/ASSE Series 5000-1998, Backflow Prevention Assemblies (14 Test Procedures)

Identifies the professional and educational/training requirements for individuals to be certified as having the knowledge and abilities to test, repair, or survey backflow prevention and cross-connection control devices installed to protect potable water supplies.

ASTM (ASTM International)

ANSI/ASTM D5802-1995 (R2001), Test Method for Sorption of Bibulous Paper Products (Sorption Rate and Capacity Using Gravimetric Principles)

ANSI/ISO 14040-1997, Environmental Management – Life Cycle Assessment – Principles and Framework

This standard specifies the general framework, principles and requirements for conducting and reporting life cycle assessment studies. This standard does not describe the life cycle assessment techniques in detail.

ANSI/ISO/IEC 17025-2005, General Requirements for the Competence of Testing and Calibration Laboratories

Specifies the general requirements for the competence of testing and calibration laboratories to carry out tests and/or calibrations, including sampling. This standard covers testing and calibration performed using standard methods, nonstandard methods, and laboratory-developed methods. This standard is being adopted jointly by ASQ, ASTM, and NCSL International.

ASTM C1025-2000 (R2005), Test Method for Modulus of Rupture in Bending of Electrode Graphite

ASTM C1039-2000 (R2005), Test Methods for Apparent Porosity, Apparent Specific Gravity, and Bulk Density of Graphite Electrodes	ASTM C781-2002, Practice for Testing Graphite and Boronated Graphite Components for High-temperature Gas-cooled Nuclear Reactors	ASTM D1093-2004, Acidity of Distillation Residues or Hydrocarbon Liquids, Method of Test for
ASTM C1179-2000 (R2005), Test Method for Oxidation Mass Loss of Manufactured Carbon and Graphite Materials in Air	ASTM C783-2000 (R2005), Practice for Core Sampling of Graphite Electrodes	ASTM D1094-2001 (R2005), Test Method for Water Reaction of Aviation Fuels
ASTM C559-2000 (R2005), Test Method for Bulk Density by Physical Measurements of Manufactured Carbon and Graphite Articles	ASTM C808-2000 (R2005), Guideline for Reporting Friction and Wear Test Results of Manufactured Carbon and Graphite Bearing and Seal Materials	ASTM D115-2002, Test method for Varnishes Used for Electrical Insulation (10.01) (no abstract provided by developer)
ASTM C560-2005, Test Methods for Chemical Analysis of Graphite	ASTM C816-2005, Test Method for Sulfur in Graphite by Combustion-iodometric Titration Method	ASTM D1157-1991 (R2004), Test Method for Total Inhibitor Content (TBC) of Light Hydrocarbons (no abstract provided by developer)
ASTM C561-2000 (R2005), Test Method for Ash in a Graphite Sample	ASTM C838-2001 (R2005), Test Method for Bulk Density of As-Manufactured Carbon and Graphite Shapes	ASTM D1159-2001, Bromine Number of Petroleum Distillates and Commercial Aliphatic Olefins by Electrometric Titration, Test Method for (05.01) (no abstract provided by developer)
ASTM C562-2000 (R2005), Test Method for Moisture in a Graphite Sample	ASTM D1000-1999, Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications	ASTM D1160-2003, Test Method for Distillation of Petroleum Products at Reduced Pressures (05.01) (no abstract provided by developer)
ASTM C581-2003, Practice for Determining Chemical Resistance of Thermosetting Resins Used in Glass-Fiber-Reinforced Structures Intended for Liquid Service	ASTM D1015-2005, Test Method for Freezing Points of High-purity Hydrocarbons (no abstract provided by developer)	ASTM D1168-1999 (R2003), Test Methods for Hydrocarbon Waxes Used for Electrical Insulating
ASTM C611-2005, Test Method for Electrical Resistivity of Manufactured Carbon and Graphite Articles at Room Temperature	ASTM D1016-2005, Test Method for Purity of Hydrocarbons from Freezing Points (no abstract provided by developer)	ASTM D1217-1993 (R2004), Test Method for Density and Relative Density (Specific Gravity) of Liquids by Bingham Pycnometer (05.01)
ASTM C625-2000 (R2005), Practice for Reporting Irradiation Results on Graphite	ASTM D1018-2000 (R2005), Test Method for Hydrogen in Petroleum Fractions (no abstract provided by developer)	D2069
ASTM C651-2000 (R2005), Test Method for Flexural Strength of Manufactured Carbon and Graphite Articles Using Four-Point Loading at Room Temperature	ASTM D1025-1991 (R2004), Test Method for Nonvolatile Residue of Polymerization Grade Butadiene (05.01) (no abstract provided by developer)	ASTM D1218-2002, Refractive Index and Refractive Dispersion of Hydrocarbon Liquids, Method of Test for (05.01, 10.03) (no abstract provided by developer)
ASTM C662-2005, Specification for Impervious Graphite Pipe and Threading	ASTM D1030-1999, Test Method for Fiber Analysis of Paper and Paperboard	ASTM D1223-1993 (R1998), Test Method for Specular Gloss of Paper and Paperboard at 75 Degrees
ASTM C695-2000 (R2005), Test Method for Compressive Strength of Carbon and Graphite	ASTM D1039-1999 (R2004), Method of Testing Glass-Bonded Mica Used as Electrical Insulation (10.01) (no abstract provided by developer)	ASTM D1224-1992 (R2001), Test Method for Zinc and Cadmium in Paper
ASTM C709-2003, Terminology Relating to Manufactured Carbon and Graphite	ASTM D1047-1995 (R2001), Specification for Poly(Vinyl Chloride) Jacket for Wire and Cable (10.01)	ASTM D1250-2003, Guide for Petroleum Measurement Tables (no abstract provided by developer)
ASTM C714-2005, Test Method for Thermal Diffusivity of Carbon and Graphite by a Thermal Pulse Method	ASTM D1082-2000 (R2005), Test Method for Dissipation Factor and Permittivity (Dielectric Constant) of Mica	ASTM D1263-1994 (R2005), Test Method for Leakage Tendencies of Automotive Wheel Bearing Greases (no abstract provided by developer)
ASTM C747-2005, Test Method for Moduli of Elasticity and Fundamental Frequencies of Carbon and Graphite Materials by Sonic Resonance	ASTM D1091-2000 (R2005), Test Methods for Phosphorus in Lubricating Oils and Additives (05.01) (no abstract provided by developer)	ASTM D1264-2003, Test Method for Determining the Water Washout Characteristics of Lubricating Greases
ASTM C748-2005, Test Method for Rockwell Hardness of Graphite Materials	ASTM D1092-2005, Test Method for Apparent Viscosity of Lubricating Greases (no abstract provided by developer)	
ASTM C749-1992 (R2002), Test Method for Tensile Stress-Strain of Carbon and Graphite		
ASTM C769-2005, Test Method for Sonic Velocity in Manufactured Carbon and Graphite Materials for Use in Obtaining an Approximate Young S Modulus		

ASTM D1265-2005, Practice for Sampling Liquefied Petroleum (LP) Gases, Manual Method (no abstract provided by developer)	ASTM D1352-2002, Specification for Ozone-Resisting Butyl Rubber Insulation for Wire and Cable	ASTM D149-1997a (R2004), Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies (10.01) (no abstract provided by developer)
ASTM D1266-1998 (R2003), Test Method for Sulfur in Petroleum Products (Lamp Method) (05.01)	ASTM D1367-1996 (R2001), Specifications for Lubricating Qualities of Graphites (05.01) (no abstract provided by developer)	ASTM D1494-2001, Test Method for Diffuse Light Transmission Factor of Reinforced Plastic Panels (08.01, 08.04) (no abstract provided by developer)
ASTM D1267-2002, Vapor Pressure of Liquefied Petroleum (LP) Gases (LP-Gas Method, Method of Test for (05.01, 05.05) (no abstract provided by developer)	ASTM D1389-1998 (R2004), Test Method for Proof-Voltage Testing of Thin Solid Electrical Insulating Materials	ASTM D150-1998 (R2004), Test Methods for AC Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulating Materials
ASTM D127-2005, Test Method for Drop Melting Point of Petroleum Wax Including Petrolatum (no abstract provided by developer)	ASTM D1394-1996, Specification for Transferring Information between Clinical Instruments and Computer Systems	ASTM D1500-2004a, Test Method for ASTM Color of Petroleum Products (05.01) (no abstract provided by developer)
ASTM D128-1998 (R2003), Analysis of Lubricating Grease, Methods of (05.01) (no abstract provided by developer)	ASTM D1401-2002, Test Method for Water Separability of Petroleum Oils and Synthetic Fluids (05.01) (no abstract provided by developer)	ASTM D1523-2000, Specification for Synthetic Rubber Insulation for Wire and Cable, 90°C Operations (10.01) (no abstract provided by developer)
ASTM D129-2000 (R2005), Test Method for Sulfur in Petroleum Products (General Bomb Method) (no abstract provided by developer)	ASTM D1403-2002, Test Method for Cone Penetration of Lubricating Grease Using One-Quarter and One-Half Scale Cone Equipment (05.01) (no abstract provided by developer)	ASTM D1527-2005, Specification for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe, Schedules 40 and 80
ASTM D1298-1999 (R2005), Test Method for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method (no abstract provided by developer)	ASTM D1404-1999 (R2004), Estimation of Deleterious Particles in Lubricating Grease, Method for (05.01) (no abstract provided by developer)	ASTM D1531-2001, Test Methods for Relative Permittivity (Dielectric Constant) and Dissipation Factor by Fluid Displacement Procedures (10.01) (no abstract provided by developer)
ASTM D130-2004, Test Method for Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test	ASTM D1405-2002, Method for Estimation of Net Heat of Combustion of Aviation Fuels (05.01) (no abstract provided by developer)	ASTM D1550-94 (R2005), Standard ASTM Butadiene Measurement Tables
ASTM D1305-1999 (R2004), Specification for Electrical Insulating Paper and Paperboard Sulfate Kraft Layer Type	ASTM D1458-2001, Test Methods for Fully Cured Silicone Rubber-Coated Glass Fabric and Tapes for Electrical Insulation	ASTM D1552-2003, Sulfur in Petroleum Products (High-Temperature Method), Method of Test for (05.01) (no abstract provided by developer)
ASTM D1318-2000 (R2005), Test Method for Sodium in Residual Fuel Oil (Flame Photometric Method)	ASTM D1459-1993 (R2003), Specification for Silicone Varnished Glass Cloth and Tape for Electrical Insulation (no abstract provided by developer)	ASTM D156-2002, Test Method for Saybolt Color of Petroleum Products (Saybolt Chromometer Method) (05.01) (no abstract provided by developer)
ASTM D1319-2003, Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption, Test Method for (05.01) (no abstract provided by developer)	ASTM D1465-2004, Test Method for Blocking and Picking Points of Petroleum Wax	ASTM D1598-1997, Test Method for Time-to-Failure of Plastic Pipe under Constant Internal Pressure
ASTM D1321-2004, Needle Penetration of Petroleum Waxes, Method of Test for (05.01, 15.09)	ASTM D1478-2002, Test Method for Low-Temperature Torque of Ball Bearing Greases (05.01) (no abstract provided by developer)	ASTM D1599-1999 (R2005), Test Method for Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing, and Fittings
ASTM D1322-1997 (R2002), Smoke Point of Aviation Turbine Fuels, Method of Test for (05.01) (no abstract provided by developer)	ASTM D1480-2002, Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Bingham Pycnometer (05.01) (no abstract provided by developer)	ASTM D1655-2004b, Specification for Aviation Turbine Fuels (no abstract provided by developer)
ASTM D1351-2002, Specification for Thermoplastic Polyethylene Insulation for Electrical Wire and Cable	ASTM D1481-2002, Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Lipkin Bicapillary Pycnometer (05.01) (no abstract provided by developer)	ASTM D1657-2002, Test Method for Density or Relative Density of Light Hydrocarbons by Pressure Thermohydrometer
		ASTM D1662-1992 (R2002), Active Sulfur in Cutting Fluids, Method of Test for (05.01) (no abstract provided by developer)

ASTM D1673-1994 (R2004), Test Methods for Relative Permittivity and Dissipation Factor of Expanded Cellular Plastics Used for Electrical Insulation (10.01) (no abstract provided by developer)	ASTM D1825-2003, Practice for Etching and Cleaning Copper-Clad Electrical Insulating Materials and Thermosetting Laminates for Electrical Testing	ASTM D1931-1999 (R2004), Specification for Fully Cured Silicone Rubber-coated Glass Fabric and Tapes for Electrical Insulation (no abstract provided by developer)
ASTM D1675-2003, Test Methods for Polytetrafluoroethylene Tubing (10.01) (no abstract provided by developer)	ASTM D1830-1999 (R2005), Test Method for Thermal Endurance of Flexible Sheet Materials Used for Electrical Insulation by the Curved Electrode Method (10.01) (no abstract provided by developer)	ASTM D1932-2004, Test Method for Thermal Endurance of Flexible Electrical Insulating Varnishes
ASTM D1676-2003, Methods of Testing Film-Insulated Magnet Wire (10.01) (no abstract provided by developer)	ASTM D1831-2001, Roll Stability of Lubricating Grease, Method of Test for (05.01) (no abstract provided by developer)	ASTM D2001-1992 (R2002), Test Method for Depentanization of Gasoline and Naphthas (05.01) (no abstract provided by developer)
ASTM D1677-2002, Methods for Sampling and Testing Untreated Mica Paper Used for Electrical Insulation	ASTM D1832-2004, Test Method for Peroxide Number of Petroleum Wax (05.01, 15.09) (no abstract provided by developer)	ASTM D2002-1993 (R1998), Test Method for Isolation of Representative Saturates Fraction from Low-Olefinic Petroleum Naphthas (05.01) (no abstract provided by developer)
ASTM D1679-2002, Specification for Synthetic Rubber Heat- and Moisture-Resisting Insulation for Wire and Cable, 75 Deg C Operation	ASTM D1833-87 (R1999), Odor of Petroleum Wax, Method of Test for (05.01, 15.09) (no abstract provided by developer)	ASTM D2003-1993 (R1998), Test Method for Isolation of Representative Saturates Fraction from High-Olefinic Petroleum Naphthas (05.01) (no abstract provided by developer)
ASTM D1711-2002, Terminology Relating to Electrical Insulation (10.01) (no abstract provided by developer)	ASTM D1835-2005, Specification for Liquefied Petroleum LP Gases (no abstract provided by developer)	ASTM D2007-2003, Test Method for Characteristic Groups in Rubber Extender and Processing Oils and other Petroleum Derived Oils by the Clay-Gel Absorption Chromatographic Method (05.01) (no abstract provided by developer)
ASTM D1740-1996, Test Method for Luminometer Numbers of Aviation Turbine Fuels (05.01) (no abstract provided by developer)	ASTM D1837-2002a, Test Method for Volatility of Liquefied Petroleum (LP) Gases (05.01) (no abstract provided by developer)	ASTM D2008-1991 (R2001), Test Method for Ultraviolet Absorbance and Absorptivity of Petroleum Products (05.01) (no abstract provided by developer)
ASTM D1742-2000, Oil Separation from Lubricating Grease during Storage, Test Method for (05.01) (no abstract provided by developer)	ASTM D1838-2005, Test Method for Copper Strip Corrosion by Liquefied Petroleum (LP) Gases (05.01, 05.05) (no abstract provided by developer)	ASTM D2019-1997 (R2002), Test Method for Dirt in Paper and Paperboard
ASTM D1743-2005, Test Method for Determining Corrosion Preventive Properties of Lubricating Greases (no abstract provided by developer)	ASTM D1839-1991 (R2005), Test Method for Amyl Nitrate in Diesel Fuels by Spectrophotometry (05.01) (no abstract provided by developer)	ASTM D202-1992 (R2002), Methods of Sampling and Testing Untreated Paper Used for Electrical Insulation (10.01) (no abstract provided by developer)
ASTM D1747-1999 (R2004), Test Method for Refractive Index of Viscous Materials (05.01) (no abstract provided by developer)	ASTM D1840-2004, Naphthalene Hydrocarbons in Aviation Turbine Fuels by Ultraviolet Spectrophotometry, Method of Test for (05.01) (no abstract provided by developer)	ASTM D2020-1999 (R2003), Test Methods for Mildew (Fungus) Resistance of Paper and Paperboard
ASTM D1748-2002, Rust Protection by Metal Preservatives in the Humidity Cabinet, Method of Test for (05.01) (no abstract provided by developer)	ASTM D1867-2001, Specification for Copper-Clad Thermosetting Laminates for Printed Wiring	ASTM D2043-1994 (R2002), Test Method for Silver Tarnishing by Paper
ASTM D1749-1993 (R2002), Practice for Interlaboratory Evaluation of Test Methods Used with Paper and Paper Products	ASTM D1868-93 (R98), Test Method for Detection and Measurement of Partial Discharge (Corona) Pulses in Evaluation of Insulation Systems	ASTM D2068-2004, Test Method for Filter Blocking Tendency of Distillate Fuel Oils (05.01) (no abstract provided by developer)
ASTM D176-2000, Test Methods for Solid Filling and Treating Compounds Used for Electrical Insulation	ASTM D187-1994 (R2004), Burning Quality of Kerosine, Method of Test for (05.01) (no abstract provided by developer)	ASTM D2070-1991 (R2001), Method for Thermal Stability of Hydraulic Oils (05.01) (no abstract provided by developer)
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ASTM D1796-2004, Test Method for Water and Sediment in Fuel Oils by the Centrifuge Method (Laboratory Procedure) (no abstract provided by developer)		

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ASTM D2122-1996 (R2004), Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings	ASTM D2175-1997 (R2002), Test Method for Book Bulk and Book Bulking Number of Paper	ASTM D2273-2005, Test Method for Trace Sediment in Lubricating Oils (no abstract provided by developer)
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ASTM D2132-2003, Test Method for Dust-and-Fog Tracking and Erosion Resistance of Electrical Insulating Materials	ASTM D2176-1997 (R2002), Test Method for Folding Endurance of Paper by the M.I.T. Tester	ASTM D2275-2001, Test Method for Voltage Endurance of Solid Electrical Insulating Materials Subjected to Partial Discharges (Corona) on the Surface (10.01) (no abstract provided by developer)
ASTM D2143-2000, Test Method for Cyclic Pressure Strength of Reinforced, Thermosetting Plastic Pipe	ASTM D2177-1999 (R2003), Test Method for Ink Absorption of Blotting Paper	ASTM D2276-2005, Test Method for Particulate Contaminant in Aviation Fuel by Line Sampling (05.01) (no abstract provided by developer)
ASTM D2148-2002, Test Methods for Bondable Silicone Rubber Tapes Used for Electrical Insulation (10.01) (no abstract provided by developer)	ASTM D2219-2002, Poly(Vinyl Chloride) Insulation for Wire and Cable, 60°C Operation, Specification for (10.01) (no abstract provided by developer)	ASTM D2282-1999 (R2005), Specification for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe (SDR-PR)
ASTM D2149-1997 (R2004), Test Method for Permittivity (Dielectric Constant) and Dissipation Factor of Solid Ceramic Dielectrics at Frequencies to 10 MHz and Temperature to 500 Deg C	ASTM D2220-2002, Poly(Vinyl Chloride) Insulation for Wire and Cable, 75°C Operation, Specification for (10.01) (no abstract provided by developer)	ASTM D229-2001, Test Methods for Rigid Sheet and Plate Materials Used for Electrical Insulation
ASTM D2152-1995, Test Method for Adequacy of Fusion of Extruded Poly (Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion	ASTM D2235-2004, Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings	ASTM D2290-2004, Test Method for Apparent Tensile Strength of Ring or Tubular Plastics and Reinforced Plastics by Split Disk Method
ASTM D2156-1994 (R2004), Test Method for Smoke Density in Flue Gases from Burning Distillate Fuels (no abstract provided by developer)	ASTM D2239-2003, Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter	ASTM D2301-1999 (R2004), Specification for Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape
ASTM D2157-1994 (R2004), Test Method for Effect of Air Supply on Smoke Density in Flue Gases from Burning Distillate Fuels (no abstract provided by developer)	ASTM D2241-2005, Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)	ASTM D2303-1997 (R2004), Test Methods for Liquid-Contaminant, Inclined-Plane Tracking and Erosion of Insulating Materials
ASTM D2158-2005, Test Method for Residues in Liquefied Petroleum (LP) Gases (no abstract provided by developer)	ASTM D2265-2001, Dropping Point of Lubricating Grease of Wide Temperature Range, Method of Test for (05.01) (no abstract provided by developer)	ASTM D2304-1997 (R2002), Test Method for Thermal Endurance of Rigid Electrical Insulating Materials
ASTM D2159-1993 (R1998), Naphthenes in Saturates Fractions by Refractivity Intercept, Method of Test for (05.01) (no abstract provided by developer)	ASTM D2266-2001, Test Method for Wear Preventive Characteristics of Lubricating Grease (Four-Ball Method) (05.01)	ASTM D2305-2002, Test Methods for Polymeric Films Used for Electrical Insulation (94-4, Item 2) (10.01) (no abstract provided by developer)
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ASTM D2162-1991 (R2004), Method for Basic Calibration of Master Viscometer and Viscosity Oil Standards (05.01) (no abstract provided by developer)	ASTM D2269-1999 (R2005), Test Method for Evaluation of White Mineral Oils by Ultraviolet Absorption (no abstract provided by developer)	ASTM D2308-2002, Specification for Thermoplastic Polyethylene Jacket for Electrical Wire and Cable
	ASTM D2270-2004, Method for Calculating Viscosity Index from Kinematic Viscosity at 40° and 100°C (05.01) (no abstract provided by developer)	

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ASTM D2318-1998 (R2004), Test Method for Quinoline-Insoluble (QI) Content of Tar and Pitch	ASTM D2423-1985 (R2002), Test Method for Surface Wax on Waxed Paper or Paperboard (05.01, 15.09) (no abstract provided by developer)	ASTM D2503-1992 (R2002), Molecular Weight of Hydrocarbons by Thermoelectric Measurement of Vapor Pressure, Method of Test for (05.01) (no abstract provided by developer)
ASTM D2319-1998 (R2004), Test Method for Softening Point of Pitch (Cube-In-Air Method)	ASTM D2425-2004, Chemical Composition of Gases by Mass Spectrometry, Test Method for (05.01) (no abstract provided by developer)	ASTM D2504-1988 (R2004), Test Method for Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography (no abstract provided by developer)
ASTM D2320-1998 (R2004), Test Method for Density (relative Density) of Solid Pitch	ASTM D2426-93 (R2004), Test Method for Butadiene Dimer and Styrene in Butadiene Concentrates by Gas Chromatography (no abstract provided by developer)	ASTM D2505-1988 (R2004), Test Method for Ethylene, Other Hydrocarbons, and Carbon Dioxide in High-Purity Ethylene by Gas Chromatography (no abstract provided by developer)
ASTM D2321-2005, Practice for Underground Installation of Thermoplastic Pipe for Sewers and other Gravity-Flow Applications	ASTM D2427-1992 (R2001), Method for Determination of C2 Through C5 Hydrocarbons in Gasoline by Gas Chromatography (05.01) (no abstract provided by developer)	ASTM D2509-2003, Test Method for Measurement of Load-Carrying Capacity of Lubricating Grease (Timken Method) (05.01) (no abstract provided by developer)
ASTM D2384-2001 (R2004), Test Methods for Traces of Volatile Chlorides in Butane-Butene Mixtures	ASTM D2443-1996, Methods of Testing Lacing Twines and Tapes Used as Harnesses in Electrical Equipment	ASTM D2510-2004, Test Method for Adhesion of Solid Film Lubricants (no abstract provided by developer)
ASTM D2386-2005, Test Method for Freezing Point of Aviation Fuels (no abstract provided by developer)	ASTM D2444-1999 (R2005), Test Method for Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)	ASTM D2511-83 (R2004), Test Method for Thermal Shock Sensitivity of Solid Film Lubricants (no abstract provided by developer)
ASTM D2392-1996 (R2001), Test Method for Color of Dyed Aviation Gasolines	ASTM D2447-2003, Specification for Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter	ASTM D2513-2003a, Specification for Thermoplastic Gas Pressure Pipe Tubing and Fittings
ASTM D240-2002, Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, Method of Test for (05.01) (no abstract provided by developer)	ASTM D2464-1999, Specification for Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	ASTM D2517-2000, Specification for Reinforced Epoxy Resin Gas Pressure Pipe and Fittings (08.04) (no abstract provided by developer)
ASTM D2400-1999 (R2004), Specification for Varnished Glass-Polyester Cloth Used for Electrical Insulation (10.01) (no abstract provided by developer)	ASTM D2466-2005, Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	ASTM D2518-1999 (R2004), Specification for Woven Glass Fabrics for Electrical Insulation (10.02) (no abstract provided by developer)
ASTM D2412-2002, Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading	ASTM D2467-2005, Specification for Socket-Type Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	ASTM D2519-2002, Test Method for Bond Strength of Electrical Insulating Varnishes by the Helical Coil Test
ASTM D2413-2000 (R2005), Test Methods for Preparation and Electrical Testing of Insulating Paper and Board Impregnated with a Liquid Dielectric	ASTM D2482-1998 (R2002), Test Method for Surface Strength of Paper (Wax Pick Method)	ASTM D2520-2001, Test Methods for Complex Permittivity (Dielectric Constant) of Solid Electrical Insulating Materials at Microwave Frequencies and Temperature to 1, 650°C (10.02) (no abstract provided by developer)
ASTM D2415-1998 (R2004), Test Method for Ash in Coal Tars and Pitches	ASTM D2484-2000, Specification for Polyester Film Pressure – Sensitive Electrical Insulating (10.01) (no abstract provided by developer)	ASTM D2526-2002, Specification for Ozone-Resisting Silicone Rubber Insulation for Wire and Cable
ASTM D2416-84 (R2004), Test Method for Coking Value of Tar and Pitch (Modified Conradson)	ASTM D2500-2005, Test Method for Cloud Point of Petroleum Products (no abstract provided by developer)	
ASTM D2420-96 (R2001), Test Method for Hydrogen Sulfide in Liquefied Petroleum (LP) Gases (Lead Acetate Method) (05.01) (no abstract provided by developer)	ASTM D2501-1991 (R2005), Test Method for Calculation of Viscosity-Gravity Constant (VGC) of Petroleum Oils (no abstract provided by developer)	
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ASTM D2532-2004, Viscosity and Viscosity Change after Standing at Low Temperature of Aircraft Turbine Lubricants, Method of Test for (05.01) (no abstract provided by developer)	ASTM D2609-1996a, Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe	ASTM D2662-1996, Specification for Polybutylene (PB) Plastic Pipe (SDR-PR) Based on Controlled Inside Diameter
ASTM D2533-1997, Vapor-Liquid Ratio of Gasoline, Method of Test for (05.01)	ASTM D2609-2002, Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe	ASTM D2665-2002, Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D2534-88 (R2004), Coefficient of Kinetic Friction for Wax Coatings, Method of Test for (05.01) (no abstract provided by developer)	ASTM D2619-1995 (R2002), Hydrolytic Stability of Hydraulic Fluids (Beverage Bottle Test Method), Test Method for (05.02) (no abstract provided by developer)	ASTM D2666-1996, Specification for Polybutylene (PB) Plastic Tubing
ASTM D2549-2002, Method for Separation of Representative Aromatics and Nonaromatics Fractions of High-Boiling Oils by Elution Chromatography (05.01) (no abstract provided by developer)	ASTM D2622-2005, Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry (no abstract provided by developer)	ASTM D2670-1994 (R2004), Measuring Wear Properties of Fluid Lubricants (Falex Method), Method for (05.02) (no abstract provided by developer)
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ASTM D2569-1997 (R2002), Test Method for Distillation of Pitch Check previous designation	ASTM D2625-1994 (R2004), Test Method for Endurance (Wear) Life and Load-Carrying Capacity of Solid Film Lubricants (Falex Pin and Vee Method) (no abstract provided by developer)	ASTM D2672-1996a (R2003), Specification for Joints for IPS PVC Pipe Using Solvent Cement
ASTM D257-1999 (R2005), Test Methods for DC Resistance or Conductance of Insulating Materials	ASTM D2633-2002, Methods of Testing Thermoplastic Insulations and Jackets for Wire and Cable	ASTM D2680-2001, Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping
ASTM D2593-1993 (R2004), Test Method for Butadiene Purity and Hydrocarbon Impurities by Gas Chromatography (no abstract provided by developer)	ASTM D2638-1991 (R2002), Test Method for Real Density of Calcined Petroleum Coke by Helium Pycnometer	ASTM D2683-2004, Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing
ASTM D2595-1997 (R2002), Evaporation Loss of Lubricating Greases over Wide-Temperature Range, Method of Test for (05.01)	ASTM D2649-2004, Corrosion Characteristics of Dry Soid Film Lubricants, Method for Determining (05.02) (no abstract provided by developer)	ASTM D2686-2000, Specification for Tetrafluoroethylene-Backed Pressure-Sensitive Electrical Insulating Tape (10.02) (no abstract provided by developer)
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ASTM D2597-1994 (R2004), Analysis of Natural Gas-Liquid Mixtures by Gas Chromatography, Method for (05.02) (no abstract provided by developer)	ASTM D2655-2000, Specification for Crosslinked Polyethylene Insulation for Wire and Cable Rated to 2000 (10.02) (no abstract provided by developer)	ASTM D2700-1996, Test Method for Knock Characteristics of Motor and Aviation Fuels by the Motor Method
ASTM D2598-2002, Practice for Calculation of Certain Physical Properties of Liquefied Petroleum (LP) Gases from Compositional Analysis (05.02) (no abstract provided by developer)	ASTM D2656-2000, Specification for Crosslinked Polyethylene Insulation for Wire and Cable Rated 2001 to 35V (10.02) (no abstract provided by developer)	ASTM D2700-2005, Test Method for Motor Octane Number of Spark-Ignition Engine Fuel (no abstract provided by developer)
ASTM D2603-2001, Test Method for Sonic Shear Stability of Polymer-Containing Oils (05.02) (no abstract provided by developer)	ASTM D2657-2003, Practice for Heat Joining of Polyolefin Pipe and Fittings	ASTM D2710-1999 (R2004), Bromine Index of Petroleum Hydrocarbons by Electrometric Titration, Test Method for (05.02) (no abstract provided by developer)
	ASTM D2661-2002, Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings	ASTM D2711-2001a, Demulsibility Characteristics of Lubricating Oils, Method of Test for (05.02) (no abstract provided by developer)

ASTM D2712-1991 (R2004), Test Method for Hydrocarbon Traces in Propylene Concentrates by Gas Chromatography (05.02) (no abstract provided by developer)	ASTM D2774-2001, Practice for Underground Installation of Thermoplastic Pressure Piping	ASTM D2865-2001, Practice for Calibration of Standards and Equipment for Electrical Insulating Materials Testing (10.02) (no abstract provided by developer)
ASTM D2713-2001, Test Method for Dryness of Propane (Valve Freeze Method)	ASTM D2779-1992 (R2002), Estimation of Solubility of Gases in Petroleum Liquids, Method for (05.02) (no abstract provided by developer)	ASTM D287-1992, API Gravity of Crude Petroleum Products (Hydrometer Method), Method of Test for (05.01, 10.03) (no abstract provided by developer)
ASTM D2714-1994 (R2004), Calibration and Operation of the Alpha Model LFW-1 Friction and Wear Testing Machine, Method for (05.02) (no abstract provided by developer)	ASTM D2780-1992 (R1997), Test Method for Solubility of Fixed Gases in Liquids	ASTM D287-1994 (R2000), Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test, Method for (05.01, 06.04) (no abstract provided by developer)
ASTM D2715-1992 (R2002), Measurement of Volatilization Rates of Lubricants in Vacuum, Method for (05.02) (no abstract provided by developer)	ASTM D2782-2002, Measurement of Extreme-Pressure Properties of Lubricating Fluids (Timken Method), Method for (05.02) (no abstract provided by developer)	ASTM D2878-1995 (R2005), Test Method for Estimating Apparent Vapor Pressures and Molecular Weights of Lubricating Oils (no abstract provided by developer)
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ASTM D2729-2003, Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings	ASTM D2784-1998 (R2003), Test Method for Sulfur in Liquefied Petroleum Gases (Oxy-Hydrogen Burner or Lamp) (05.02) (no abstract provided by developer)	ASTM D2880-2003, Gas Turbine Fuel Oils, Specification for (05.02) (no abstract provided by developer)
ASTM D2737-2003, Specification for Polyethylene (PE) Plastic Tubing	ASTM D2786-1996 (R2001), Test Method for Hydrocarbon Types Analysis of Gas-Oil Saturate Fractions by High Ionizing Voltage Mass Spectrometry (05.02) (no abstract provided by developer)	ASTM D2881-2003, Classification of Metal Working Fluids and Related Materials
ASTM D2749-2002, Symbols for Dimensions of Plastic Pipe Fittings	ASTM D2789-1996 (R2005), Test Method for Hydrocarbon Types in Low Olefinic Gasoline by Mass Spectrometry (no abstract provided by developer)	ASTM D2883-1995 (R2005), Test Method for Reaction Threshold Temperature of Liquid and Solid Materials (no abstract provided by developer)
ASTM D2751-2005, Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings	ASTM D2802-2003, Specification for Ozone-Resistant Ethylene-Propylene Rubber Insulation for Wire and Cable	ASTM D2884-1987 (R2002), Test Method for Yield Stress of Heterogeneous Propellants by the Cone Penetration Method (05.02) (no abstract provided by developer)
ASTM D2754-1999 (R2004), Specification for High-Temperature Glass Cloth Pressure-Sensitive Electrical Tape	ASTM D2837-2004, Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials	ASTM D2885-2003, Research and Motor Method Octane Ratings Using On-Line Analyzers, Test Method for (05.04) (no abstract provided by developer)
ASTM D2756-2002, Test Method for Weight Loss of Electrical Insulating Varnishes	ASTM D2846-1999, Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems	ASTM D2887-2004b, Test Method for Boiling Range Distribution of Petroleum Fractions by Gas Chromatography 5421
ASTM D2764-1997 (R2004), Test Method for Dimethylformamide-Insoluble(Dmf-I) Content of Tar and Pitch Check previous designation	ASTM D2852-1995 (R2002) , Specification for Styrene-Rubber (SR) Plastic Drain Pipe and Fittings	ASTM D2889-1995 (R2005), Test Method for Calculation of True Vapor Pressures of Petroleum Distillate Fuels (no abstract provided by developer)
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ASTM D2766-1995 (R2005), Test Method for Specific Heat of Liquids and Solids (no abstract provided by developer)	ASTM D2859-2004, Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials	
ASTM D2768-1995 (R2001), Specification for General-Purpose Ethylene-Propylene Rubber Jacket for Wire and Cable (10.02)	ASTM D2861-1998 (R2004), Test Methods for Flexible Composites of Copper Foil with Dielectric Film or Treated Fabrics	
ASTM D2770-2001, Specification for Ozone-Resisting Ethylene-Propylene Rubber Integral Insulation and Jacket for Wire and Cable		

ASTM D2892-2005, Test Method for Distillation of Crude Petroleum (15-theoretical Plate Column)	ASTM D2992-2001, Practice for Obtaining Hydrostatic or Pressure Design Basis for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings (08.04) (no abstract provided by developer)	ASTM D3120-2003a, Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry, Method of Test for (05.02) (no abstract provided by developer)
ASTM D2893-2004, Test Method for Oxidation Characteristics of Extreme Pressure Lubricating Oils	ASTM D2996-2001, Specification for Filament-Wound "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe (08.04) (no abstract provided by developer)	ASTM D3122-1995 (R2002), Specification for Solvent Cements for Styrene-Rubber Plastic Pipe and Fittings
ASTM D2896-2004, Total Base Number of Petroleum Products by Potentiometric Perchloric Acid Titration, Test Method for (05.02) (no abstract provided by developer)	ASTM D2997-2001, Specification for Centrifugally Cast "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe	ASTM D3138-2004, Specification for Solvent Cements for Transition Joints between Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Non-Pressure Piping Components
ASTM D2902-2000, Specification for Fluoropolymer Resin Heat-Shrinkable Tubing (10.02) (no abstract provided by developer)	ASTM D3000-1996, Specification for Polybutylene (PB) Plastic Pipe (SDR-PR) Based on Outside Diameter	ASTM D3139-1996A, Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
ASTM D2903-2003, Specification for Crosslinked Chlorinated Polyolefin Heat-Shrinkable Tubing for Electrical Insulation	ASTM D3004-2002, Specification for Extruded Thermosetting and Thermoplastic Semi-Conducting Conductor and Insulation Shields (10.02) (no abstract provided by developer)	ASTM D3140-1996, Practice for Flaring Polyolefin Pipe and Tubing
ASTM D2924-2001, Reinforced Thermosetting-Resin Pipe, Test Method for External Pressure Resistance of (08.04) (no abstract provided by developer)	ASTM D3005-1999 (R2004), Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape	ASTM D3144-2000, Specification for Poly (Vinylidene Fluoride) Heat-Shrinkable Tubing for Electrical Insulation (10.02) (no abstract provided by developer)
ASTM D2925-2001, Test Method for Beam Deflection of "fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe Under Full Bore Flow	ASTM D3006-1999 (R2004), Specification for Polyethylene Plastic Pressure-Sensitive Electrical Insulating Tape	ASTM D3145-2003, Test Method for Thermal Endurance of Electrical Insulating Varnishes by the Helical Coil Method
ASTM D2949-2000, Specification for 3.25-in. Outside Diameter Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	ASTM D3032-2004, Hookup Wire Insulation, Test Method for (10.02) (no abstract provided by developer)	ASTM D3149-2000, Specification for Crosslinked Polyolefin Heat-Shrinkable Tubing for Electrical Insulation
ASTM D295-1999 (R2004), Method of Testing Varnish Cotton Fabrics Used for Electrical Insulation (no abstract provided by developer)	ASTM D3034-2004, Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings	ASTM D3150-2000, Specification for Crosslinked and Noncrosslinked Poly (Vinyl Chloride) Heat-Shrinkable Tubing for Electrical Insulation (10.02) (no abstract provided by developer)
ASTM D2962-1997 (R2002), Method for Calculating Volume-Temperature Correction for Coal-Tar Pitches Check previous designation	ASTM D3035-2003, Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter	ASTM D3151-88 (R98), Test Method for Thermal Failure of Solid Electrical Insulating Materials Under Electric Stress
ASTM D2981-1994 (R2004), Measuring the Wear Life of Bonded Solid Film Lubricants in Oscillating Motion, Test Method for (05.02) (no abstract provided by developer)	ASTM D3056-2005, Test Method for Gel Time of Solventless Varnishes	ASTM D3212-1996 (R2003), Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
ASTM D2982-1998 (R2004), Detecting Glycol-Base Antifreeze in Used Lubricating Oils, Method of Test for	ASTM D3104-1997, Test Method for Softening Point of Pitches (Mettler Softening Point Method) Check previous designation	ASTM D3214-1997, Test Methods for Coating Powders and Their Coatings Used for Electrical Insulation
ASTM D2983-2004, Low-Temperature Viscosity of Automotive Test Fluid Lubricants Measured by Brookfield Viscometer, Method of Test for (05.02) (no abstract provided by developer)	ASTM D3104-1999, Test Method for Softening Point of Pitches (Mettler Softening Point Method)	ASTM D322-1997 (R2002), Test Method for Gasoline Diluent in Used Gasoline Engine Oils by Distillation
	ASTM D3115-1995 (R2005), Test Method for Explosive Reactivity of Lubricants with Aerospace Alloys Under High Shear (no abstract provided by developer)	ASTM D3227-2004, Mercaptan Sulfur in Gasoline, Kerosine, Aviation Turbine, and Distillate Fuels (Potentiometric Method), Method of Test for (05.02) (no abstract provided by developer)
	ASTM D3117-2002, Test Method for Wax Appearance Point of Distillate Fuels (05.02) (no abstract provided by developer)	ASTM D3228-2005, Test Method for Total Nitrogen in Lubricating Oils and Fuel Oils by Modified Kjeldahl Method (no abstract provided by developer)

ASTM D323-1999, Vapor Pressure of Petroleum Products (Reid Method), Test Method for (05.01) (no abstract provided by developer)	ASTM D3246-2005, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry (no abstract provided by developer)	ASTM D3342-1990 (R2000), Measuring the Emulsion Stability of New (Unused) Rolling Oil Dispersions in Water, Method of (05.02) (no abstract provided by developer)
ASTM D3230-2005, Test Method for Salts in Crude Oil Electrometric Method (no abstract provided by developer)	ASTM D3251-2004, Test Method for Thermal-Aging Characteristics of Electrical Insulating Varnishes Applied Over Film-Insulated Magnet Wire (10.02) (no abstract provided by developer)	ASTM D3343-2005, Test Method for Estimation of Hydrogen Content of Aviation Fuels (no abstract provided by developer)
ASTM D3231-2002, Phosphorus in Gasoline, Method of Test for (05.02) (no abstract provided by developer)	ASTM D3261-1997, Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing	ASTM D3344-1990 (R2005), Test Method for Total Wax Content of Corrugated Paperboard
ASTM D3233-1993 (R2003), Measurement of Extreme Pressure Properties of Fluid Lubricants (Falex Methods), Methods for (05.02) (no abstract provided by developer)	ASTM D3262-2004, Specification for Reinforced Plastic Mortar Sewer Pipe (08.04) (no abstract provided by developer)	ASTM D3348-1998 (R2003), Specification for Rapid Field Test for Trace Lead in Unleaded Gasoline (Colorimetric Method) (05.02) (no abstract provided by developer)
ASTM D3235-2005, Test Method for Solvent Extractables in Petroleum Waxes (no abstract provided by developer)	ASTM D3285-1993 (R2005), Test Method for Water Absorptiveness of Nonbibulous Paper and Paperboard (COBB TEST)	ASTM D3349-1999, Carbon Black Pigmented Ethylene Plastic Film, Test Method for Absorption Coefficient of (08.03) (no abstract provided by developer)
ASTM D3236-88 (R2004), Apparent Viscosity of Hot Melt Adhesives and Coating Materials, Method of Test for (05.02) (no abstract provided by developer)	ASTM D3288-2003, Test Methods for Magnet-Wire Enamels (10.02) (no abstract provided by developer)	ASTM D3353-200x, Test Methods for Fibrous-Insulated Magnet Wire
ASTM D3237-2002, Lead in Gasoline by Atomic Absorption Spectrometry, Method of Test for (05.02)	ASTM D3299-2000, Specification for Filament-Wound Glass Fiber Reinforced Thermoset Resin Chemical-Resistant Tanks (08.04) (no abstract provided by developer)	ASTM D3376-2000 (R2005), Test Methods of Sampling and Testing Pulp to be Used in the Manufacture of Electrical Insulation This standard was listed for public review in the 8/11/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.
ASTM D3238-1995 (R2005), Carbon Distribution and Structural Group Analysis of Petroleum Oils by the n-d-M Method, Method of Test for (05.02) (no abstract provided by developer)	ASTM D3309-1996 (R2002), Specification for Polybutylene (PB) Plastic Hot-Water Distribution Systems	ASTM D3377-2000, Test Method for Weight Loss of Solventless Varnishes
ASTM D3239-1996 (R2001), Test Method for Aromatic Types Analysis of Gas-Oil Aromatic Fractions by High Ionizing Voltage Mass Spectrometry (05.02) (no abstract provided by developer)	ASTM D3311-1996, Specification for Drain, Waste, and Vent (DWV) Plastic Fittings Patterns	ASTM D3380-2003, Test Method for Relative Permittivity (dielectric Constant) and Dissipation Factor of Plastic-based Microwave Circuit Substrates
ASTM D3240-2005, Test Method for Undissolved Water in Aviation Turbine Fuels (no abstract provided by developer)	ASTM D3312-2000, Test Method for Percent Reactive Monomer in Solventless Varnishes	ASTM D3382-1995 (R2001), Test Methods for Measurement of Energy and Integrated Charge Transfer Due to Partial Discharges (Corona) Using Bridge Techniques (10.02) (no abstract provided by developer)
ASTM D3241-2005a, Test Method for Thermal Oxidation Stability of Aviation Turbine Fuels (JFTOT Procedure) (no abstract provided by developer)	ASTM D3336-2005, Test Method for Life of Lubricating Greases in Ball Bearings at Elevated Temperatures (no abstract provided by developer)	ASTM D3386-2005, Test Method for Coefficient of Linear Thermal Expansion of Electrical Insulating Materials research
ASTM D3242-2005, Test Method for Acidity in Aviation Turbine Fuel (no abstract provided by developer)	ASTM D3338-2005, Test Method for Estimation of Net Heat of Combustion of Aviation Fuels (no abstract provided by developer)	ASTM D3394-1994 (R2005), Methods of Sampling and Electrical Insulating Board (10.02) (no abstract provided by developer)
ASTM D3244-1997 (R2002), Practice for Utilization of Test Data to Determine Conformance with Specifications	ASTM D3339-2004, Total Acid Number by Semi-Micro Color Indicator Titration, Method of Test for (05.02) (no abstract provided by developer)	ASTM D341-2004, Viscosity – Temperature Charts for Liquid Petroleum Products (05.01) (no abstract provided by developer)
ASTM D3245-2003, Test Method for Pumpability of Industrial Fuel Oils (05.02) (no abstract provided by developer)	ASTM D3340-1998 (R2003), Test Method for Lithium and Sodium in Lubricating Greases by Flame Photometer (05.02) (no abstract provided by developer)	
	ASTM D3341-2005, Test Method for Lead in Gasoline --iodine Monochloride Method	

ASTM D3426-1995 (R2004), Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials Using Impulse Waves (10.02) (no abstract provided by developer)	ASTM D3522-1986 (R2002), Corrugated Board Facing, Test for Applied Coating Wax and Impregnating Wax in (05.02) (no abstract provided by developer)	ASTM D3636-2000, Sampling and Judging Quality of Solid Electrical Insulating Materials (10.02) (no abstract provided by developer)
ASTM D3427-2004, Gas Bubble Separation Time of Petroleum Oils, Test Method for (05.02) (no abstract provided by developer)	ASTM D3523-1992 (R2002), Liquids and Solids (Differential Mackey Test), Test for Spontaneous Heating Values of (05.02) (no abstract provided by developer)	ASTM D3638-93 (R1998), Test Method for Comparative Tracking Index of Electrical Insulating Materials
ASTM D3429-1987 (R2002), Solubility of Fixed Gases in Low-Boiling Liquids, Method of Test for (05.02) (no abstract provided by developer)	ASTM D3524-2004, Test Method for Diesel Fuel Diluent in Used Diesel Engine Oils by Gas Chromatography (no abstract provided by developer)	ASTM D3664-2004, Specification for Biaxially Oriented Polyethylene Terephthalate Film for Capacitors in Electrical Equipment
ASTM D3461-1997 (R2002), Test Method for Softening Point of Asphalt and Pitch (Mettler Cup-And-Ball Method) Check previous designation	ASTM D3525-2004, Gasoline Diluent in Used Gasoline Engine Oils by Gas Chromatography, Test for (05.02) (no abstract provided by developer)	ASTM D3678-2001, Specification for Rigid Poly(Vinyl Chloride) (PVC) Interior Profile Extrusions (08.04) (no abstract provided by developer)
ASTM D348-1995, Test Method for Rigid Tubes Used for Electrical Insulation (10.01) (no abstract provided by developer)	ASTM D3527-2002, Test Method for Life Performance of Automotive Wheel Bearing Greases	ASTM D3679-2004, Specification for Rigid Poly(Vinyl Chloride) (PVC) Siding (08.04) This specification establishes requirements and test methods for the materials, dimensions, warp, shrinkage, impact strength, expansion, appearance, and windload resistance of extruded single-wall siding manufactured from rigid (unplasticized) PVC compound. Methods of indicating compliance with this specification are also provided
ASTM D348-2000, Test Methods for Rigid Tubes Used for Electrical Insulation	ASTM D3554-2001, Specification for Track-Resistant Black Thermoplastic High-Density Polyethylene Insulation for Wire and Cable	ASTM D3681-2001, Test Method for Chemical Resistance of Fiberglass (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe in a Deflected Condition (08.04) (no abstract provided by developer)
ASTM D3485-2002, Specification for Smooth-Wall Coilable Polyethylene (PE) Conduit (Duct) for Preassembled Wire and Cable	ASTM D3555-2001, Specification for Track-Resistant Black Crosslinked Thermosetting Polyethylene Insulation for Wire and Cable	ASTM D3699-2005, Specification for Kerosine
ASTM D349-1999 (R2004), Test Methods for Laminated Round Rods Used for Electrical Insulation	ASTM D3567-1997, Practice for Determining Dimensions of Reinforced Thermosetting Resin Pipe (RTRP) and Fittings (08.04) (no abstract provided by developer)	ASTM D3700-2001, Hydrocarbon Fluid Samples Using a Floating Piston Cylinder, Test for Obtaining (05.02) (no abstract provided by developer)
ASTM D350-2001, Test Methods for Flexible Treated Sleeving Used for Electrical Insulation	ASTM D3601-1988 (R2002), Foam in Aqueous Media (Bottle Test), Test Method for (05.02) (no abstract provided by developer)	ASTM D3701-2001, Test Method for Hydrogen Content of Aviation Turbine Fuels by Low Resolution Nuclear Magnetic Resonance Spectrometry (05.02) (no abstract provided by developer)
ASTM D351-1997 (R2003), Classification for Natural Muscovite Block Mica and Thins Based on Visual Quality	ASTM D3603-1993 (R2002), Test Method for Rust-Preventing Characteristics of Steam Turbine Oil in the Presence of Water (Horizontal Disk Method)	ASTM D3702-1994 (R2004), Wear Rate of Materials in Unlubricated Rubbing Contact Using a Thrust Washer Testing Machine, Test for (05.02) (no abstract provided by developer)
ASTM D3517-2004, Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin)(08.04) (no abstract provided by developer)	ASTM D3605-2005, Test Method for Trace Metals in Gas Turbine Fuels by Atomic ABSorption and Flame Emission Spectroscopy	ASTM D3703-1999 (R2004), Peroxide Number of Aviation Turbine Fuels, Test for (05.02) (no abstract provided by developer)
ASTM D3519-1988 (R2002), Foam in Aqueous Media (Blender Test), Test Method for (05.02) (no abstract provided by developer)	ASTM D3606-2004a, Test Method for Benzene and Toluene in Finished Motor and Aviation Gasoline by Gas Chromatography (05.02) (no abstract provided by developer)	ASTM D3704-1996 (R2001), Wear Preventive Properties of Lubrication Greases Using the (Falex) Ring and Block Test Machine in Oscillating Motion, Test for (05.02) (no abstract provided by developer)
ASTM D352-1997 (R2003), Test Methods for Pasted Mica Used in Electrical Insulation	ASTM D3607-1997 (R2002), Removing Volatile Contaminants from Used Engine Oils by Stripping (05.02)	
ASTM D3520-2004, Test Method for Quenching Time of Heat-treating Fluids - Magnetic Quenchometer Method (no abstract provided by developer)		
ASTM D3521-1986 (R2002), Corrugated Board, Test for Surface Wax Coating on (05.02) (no abstract provided by developer)		

ASTM D3705-1998 (R2003), Standard Test Method for Misting Properties of Lubricating Fluids	ASTM D3755-1997 (R2004), Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Electrical Insulating Materials Under Direct-voltage Stress	ASTM D3944-1988 (R2005), Test Method for Solidification Point of Petroleum Wax (no abstract provided by developer)
ASTM D3707-1989 (R2005), Test Method for Storage Stability of Water-in-Oil Emulsions by the Oven Test Method (no abstract provided by developer)	ASTM D3756-1997 (R2004), Test Method for Evaluation of Resistance to Electrical Breakdown by Treeing in Solid Dielectric Materials Using Diverging Fields	ASTM D3946-1992 (R97), Bioresistance of Water-Soluble Metal-Working Fluids (05.02) (no abstract provided by developer)
ASTM D3708-1988 (R2005), Test Method for Weight of Wax Applied During Curtain Coating Operation (no abstract provided by developer)	ASTM D3764-2001, Validation of Process Stream Analyzers, Practice for (05.02) (no abstract provided by developer)	ASTM D3948-2005, Test Method for Determining Water Separation Characteristics of Aviation Turbine Fuels by Portable Separometer (no abstract provided by developer)
ASTM D3709-1989 (R2005), Test Method for Stability of Water-in-Oil Emulsions Under Low to Ambient Temperature Cycling Conditions (no abstract provided by developer)	ASTM D381-2004, Existent Gum in Fuels by Jet Evaporation, Method of Test for (05.01) (no abstract provided by developer)	ASTM D3949-1999 (R2004), Specification for Coated Glass Fabrics Used for Electrical Insulation (10.02) (no abstract provided by developer)
ASTM D3710-1995 (R2004), Test Method for Boiling Range Distribution of Gasoline and Gasoline Fractions by Gas Chromatography (no abstract provided by developer)	ASTM D3825-1990 (R2005), Test Method for Dynamic Surface Tension by the Fast-Bubble Technique (no abstract provided by developer)	ASTM D3955-2004, Specification for Electrical Insulating Varnishes (10.02) (no abstract provided by developer)
ASTM D3711-1995 (R2005), Test Method for Deposition Tendencies of Liquids in Thin Films and Vapors (no abstract provided by developer)	ASTM D3827-1997 (R2002), Solubility of Gases in Petroleum and Other Organic Liquids, Method for Estimation of (05.02) (no abstract provided by developer)	ASTM D396-2005, Specification for Fuel Oils (no abstract provided by developer)
ASTM D3712-2005, Test Method of Analysis of Oil-soluble Petroleum Sulfonates by Liquid Chromatography	ASTM D3828-2005, Test Methods for Flash Point by Small Scale Closed Cup Tester	ASTM D3982-2003, Specification for Contact Molded Fiberglass (Glass-Fiber-Reinforced Thermosetting-Resin) Duct and Hoods
ASTM D372-2000, Test Methods for Rigid Tubes Used for Electrical Insulation	ASTM D3829-2002, Predicting the Borderline Pumping Temperature of Engine Oil, Test for (05.02) (no abstract provided by developer)	ASTM D4006-2000 (R2005), Test Method for Water in Crude Oil by Distillation
ASTM D374-1994 (R2004), Test Methods for Thickness of Solid Electrical Insulation (10.01) (no abstract provided by developer)	ASTM D3831-2001, Manganese in Gasoline by Atomic Absorption Spectrometry, Test for (05.02) (no abstract provided by developer)	ASTM D4007-2002a, Water and Sediment in Crude Oil by the Centrifuge Method (Laboratory Procedures) (05.02) (no abstract provided by developer)
ASTM D374M-1999 (R2005), Test Methods for Thickness of Solid Electrical Insulation (Metric) (10.01) (no abstract provided by developer)	ASTM D3839-2002, Practice for Underground Installation of Flexible Reinforced Thermosetting Resin Pipe and Reinforced Plastic Mortar Pipe (08.04) (no abstract provided by developer)	ASTM D4024-2000, Specification for Reinforced Thermosetting Resin (Rtr) Flanges (08.04) (no abstract provided by developer)
ASTM D3753-2005, Specification for Glass Fiber-Reinforced Polyester Manholes	ASTM D3840-2001 (R2005), Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Fittings for Nonpressure Applications (no abstract provided by developer)	ASTM D4042-1993 (R2004), Rolling Oils, Sampling and Testing for Ash and Total Iron in Steel Mill Dispersions of (05.03) (no abstract provided by developer)
ASTM D3754-2004, Specification for Fiberglass Sewer and Industrial Pressure Pipe (08.04) 1.1 This specification covers machine-made fiberglass pipe, 8 in. (200 mm) through 144 in. (3700 mm), for use in pressure systems for conveying sanitary sewage, storm water, and many industrial wastes, and corrosive fluids. Both glass-fiber-reinforced thermosetting-resin pipe (RTRP) and glass-fiber-reinforced polymer mortar pipe (RPMP) are fiberglass pipes. This standard is suited primarily for pipes to be installed in buried applications, although it may be used to the extent applicable for other installations such as, but not limited to, sliplining and rehabilitation of existing pipelines.	ASTM D3841-2001, Specification for Glass Fiber-Reinforced Polyester Plastic Panels (08.04)	ASTM D4045-2004, Sulfur in Petroleum Products by Hydrogenolysis and Rateometric Colorimetry (05.02) (no abstract provided by developer)
	ASTM D3850-1994 (R2000), Test Method for Rapid Thermal Degradation of Solid Electrical Insulating Materials by Thermogravimetric Method (10.02) (no abstract provided by developer)	ASTM D4046-1991 (R2005), Test Method for Alkyl Nitrate in Diesel Fuels by Spectrophotometry (no abstract provided by developer)
	ASTM D3874-2003, Test Method for Ignition of Materials by Hot Wire Sources	ASTM D4047-2005, Test Method for Phosphorus in Lubricating Oils and Additives by Quinoline Phosphomolybdate Method
		ASTM D4048-2002, Method for Detection of Copper Corrosion from Lubricating Grease by the Copper Strip Tarnish Test (05.02) (no abstract provided by developer)

ASTM D4049-1999 (R2004), Resistance of Lubricating Grease to Water Spray, Test Method for (05.02) (no abstract provided by developer)	ASTM D4166-1999 (R2004), Test Method for Measurement of Thickness of Nonmagnetic Materials by Means of a Digital Magnetic Intensity Instrument	ASTM D4241-1999 (R2004), Gas Turbine Generator Lubricating Oil System, Design of (05.02) (no abstract provided by developer)
ASTM D4051-1999, Preparation of Low-Pressure Gas Blends, Method for (05.02) (no abstract provided by developer)	ASTM D4167-1997, Specification for Fiber-Reinforced Plastic Fans and Blowers (08.04) (no abstract provided by developer)	ASTM D4243-1998 (R2004), Method for Measurement of Average Viscometric Degree of Polymerization of New and Aged Electrical Papers and Boards
ASTM D4052-1996 (R2002), Test Method for Density and Relative Density of Liquids by Digital Density Meter (05.02) (no abstract provided by developer)	ASTM D4170-1997 (R2002), Test Method for Fretting Wear Protection by Lubricating Grease (05.02) (no abstract provided by developer)	ASTM D4244-1995 (R2001), Specification for General-Purpose, Heavy-Duty and Extra-Heavy Duty Acrylonitrile-Butadiene Polyvinyl Chloride (NBR PVC) Jackets for Wire and Cable (10.02)
ASTM D4053-2004, Test Method for Benzene in Motor and Aviation Gasoline by Infrared Spectroscopy (05.02) (no abstract provided by developer)	ASTM D4171-2004, Specification for Fuel System Icing Inhibitors (05.02) (no abstract provided by developer)	ASTM D4245-1997, Specification for Ozone-Resistant Thermoplastic Elastomer Insulation for Wire and Cable 90oC Dry/75oC Wet Operation
ASTM D4054-1993 (R2003), Evaluating the Compatibility of Additives with Aviation Turbine Fuels and Aircraft Fuel System Materials (05.02) (no abstract provided by developer)	ASTM D4172-1994 (R2004), Wear Preventive Characteristics of Lubricating Fluid (Four-Ball Method), Method of Test for (05.02) (no abstract provided by developer)	ASTM D4245-2002, Specification for Ozone-Resistant Thermoplastic Elastomer Insulation for Wire and Cable 90oC Dry/75oC Wet Operation
ASTM D4055-2004, Pentane Insolubles by Membrane Filtration (05.02) (no abstract provided by developer)	ASTM D4174-1989 (R2005), Practice for Cleaning, Flushing, and Purification of Petroleum Fluid Hydraulic Systems (no abstract provided by developer)	ASTM D4246-2002, Specification for Ozone-Resistant Thermoplastic Elastomer Insulation for Wire and Cable, 90oC Operation
ASTM D4056-2001, Solubility of Water in Hydrocarbon and Aliphatic Ester Lubricants (05.02) (no abstract provided by developer)	ASTM D4175-2005, Terminology Relating to Petroleum, Petroleum Products, and Lubricants (no abstract provided by developer)	ASTM D4247-1999 (R2004), Specification for General-Purpose, Black Heavy-Duty, and Black Extra-Heavy-Duty Crosslinked Polychloroprene Jackets for Wire and Cable (no abstract provided by developer)
ASTM D4057-1995 (R2000), Practice for Manual Sampling of Petroleum and Petroleum Products	ASTM D4176-1997, Test Method for Free Water and Particulate Contamination in Distillate Fuels (Visual Inspection Procedures)	ASTM D4248-1999 (R2004), Design of Steam Turbine Generator Oil Systems (05.02) (no abstract provided by developer)
ASTM D4063-1999 (R2004), Specification for Electrical Insulating Board	ASTM D4176-2004, Test Method for Free Water and Particulate Contamination in Distillate Fuels (Clear and Bright Pass/Fail Proceedings) (05.02) (no abstract provided by developer)	ASTM D4250-1999 (R2003), Test Method for Water-Holding Capacity of Bibulous Fibrous Products
ASTM D4068-2001, Specification for Chlorinated Polyethylene (CPE) Sheeting for Concealed Water-Containment Membrane (08.04) (no abstract provided by developer)	ASTM D4177-1995 (R2000), Practice for Automatic Sampling of Petroleum and Petroleum Products	ASTM D4289-2003, Method of Testing Compatibility of Lubricating Grease with Elastomers (05.02) (no abstract provided by developer)
ASTM D4072-1998 (R2004), Test Method for Toluene-Insoluble (TI) Content of Tar and Pitch	ASTM D4177-1995 (R2005), Automatic Sampling of Petroleum and Petroleum Products, Method for the (05.02) (no abstract provided by developer)	ASTM D4290-2002, Determining the Leakage Tendencies of Automotive Wheel Bearing Grease Under Accelerated Conditions, Method of Test for (05.02) (no abstract provided by developer)
ASTM D4097-2001, Specification for Conduct Molded Glass-Fiber-Reinforced Thermoset Resin Chemical-Resistant Tanks (08.04) (no abstract provided by developer)	ASTM D4178-1982 (R2005), Practice for Calibrating Moisture Analyzers (no abstract provided by developer)	ASTM D4291-2004, Trace Ethylene Glycol in Used Engine Oil, Test Method for (05.02) (no abstract provided by developer)
ASTM D411-1998 (R2003), Test Methods for Shellac used for Electrical Insulation	ASTM D4226-2000, Test Method for Impact Resistance of Rigid Poly(Vinyl Chloride) (PVC) Building Products (95-1, Item 42) (08.02) (no abstract provided by developer)	ASTM D4292-1992 (R2002), Vibrated Bulk Density of Calcined Petroleum Coke, Test Method for (05.03) (no abstract provided by developer)
ASTM D4161-2001 (R2005), Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe Joints Using Flexible Elastomeric Seals (no abstract provided by developer)		

ASTM D4293-83 (R2003), Phosphate Ester Based Fluids for Turbine Lubrication, Specification for (05.02) (no abstract provided by developer)	ASTM D4363-1998 (R2003), Specification for Thermoplastic Chlorinated Polyethylene Jacket for Wire and Cable	ASTM D4477-2004a, Specification for Rigid Poly(Vinyl Chloride) (PVC) Soffit (08.04) 1.1 This specification establishes requirements and test methods for the materials, dimensions, camber, impact strength, weatherability, expansion, and appearance of extruded single-wall soffit manufactured principally from rigid (unplasticized) PVC compound. Methods of indicating compliance with this specification are also provided.
ASTM D4294-2004, Sulfur in Petroleum Products by Non-Dispersive X-Ray Fluorescence Spectrometry, Method of Test for (05.02) (no abstract provided by developer)	ASTM D4377-2000, Test Method for Water in Crude Oils (Karl Fischer) Titration (05.02) (no abstract provided by developer)	ASTM D4485-2005, Specification for Performance of Engine Oils
ASTM D4296-83 (R2004), Practice for Sampling Pitch	ASTM D4378-2003, In-Service Monitoring of Mineral Turbine Oils for Steam and Gas Turbines (05.02) (no abstract provided by developer)	ASTM D4486-1991 (R2001), Test Method for Kinematic Viscosity of Volatile and Reactive Liquids (05.02) (no abstract provided by developer)
ASTM D4304-2001, Mineral Lubricating Oil Used in Steam or Gas Turbines, Specification for (05.02) (no abstract provided by developer)	ASTM D4388-2002, Specification for Nonmetallic Semi-Conducting and Electrically Insulating Tapes	ASTM D4495-2000, Test Method for Impact Resistance of Poly(Vinyl Chloride) (PVC) Rigid Profiles by Means of a Falling Weight (08.04) (no abstract provided by developer)
ASTM D4305-1999 (R2004), Filter Flow of Aviation Fuels at Low Temperature, Method of Test for (05.02) (no abstract provided by developer)	ASTM D4418-2001, Receipt, Storage, and Handling of Gas Turbine, Practice for	ASTM D4496-1998, Test Method for DC Resistance or Conductance of Moderately Conductive Materials
ASTM D4306-2001, Practice for Sampling Aviation Fuel for Tests Affected by Trace Contamination (05.02) (no abstract provided by developer)	ASTM D4419-90 (R2005), Test Method for Measurement of Transition Temperatures of Petroleum Waxes by Differential Scanning Calorimetry (DSC) (no abstract provided by developer)	ASTM D4514-2000, Specification for Friction Tape (10.02) (no abstract provided by developer)
ASTM D4307-1999 (R2004), Preparation of Liquid Blends for Use as Analytical Standards, Practice for (05.02) (no abstract provided by developer)	ASTM D4422-2004, Test Method for Ash in Analysis of Petroleum Coke (05.02)	ASTM D4529-2002, Estimation of Net Heat of Combustion of Aviation Fuels, Test Method for (05.02) (no abstract provided by developer)
ASTM D4308-1995 (R2005), Test Method for Electrical Conductivity of Liquid Hydrocarbons by Precision Meter (no abstract provided by developer)	ASTM D4423-1991 (R1996), Test Method for Determination of Carbonyls in C4 Hydrocarbons (05.02) (no abstract provided by developer)	ASTM D4530-2003, Micro Carbon Residue of Petroleum Products, Test Method for (05.02) (no abstract provided by developer)
ASTM D4310-2003, Test Methods for Determination of the Sludging and Corrosion Tendencies of Inhibited Mineral Oils	ASTM D4424-1990 (R2002), Test Method for Butylene Analysis by Gas Chromatography (05.02) (no abstract provided by developer)	ASTM D4539-2003, Test Method for Filterability of Diesel Fuels by the Low Temperature Flow Test (Lift) Method (05.02) (no abstract provided by developer)
ASTM D4312-2005, Test Method for Toluene-insoluble Ti Content of Tar and Pitch Short Method	ASTM D4425-1997 (R2002), Test Method for Oil Separation from Lubricating Grease by Centrifuging (Koppers Method) (05.02)	ASTM D4551-2001, Specification for Poly(Vinyl Chloride) (PVC) Plastic Flexible Concealed Water-Containment Membrane (08.04) (no abstract provided by developer)
ASTM D4313-2003, Specification for General Purpose, Heavy-Duty, and Extra-Heavy-Duty Crosslinked Chlorinated Polyethylene Jackets for Wire and Cable	ASTM D445-2004, Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity), Method of Test for (05.01) (10.03) (no abstract provided by developer)	ASTM D4565-1999 (R2004), Test Methods for Physical and Environmental Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable (10.02) (no abstract provided by developer)
ASTM D4314-1999, Specification for General Purpose Heavy-Duty and Extra-Heavy-Duty Crosslinked Chlorosulfonated Polyethylene Jackets for Wire and Cable (10.02) (no abstract provided by developer)	ASTM D446-2001, Operating Instructions for Glass Capillary Kinematic Viscometers, Test Method for (05.01) (no abstract provided by developer)	ASTM D4566-1998, Test Methods for Electrical Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable (10.02) (no abstract provided by developer)
ASTM D4325-2002, Test Methods for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes	ASTM D4470-1997 (R2004), Test Method for Static Electrification (10.02) (no abstract provided by developer)	
ASTM D4356-1997 (R2002), Practice for Establishing Consistent Test Method Tolerances		

ASTM D4568-1999 (R2004), Test Methods for Evaluating Compatibility Between Cable Filling and Flooding Compounds and Polyolefin Cable Materials (10.02) (no abstract provided by developer)	ASTM D470-2005, Methods of Testing Crosslinked Insulations and Jackets for Wire and Cable (10.01) (no abstract provided by developer)	ASTM D4756-2003, Practice for Installation of Rigid Poly (Vinyl Chloride) (PVC) Siding and Soffit (08.04) (no abstract provided by developer)
ASTM D4616-2005, Test Method for Microscopical Analysis by Reflected Light and Determination of Mesophase in a Pitch	ASTM D4714-1992 (R2001), Test Method for Determination of Effect of Moist Heat on Properties of Paper and Board	ASTM D4803-1997, Test Method for Predicting Heat Buildup in PVC Building Products
ASTM D4625-2004a, Test Method for Distillate Fuel Storage Stability at 43C (110F) (no abstract provided by developer)	ASTM D4715-1998 (R2004), Test Method for Coking Value of Tar and Pitch (Alcan)	ASTM D4806-2004, Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-ignition Engine Fuel (no abstract provided by developer)
ASTM D4626-1995 (R2005), Practice for Calculation of Gas Chromatographic Response Factors (no abstract provided by developer)	ASTM D4726-2002, White Rigid Poly (Vinyl Chloride) Exterior-Profile Extrusions Used for Assembled Windows and Doors, Specification for (08.04) (no abstract provided by developer)	ASTM D4807-2005, Sediment in Crude Oil by Membrane Filtration, Test Method (05.03) (no abstract provided by developer)
ASTM D4627-1992 (R2002), Water Soluble Metal Working Fluids, Iron Chip Corrosion Test for (05.02) (no abstract provided by developer)	ASTM D473-2002, Sediment in Crude and Fuel Oils by Extraction, Method of Test for (05.01) (no abstract provided by developer)	ASTM D4808-2001, Hydrogen Content of Petroleum Products by Low Resolution Nuclear Magnetic Resonance Spectroscopy, Test Method for (05.03) (no abstract provided by developer)
ASTM D4628-2005, Test Method for Analysis of Barium, Calcium, Magnesium, and Zinc in Unused Lubricating Oils by Atomic ABSorption Spectrometry (no abstract provided by developer)	ASTM D4730-2002, Specification for Flooding Compounds for Telecommunications Wire and Cable	ASTM D4809-1995, Heat Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Intermediate Precision Method), Test Method for (05.03) (no abstract provided by developer)
ASTM D4629-2002, Test Method for Organically Bound Trace Nitrogen in Liquid Petroleum Hydrocarbons by Oxidative Combustion and Chemiluminescence Detection (05.02) (no abstract provided by developer)	ASTM D4731-2002, Specification for Hot-Application Filling Compounds for Telecommunications Wire and Cable	ASTM D4814-2004b, Specification for Automotive Spark-Ignition Engine Fuel
ASTM D4636-1998 (R2004), Test Method for Corrosiveness and Oxidation Stability of Hydraulic Oils, Aircraft Turbine Engine Lubricants, and Other Highly Refined Oils	ASTM D4732-2002, Specification for Cool-Application Filling Compounds for Telecommunications Wire and Cable	ASTM D4815-2004, Analysis of C1 to C4 Alcohols and MTBE in Gasoline by Gas Chromatography, Test Method for (05.03) (no abstract provided by developer)
ASTM D465-1990 (R2001), Test Method for Blocking and Picking Points of Petroleum Wax	ASTM D4733-2003, Test Methods for Solventless Electrical Insulating Varnishes	ASTM D482-2002, Test Method for Ash from Petroleum Products (05.01) (no abstract provided by developer)
ASTM D4682-1996 (R2002), Specification for Miscibility with Gasoline and the Fluidity of Two-Stroke-Cycle Gasoline Engine Lubricants	ASTM D4737-2004, Test Method for Calculated Centane Index by Four Variable Equation	ASTM D4825-1997 (R2002), Test Method for Measurement of Curl in Cut-Sized Office Paper
ASTM D4683-2004, Standard Test Method to Measure Viscosity by Tapered Bearing Simulator at High Temperature and High Shear Rate (05.03) (no abstract provided by developer)	ASTM D4739-2005, Test Method for Base Number Determination by Potentiometric Titration (no abstract provided by developer)	ASTM D4826-1997 (R2002), Practice for Units of Measurements and Conversion Factors for Pulp, Paper, and Paperboard
ASTM D4684-2002a, Test Method for Determination of Yield Stress and Apparent Viscosity of Engine Oils at Low Temperature (05.03)	ASTM D4740-2004, Test Method for Cleanliness and Compatibility of Residual Fuels by Spot Test	ASTM D483-2004, Test Method for Unsulphonated Residue of Petroleum Plant Spray Oils (no abstract provided by developer)
ASTM D4693-2004, Test Method for Low-Temperature Torque of Grease-Lubricated Wheel Bearings	ASTM D4741-2001, Measuring of Viscosity at High Temperature and High Shear Rate by Tapered Plug Viscometer, Test Method for (05.03) (no abstract provided by developer)	ASTM D4857-2004, Determination of the Ability of Lubricants to Minimize Ring Sticking and Piston Deposits in Two-Stroke-Cycle Gasoline Engines Other Than Outboards, Test Method for (05.03) (no abstract provided by developer)
	ASTM D4742-2002a, Oxidation Stability of Gasoline Automotive Engine Oils by Thin-Film Oxygen Uptake (TFOUT), Test Method for (05.03) (no abstract provided by developer)	ASTM D4858-2002, Determination of the Tendency of Lubricants to Promote Preignition in Two-Stroke-Cycle Gasoline Engines, Test Method for (05.03) (no abstract provided by developer)
	ASTM D4746-1998 (R2004), Test Method for Determination of Quinoline Insolubles (QI) in Tar and Pitch by Pressure Filtration	

ASTM D4859-1997 (R2003), Lubricants for Two-Stroke-Cycle Spark-Ignition Gasoline Engines – TC, Specification for (05.03) (no abstract provided by developer)	ASTM D4917-1997 (R2002), Test Method for Coefficient of Static and Kinetic Friction of Uncoated Writing and Printing Paper by Use of the Horizontal Plane Method	ASTM D4987-1994 (R2003), Test Method for Tensile Breaking Strength of Perforations in One Part Continuous Forms Paper
ASTM D4860-2005, Test Method for Free Water and Particulate Contamination in Mid-Distillate Fuels (Clear and Bright Numerical Rating)	ASTM D4918-1997 (R2002), Test Method for Coefficient of Static Friction of Uncoated Writing and Printing Paper by Use of the Inclined Plane Method	ASTM D4988-1996 (R2001), Test Method for Determination of Alkalinity of Paper as Calcium Carbonate (Alkaline Reserve of Paper)
ASTM D4863-2002, Determination of the Lubricity of Two-Stroke Cycle Gasoline Engine Lubricants (05.03) (no abstract provided by developer)	ASTM D4927-2005, Test Methods for Elemental Analysis of Lubricant and Additive Components – Barium, Calcium, Phosphorus, Sulfur, and Zinc by Wavelength-Dispersive X-Ray Fluorescence (05.02) (no abstract provided by developer)	ASTM D4998-1995 (R2003), Test Method for Evaluating Wear Characteristics of Tractor Hydraulic Fluids (05.03) (no abstract provided by developer)
ASTM D4864-1990 (R2005), Determination of Traces of Methanol in Propylene Concentrates by Gas Chromatography, Test Method for (05.03) (no abstract provided by developer)	ASTM D4928-1996 (R2005), Test Method for Water in Crude Oils by Coulometric Karl Fischer Titration	ASTM D5000-2005, Practice for Evaluating Activity of Clay Elements Using a Side-Stream Sensor (no abstract provided by developer)
ASTM D4865-1999 (R2003), Guide for Generation and Dissipation of Static Electricity in Petroleum Fuel Systems	ASTM D4929-2004, Test Methods for Determination of Organic Chloride Content in Crude Oil	ASTM D5001-2004, Test Method for Measurement of Lubricity of Aviation Turbine Fuels by the Ball-on-Cylinder Lubricity Evaluator (Bocle) (05.03) (no abstract provided by developer)
ASTM D4868-1990 (R2005), Estimation of Net and Gross Heat of Combustion of Petroleum Fuels, Test Method for (05.03) (no abstract provided by developer)	ASTM D4930-1999 (R2004), Test Method for Dust Control Material on Calcined Petroleum Coke (no abstract provided by developer)	ASTM D5002-1999 (R2005), Test Method for Density and Relative Density of Crude Oils by Digital Density Analyzer (no abstract provided by developer)
ASTM D4870-2004, Test Method for Total Sediment in Residual Fuels (05.03) (no abstract provided by developer)	ASTM D4931-1997 (R2002), Test Method for Gross Moisture in Green Petroleum Coke	ASTM D5003-1995 (R2005), Test Method for the Hardgrove Grindability Index (HGI) of Petroleum Coke (no abstract provided by developer)
ASTM D4871-2000, Universal Oxidation/Thermal Stability Test Apparatus, Guide for (05.03) (no abstract provided by developer)	ASTM D4949-1997 (R2002), Test Method for Determination of D.C. Resistivity of Writing Paper (Keithley Method)	ASTM D5004-1999 (R2004), Test Method for Real Density of Calcined Petroleum Coke by Xylene Displacement (no abstract provided by developer)
ASTM D4872-1999 (R2004), Test Method for Dielectric Testing of Wire and Cable Filling Compounds	ASTM D495-1999 (R2004), Test Method for High-Voltage, Low-Current, Dry Arc Resistance of Solid Electrical Insulation	ASTM D5006-2004, Test Method for Determination of Fuel System Icing Inhibitors (Ether Type) in Aviation Fuels (05.03) (no abstract provided by developer)
ASTM D4880-2003, Test Method for Salt Water Proofness of Insulating Varnishes over Enameled Magnet Wire	ASTM D4950-2001 (R2004), Classification and Specification for Automotive Service Greases	ASTM D5018-89 (R2004), Test Method for Shear Viscosity of Coal-Tar and Petroleum Pitches
ASTM D4881-2005, Test Method for Thermal Endurance of Varnished Fibrous or Film Wrapped Magnet Wire	ASTM D4951-02, Test Method for Determination of Additive Elements in Lubricating Oils by Inductively Coupled Plasma Atomic Emission Spectrometry (05.03)	ASTM D5032-2003, Practice for Maintaining Constant Relative Humidity by Means of Aqueous Glycerin Solutions
ASTM D4882-2005, Test Method for Bond Strength of Electrical Insulating Varnishes by the Twisted Coil Test	ASTM D4952-2002, Test Method for Qualitative Analysis for Active Sulfur Species in Fuels and Solvents (Doctor Test) (05.03) (no abstract provided by developer)	ASTM D5039-1997 (R2002), Test Methods for Identification of Wire Side of Paper
ASTM D4892-89 (R2004), Test Method for Density of Solid Pitch (Helium Pycnometer Method)	ASTM D4953-1999, Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method) (05.03) (no abstract provided by developer)	ASTM D5056-2004, Test Method for Trace Metals in Petroleum Coke by Atomic Absorption
ASTM D4893-1994 (R2004), Test Method for Determination of Pitch Volatility	ASTM D4967-1999 (R2004), Guide for Selecting Materials to be Used for Insulation, Jacketing and Strength Components in Fiber-Optic Cables (10.02)	ASTM D5059-1998 (R2003), Test Method for Lead in Gasoline by X-Ray Spectroscopy (05.03) (no abstract provided by developer)
ASTM D4898-1990 (R2005), Test Method for Insoluble Contamination of Hydraulic Fluids by Gravimetric Analysis		ASTM D5109-1999 (R2004), Test Methods for Copper-Clad Thermosetting Laminates for Printed Wiring Boards

ASTM D5133-2005, Test Method for Low Temperature, Low Shear Rate Viscosity/Temperature Dependence of Lubricating Oils Using a Temperature-Scanning Technique	ASTM D5213-2004, Specification for Polyimide Resin Film for Electrical Insulation and Dielectric Application (10.02) (no abstract provided by developer)	ASTM D5302-2001a, New Test Method for Evaluation of Automotive Engine Oils for Inhibition of Deposit Formation and Wear in Spark-Ignition Internal-Combustion Engine Fueled with Gasoline and Operated Under Low Temperature, Light-Duty Can (05.03) (no abstract provided by developer)
ASTM D5134-1998 (R2003), Test Method for Detailed Analysis of Petroleum Naphthas Through N-Noname by Capillary Gas Chromatography (05.03) (no abstract provided by developer)	ASTM D5234-1997 (R2002), Guide for the Analysis of Ethylene Product (05.03) (no abstract provided by developer)	ASTM D5303-1997 (R2002), New Test Method for Trace Carbonyl Sulfide in Propylene by Gas Chromatography (no abstract provided by developer)
ASTM D5182-1997 (R2002), Test Method for Evaluating the Scuffing (Scoring) Load Capacity of Oils (05.03) (no abstract provided by developer)	ASTM D5236-2003, Test Method for Distillation of Heavy Hydrocarbon Mixtures Vacuum Potstill Method (no abstract provided by developer)	ASTM D5304-2005, Test Method for Assessing Middle Distillate Fuel Storage Stability by Oxygen Overpressure (no abstract provided by developer)
ASTM D5183-2005, Test Method for Determination of the Coefficient of Friction of Lubricants Using the Four-Ball Wear Test Machine (no abstract provided by developer)	ASTM D524-2004, Test Method for Ramsbottom Carbon Residue of Petroleum Products	ASTM D5305-1997 (R2002), New Test Method for the Determination of Ethyl Mercaptan in LPGas Vapor (no abstract provided by developer)
ASTM D5184-2001, Test Methods for Determination of Aluminum and Silicon in Fuel Oils by Ashing, Fusion, Inductively Coupled Plasma Atomic Emission Spectrometry, and Atomic Absorption Spectrometry (05.03) (no abstract provided by developer)	ASTM D525-2005, Test Method for Oxidation Stability of Gasoline Induction Period Method (no abstract provided by developer)	ASTM D5306-1997 (R2002), New Test Method for Linear Flame Propagation Rate of Lubricating Oils and Hydraulic Fluids (05.03) (no abstract provided by developer)
ASTM D5185-2005, Test Method for Determination of Additive Elements, Wear Metals, and Contaminants in Used Lubricating Oils by Inductively Coupled Plasma Atomic Emission Spectrometry (05.03) (no abstract provided by developer)	ASTM D5273-1997 (R2002), Guide for Analysis of Propylene Concentrates (05.03) (no abstract provided by developer)	ASTM D5307-1997 (R2002), Test Method for the Determination of Boiling Range Distribution of Crude Petroleum by Gas Chromatography
ASTM D5186-2003, Test Method for the Determination of the Aromatic Content and Polynuclear of Diesel Fuels and Aviation Turbine Fuels by Supercritical Fluid Chromatography	ASTM D5274-2000 (R2005), Guide for Analysis of 1,3-Butadiene Product (no abstract provided by developer)	ASTM D5319-2001, Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels (no abstract provided by developer)
ASTM D5187-1991 (R2002), Test Method for Crystallite Size (LC) of Calcined Petroleum Coke by X-Ray Diffraction (05.03) (no abstract provided by developer)	ASTM D5275-2004, Test Method for Fuel Injector Shear Stability Test (FISST) for Polymer Containing Fluids (05.01) (no abstract provided by developer)	ASTM D5342-1997 (R2002), Test Method for Resistance to Bending of Paper and Paperboard (Taber-Type Tester in Basic Configuration)
ASTM D5188-2004, Test Method for Vapor-Liquid Ratio Temperature Determination of Fuels Evacuated Chamber Method	ASTM D528-1997 (R2002), Test Method for Machine Direction of Paper and Paperboard	ASTM D5365-2001, Test Method for Long-Term Ring-Bending Strain of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
ASTM D5190-2001, Test Method for Vapor Pressure of Petroleum Products (Automatic Method) (05.03) (no abstract provided by developer)	ASTM D528-879(R96), Test Methods for Machine Direction of Paper and Paperboard	ASTM D5372-2004, Guide for the Evaluation of Hydrocarbon Heat Transfer Fluids
ASTM D5191-2004, Test Method for Vapor Pressure of Petroleum Products (Mini Method) (05.03) (no abstract provided by developer)	ASTM D5288-1997 (R2004), Test Method for Determining the Tracking Index of Electrical Insulating Materials Using Various Electrode Materials (Excluding Platinum)	ASTM D5374-1999 (R2005), Test Methods for Forced-Convection Laboratory Ovens for Evaluation of Electrical Insulation /ANSI/ASTM D5374M-93(1999)
ASTM D5206-1997, Test Method for Windload Resistance of Rigid Poly(Vinyl Chloride) (PVC) Siding	ASTM D5291-2002, Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants, Test Method for (05.03) (no abstract provided by developer)	ASTM D5384-1995 (R2005), Test Methods for Chlorine in Used Petroleum Products (Field Test Kit Method) (no abstract provided by developer)
	ASTM D5292-1999 (R2004), Test Method for Aromatic Carbon Contents of Hydrocarbon Oils by High Resolution Nuclear Magnetic Resonance Spectroscopy (no abstract provided by developer)	ASTM D5421-2005, Specification for Contact Molded "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Flanges
	ASTM D5293-2004, Apparent Viscosity of Engine Oils – Between 30 and 50°C Using the Cold-Cranking Simulation, Test Method for (05.03) (no abstract provided by developer)	

ASTM D5423-1999 (R2005), Specification for Forced-Convection Laboratory Ovens for Evaluation of Electrical Insulation	ASTM D5500-1999 (R2004), Test Method for Vehicle Evaluation of Unleaded Automotive Spark-Ignition Engine Fuel for Intake Valve Deposit (05.03) (no abstract provided by developer)	ASTM D5619-2004 (R2005), Test Method for Comparing Metal Removal Fluids Using the Tapping Torque Test Machine 1.1 This test method covers a laboratory technique to evaluate the relative performance of metal removal fluids using a non-matrix test protocol using the tapping torque test machine. 1.2 The values stated in SI units are to be regarded as standard. Because the equipment used in this test method is available only in inch-pound units, SI units are omitted when referring to the equipment and the test pieces.
ASTM D5424-2005, Test Method for Smoke Obscuration Caused by Burning Cables in a Vertical Configuration (10.02)	ASTM D5501-2004, Test Method for the Determination of Ethanol Content of Denatured Fuel Ethanol by Gas Chromatography (05.03) (no abstract provided by developer)	ASTM D5620-1999 (R2004), Test Method for Evaluating Thin Film Fluid Lubricants in a Drain and Dry Mode Using a Pin and Vee Block Test Machine (no abstract provided by developer)
ASTM D5425-2002, Guide for Development of Fire Hazard Assessment Standards of Electrotechnical Products	ASTM D5534-1999 (R2005), Test Method for Vapor-Phase Rust-Preventing Characteristics of Hydraulic Fluids	ASTM D5621-2001, Test Method for Sonic Shear Stability of Hydraulic Fluid (05.03) (
ASTM D5441-2003, Test Method for Analysis of Methyl TERT-Butyl Ether MTBE by Gas Chromatography	ASTM D5537-2003, Test Method for Heat Release, Flame Spread and Mass Loss Testing of Insulating Materials Contained in Electrical or Optical Fiber Cables When Burning in a Vertical Cable Tray Configuration (no abstract provided by developer)	ASTM D5622-1995 (R2005), Test Methods for Determination of Total Oxygen in Gasoline and Methanol Fuels by Reductive Pyrolysis
ASTM D5442-93 (R2003), Test Method for Analysis of Petroleum Waxes by Gas Chromatography	ASTM D5568-2001, Test Method for Measuring Relative Complex Permittivity and Magnetic Permeability of Solid Materials at Microwave Frequencies (10.02) (no abstract provided by developer)	ASTM D5623-2004, Test Method for Sulfur Compounds in Light Petroleum Liquids by Gas Chromatography and Sulfur Selective Detection
ASTM D5443-2004, Test Method for Paraffin, Naphthene, and Aromatic Hydrocarbon Type Analysis in Petroleum Distillates Through 200°C by Multi-Dimensional Gas	ASTM D5579-2005, Test Method for Evaluating the Thermal Stability of Manual Transmission Lubricants in a Cyclic Durability Test (05.03) (no abstract provided by developer)	ASTM D5625-1997 (R2002), Test Method for Measuring Length, Width, and Squareness of Sheeted Paper and Paper Products
ASTM D5452-2005, Test Method for Particulate Contamination in Aviation Fuels by Laboratory Filtration (no abstract provided by developer)	ASTM D5598-2001, Test Method for Evaluating Unleaded Automotive Spark-Ignition Engine Fuel for Electronic Port Fuel Injector Fouling (05.03) (no abstract provided by developer)	ASTM D5626-1994 (R2001), Test Method for U.S. Postal Service Optical Measurements for Small Areas
ASTM D5453-2005, Test Method for Determination of Total Sulfur in Light Hydrocarbons, Spark Ignition Engine Fuel, Diesel Engine Fuel, and Engine Oil by Ultraviolet Fluorescence	ASTM D5599-1995 (R2005), Test Method for the Determination of Oxygenates in Gasoline by Gas Chromatography and Oxygen Selective Flame Ionization Detection (05.03) (no abstract provided by developer)	ASTM D5637-2005, Test Method for Moisture Resistance of Electrical Insulating Varnishes (10.02) (no abstract provided by developer)
ASTM D5455-1993 (R2003), Test Method for Short-Term Liquid Sorption Into Paper (Bristow Test)	ASTM D56-2005, Test Method for Flash Point by Tag Closed Cup Tester	ASTM D5638-2005, Test Method for Chemical Resistance of Electrical Insulating Varnishes (10.02) (no abstract provided by developer)
ASTM D5470-2001, Test Method for Thermal Transmission Properties of Thin Thermally Conductive Solid Electrical Insulation Materials (10.02)	ASTM D5600-2004, Test Method for Trace Metals in Petroleum Coke by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES) (05.03) (no abstract provided by developer)	ASTM D5642-1999 (R2004), Test Method for Sealed Tube Chemical Compatibility Test
ASTM D548-1997 (R2002), Test Method for Water-Soluble Acidity or Alkalinity of Paper	ASTM D565-1999 (R2005), Carbonizable Substances in White Mineral Oil (Liquid Petrolatum), Method of Test for (05.01) (no abstract provided by developer)	ASTM D5650-1997 (R2002), Test Method for Use of the Taber-Type Tester for Stiffness in the Expanded 0-10 Taber Stiffness Unit Range
ASTM D5481-2004, Test Method for Measuring Apparent Viscosity at High-Temperature and High-Shear Rate by Multicell Capillary Viscometer	ASTM D5483-2005, Test Method for Oxidation Induction Time of Lubricating Greases by Pressure Differential Scanning Calorimetry	ASTM D566-2002, Test Method for Dropping Point of Lubricating Grease (05.01) (no abstract provided by developer)
ASTM D5482-2001, Test Method for Vapor Pressure of Petroleum Products (Mini Method-Atmospheric)	ASTM D5485-2005, Fire Test Response Standard for Determining the Corrosive Effectiveness of Combustion Products Using the Cone Corrosimeter (10.02) (no abstract provided by developer)	

ASTM D5662-1999, Test Method for Determining Automotive Gear Oil Compatibility with Typical Oil Seal Elastomers 17738	ASTM D5725-1997 (R2003), Test Method for Surface Wettability and Absorbency of Sheeted Materials Using an Automated Contact Angle Tester	ASTM D5813-2004, Specification for Cured-in-place Thermosetting Resin Sewer Pipe
ASTM D5663-2003, Guide for Validating Recycled Content in Packaging Paper and Paperboard	ASTM D5760-2005, Specification for Performance of Manual Transmission Gear Lubricants (05.03) (no abstract provided by developer)	ASTM D5842-2004, Practice for the Sampling and Handling of Fuels for Volatility Measurement
ASTM D5677-2005, Specification for Fiberglass (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Pipe Fittings, Adhesive Bonded Joint Type, for Aviation Jet Turbine Fuel Lines (no abstract provided by developer)	ASTM D5761-1997 (R2001), Practice for the Emulsification/Suspension of Multi-phase Fluid Waste Materials (05.03) (no abstract provided by developer)	ASTM D5845-2001, Test Method for Determination of MTBE, ETBE, TAME, DIPE, Methanol, Ethanol and Tert-Butanol in Gasoline by Infrared Spectroscopy
ASTM D5685-2005, Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pressure Pipe Fittings (no abstract provided by developer)	ASTM D5762-2005, Test Method for Nitrogen in Petroleum and Petroleum Products by Boat-inlet Chemiluminescence (no abstract provided by developer)	ASTM D5846-2002, Test Method for Universal Oxidation Test for Hydraulic Fluids and Turbine Oils
ASTM D5704-2005a, Test Method for Evaluation of the Thermal and Oxidative Stability of Lubricating Oils Used for Manual Transmissions and Final Drive Axles (no abstract provided by developer)	ASTM D5763-1995 (R2001), Test Method for Oxidation and Thermal Stability Characteristics of Gear Oils Using Universal Glassware (05.03) (no abstract provided by developer)	ASTM D585-1997 (R2002), Practice for Sampling and Accepting a Single Lot of Paper, Paperboard, Fiberboard, and Related Products
ASTM D5705-1995, Test Method for Measurement of Hydrogen Sulfide in the Vapor Phase above Residual Fuel Oils	ASTM D5769-2004, Test Method for Determination of Benzene, Toluene and Total Aromatics in Finished Gasolines by Gas Chromatography/Mass Spectrometry	ASTM D5853-1995 (R2001), Test Method for Pour Point of Crude Oils
ASTM D5705-2004, Test Method for Measurement of Hydrogen Sulfide in the Vapor Phase above Residual Fuel Oils (05.03) (no abstract provided by developer)	ASTM D5770-2002, Test Method for Semi-Quantitative Micro Determination of Acid Number of Used Lubricating Oils	ASTM D5854-1996 (R2005), Practice for Mixing and Handling of Liquid Samples of Petroleum and Petroleum Products
ASTM D5706-1995, Test Method for Determining Extreme Pressure Properties of Lubricating Greases Using a High-Frequency, Linear-Oscillation (SRV) Test Machine	ASTM D5771-2005, Test Method for Cloud Point of Petroleum Products - Optical Detection Stepped Cooling Method	ASTM D586-1997 (R2002), Test Method for Ash in Pulp, Paper, and Paper Products
ASTM D5706-2005, Test Method for Determining Extreme Pressure Properties of Lubricating Greases Using a High-Frequency, Linear-Oscillation (SRV) Test Machine (05.03) (no abstract provided by developer)	ASTM D5772-2005, Test Method for Cloud Point of Petroleum Products - Linear Cooling Rate Method	ASTM D5862-2004, Test Method for Evaluation of Engine Oils in the Two-Stroke Cycle Turbo-Supercharged 6v92ta Diesel Engine
ASTM D5707-2005, Test Method for Measuring Friction and Wear Properties of Lubricating Grease Using a High-frequency, Linear-oscillation (SRV) Test Machine	ASTM D5773-2005, Test Method for Cloud Point of Petroleum Products (Constant Cooling Rate Method)	ASTM D5863-2000 (R2005), Test Method for Determination of Nickel, Vanadium, Iron, and Sodium in Crude Oils and Residual Fuels by Flame Atomic Absorption Spectrometry
ASTM D5708-2005, Test Methods for Determination of Nickel, Vanadium, and Iron in Crude Oils and Residual Fuels by Inductively Coupled Plasma (ICP) Atomic Emission Spectrometry	ASTM D5797-1996 (R2001), Specification for Fuel Methanol (M85-M70) for Automotive Spark-Ignition Engines	ASTM D5864-2005, Test Method for Determining the Aerobic Aquatic Biodegradation of Lubricants or Their Components
ASTM D5709-1995 (R2005), Test Method for Sieve Analysis of Petroleum Coke (no abstract provided by developer)	ASTM D5798-1999A (R2004), Specification for Fuel Ethanol (ED85-ED75) for Automotive Spark-Ignition Engines	ASTM D589-1997 (R2002), Test Method for Opacity of Paper 15 Diffuse Illuminant
	ASTM D5799-95 (R2004), Test Method for Determination of Peroxides in Butadiene	ASTM D590-1993 (R2002), Test Method for Petroleum Wax in Paper
	ASTM D5800-2005a, Test Method for Evaporation Loss of Lubricating Oils by the Noack Method	ASTM D5901-2003, Test Method for Freezing Point of Aviation Fuels (Automated Optical Method)
	ASTM D5803-1997 (R2002), Test Method for Wet Tensile Strength at Zero-Span	ASTM D5926-2004, Specification for Poly(Vinyl Chloride) (PVC) Gaskets for Drain, Waste and Vent (DWV), Sewer, Sanitary and Storm Plumbing Systems
	ASTM D5804-1997 (R2002), Test Methods for Zero-Span Breaking Strength ("Dry Zero-Span Tensile")	ASTM D5949-2001, Test Method for Pour Point of Petroleum Products (Automatic Pressure Pulsing Method)
		ASTM D5950-2002, Test Method for Pour Point of Petroleum Products (Automatic Tilt Method)

ASTM D5966-2002, Test Method for Evaluation of Engine Oils for Roller Follower Wear in Light-Duty Diesel Engine	ASTM D6053-2003, Test Method for Determination of Volatile Organic Compound (VOC) Content of Electric Insulating Varnishes	ASTM D611-2004, Aniline Point and Mixed Aniline Point of Petroleum Products and Hydrocarbon Solvents, Method of Test for (05.01, 06.04, 10.03)
ASTM D5967-2005, Test Method for Evaluation of Diesel Engine Oils in the T-8 Diesel Engine	ASTM D6054-1997 (R2004), Practice for Conditioning Electrical Insulating Materials for Testing	This standard was listed for public review in the 9/21/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.
ASTM D5968-2004, Test Method for Evaluation of the Corrosiveness of Diesel Engine Oil	ASTM D6064-1997, Specification for Hfc-227ea, 1, 1, 1, 2, 3, 3, 3-Heptafluoropropane (Cf3 Chfcf3)1	ASTM D6113-2003, Test Method for Using a Cone Calorimeter to Determine Fire-Test-Response Characteristics of Insulating Materials Contained in Electrical or Optical Fiber Cables
ASTM D5969-2005, Test Method for Corrosion-Preventive Properties of Lubricating Greases in the Presence of Dilute Synthetic Sea Water Environments	ASTM D6070-2002, Test Methods for Physical Properties of Smooth-Wall, Coilable Polyethylene (PE) Conduit (Duct) for Preassembled Wire and Cable	ASTM D612-88 (R2004), Carbonizable Substances in Paraffin Wax, Method of Test for (05.01, 15.09)
ASTM D5972-2005, Test Method for Freezing Point of Aviation Fuels (Automatic Phase Transition Method)	ASTM D6074-1999 (R2005), Guide for Characterizing Hydrocarbon Lubricant Base Oils	(no abstract provided by developer)
ASTM D5983-1996, Specification for Methyl Tertiary-Butyl Ether (MTBE) for Downstream Blending with Automotive Spark Ignition Fuel	ASTM D6078-2004, Test Method for Evaluating Lubricity of Diesel Fuels by the Scuffing Load Ball-On-Cylinder Lubricity Evaluator (SLBOCLE)	ASTM D6120-1997 (R2002), Test Method for Electrical Resistivity of Anode and Cathode Carbon Material at Room Temperature
ASTM D5983-1997 (R2002), Specification for Methyl Tertiary-Butyl Ether (MTBE) for Downstream Blending with Automotive Spark Ignition Fuel	ASTM D6079-2004, Test Method for Evaluating Lubricity of Diesel Fuels by the High-Frequency Reciprocating Rig (HFRR)	ASTM D6121-2005a, Test Method for Evaluation of Load-Carrying Capacity of Lubricants Under Conditions of Low Speed and High Torque Used for Final Hypoid Drive Axles
ASTM D5984-1997 (R2002), Test Method for Semi-quantitative Field Test Method for Base Number in New and Used Lubricants by Color-indicator Titration	ASTM D6080-1997 (R2002), Practice for Defining the Viscosity Characteristics of Hydraulic Fluids	ASTM D6122-2001, Practice for Validation of Multivariate Process Infrared Spectrophotometers
ASTM D5985-2002, Test Method for Pour Point of Petroleum Products (Rotational Method)	ASTM D6081-1997 (R2004), Practice for Aquatic Toxicity Testing of Lubricants: Sample Preparation and Results Interpretation	ASTM D6125-1997 (R2002), Test Method for Bending Resistance of Paper and Paperboard (Gurley Type Tester)
ASTM D5986-1996 (R2001), Test Method for Determination of Oxygenates, Benzene, Toluene, C8-C12 Aromatics and Total Aromatics in Finished Gasoline by Gas Chromatography/Fourier Transform Infrared Spectroscopy	ASTM D6082-2001, Test Method for High Temperature Foaming Characteristics of Lubricating Oils	ASTM D613-2005, Test Method for Cetane Number of Diesel Fuel Oil
ASTM D6006-1997a (R2004), Guide for Assessing Biodegradability of Hydraulic Fluids	ASTM D6095-1999, Test Method for Volume Resistivity for Extruded Crosslinked and Thermoplastic Semi-Conducting, Conductor and Insulation Shielding Materials	(no abstract provided by developer)
ASTM D6021-1996 (R2001), Test Method for the Measurement of Total Hydrogen Sulfide in Residual Fuels by Multiple Headspace Extraction and Sulfur Specific Detection	ASTM D6096-2002, Specification for Poly(vinyl Chloride) Insulation for Wire and Cable, 90 C Operation	ASTM D6138-2003, Test Method for Determination of Corrosion Preventive Properties of Lubricating Greases Under Dynamic Wet Conditions (Emcor Test)
ASTM D6022-2001, Practice for the Calculation of Permanent Shear Stability Index	ASTM D6097-2001a, Test Method for Relative Resistance to Vented Water-Tree Growth in Solid Dielectric Insulating Materials	ASTM D6139-2000 (R2005), Test Method for Determining the Aerobic Aquatic Biodegradation of Lubricants or Their Components Using the Gledhill Shake Flask
ASTM D6041-1997, Specification for Contact-Molded "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Corrosion Resistant Pipe and Fittings	ASTM D61-75 (R2004), Test Method for Softening Point of Pitches (Cube-In-Water Method)	ASTM D6148-1997 (R2002), Practice for the Examination of Stickies
ASTM D6045-2004, Test Method for Color of Petroleum Products by the Automatic Tristimulus Method	ASTM D6101-2000 (R2005), Test Method for Equivalent Black Area (EBS) of Dirt in Pulp, Paper and Paperboard by Image Analysis	ASTM D6158-2005, Specification for Mineral Hydraulic Oils
ASTM D6046-2002, Classification of Hydraulic Fluids for Environmental Impact		ASTM D6159-1997 (R2002), Test Method for Determination of Hydrocarbon Impurities in Ethylene by Gas Chromatography
		ASTM D6160-1998 (R2003), Test Method for Determination of Polychlorinated Biphenyls (PCBs) in Waste Materials by Gas Chromatography
		ASTM D6184-1997 (R2005), Test Method for Oil Separation from Lubricating Grease (Conical Sieve Method)

ASTM D6185-1997 (R2002), Practice for Evaluating Compatibility of Binary Mixtures of Lubricating Greases	ASTM D6296-1999 (R2003), Test Method for Total Olefins in Spark-Ignition Engine Fuels by Multi-Dimensional Gas Chromatography	ASTM D6378-2004, Test Method for Determination of Vapor Pressure V _{px} of Petroleum Products, Hydrocarbons and Hydrocarbon-Oxygenate Mixtures (Triple Expansion Method)
ASTM D6186-1997 (R2003), Test Method for Oxidation Induction Time of Lubricating Oils by Pressure Differential Scanning Calorimetry (PDSC)	ASTM D6299-2002, Practice for Applying Statistical Quality Assurance Techniques to Evaluate Analytical Measurement System Performance	ASTM D6379-2004, Test Method for Determination of Aromatic Hydrocarbon Types in Aviation Fuels and Petroleum Distillates - High Performance Liquid Chromatography Method with Refractive Index Detection
ASTM D619-1999 (R2004), Test Methods for Vulcanized Fibre Used for Electrical Insulation (10.01) (no abstract provided by developer)	ASTM D6300-2004, Practice for Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products and Lubricants	ASTM D6384-1999 (R2005), Terminology Relating to Biodegradability and Ecotoxicity of Lubricants
ASTM D6194-2003, Test Method for Glow-Wire Ignition of Materials	ASTM D6304-2004, Test Method for Determination of Water in Petroleum Products, Lubricating Oils, and Additives by Coulometric Karl Fischer Titration	ASTM D6417-2002, Test Method for Estimation of Engine Oil Volatility by Capillary Gas Chromatography
ASTM D6200-2001, Test Method for Determination of Cooling Characteristics of Quench Oils by Cooling Curve Analysis	ASTM D6334-1998 (R2003), Test Method for Sulfur in Gasoline by Wavelength Dispersive X-Ray Fluorescence	ASTM D6421-1999A (R2004), Test Method for Evaluating Automotive Spark-Ignition Engine Fuel for Electronic Port Fuel Injector Fouling by Bench Procedure
ASTM D6201-2004, Test Method for Dynamometer Evaluation of Unleaded Spark-Ignition Engine Fuel for Intake Valve Deposit Formation	ASTM D6335-2002, Test Method for Determination of High Temperature Deposits by Thermo-Oxidation Engine Oil Simulation Test	ASTM D6422-1999 (R2004), Test Method for Water Tolerance (Phase Separation) of Gasoline-Alcohol Blends
ASTM D6202-2002, Test Method for Measurement of the Effects of Automotive Engine Oils on the Fuel Economy of Passenger Cars and Light-Duty Trucks in the Sequence via Spark Ignition Engine	ASTM D6343-1999 (R2004), Test Methods for Thin Thermally Conductive Solid Materials for Electrical Insulation and Dielectric Applications	ASTM D6423-1999 (R2004), Test Method for Determination of the PHE of Ethanol, Denatured Fuel Ethanol, and Fuel Ethanol (Ed75-Ed85)
ASTM D6203-1997 (R2001), Test Method for Thermal Stability of Way Lubricants	ASTM D6351-1999 (R2005), Test Method for Determination of Low Temperature Fluidity and Appearance of Hydraulic Fluids	ASTM D6424-2004a, Practice for Octane Rating Naturally Aspirated Spark Ignition Aircraft Engines
ASTM D6217-1998 (R2003), Test Method for Particulate Contamination in Middle Distillate Fuels by Laboratory Filtration	ASTM D6352-2004a, Test Method for Boiling Range Distribution of Petroleum Distillates in the Boiling Range of 174 to 700 C by Gas Chromatography	ASTM D6425-2005, Test Method for Measuring Friction and Wear Properties of EP Lubricating Oils Using the SRV Test Machine
ASTM D6224-2002, Practice for In-Service Monitoring of Lubricating Oil for Auxiliary Power Plant Equipment	ASTM D6353-1998 (R2004), Guide for Sampling Plan and Core Sampling of Prebaked Anodes Used in Aluminum Production	ASTM D6426-2004, Test Method for Determining Filterability of Middle Distillate Fuel Oils
ASTM D6227-2004a, Specification for Grade 82 Unleaded Aviation Gasoline	ASTM D6354-2004, Guide for Sampling Plan and Core Sampling of Carbon Cathode Blocks Used in Aluminum Production	ASTM D643-1997 (R2002), Test Method for Folding Endurance of Paper by the SchopperTester
ASTM D6258-2004, Test Method for Determination of Solvent Red 164 Dye Concentration in Diesel Fuels	ASTM D6371-20055, Test Method for Cold Filter Plugging Point of Diesel and Heating Fuels	ASTM D6439-2005, Guide for Cleaning, Flushing and Purification of Steam, Gas and Hydroelectric Turbine Lubrication Systems
ASTM D6259-1998 (R2004), Practice for Determination of a Pooled Limit of Quantitation	ASTM D6374-1999 (R2004), Test Method for Volatile Matter in Green Petroleum Coke Quartz Crucible Procedure	ASTM D644-1999 (R2002), Test Method for Moisture Content of Paper and Paperboard by Oven Drying
ASTM D6277-2001, Test Method for Determination of Benzene in Spark-Ignition Engine Fuels Using Mid-Infrared Spectroscopy	ASTM D6375-2005, Test Method for Evaporation Loss of Lubricating Oils by Thermogravimetric Analyzer (TGA) Noack Method	ASTM D6443-2004, Test Method for Determination of Calcium, Chlorine, Copper, Magnesium, Phosphorus, Sulfur and Zinc in Unused Lubricating Oils and Additives by Wavelength Dispersive X-Ray Fluorescence Spectrometry (Mathematical)
ASTM D6278-2002, Test Method for Shear Stability of Polymer-Containing Fluids Using a European Diesel Injector Apparatus	ASTM D6376-2005, Test Method for the Determination of Trace Metals in Petroleum Coke by Wavelength-Dispersive X-Ray Fluorescence Spectroscopy	ASTM D6445-1999 (R2004), Test Method for Sulfur in Gasoline by Energy-Dispersive X-Ray Fluorescence Spectrometry
ASTM D6293-1999 (R2003), Test Method for Oxygenates and Paraffin, Olefin, Naphthene, Aromatic (O-Pona) Hydrocarbon Types in Low-Olefin Spark-Ignition Engine Fuels by Gas Chromatography	ASTM D6377-2004, Test Method for Vapor Pressure of Crude Oil: V _{pcrx} (Expansion Method)	

ASTM D6446-1999, Test Method for Estimation of Heat of Combustion (Specific Energy) of Aviation Fuels	ASTM D6548-2005, Test Method for Resistance to Mechanical Penetration of Sanitary Tissue Papers (Ball Burst Procedure)	ASTM D6618-2005, Test Method for Evaluation of Engine Oils in the Diesel Four-Stroke Cycle Supercharged 1m-PC Single Cylinder Oil Test Engine
ASTM D6447-2004, Test Method for Hydroperoxide Number of Aviation Turbine Fuels by Voltammetric Analysis	ASTM D6549-2001, Test Method for Determination of Cooling Characteristics of Quenchants by Cooling Curve Analysis with Agitation (Drayton Unit)	ASTM D6624-2001, Practice for Determining a Flow-Proportioned Average Property Value (FPAPV) for a Collected Batch of Process Stream Material Using Stream Analyzer Data
ASTM D6448-2004, Specification for Industrial Burner Fuels from Used Lubricating Oils	ASTM D6550-2005, Test Method for the Determination of the Olefin Content of Gasolines by Super-Critical-Fluid Chromatography	ASTM D664-2004, Test Method for Acid Number of Petroleum Products by Potentiometric Titration
ASTM D645-1997 (R2002), Test Methods for Thickness of Paper and Paperboard	ASTM D6553-2000 (R2005), Test Method for Coolant Compatibility of Way Lubricants	ASTM D665-2004, Rust-Preventing Characteristics of Steam-Turbine Oil in the Presence of Water, Method of Test for (05.01) (no abstract provided by developer)
ASTM D6450-2005, Test Method for Flash Point by Continuously Closed Cup (CCCFP) Tester	ASTM D6557-2004, Test Method for Evaluation of the Rust Preventive Characteristics of Automotive Engine Oils	ASTM D6666-2004, Guide for Evaluation of Aqueous Polymer Quenchants
ASTM D6454-1998, Guide for Sampling Plan and Core Sampling of Carbon Cathode Blocks Used in Aluminum Production	ASTM D6558-2001 (R2005), Test Method for Determination of TGA CO ₂ Reactivity of Baked Carbon Anodes and Cathode Blocks	ASTM D6667-2004, Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence
ASTM D646-1996 (R2001), Test Method for Grammage of Paper and Paperboard (Weight Per Unit Area)	ASTM D6559-2001 (R2005), Test Method for Determination of TGA Air Reactivity of Baked Carbon Anodes and Cathode Blocks	ASTM D6668-2001, Test Method for Discrimination Between Flammability Ratings of F = 0 and F = 1
ASTM D6468-1999 (R2004), Test Method for High Temperature Stability of Distillate Fuels	ASTM D6560-2000 (R2005), Test Method for Determination of Asphaltenes (Heptane Insolubles), in Crude Petroleum and Petroleum Products	ASTM D668-1999 (R2004), Method for Measuring Dimensions of Rigid Rods and Tubes Used for Electrical Insulation (10.01) (no abstract provided by developer)
ASTM D6469-2004, Guide to Microbial Contamination in Fuels and Fuel Systems	ASTM D6584-2000, Test Method for Determination of Free and Total Glycerin in B-100 Biodiesel Methyl Esters by Gas Chromatography	ASTM D6681-2005, Test Method for Evaluation of Engine Oils in a High-Speed, Single-Cylinder Diesel Engine - Caterpillar 1p Test Procedure
ASTM D6470-1999 (R2004), Method for Salt in Crude Oils (Potentiometric Method)	ASTM D6593-2005a, Test Method for Evaluation of Automotive Engine Oils for Inhibition of Deposit Formation in a Spark-Ignition Internal Combustion Engine Fueled with Gasoline and Operated Under Low-Temperature, Light-Duty Conditions	ASTM D669-2003, Test Method for Dissipation Factor and Permittivity Parallel with Laminations of Laminated Sheet and Plate Materials
ASTM D6478-1999, Test Method for High Temperature Stability of Distillate Fuels	ASTM D6594-2005, Test Method for Evaluation of Corrosiveness of Diesel Engine Oil at 135oC	ASTM D6708-2005, Practice for Statistical Assessment and Improvement of the Expected Agreement Between Two Test Methods That Purport to Measure the Same Property of a Material
ASTM D6481-1999 (R2004), Test Method for Determination of Phosphorus, Sulfur, Calcium and Zinc in Lubricating Oils by Energy Dispersive X-Ray Fluorescence Spectroscopy	ASTM D6595-2005, Test Method for Determination of Wear Metals and Contaminants in Used Lubricating Oils or Used Hydraulic Fluids by Rotating Disc Electrode Atomic Emission Spectrometry	ASTM D6709-2005, Test Method for Evaluation of Automotive Engine Oils in the Sequence VIII Spark-Ignition Engine (CLR Oil Test Engine)
ASTM D6482-2001, Test Method for Determination of Cooling Characteristics of Aqueous Polymer Quenchants by Cooling Curve Analysis with Agitation (Tensi Method)	ASTM D6596-2005, Practice for Ampulization and Storage of Gasoline and Related Hydrocarbon Materials	ASTM D6710-2002, Guide for Evaluation of Hydrocarbon-Based Quench Oil
ASTM D6483-2004, Test Method for Evaluation of Diesel Engine Oils in the T-9 Diesel Engine	ASTM D6615-2005, Specification for Jet B Wide-Cut Aviation Turbine Fuel	ASTM D6728-2001, Test Method for Determination of Contaminants in Gas Turbine and Diesel Engine Fuel by Rotating Disc Electrode Atomic Emission Spectrometry
ASTM D6514-2003, Test Method for High Temperature Universal Oxidation Test for Turbine Oils (1)	ASTM D6616-2001a, Test Method for Measuring Viscosity at High Shear Rate by Tapered Bearing Simulator Viscometer at 100 C	
ASTM D6546-2000 (R2005), Test Methods and Suggested Limits for Determining the Compatibility of Elastomer Seals for Industrial Hydraulic Fluid Applications	ASTM D6617-2005, Practice for Laboratory Bias Detection Using a Single Test Result from a Standard Material	
ASTM D6547-2000 (R2005), Test Method for Corrosiveness of a Lubricating Fluid to a Bi-Metallic Couple		

ASTM D6729-2004, Test Method for the Determination of Individual Components in Spark Ignition Engine Fuels by 100 Meter Capillary (With Precolumn) High Resolution Gas Chromatography	ASTM D6783-2005, Specification for Polymer Concrete Pipe	ASTM D6833-2002, Test Method for Accelerated Pollutant Aging of Printing and Writing Paper by Pollution Chamber Exposure Apparatus
ASTM D6730-2001, Test Method for Determination of Individual Components in Spark Ignition Engine Fuels by 100 Meter Capillary High Resolution Gas Chromatography	ASTM D6789-2002a, Test Method for Accelerated Light Aging of Printing and Writing Paper by Xenon-Arc Exposure Apparatus	ASTM D6837-2005a, Test Method for Measurement of the Effects of Automotive Engine Oils on the Fuel Economy of Passenger Cars and Light-Duty Trucks in the Sequence VIB Spark Ignition Engine
ASTM D6731-2001 (R2005), Test Method for Determining the Aerobic, Aquatic Biodegradability of Lubricants or Lubricant Components in a Closed Respirometer	ASTM D6791-2002, Test Method for the Determination of Grain Stability of Calcined Petroleum Coke	ASTM D6838-2004, Test Method for Cummins M11 High Shoot Test
ASTM D6732-2004, Test Method for the Determination of Copper in Jet Fuels by Graphite Furnace Atomic Absorption Spectrometry	ASTM D6792-2005, Guide for a Quality System in Petroleum Products and Lubricants Testing Laboratories	ASTM D6839-2002, Test Method for Hydrocarbons Types, Oxygenated Compounds and Benzene in Spark Ignition Engine Fuels by Gas Chromatography
ASTM D6733-2001, Test Method for Determination of Individual Components in Spark Ignition Engine Fuels by 50 Meter Capillary High Resolution Gas Chromatography	ASTM D6793-2002, Test Method for Determination of Isothermal Secant and Tangent Bulk Modulus	ASTM D6849-2002, Practice for Storage and Use of LPG in Sample Cylinders for LPG Test Methods
ASTM D6743-2001, Test Method for Thermal Stability of Organic Heat Transfer Fluids	ASTM D6794-2002, Test Method for Measuring the Effect on Filterability of Engine Oils After Treatment with Various Amounts of Water and a Long (6 H) Heating Time	ASTM D685-1993 (R2002), Practice for Conditioning Paper and Paper Products for Testing
ASTM D6744-2001, Test Method for Determination of the Thermal Conductivity of Anode Carbons by the Guarded Heat Flow Meter Technique	ASTM D6795-2002, Test Method for Measuring the Effect on Filterability of Engine Oils After Treatment with Water and Dry Ice and a Short (30 Min) Heating Time	ASTM D686-1993, Test Method for Qualitative Examination of Mineral Filler and Mineral Coating of Paper
ASTM D6745-2001, Test Method for Linear Thermal Expansion of Electrode Carbons	ASTM D6810-2002, Test Method for Measurement of Hindered Phenolic Antioxidant Content in Turbine Oil by Linear Sweep Voltammetry	ASTM D686-1996 (R2002), Test Method for Qualitative Examination of Mineral Filler and Mineral Coating of Paper
ASTM D6748-2002a, Test Method for Determination of Potential Instability of Middle Distillate Fuels Caused by the Presence of Phenalenes and Phenalenones. Rapid Method by Portable Spectrophotometer	ASTM D6811-2002, Test Method of Measurement of Thermal Stability of Aviation Turbine Fuels under Turbulent Flow Conditions (HIRETS Method)	ASTM D6864-2003, Specification for Color and Appearance Retention of Solid Colored Plastic Siding Products
ASTM D6749-2002, Test Method for Pour Point of Petroleum Products (Automatic Air Pressure Method)	ASTM D6812-2004b, Practice for Ground-based Octane Rating Procedures for Turbocharged/supercharged Spark Ignition Aircraft Engines	ASTM D689-2003, Test Method for Internal Tearing Resistance of Paper
ASTM D6750-2005a, Test Methods for Evaluation of Engine Oils in a High-Speed, Single-Cylinder Diesel Engine - 1K Procedure (0.4% Fuel Sulfur) and 1N Procedure (0.04% Fuel Sulfur)	ASTM D6813-2002a, Guide for the Performance Evaluation of Hydraulic Fluids for Piston Pumps	ASTM D6890-2004, Test Method for the Determination of Ignition Delay and Derived Cetane Number (DCN) of Diesel Fuel Oils by Combustion in a Constant Volume Chamber
ASTM D6751-2005, Provisional Specification for Biodiesel Fuel (B100) Blend Stock for Distillate Fuels	ASTM D6819-2002, Test Method for Accelerated Temperature Aging of Printing and Writing Paper by Dry Oven Exposure Apparatus	ASTM D6891-2005a, Test Method for Evaluation of Automotive Engine Oils in the Sequence IVA Spark-Ignition Engine
ASTM D6756-2002, Test Method for Determination of the Red Dye Concentration and Estimation of the ASTM Color of Diesel Fuel and Heating Oil Using a Portable Visible Spectrophotometer	ASTM D6821-2002, Test Method for Viscosity of Drive Line Lubricants in a Constant Shear Stress Viscometer	ASTM D6892-2003, Test Method for Pour Point of Petroleum Products (robotic Tilt Method)
ASTM D6777-2002, Test Method for Relative Rigidity of Poly(Vinyl Chloride) (PVC) Siding	ASTM D6822-2002, Test Method for Density, Relative Density and API Gravity of Crude Petroleum and Liquid Petroleum Products by Thermohydrometer Method	ASTM D6894-2003, Test Method for Evaluation of the Aeration Resistance of Engine Oils in a Direct-injected Turbocharged Automotive Diesel Engine
	ASTM D6823-2002, Standard Specification for Commercial Boiler Fuels with Used Lubricating Oils	ASTM D6895-2003, Test Method for Rotational Viscosity of Heavy Duty Diesel Drain Oils at 100 C
	ASTM D6824-2004, Test Method for Determining Filterability of Aviation Turbine Fuel	ASTM D6896-2003, Test Method for Determination of Yield Stress and Apparent Viscosity of Used Engine Oils at Low Temperature

ASTM D6897-2004, Test Method for Vapor Pressure of Liquefied Petroleum Gases (LPG) (Expansion Method)	ASTM D7040-2004, Test Method for Determination of Low Levels of Phosphorus in Gf 4 Lubricating Oils by Inductively Coupled Plasma Atomic Emission Spectrometry"	ASTM D7066-2004, Test Method for Dimer/Trimer of Chlorotrifluoroethylene (s-316) Recoverable Oil and Grease and Nonpolar Material by Infrared Determination
ASTM D6898-2003, Test Method for Evaluating Diesel Fuel Lubricity by an Injection Pump Rig	ASTM D7041-2004, Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Online Gas Chromatography with Flame Photometric Detection	ASTM D709-2001, Specification for Laminated Thermosetting Materials
ASTM D69-2001, Test Methods for Friction Tapes	ASTM D7042-2004, Test Method for Dynamic Viscosity and Density of Liquids by Stabinger Viscometer (an D the Calculation of Kinematic Viscosity)	ASTM D7094-2004, Test Method for Flash Point by Modified Continuously Closed Cup Flash Point Tester
ASTM D6920-2003, Test Method for Total Sulfur in Naphthas, Distillates, Reformulated Gasolines, Diesels, Biodiesels, and Motor Fuels by Oxidative Combustion and Electrochemical Detection	ASTM D7043-2004a, Test Method for Indicating Wear Characteristics of Petroleum and Non-petroleum Hydraulic Fluids in a Constant Volume Vane Pump	ASTM D7095-2004, Test Method for Rapid Determination of Corrosiveness to Copper from Petroleum Products Using a Disposable Copper Foil Strip
ASTM D6922-2003, Test Method for Measuring Homogeneity and Miscibility in Automotive Engine	ASTM D7044-2004a, Specification for Biodegradable Fire Resistant Hydraulic Fluids	ASTM D7096-2005, Test Method for Determination of the Boiling Range Distribution of Gasoline by Wide-bore Capillary Gas Chromatography
ASTM D6923-2005, Test Method for Evaluation of Engine Oils in a High Speed, Single-Cylinder Diesel Engine - Caterpillar 1R Test Procedure	ASTM D7058-2004, Standard Test Method for Determination of the Red Dye Concentration and Estimation of Saybolt Color of Aviation Turbine Fuels and Kerosine Using a Portable Visible Spectrophotometer1	ASTM D7097-2005, Test Method for Determination of Moderately High Temperature Piston Deposits by Thermo-oxidation Engine Oil Simulation Test - Teost Mht
ASTM D6969-2003, Practice for the Preparation of Calcined Petroleum Coke Samples for Analysis	ASTM D7058-2004, Standard Test Method for Determination of the Red Dye Concentration and Estimation of Saybolt Color of Aviation Turbine Fuels and Kerosine Using a Portable Visible Spectrophotometer1	ASTM D7098-2005, Test Method for Oxidation Stability of Lubricants by Thin-film Oxygen Uptake (tfout)1 Catalyst B2
ASTM D6970-2003, Practice for Collection of Calcined Petroleum Coke Samples for Analysis	ASTM D7059-2004, Test Method for Determination of Methanol in Crude Oils by Multidimensional Gas Chromatography	ASTM D71-1994 (R2004), Test Method for Relative Density of Solid Pitch and Asphalt (Displacement Method)
ASTM D6973-2005, Test Method for Indicating Wear Characteristics of Petroleum Hydraulic Fluids in a High Pressure Constant Volume Vane Pump	ASTM D7059-2004, Test Method for Determination of Methanol in Crude Oils by Multidimensional Gas Chromatography	ASTM D710-1997 (R2002), Specification for Vulcanized Fibre Sheets-94, Rods-94, and Tubes Used for Electrical Insulation (10.01) (no abstract provided by developer)
ASTM D6974-2003, Practice for Enumeration of Viable Bacteria and Fungi in Liquid Fuels - Filtration and Culture Procedures	ASTM D7060-2004, Test Method for Determination of the Maximum Flocculation Ratio and Peptizing Power in Residual and Heavy Fuel Oils (optical Detection Method)	ASTM D7109-2005, Test Method for Shear Stability of Polymer Containing Fluids Using a European Diesel Injector Apparatus at 30 and 90 Cycles
ASTM D6974-2004a, Practice for Enumeration of Viable Bacteria and Fungi in Liquid Fuels - Filtration and Culture Procedures	ASTM D7060-2005, Test Method for Determination of the Maximum Flocculation Ratio and Peptizing Power in Residual and Heavy Fuel Oils (optical Detection Method)	This test method covers the evaluation of the shear stability of polymer-containing fluids. The test method measures the viscosity loss, in mm ² /s and percent, at 100C of polymer-containing fluids when evaluated by a diesel injector apparatus procedure that uses Europena diesel injector test equipment. The viscosity loss reflects polymer degradation due to shear at the nozzle.
ASTM D6975-2004, Test Method for Cummins M11 EGR Test	ASTM D7061-2004, Test Method for Measuring the N-Heptane Induced Phase Separation of Asphaltene-containing Heavy Fuel Oils as a Separability Number by an Optical Scanning Device	ASTM D7110-2005, Test Method for Determining the Viscosity-temperature Relationship of Used and Soot-containing Engine Oils at Low Temperatures
ASTM D6984-2005a, Test Method for Evaluation of Automotive Engine Oils in the Sequence IIF, Spark-Ignition Engine	ASTM D7061-2005, Test Method for Measuring the N-Heptane Induced Phase Separation of Asphaltene-containing Heavy Fuel Oils as a Separability Number by an Optical Scanning Device	
ASTM D6985-2004a, Specification for Middle Distillate Fuel Oil - Military Marine Applications		
ASTM D6987-2005a, Test Method for Evaluation of Diesel Engine Oils in the T-10 Exhaust Gas Recirculation Diesel Engine		
ASTM D7038-2005a, Test Method for the Evaluation of Moisture Corrosion Resistance of Automotive Gear Lubricants		
ASTM D7039-2004, Test Method for Sulfur in Gasoline and Diesel Fuel by Monochromatic Wavelength Dispersive X-ray Fluorescence Spectrometry		

ASTM D7111-2005, Standard Test Method for Determination of Trace Elements in Middle Distillate Fuels by Inductively Coupled Plasma Atomic Emission Spectrometry (icp-aes)1

This test method covers the determination of selected elements in middle distillate fuels by inductively coupled plasma atomic emission spectrometry (ICP-AES). The specific elements are listed in Table 1. The concentration range of this method is approximately 0.1 mg/kg to 2.0 mg/kg. The method may be used for concentrations outside of this range; however, the precision statements may not be applicable. Middle distillate fuels covered in this method have all distillation fractions contained within the boiling range of 150 C to 390 C. This includes, but is not limited to, diesel fuels and aviation turbine fuels. This method is not intended.

ASTM D7112-2005, Test Method for Determining Stability and Compatibility of Heavy Fuel Oils and Crude Oils by Heavy Fuel Oil Stability Analyzer Optical Detection

ASTM D7171-2005, Standard Test Method for Hydrogen Content of Middle Distillate Petroleum Products by Low-Resolution Pulsed Nuclear Magnetic Resonance Spectroscopy

ASTM D721-2005, Test Method for Oil Content of Petroleum Waxes
(no abstract provided by developer)

ASTM D7213-2006, Test Method for the Boiling Range Distribution of Petroleum Distillates in The Boiling range form 100 to 615 by Gas Chromatography

ASTM D7214-2005, Test Method for Determination of the Oxidation of Used Lubricants by FT-IR Using Peak Area Increase Calculation

1.1 This test method covers the determination of the oxidation of used lubricants by FT-IR (Fourier Transform Infrared Spectroscopy). It measures the constituents containing a carbonyl function that have formed during the oxidation of the lubricant. 1.2 The test method may be used to indicate relative changes that occur in an oil under oxidizing conditions. The test method is not intended to measure an absolute oxidation property that can be used to predict performance of an oil in service

ASTM D7216-2005, Test Method for Determining Automotive Engine Oil Compatibility With Typical Seal Elastomers

This test method provides quantitative procedures for the evaluation of the compatibility of automotive engine oils with reference elastomers.

ASTM D7217-2006, Test Method for Determining Extreme Pressure Properties of Solid Bonded Films Using A High-Frequency, Linear-Oscillation (SRV Test Machine 1

ASTM D7219-2006, Specification for Isotropic and Near-Isotropic Nuclear Graphites

ASTM D722-1993 (R2002), Test Method for Grease Resistance of Paper (Turpentine Test)

ASTM D7223-2006, Specification for Aviation Certification Turbine Fuel

ASTM D7224-2006, Test Method for Determining Water Separation characteristics of Kerosene-type Aviation Turbine Fuels Containing Additives by Portable Separometer

ASTM D7235-2005, Guide for Establishing a Linear Correlation Relationship Between Analyzer and Test Method Results Using Relevant ASTM Standard Practices

ASTM D7236-2005, Method for Flash Point by Small Scale Closed Cup Tester (ramp Method)

ASTM D724-1999 (R2003), Test Method for Surface Wettability of Paper (Angle-Of-Contact Method)

ASTM D726-1994 (R2003), Test Method for Resistance of Nonporous Paper to Passage of Air

ASTM D727-1996 (R2001), Test Method for Kerosine Number of Roofing and Flooring Felt by the Vacuum Method

ASTM D748-2000 (R2005), Specification for Natural Block Mica and Mica Films Suitable for Use in Fixed Mica-Dielectric Capacitors

ASTM D774-1997 (R2002), Test Method for Bursting Strength of Paper

ASTM D776-1992 (R2001), Test Method For Determination Of Effect Of Dry Heat On Properties Of Paper And Board

ASTM D777-1997 (R2002), Test Method For Flammability Of Treated Paper And Paperboard

ASTM D778-1997 (R2002), Test Methods for Hydrogen Ion Concentrate (pH) of Paper Extracts (Hot-Extraction and Cold-Extraction Procedures)

ASTM D779-2003, Test Method For Water Resistance Of Paper, Paperboard, And Other Sheet Materials By The Dry-Indicator Method

ASTM D780-1995 (R2003), Test Method For Printing Ink Permeation Of Paper (Castor Oil Test)

ASTM D784-2003, Specification for Orange Shellac and Other Indian Lacs for Electrical Insulation (10.01)

(no abstract provided by developer)

ASTM D808-2005, Test Method for Chloride in New and Used Petroleum Products (Bomb Method)

(no abstract provided by developer)

ASTM D824-1994 (R2002), Test Method For Rate Of Absorption Of Water By Bibulous Papers

ASTM D828-2002, Test Method for Tensile Properties of Paper and Paperboard Using

ASTM D829-1997 (R2002), Test Methods for Wet Tensile Breaking Strength of Paper and Paper Products

ASTM D834-1990 (R2001), Test Method for 20-Deg Specular Gloss of Waxed Paper

ASTM D86-2005, Test Method for Distillation of Petroleum Products at Atmospheric Pressure

D86

ASTM D866-1999 (R2004), Specification for Styrene-Butadiene (SBR) Synthetic Rubber Jacket for Wire and Cable (10.01)

(no abstract provided by developer)

ASTM D87-2004, Test Method for Melting Point of Petroleum Wax (Cooling Curve) (05.01)

(no abstract provided by developer)

ASTM D873-2002, Test Method for Oxidation Stability of Aviation Fuels Potential Residue Method

(no abstract provided by developer)

ASTM D874-2000, Test Method for Sulfated Ash from Lubricating Oils and Additives (05.01)

(no abstract provided by developer)

ASTM D892-2005, Test Method for Foaming Characteristics of Lubricating Oils

(no abstract provided by developer)

ASTM D893-2005a, Insolubles in Used Lubricating Oils, Method of Test for (05.01)

ASTM D902-2000, Test Methods for Flexible Resin-Coated Glass Fabrics and Glass Fabric Tapes Used for Electrical Insulation (10.01)

(no abstract provided by developer)

ASTM D909-2001, Test Method for Knock Characteristics of Aviation Gasolines by the Supercharge Method (not available as separate reprint) (05.04)

(no abstract provided by developer)

ASTM D91-2002, Test Method for Precipitation Number of Lubricating Oils (05.01) (no abstract provided by developer)	ASTM D97-2005, Test Method for Pour Point of Petroleum Products (no abstract provided by developer)	ASTM E1261-2000, Selection and Calibration of Dosimetry Systems for Radiation Processing, Guide for (12.02) (no abstract provided by developer)
ASTM D910-2004b, Specification for Aviation Gasolines (05.01) (no abstract provided by developer)	ASTM D972-2002, Test Method for Evaporation Loss of Lubricating Greases and Oils (05.01) (no abstract provided by developer)	ASTM E1275-2004, The Use of a Radiochromic Film Dosimetry System, Practice for (12.02) (no abstract provided by developer)
ASTM D918-1993 (R2003), Test Method For Blocking Resistance Of Paper And Paperboard	ASTM D974-2004, Neutralization Number by Color-Indicator Titration, Method of Test for (05.01) (no abstract provided by developer)	ASTM E1276-2002, Use of Polymethylmethacrylate Dosimetry System, Practice for
ASTM D919-1997 (R2002), Test Method For Copper Number Of Paper And Paperboard	ASTM D975-2004, Specification for Diesel Fuel Oils (05.01)	ASTM E1284-1997, Guide for Nosologic Standards and Guides for Construction of New Biomedical Nomenclature
ASTM D92-2005, Test Method for Flash and Fire Points by Cleveland Open Cup Tester (no abstract provided by developer)	ASTM D976-2004a, Test Method for Calculated Cetane Index of Distillate Fuels (no abstract provided by developer)	ASTM E1296-1997, Terminology Relating to Liquid Particle Statistics
ASTM D922-2000, Specification for Nonrigid Vinyl Chloride Polymer Tubing This standard was listed for public review in the 8/11/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.	ASTM D984-1997 (R2002), Test Methods For Reducible Sulfur In Paper	ASTM E1301-1996 (R2003), Guide for Development and Operation of Laboratory Proficiency Testing Programs
ASTM D922-2000d, Specification for Nonrigid Vinyl Chloride Polymer Tubing This standard was listed for public review in the 8/11/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.	ASTM D985-1997 (R2002), Test Method for Brightness of Pulp, Paper, and Paperboard (Directional Reflectance at 457 Nm)	ASTM E1302-2000, Guide for Acute Animal Toxicity Testing of Water-Miscible Metal Working Fluids
ASTM D93-2002a, Test Methods for Flash-point by Pensky-Martens Closed Cup Tester (no abstract provided by developer)	ASTM E1026-2004, Practice for Using the Fricke Reference Standard Dosimetry System	ASTM E1310-2004, Practice for Use of a Radiochromic Optical Waveguide Dosimetry System
ASTM D937-2004, Test Method for Cone Penetration of Petrolatum (05.01) (no abstract provided by developer)	ASTM E105-1997, Practice for Probability Sampling of Materials	ASTM E1317-2002, Test Method for Flammability of Marine Surface Finishes
ASTM D938-2005, Congealing Point of Petroleum Waxes Including Petrolatum, Method of Test for (05.01) (no abstract provided by developer)	ASTM E108-2005, Test Methods For Fire Tests Of Roof Coverings	ASTM E1321-2002, Test Method for Determining Material Ignition and Flame Spread Properties
ASTM D94-2002, Saponification Number of Petroleum Products, Test for (05.01, 10.03) (no abstract provided by developer)	ASTM E1169-2002, Guide for Conducting Ruggedness Tests	ASTM E1323-1996 (R2002), Guide for Evaluating Laboratory Measurement Practices and the Statistical Analysis of the Resulting Data
ASTM D942-2002, Test Method for Oxidation Stability of Lubricating Greases by the Oxygen Bomb Method (05.01) (no abstract provided by developer)	ASTM E119-2005, Test Methods for Fire Tests of Building Construction and Materials	ASTM E1325-2002, Terminology Relating to Design of Experiments
ASTM D943-2004, Test Method for Oxidation Characteristics of Inhibited Mineral Oils	ASTM E1204-2004, Dosimetry in Gamma Irradiation Facilities for Food Processing, Practice for (12.02)	ASTM E1334-1995 (R2005), Practice for Rating the Serviceability of a Building or Building-Related Facility
ASTM D95-2005, Test Method for Water in Petroleum Products and Bituminous Materials by Distillation (no abstract provided by developer)	ASTM E1205-2006, Practice for Use of a Ceric-cerous Sulfate Dosimetry System	ASTM E1340-2005, Guide for Rapid Prototyping of Computerized Systems
ASTM D96-88 (R1998), Water and Sediment in Crude Oils, Method of Test for (05.01) (no abstract provided by developer)	ASTM E122-2000, Practice for Choice of Sample Size to Estimate a Measure of Quality for a Lot or Process	ASTM E1352-2002, Test Methods For Cigarette Ignition Resistance Of Mock-Up Upholstered Furniture Assemblies
	ASTM E1239-2005, Guide for Description of Reservation/registration-admission, Discharge, Transfer R-ADT Systems for Electronic Health Record EHR Systems (no abstract provided by developer)	ASTM E1353-2002, Test Methods For Cigarette Ignition Resistance Of Components Of Upholstered Furniture
		ASTM E1355-2005, Guide For Evaluating The Predictive Capability Of Fire Models research

ASTM E136-2004, Test Method For Behavior Of Materials In a Vertical Tube Furnace At 750 Degrees Celcius	ASTM E1539-2004, Guide for the Use of Radiation-Sensitive Indicators	ASTM E1662-1995A (R2005), Classification for Serviceability of an Office Facility for Sound and Visual Environment
ASTM E1384-2002a, Description for Content and Structure of an Automated Primary Record of Care, Guide for (14.01) (no abstract provided by developer)	ASTM E1540-2004, Use of a Radiochromic Liquid Solution Dosimetry System, Practice for (12.02) (no abstract provided by developer)	ASTM E1663-2003, Classification for Serviceability of an Office Facility for Typical Office Information Technology
ASTM E1400-2003, Characterization and Performance of a High-Dose Radiation Dosimetry Calibration Laboratory, Practice for (12.02) (no abstract provided by developer)	ASTM E1546-1998, Guide For Development Of Fire Hazard Assessment Standards	ASTM E1664-1995A (R2005), Classification for Serviceability of an Office Facility for Facility Protection
ASTM E1401-2003, Use of a Dichromate Dosimetry System, Practice for (12.02) (no abstract provided by developer)	ASTM E1580-1996, Guide for Surveillance of Accredited Laboratories	ASTM E1665-1995A (R2005), Classification for Serviceability of an Office Facility for Facility Protection
ASTM E141-1997 (R2003), Practice for Acceptance of Evidence Based on the Results of Probability Sampling	ASTM E1590-2002, Method for Fire Testing of Real Scale Mattresses	ASTM E1666-1995A (R2005), Classification for the Serviceability of an Office Facility for Work Outside Normal Hours or Conditions
ASTM E1410-1991 (R2005), Practice for Specifying Data for Evaluation of Energy Used in Residential Buildings	ASTM E1591-2000, Guide For Data For Fire Models	ASTM E1668-1995A (R2005), Classification for Serviceability of an Office Facility for Amenities to Attract and Retain Staff
ASTM E1431-2004, Dosimetry in Electron and Bremsstrahlung Irradiation Facilities for Food Processing, Practice for (12.02) (no abstract provided by developer)	ASTM E1607-2004, Use of the Alanine-EPR Dosimetry System, Practice for (12.02) (no abstract provided by developer)	ASTM E1669-1995A (R2005), Classification for Serviceability of an Office Facility for Location, Access, and Wayfinding
ASTM E1464-1992 (R2005), Guide for Developing Energy Monitoring Protocols for Commercial and Institutional Buildings or Facilities (04.11)	ASTM E1608-2004, Dosimetry in an X-Ray (Bremsstrahlung) Facility for Radiation Processing, Practice for (12.02) (no abstract provided by developer)	ASTM E1670-1995A (R2005), Classification for Serviceability of an Office Facility for Management of Operations and Maintenance
ASTM E1472-2005, Guide For Documenting Computer Software For Fire Models	ASTM E162-2003, Test Method For Surface Flammability Of Materials Using A Radiant Heat Energy Source	ASTM E1671-1995A (R2005), Classification for Serviceability of an Office Facility for Cleanliness
ASTM E1474-2001, Test Method for Determining the Heat Release Rate of Upholstered Furniture and Mattress Components or Composites Using a Bench Scale Oxygen Consumption Calorimeter	ASTM E1623-2003, Test Method For Determination Of Fire And Thermal Parameters Of Materials, Products And Systems Using An Intermediate Scale Calorimeter (ICAL)	ASTM E1678-1995, Test Method For Measuring Smoke Toxicity For Use In Fire Hazard Analyses
ASTM E1480-1992 (R2004), Terminology of Facility Management (Building-Related) (04.11)	ASTM E1626-2002, Guide for Including Government Procurement Requirements In ASTM Documents	ASTM E1679-1995 (R2005), Practice for Setting Requirements for Serviceability of a Building or Building-Related Facility
ASTM E1488-2002, Test Method for Statistical Procedures to Use in Developing and Applying Test Methods	ASTM E1631-2003, Use of Calorimetric Dosimetry Systems for Electron Beam Dosimeter Measurements and Dosimeter Calibrations, Practice for	ASTM E1687-2004, Test Method for Determining Carcinogenic Potential of Virgin Base Oils in Metalworking Fluids
ASTM E1497-2005, Practice for Safe Use of Water-Miscible Metal Removal Fluids	ASTM E1633-2002, Specification for Coded Values Used in Computer-Based Patient Record	ASTM E1692-1995A (R2005), Classification for Serviceability of an Office Facility for Change and Churn by Occupants
ASTM E1529-2005, Test Methods for Determining Effects of Large Hydrocarbon Pool Fires on Structural Members and Assemblies	ASTM E1649-2004, Dosimetry in an Electron Beam Facility for Radiation Processing at Energies between 300 KeV and 25 MeV, Practice for (12.02) (no abstract provided by developer)	ASTM E1693-1995 (R2005), Classification for Serviceability of an Office Facility for Protection of Occupant Assets
ASTM E1537-2002b, Test Method for Fire Testing of Real Scale Upholstered Furniture Items	ASTM E1650-2004, Use of a Cellulose Acetate Dosimetry System, Practice for	ASTM E1694-1995A (R2005), Classification for Serviceability of an Office Facility for Special Facilities and Technologies
ASTM E1538-2006, Practice for Use of the Ethanol-Chlorobenzene Dosimetry System (no abstract provided by developer)	ASTM E1660-1995A (R2005), Classification for Serviceability of an Office Facility for Support for Office Work	ASTM E1700-1995 (R2005), Classification for Serviceability of an Office Facility for Structure and Building Envelope
	ASTM E1661-1995A (R2005), Classification for Serviceability of an Office Facility for Meetings and Group Effectiveness	ASTM E1701-1995 (R2005), Classification for Serviceability of an Office Facility for Manageability
		ASTM E1702-2004, Practice for Dosimetry in a Gamma Irradiation Facility for Radiation Processing

ASTM E1707-2004, Guide for Estimating Uncertainties in Dosimetry for Radiation Processing (no abstract provided by developer)	ASTM E1895-2004, Guide for Determining Uses and Limitations of Deterministic Fire Models	ASTM E2032-1999, Extension of Data from Fire Endurance Tests
ASTM E1714-2001, The Properties of a Universal Healthcare Identifier, Guide for (14.01) (no abstract provided by developer)	ASTM E1900-2005, Guide for Dosimetry in Radiation Research on Food and Agricultural Products	ASTM E2058-2003, Methods of Test for Measurement of Synthetic Polymer Material Flammability Using a Fire Propagation Apparatus
ASTM E1715-2001, Practice for an Object-Oriented Model for Registration, Admitting, Discharge, and Transfer (RADT) Functions in Computer-Based Patient Record Systems	ASTM E1902-2002, Guide for Mangement of the Confidentiality and Security of Dictation, Transcription, and Transcribed Health Record	ASTM E2061-2002, Guide for Fire Hazard Assessment of Rail Transportation Vehicles
ASTM E1725-1995 (R2001), Test Methods For Fire Tests Of Fire Resistive Barrier Systems For Electrical System Components	ASTM E1939-2004, Practice for Blood Irradiation Dosimetry	ASTM E2067-2002a, Practice for Full-Scale Oxygen Consumption Calorimetry Fire Tests
ASTM E1740-2001, Test Method for Determining the Heat Release Rate and Other Fire-Test-Response Characteristics of Wallcovering Composites Using a Cone Calorimeter	ASTM E1940-2004, Guide for Dosimetry for Irradiation of Insects for Sterile Release Programs	ASTM E2072-2004, Specification for Photoluminescent (Phosphorescent) Safety Markings
ASTM E1744-2005, Guide for a View of Emergency Medical Care in the Computerized Patient Record	ASTM E1956-2005, Practice for Use of Thermoluminescence-Dosimetry (TLD) Systems for Radiation Processing	ASTM E2073-2001, Test Method for Photopic Luminance of Photoluminescent (Phosphorescent) Markings
ASTM E176-2005a, Terminology of Fire Standards research	ASTM E1959-2006, Guide for Requests for Proposals Regarding Medical Transcription Services for Healthcare Institutions	ASTM E2074-2001, Method of Tests for Fire Door Assemblies Under Positive Pressure
ASTM E1762-1997 (R2003), Specification for Electronic Authentication of Health Care Information	ASTM E1966-2001, Test Method for Fire Resistive Joint Systems	ASTM E2087-2000, Specification for Controlled Health Vocabularies
ASTM E1769-1996, Guide for Properties of Electronic Health Records and Record Systems	ASTM E1972-2004, Practice for Minimizing Effects of Aerosols in Wet Removal Environment	ASTM E2097-2000, Practice for Full Scale Oxygen Consumption Calorimetry Fire Tests research
ASTM E177-2004, Practice for Use of the Terms Precision and Bias in ASTM Test Methods	ASTM E1985-1998 (R2006), Guide for User Authentication and Authorization	ASTM E2102-2004b, Method for Measurement of Mass Loss and Ignitability for Screening Purposes Using a Conical Radiant Heater research
ASTM E178-2002, Practice for Dealing with Outlying Observations	ASTM E1986-1998 (R2006), Information Access Privileges to Health Information	ASTM E2116-2001, Practice for Dosimetry for a Self-Contained Dry Source Irradiator
ASTM E18-2003, Test Method for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials	ASTM E1987-1998, Guide for Individual Rights Regarding Health Information	ASTM E2117-2000, Guide for Identification and Establishment of a Quality Assurance Program for Medical Transcription
ASTM E1818-2006, Practice for Dosimetry in an Electron Beam Facility for Radiation Processing at Energies between 80 and 300 Kev	ASTM E1988-1998, Guide for Training of Persons Who Have Access to Health Information	ASTM E2144-2002, Practice for Personal Sampling and Analysis of Endotoxin in Metalworking Fluid Aerosols in Workplace Atmospheres
ASTM E1822-2002a, Test Method for Fire Testing of Real Scale Stacked Chairs	ASTM E1994-1998 (R2003), Practice for Use of Process Oriented AOQL and LTPD Sampling Plans	ASTM E2145-2001, Practice for Modeling in Health Informatics
ASTM E1836-2002, Standard Classification for Building Floor Area Measurements for Facility Management	ASTM E1995-2004, Test Method for Measurement of Smoke Obscuration Using in a Single Closed Chamber, with the Test Specimen Oriented Horizontally research	ASTM E2148-2003, Guide for Using Documents Related to Metal-Working or Metal Removal Fluid Health and Safety This Guide covers information on how to use documents related to health and safety of metalworking and metal removal fluids. As such, this guide will provide the user with sufficient background information to effectively use the documents listed in Section 2. Documents referenced in this guide are grouped as applicable to producers, to users or to all.
ASTM E1869-2005, Guide for Confidentiality, Privacy, Access and Data Security Principles for Health Information Including Computer Based Patient Records	ASTM E2010-2001, Test Method for Positive Pressure Fire Test of Window Assemblies	ASTM E2169-2001, Practice for Selecting Antimicrobial Pesticides for Use in Water-Miscible Metalworking Fluids
	ASTM E2017-1999 (R2005), Guide for Amendments to Health Information	
	ASTM E2026-1999, Guide for Estimation of Building Damageability in Earthquakes	
	ASTM E2030-2004, Guide for Recommended Uses of Photoluminescent Safety Markings	

ASTM E2171-2002, Practice for Rating-Scale Measures Relevant to the Electronic Health Record	ASTM E2284-2003, Practice for Setting an Upper Confidence Bound for a Fraction or Number of Non-conforming Items, or a Rate of Occurrence for Non-conformities, Using Attribute Data, When There Is a Zero Response in the Sample	ASTM E29-2004, Practice for Using Significant Digits in Test Data to Determine Conformance With Specifications
ASTM E2182-02, Specification for Clinical XML DTDs in Healthcare	ASTM E23-2005, Test Methods for Notched Bar Impact Testing of Metallic Materials	ASTM E329-2005, Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction
ASTM E2183-02, Practice/guide for XML DTD Design, Architecture and Implementation	ASTM E230-2002, Specification for Temperature - Electromotive Force (EMF) Tables for Standardized Thermocouples	ASTM E456-2004, Terminology Relating to Quality and Statistics
ASTM E2184-02, Specification for Healthcare Document Formats	ASTM E2303-2003, Guide for Absorbed-Dose Mapping in Radiation Processing Facilities	ASTM E535-2005a, Practice For Preparation Of Fire-Test-Response Standards
ASTM E2185-2001, Specification for Transferring Digital Voice Data Between Independent Digital Dictation Systems and Workstations	ASTM E2304-2003a, Practice for Use of a LIF Photo-Fluorescent Film Dosimetry System	ASTM E541-02, Criteria for Agencies Engaged in System Analysis and Compliance Assurance for Manufactured Building
ASTM E2187-2004, Test Method for Measuring the Ignition Strength of Cigarettes This fire-test-response standard provides a standard measure of the capability of a cigarette, positioned on one of three standard substrates, to generate sufficient heat to continue burning and thus potentially cause ignition of bedding or upholstered furniture.	ASTM E2307-2004, Test Method for Determining the Fire-endurance of Perimeter Fire Barrier Systems Using the Intermediate-scale, Multi-story Test Apparatus	ASTM E603-2003, Guide for Room Fire Experiments
ASTM E2211-2002, Specification for Relationship Between a Person (consumer) and a Supplier of an Electronic Personal (consumer) Health Record	ASTM E2320-2004, Classification for Serviceability of an Office Facility for Thermal Environment and Indoor Air Conditions This classification contains pairs of scales for classifying an aspect of the serviceability of an office facility, that is, the capability of an office facility to meet certain possible requirements for suitable thermal environment and indoor air conditions.	ASTM E648-2004, Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
ASTM E2212-2002, Practice for Healthcare Certificate Policy	ASTM E2343-2004, Standard Practice for Performance Characterization of Routine Dosimetry Systems	ASTM E651-02, Guidelines for Evaluating Capabilities of Agencies Involved in System Analysis and Compliance Assurance for Manufactured Building
ASTM E2226-2002, Practice for Application of Hose Stream	ASTM E2364-2004, Guide to Speech Recognition Technology Products in Health Care	ASTM E662-2001, Test Method For Specific Optical Density Of Smoke Generated By Solid Materials
ASTM E2230-2002, Practice for Thermal Qualification of Type B Packages for Radioactive Material	ASTM E2369-2005, Specification for the Continuity of Care Record (CCR)	ASTM E691-1999, Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method
ASTM E2231-2003, Standard Practice on Specimen Preparation and Mounting for Pipe and Duct Insulation for Flame Spread and Smoke Obscuration	ASTM E2381-2004, Guide for Dosimetry in Radiation Processing of Fluidized Beds and Fluid Streams	ASTM E699-2003, Practice for Criteria for Evaluation of Agencies Involved in Testing
ASTM E2232-2002, Guide for Selection and Use of Mathematical Methods for Calculating Absorbed Dose in Radiation Processing Applications	ASTM E2405-2005, Test Method for Determination of Fire and Thermal Parameters of Materials Using an Intermediate Scale Test with Vertically Oriented Specimen	ASTM E800-2005, Guide For Measurement Of Gases Present Or Generated During Fires
ASTM E2233-2002, Practice for Sampling a Stream of Product by Variables Indexed by Aql	ASTM E2473-2006, Practice for the Occupational/Environmental Health View of the Electronic Health Record This practice is intended to assemble a logical occupational/ environment health view of the already defined general structure and vocabulary for the Electronic Health Record (EHR) and to suggest the ways in which this view can be used to support employee health assessment and other healthcare delivered at the work site.	ASTM E814-2002, Methods for Fire Tests of Through-Penetration Fire Stops
ASTM E2234-2005, Practice for Sampling a Stream of Product by Attributes Indexed by Aql		ASTM E84-2005, Test Method for Surface Burning Characteristics of Building Materials REFER TO WWW.ASTM.ORG
ASTM E2257-2003, Room Fire Test of Wall and Ceiling Materials and Assemblies		ASTM E906-2004, Test Method for Heat and Visible Smoke Release Rates for Materials and Products
ASTM E2280-2003, Guide for the Fire Hazard Assessment of the Effect of Upholstered Seating Furniture Within Patient Rooms of Health Care Facilities		ASTM E970-1996, Test Method For Critical Radiant Flux Of Exposed Attic Floor Insulation Using A Radiant Heat Energy Source
		ASTM F1003-2002, Specification for Searchlights on Motor Lifeboats
		ASTM F1005-1997 (R 2002), Practice for HVAC Duct Shapes; Identification and Description of Design Configuration

ASTM F1006-1997 (R2004), Specification for Entrainment Separators for Use in Marine Piping Applications	ASTM F1072-1994 (R2000), Specification for Expanded-Metal Door	ASTM F1139-88 (R2004), Specification for Steam Traps and Drains
ASTM F1007-1997 (R2002), Specification for Pipe-Line Expansion Joints of the Packed Slip Type for Marine Application	ASTM F1073-1987 (R2000), Specification for Door Fittings, for Watertight/Gastight/Airtight, Weathertight, and Non-Tight Doors, for Marine Use	ASTM F1142-1990 (R2004), Specification for Manhole Cover Assembly, Bolted, Semi-Flush, Oiltight and Watertight
ASTM F1014-2002, Specification for Flashlights on Vessels	ASTM F1074-1997 (R2002), Specification for Cleats, Welded Horn Type	ASTM F1143-1990 (R2004), Specification for Manhole Cover Assembly, Raised, Oiltight, and Watertight
ASTM F1015-2003, Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces	ASTM F1075-1997 (R2004), Specification for Dehumidifier, Mechanically Refrigerated, Self-Contained	ASTM F1144-1990 (R2004), Specification for Manhole Cover Assembly, Bolted, Hinged, Semi-Flush, Oiltight and Watertight
ASTM F1018-87A (R2004), Specification for Steel Emergency Gear Stowage Locker	ASTM F1076-1997 (R2004), Practice for Expanded Welded and Silver Brazed Socket Joints for Pipe and Tube	ASTM F1145-1992 (R2001), Specification for Turnbuckles, Swaged, Welded, Cast, Forged
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ASTM F1069-87 (R2004), Specification for Doors, Watertight, Gastight/Airtight and Weathertight, Individually Dogged, for Marine Use	ASTM F1123-87 (R2004), Specification for Non-Metallic Expansion Joints	ASTM F1197-2001, Specification for Sliding Watertight Door Control Systems
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ASTM F1446-2004, Test Methods for Equipment, and Procedures Used in Evaluating the Performance Characteristics of Protective Headgear	ASTM F1510-2001, Specification for Rotary Positive Displacement Pumps, Commercial Ships Use	ASTM F1603-1995 (R2001), Specification for Kettles, Steam Jacketed, 32 Oz to 20 Gal (1 to 75.7 L), Tilting, Table Mounted, Direct Connected, Gas Fired and Electric Fired
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ASTM F1483-1999, Specification for Oriented Poly (Vinyl Chloride), PVCO, Pressure Pipe	ASTM F1545-1996 (R2003), Specification for Plastic-Lined Ferrous Metal Pipe, Fittings and Flanges	ASTM F1632-2003, Test Method for Particle Size Analysis and Sand Shape Grading of Golf Course Putting Green and Sports Field Rootzone Mixes
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ASTM F1498-2000, Specification for Coextruded Composite Pipe	ASTM F1565-2000, Specification for Pressure-Reducing Valves for Steam Service	ASTM F1669M-1997 (R2002), Specification for Insulation Monitors for Shipboard Electrical Systems (Metric)
ASTM F1499-1997, Specification for Coextruded Composite Drain, Waste, and Vent Pipe (DWV)(1)	ASTM F1567-1994 (R2001), Specification for Fabricated or Cast Automatic Self-Cleaning, Fuel Oil and Lubricating Oil Strainers	ASTM F1673-2004, Specification for Polyvinylidene Fluoride (PVDF) Corrosive Waste Drainage Systems
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ASTM F1697-2002, Specification for Poly (Vinyl Chloride) (PVC) Drain, Waste and Pipe and Fittings	ASTM F1753-1996 (R2001), Specification for, Classification and Marking of Single Lens Scopes for Use with Archery Bows	ASTM F1794-1997 (R2004), Specification for Hand-Operated Globe-Style Valves for Gas (Except Oxygen Gas) and Hydraulic Systems
ASTM F1698-2002, Practice for Installation of Poly (Vinyl Chloride) (PVC) Linear and Cementitious Grout for Rehabilitation of Existing Man-Entry Sewers and Conduits	ASTM F1754-1996 (R2004), Guide for Marine Vessel Structural Inspection Considerations for Design and Production	ASTM F1795-2000, Specification for Pressure-Reducing Valves for Air or Nitrogen Systems
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ASTM F1865-2002, Specification for Mechanical Cold Expansion Insert Fitting with Compression Sleeve for Crosslinked Polyethylene PEX Tubing	ASTM F1920-2003, Test Method for the Energy Performance of Rack Conveyor, Hot Water Sanitizing, Commercial Dishwashing Machines	ASTM F1963-2005, Specification for Deep-Fat Fryers, Gas or Electric, Open
ASTM F1866-2005, Specification for Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings	ASTM F1924-2005, Specification for Plastic Mechanical Fittings for Use on Outside Diameter Controlled Polyethylene Gas Distribution Pipe and Tubing	ASTM F1964-1999, Test Method for the Performance of Pressure and Kettle Fryers
ASTM F1867-1998 (R2004), Practice for Installation of Folded/Formed Poly(Vinyl Chloride) (PVC) Pipe Type A for Existing Sewer and Conduit Rehabilitation	ASTM F1931-1998 (R2004), Test Method for Characterization of Gymnastic Landing Mats and Floor Exercises Surfaces	ASTM F1965-1999, Test Method for the Performance of Deck Ovens
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ASTM F1878-1998 (R2004), Guide for Escort Vessel Evaluation and Selection	ASTM F1933-1998 (R2004), Specification for Illustrating the Footprint of a Backpacking or Mountaineering Tent	ASTM F1973-2005, Specification for Factory Assembled Anodeless Risers and Transition Fittings in Polyethylene (PE) and Polyamide 11 (PA11) Fuel Gas Distribution Systems
ASTM F1880-1998 (R2004), Specification for Determination of Percent of Let-Off for Archery Bows	ASTM F1934-1998 (R2004), Test Method for Welding a Backpack or Mountaineering Tent	ASTM F1974-2004, Specification for Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Composite Pressure Pipe
ASTM F1881-2005, Test Method for Measuring Baseball Bat Performance Factor	ASTM F1935-2001, Test Method for Measuring Peak Height of a Backpacking or Mountaineering Tent	ASTM F1975-2002, Specification for Non-Powered Bicycle Trailers Designed for Human Passengers
ASTM F1882-1998, Specification for Residential Basketball Systems	ASTM F1936-1998, Specification for Shock-Absorbing of North American Football Playing Systems as Measured in the Field	ASTM F1976-1999, Test Method for Cushioning Properties of Athletic Shoes Using an Impact Test
ASTM F1883-2003, Practice for Selection of Wire and Cable Size, in AWG or Metric Units	ASTM F1937-2005, Specification for Body Protectors Used in Horse Sports and Horseback Riding	ASTM F1977-2004, Test Method for Determining Initial Fractional Filtration Efficiency of a Vacuum Cleaner System
ASTM F1887-1998, Test Method for Measuring the Coefficient of Restitution (COR) of Baseballs and Softballs	ASTM F1947-2004, Practice for Installation of Folded Poly(Vinyl Chloride) (PVC) Pipe into Existing Sewers and Conduits	This test method may be used to determine the initial, fractional, filtration efficiency of household and commercial canister (tank-type), stick, hand-held, upright, and utility vacuum cleaner systems.
ASTM F1887-2003, Test Method for Measuring the Coefficient of Restitution COR of Baseballs and Softballs	ASTM F1948-2005, Specification for Metallic Mechanical Fittings for Use on Outside Diameter Controlled Thermoplastic Gas Distribution Pipe and Tubing	ASTM F1979-2005, Specification for Paintballs Used in the Sport of Paintball
ASTM F1888-1998, Test Method for Compression-Displacement of Baseballs and Softballs	ASTM F1952-2000, Specification for Helmets Used for Down Hill Mountain Bicycle Racing	ASTM F1985-1999 (R2005), Specification for Pneumatic-Operated, Globe-Style, Control Valves
ASTM F1888-2003, Test Method for Compression-Displacement of Baseballs and Softballs	ASTM F1953-1999 (R2003), Guide for Construction and Maintenance of Grass Tennis Courts	ASTM F1986-2001, Specification for Composite Pipe Compression Fittings and Compression Joints for Hot and Cold Drinking Water Systems
ASTM F1889-2005, Guide for Straightness Measurement of Arrow Shafts	ASTM F1955-2001 (R2005), Test Method for Flammability of Sleeping Bags	
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ASTM F1991-1999, Test Method for the Performance of Chinese (Wok) Ranges	ASTM F2043-2000, Classification for Bicycle Usage	ASTM F2121-2005, Practice for Treestand Labels
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ASTM F2014-2000, Specification for Non-Reinforced Extruded Tee Connections for Piping Applications	ASTM F2046-2000, Specification for Tachometers, Various	ASTM F2124-2005, Practice for Testing Ladder Treestand, Tripod Treestand and Climbing Stick Load Capacity
ASTM F2015-2000, Specification for Lap Joint Flange Pipe End Applications	ASTM F2048-2000, Practice for Reporting Slip Resistance Test Results	ASTM F2125-2005, Test Method for Treestand Static Stability
ASTM F2016-2000, Practice for Establishing Shipbuilding Quality Requirements for Hull Structure, Outfitting and Coatings	ASTM F2060-2001 (R2005), Guide for Maintaining Cool Season Turfgrasses on Athletic Fields	ASTM F2126-2001, Test Method for Treestand Static Load Capacity
ASTM F2017-2000, Database Structure of Electronic Data Interchange Between Ship Owner and Shipyard for Contract Administration	ASTM F2070-2001, Specification for Transducers, Pressure and Differential Pressure, Electrical and Fiber Optic	ASTM F2127-2001, Test Method for Treestand Adherence
ASTM F2018-2000, Test Method for Time-to-Failure of Plastics Using Plane Strain Tensile Specimens	ASTM F2071-2001, Specification for Switch, Position, Proximity (Non-Contact) or Limit (Mechanical Contact), Fiber Optic	ASTM F2128-2005, Test Method for Treestand and Repetitive Loading Capability
ASTM F2019-2003, Practice for Existing Pipelines and Conduits by the Pulled-in-Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)	ASTM F2075-2001a, Specification for Engineered Wood Fiber for Use as a Playground Safety Surface Under and Around Playground Equipment	ASTM F2131-2003, Charpy Impact Test on Thin Specimens of Polyethylene Used in Pressurized Pipes
ASTM F2021-2000, Specification for Design and Installation of Plastic Syphonic Roof Drainage Systems	ASTM F2080-2005, Specification for Cold-expansion Fittings with Metal Compression-sleeves for Cross-linked Polyethylene (PEX) Pipe	ASTM F2133-2001, Test Methods for Determining Effects of Large Hydrocarbon Pool Fires on Marine Bulkheads and Decks, Constructed of Steel
ASTM F2022-2001, Test Method for Performance of Booster Heater	ASTM F2087-2001, Practices for Packing, Fiberglass, Braided, Rope and Wick	ASTM F2135-2001, Specification for Molded Drain Waste and Vent (DWV) Short-Pattern Plastic Fittings
ASTM F2023-2005a, Test Method for Evaluating the Oxidative Resistance of Crosslinked Polyethylene (PEX) Tubing and Systems to Hot Chlorinated Water	ASTM F2092-2001, Specification for Convection Oven Gas or Electric	ASTM F2138-2001, Specification for Excess Flow Valves for Natural Gas Service
ASTM F2030-2000, Specification for Paintball Cylinder Burst Disk Assemblies	ASTM F2093-2001, Test Method for the Performance of Rack Ovens	ASTM F2140-2001, Test Method for Performance of Hot Food Holding Cabinets
ASTM F2031-2005, Method of Measurement of Arrow Shaft Static Spine (Stiffness)	ASTM F2098-2004, Test Method for Stainless Steel Clamps for Securing SDR9 Cross-Linked Polyethylene (PEX) Tubing to Metal Insert Fittings	ASTM F2141-2001, Test Method for Performance of Hot Deli Cases
ASTM F2032-2000, Specification for Helmets Used, in BMX Cycling	ASTM F2106-2003, Test Method for Evaluating Design and Performance Characteristics of Motorized Treadmills	ASTM F2142-2001, Test Method for Performance of Drawer Warmers
ASTM F2039-2000, Guide for the Basic Elements of a Shipboard Occupational Health and Safety Program	ASTM F2107-2001, Guide for Construction and Maintenance of Skinned Areas on Sports Fields	ASTM F2143-2004, Test Method for Performance of Refrigerated Buffet and Preparation Tables
ASTM F2040-2003, Specification for Helmets Used for Recreational Snow Sports	ASTM F2115-2005, Test Method for Motorized Treadmills	ASTM F2144-2005, Test Method for Performance of Large Open Vat Fryers
	ASTM F2117-2001, Test Method for Vertical Rebound Characteristics of Sports Surface/Ball Systems; Acoustical Measurement	ASTM F2145-2001, Specification for Polyamide11 (Pa11) Mechanical Fittings for Use on Outside Diameter Controlled Polyamide11 Pipe and Tubing (60-01-02)
		ASTM F2153-2002, Standard for the Measurement of Backpack Capacity

ASTM F2154-2001, Specification for Sound Absorbing Board, Fibrous Glass, Perforated Fibrous Glass Cloth Faced	ASTM F2216-2005, Specification for Selectorized Strength Equipment	ASTM F2277-2003, Test Methods for Evaluating Design and Performance Characteristics of Selectorized Strength Equipment
ASTM F2157-2002, Specification for Synthetic Surfaced Running Tracks	ASTM F2219-2005, Test Methods for Measuring High Speed Baseball Bat Performance Factor	ASTM F2278-2003, Test Method for Evaluating Paintball Barrier Netting
ASTM F2158-2001, Specification for Residential Central-Vacuum Tube and Fittings	ASTM F2220-2003, Specification for Headforms	ASTM F2283-2004, Specification for Shipboard Oil Pollution Abatement System
ASTM F2159-2005, Specification for Plastic Inset Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-Linked Polyethylene (PEX) Tubing	ASTM F2221-2002, Medical Suction Equipment- Part 2: Manually Powered Suction Equipment Adoption of ISO 10079-2 (with Deviations)	ASTM F2283-2004, Specification for Shipboard Oil Pollution Abatement System
ASTM F2164-2002, Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure	ASTM F2222-2002, Medical Suction Equipment-suction Equipment Powered from a Vacuum or Pressure Source Adoption of ISO 10079-3 (with Deviations)	ASTM F2288-2003, Adoption of ISO 5366-1 Anesthetic and Respirator Y Equipment - Tracheostomy Tubes - Part1: Tracheostomy Tubes and Connectors for Use in Adults
ASTM F2165-2002, Specification for Flexible Pre-insulated Piping	ASTM F2223-2004, Guide for ASTM Standards on Playground Surfacing	ASTM F2289-2003, Adoption of ISO 5366-3 Anaesthetic and Respiratory Equipment - Tracheostomy Tubes - Part 3: Paediatric Tracheostomy Tubes
ASTM F2168-2002, Specification for Packing Material, Graphitic, Corrugated Ribbon or Textured Tape and Die-Formed Ring	ASTM F2225-2003, Specification for Consumer Trampoline Enclosures	ASTM F2290-2003, Adoption of ISO 5359 Low-pressure Hose Assemblies for Use with Medical Gases
ASTM F2173-2002, ISO 7767, Oxygen Monitors for Monitoring Patient Breathing Mixtures - Safety Requirements	ASTM F2237-2003, Test Method for the Performance of Upright Overfired Broilers	ASTM F2307-2003, Specification for Series 10 Poly(Vinyl Chloride) (PVC) Closed Profile Gravity Pipe and Fittings Based on Controlled Inside Diameter (project #62-02-03)
ASTM F2174-2002, Practice for Verifying Acoustic Emission Sensor Response	ASTM F2238-2003, Test Method for the Performance of Rapid Cook Ovens	ASTM F2324-2003, Test Method for Pre-rinse Spray Valves
ASTM F2176-2002, Specification for Mechanical Couplings Used on Polyethylene Conduit, Duct and Innerduct	ASTM F2239-2003, Test Method for Performance of Conveyor Broilers	ASTM F2330-2004, Test Method for Evaluating the Oxidative Resistance of Multilayer Polyolefin Tubing to Hot Chlorinated Water
ASTM F2177-2002, ISO 5361, Anaesthetic and Respiratory Equipment - Tracheal Tubes and Connectors	ASTM F2262-2005, Specification for Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Tubing OD Controlled SDR9	ASTM F2331-2004, Test Method for Determining Chemical Compatibility of Thread Sealants with Thermoplastic Threaded Pipe and Fittings Materials
ASTM F2184-2002, Installation Guide for Paintball Barrier Netting	ASTM F2263-2005, Test Method for Evaluating the Oxidative Resistance of Polyethylene(pe) Pipe to Chlorinated Water	ASTM F2333-2004, Test Method for Traction Characteristics of the Athletic Shoe-sports Surface Interface
ASTM F2189-2002, Specification for Particular Requirements for Nitric Oxide Monitors	ASTM F2265-2003, Medical Suction Equipment - Part 1: Electrically Powered Suction Equipment - Safety Requirements Adoption of ISO 10079-1 (with Deviations)	ASTM F2336-2005, Guide for Roller Hockey Playing Facilities
ASTM F2191-2002, Specification for Packing Material, Graphitic or Carbon Braided Yarn	ASTM F2268-2003, Specification for Bicycle Serial Numbers	ASTM F2337-2003, Test Method for Treestand Fall Protection Devices
ASTM F2192-2005, Test Method for Determining and Reporting the Berthing Energy and Reaction of Marine Fenders	ASTM F2270-2004, Guide for Construction and Maintenance of Warning Track Areas on Sports Fields	ASTM F2379-2004, Test Method for the Energy Performance of Powered Open Warewashing Sinks
ASTM F2202-2002, Standard Specification for Slow Cook/Hold Ovens and Food Warming Cabinet	ASTM F2273-2003, Test Methods for Bicycle Forks	ASTM F2380-2004, Test Method for the Performance of Conveyor Toasters
ASTM F2206-2002, Specification for Fabricated Fittings of Butt-fused Polyethylene (PE) Plastic Pipe, Fittings, Sheet Stock, Plate Stock or Block Stock	ASTM F2274-2003, Specification for Condition 3 Bicycle Forks	ASTM F2389-2005, Specification for Pressure-rated Polypropylene Pp Piping Systems
ASTM F2207-2002, Specification for Cured-in-place Pipe Lining System for Rehabilitation of Metallic Gas Pipes	ASTM F2275-2003, Practice for Treestand Manufacturer Quality Assurance Program	ASTM F2396-2004, Guide for Construction of High Performance Sand-based Rootzones for Sports Fields
	ASTM F2276-2005, Specification for Fitness Equipment	

ASTM F2397-2005, Specification for Protective Headgear Used in Martial Arts	ASTM F400-2004, Consumer Safety Specification for Lighters (15.07) This consumer safety specification covers all flame-producing consumer products commonly known as cigarette lighters, pipe lighters, and cigar lighters and such similar devices as defined in 2.1.6. Matches are specifically excluded from this safety specification; flame-producing products intended solely for igniting apparatus other than cigars, pipes, and cigarettes are also specifically excluded from this safety specification. Lighters are specifically not intended for use as a candle, flashlight, or for other uses requiring an extended burn time.	ASTM F442-1996 (R2005), Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)
ASTM F2398-2004, Test Method for Measuring Moment of Inertia and Center of Percussion of a Baseball or Softball Bat		ASTM F442/F442M-1999, Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)
ASTM F2400-2004, Specification for Helmets Used in Pole Vaulting		ASTM F449-2002, Practice for Subsurface Installation of Corrugated Thermoplastic Tubing for Agricultural Drainage or Water Table Control
ASTM F2402-2004, Flow-metering Devices for Connection to Terminal Units of Medical Gas Pipeline Systems, Adoption of ISO 15002 as an American National Standard (with Deviations)		ASTM F477-2002, Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F2416-2004, Specification for Protective Headgear Used in Electric Personal Assistive Mobility Devices Covers performance requirements for helmets manufactured for users of Electric Personal Assistive Mobility Devices.	ASTM F402-1999, Practice for Safe Handling of Solvent Cements, Primers, and Cleaners Used for Joining Thermoplastic Pipe and Fittings	ASTM F480-2002, Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), Schedule 40 and Schedule 80)
ASTM F2418-2005, Specification for Polypropylene(pp) Corrugated Wall Stormwater Collection Chambers	ASTM F405-2005, Specification for Corrugated Polyethylene (PE) Pipe and Fittings	ASTM F481-1996 (R2002), Practice for Installation of Thermoplastic Pipe and Corrugated Tubing in Septic Tank Leach Fields
ASTM F2434-2005, Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene (PEX-AL-PEX) Tubing	ASTM F409-2002, Specification for Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings	ASTM F492-1996, Specification for Propylene and Polypropylene (PP) Plastic-Lined Ferrous Metal Pipe and Fittings
ASTM F2439-2005, Specification for Headgear Used for Soccer	ASTM F412-2001, Terminology Relating to Plastic Piping Systems	ASTM F493-2004, Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings
ASTM F2440-2005, Specification for Indoor Wall/feature Padding	ASTM F429-2001, Test Method for Shock-Attenuation Characteristics of Protective Headgear for Football	ASTM F512-1995 (R2001), Specification for Smooth-Wall Poly(Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation
ASTM F2472-2005, Test Method for the Performance of Staff-served Hot Deli Cases	ASTM F430-75 (R1999), Test Methods for Paper Used for Vacuum Cleaner Filter Bags	ASTM F513-2000, Safety Specification for Eye and Face Protective Equipment for Hockey Players
ASTM F2521-2005, Specification for Heavy-Duty Ranges Gas and Electric Reinstatement of Z9394Z (F2521)	ASTM F431-1999, Specification for Air Performance Measurement Plenum Chamber for Vacuum Cleaners	ASTM F539-2002, Practice for Fitting Athletic Footwear
ASTM F2531-2005, Test Method for the Load Capacity of Treestand Seats ANSI/ASTM Reinstatement of WK7080	ASTM F437-1996, Specification for Threaded Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	ASTM F542-2002, Test Method for Exothermic Temperature of Encapsulating Compounds for Electronic and Microelectronic Encapsulation
ASTM F355-2001, Test Method for Shock-Absorbing Properties of Playing Surface Systems and Materials	ASTM F437-1999, Specification for Threaded Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	ASTM F585-1994 (R2000), Practice for Insertion of Flexible Polyethylene Pipe into Existing Sewers
ASTM F381-2005, Consumer Safety Specification for Components, Assembly, and Use of a Trampoline	ASTM F438-2004, Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40	ASTM F599-1996, Specification for Poly (Vinylidene Chloride) (PVDC) Plastic-Lined Ferrous Metal Pipe and Fittings
ASTM F395-1997, Terminology Relating to Vacuum Cleaners	ASTM F439-2005, Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80 (Includes Change to Title)	ASTM F608-2003, Laboratory Test Method for Evaluation of Carpet-Embedded Dirt Removal Effectiveness of Household Vacuum Cleaners This test method covers only a laboratory test for determining the relative carpet dirt removal effectiveness of household/commercial vacuum cleaners when tested under specified conditions.
	ASTM F441-1996, Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80	
	ASTM F441/F441M-1999, Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80	

ASTM F609-1996, Test Method for Using a Horizontal Pull Slipmeter (HPS)	ASTM F707/F707M-1981 (R2001), Specification for Modular Gage Boards	ASTM F803-2003, Specification for Eye Protectors for Use by Players of Racket Sports
ASTM F610/F610M-2005, Test Method for Evaluating the Quality of Molded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings by the Heat Reversion Technique	ASTM F708-1997 (R2004), Practice for Design and Installation of Rigid Pipe Hangers	ASTM F809/F809M, Specification for Large Diameter Polybutylene (PB) Plastic Pipe
ASTM F628-2001, Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core	ASTM F714-1997, Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter	ASTM F810-2001, Specification for Smoothwall Polyethylene (PE) Pipe for Use in Drainage and Waste Disposal Absorption Fields
ASTM F645-2004, Guide for Selection, Design, and Installation of Thermoplastic Water Pressure Piping Systems	ASTM F714-2003, Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter	ASTM F821-2001, Specification for Doors and Frames, Steel, Interior, Marine
ASTM F656-2002, Specification for Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings	ASTM F717-1989 (R2000), Specification for Football Helmets	ASTM F822-1993 (R2004), Specification for Chest of Drawers (Chiffonier), Steel, Marine
ASTM F667-1997, Specification for Large Diameter Corrugated Polyethylene Tubing and Fittings	ASTM F718-2000 (R2005), Standard for Shipbuilders and Marine Paints and Coatings Product/Procedure Data Sheet	ASTM F823-1993 (R2004), Specification for Desk, Log, Marine, Steel, with Cabinet
ASTM F670-2003, Specification for Tanks, 5- and 10-Gal (20- and 40-L) Lube Oil Dispensing	ASTM F721-81 (R2004), Specification for Gage Piping Assemblies	ASTM F824-1993 (R2004), Specification for Tables, Mess, Marine, Steel
ASTM F677-2004, Test Method for Fluid and Grease Resistance of Thermoset Encapsulating Compounds Used in Electronic and Microelectronic Applications (10.02) (no abstract provided by developer)	ASTM F722-82 (R2004), Specification for Welded Joints for Shipboard Piping Systems	ASTM F825-1993 (R2004), Specification for Drawers, Furniture, Marine, Steel
ASTM F679-2003, Specification for Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings	ASTM F725-1989, Practice for Drafting Impact Test Requirements in Thermoplastic Pipe and Fittings Standards	ASTM F826-1994 (R2004), Specification for Tops, Furniture, Marine, Steel
ASTM F681-82 (R2004), Practice for Use of Branch Connections	ASTM F737-86 (R1998), Performance Specification for Ice Hockey Skate Blades	ASTM F840-83 (R2004), Specification for Ladders, Fixed, Vertical, Steel, Ships
ASTM F682-82A (93, Specification for Wrought Carbon Steel Sleeve-Type Pipe Couplings	ASTM F758-1995 (R2000), Specification for Smooth-Wall Poly (Vinyl Chloride) (PVC) Plastic Underdrain Systems for Highway, Airport, and Similar Drainage	ASTM F841-84 (R1998), Specification for Thrusters, Tunnel, Permanently Installed in Marine Vessels
ASTM F682-82A (R1998), Specification for Wrought Carbon Steel Sleeve-Type Pipe Couplings	ASTM F760-1993, Specification for Food Service Equipment Manuals	ASTM F845-1996, Specification for Plastic Insert Fittings for Polybutylene (PB) Tubing
ASTM F683-2004, Practice for Selection and Application of Thermal Insulation for Piping and Machinery	ASTM F765-1993 (R1998), Specification for Wildcats, Ship Anchor Chain	ASTM F856-1997 (R2004), Practice for Symbols - Heating, Ventilation, and Air Conditioning (HVAC)
ASTM F689-1997 (R2004), Practice for Determination of the Temperature of Above-Ground Plastic Gas Pressure Pipe within Metallic Casings	ASTM F771-2005, Specification for Polyethylene (PE) Thermoplastic High-Pressure Irrigation Pipeline Systems	ASTM F869-2001, Definitions of Terms Relating to Athletic Shoes and Biomechanics
ASTM F690-1996 (R2003), Practice for Underground Installation of Thermoplastic Pressure Piping Irrigation Systems	ASTM F781-1996, Specification for Perfluoro (Alkoxyalkane) Copolymer (PFA) Plastic-Lined Ferrous Metal Pipe and Fittings	ASTM F876-2005, Specification for Crosslinked Polyethylene (PEX) Tubing This standard was listed for public review in the 8/11/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.
ASTM F697-2000, Practice for Care and Use of Mouthguards	ASTM F782-2001, Specification for Doors, Furniture, Marine	ASTM F877-2002, Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems
ASTM F704-1981 (R2001), Practice for Selecting Bolting Lengths for Piping System Flanged Joints	ASTM F783-88 (R2004), Specification for Staple, Handgrab, Handle, and Stirrup Rung	ASTM F885-1984 (R2001), Specification for Envelope Dimensions for Bronze Globe Valves NPS 1/4 to 2
	ASTM F794-2003, Specification for Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter	ASTM F891-2004, Specification for Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core
		ASTM F894-1999, Specification for Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe

ASTM F905-2004, Practice for Qualification of Polyethylene Saddle Fusion Joints

ASTM F906-85 (R2004), Specification for Letters and Numerals for Ships

ASTM F910-2004, Specification for Face Guards for Youth Baseball

ASTM F913-2002, Specification for Thermoplastic Elastomeric Seals (Gaskets) for Joining Plastic Pipe

ASTM F914-2003, Test Method for Acoustic Emission for Insulated Aerial Personnel Devices

ASTM F936-1997, Specification for Chocks, Panama, Mooring Cast Steel

ASTM F937-1997, Specification for Chocks, Ship Mooring, Cast Steel

ASTM F940-2000 (R2005), Practice for Quality Control Receipt Inspection Procedures for Protective Coatings (Paint), Used in Marine Construction and Shipbuilding

ASTM F941-2000 (R2005), Practice for Inspection of Marine Surface Preparation and Coating Application

ASTM F948-1994 (R2001), Test Method for Time-to-Failure of Plastic Piping Systems and Components under Constant Internal Pressure with Flow

ASTM F949-2003, Specification for Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings

ASTM F956-1991 (R2001), Specification for Bell, Cast, Sound Signaling

ASTM F957-1991 (R2001), Specification for Gong, Sound Signaling

ASTM F963-2003, Consumer Safety Specification on Toy Safety (15.07)
Relates to possible hazards that may not be recognized readily by the public and that may be encountered in the normal use for which a toy is needed or after reasonably foreseeable abuse. It does not purport to cover every conceivable hazard of a particular toy.

ASTM F985-2000, Specification for Panama Canal Pilot Platform (Reinstatement)

ASTM F985-86 (91), Specification for Panama Canal Pilot Platform

ASTM F986-1997 (R2004), Specification for Suction Strainer Boxes

ASTM F987-2004, Specification for Portable Intermediate Flush Deck Stanchion

ASTM F991M-2004, Specification for Docking/drain Plug and Boss Assemblies (metric)

ASTM F992-1986 (R2001), Specification for Valve Label Plates

ASTM F993-1986 (R2001), Specification for Valve Locking Devices

ASTM F994-1986 (R2001), Specification for Design and Installation of Overboard Discharge Hull Penetration Connections

ASTM F998-2004, Specification for Centrifugal Pump, Shipboard Use

ASTM Z4822Z-1996, Test Method for Fire Testing of Real Scale Stacked Chairs (Ref. Z4822Z)

ASTM/ISO 14031:1999, Environmental Management - Environmental Performance Evaluation - Guidelines
Describes and gives guidance on the design and use of environmental performance evaluation within an organization. It is applicable to all organizations, regardless of type, size, location and complexity. This Standard does not establish environmental performance levels. It is not intended for use as a specification standard for certification or registration purposes or for the establishment of any other environmental management system conformance requirements.

ASTM/ISO 14041:1998, Life Cycle Assessment - Inventory Analysis
The standard describes and gives guidance on a general framework for the life cycle inventory analysis phase of life cycle assessment and the key features and inherent limitations of inventory analysis. It specifies requirements for conducting inventory analysis and the relationship of this to other LCA phases. Order from: webstore.ansi.org

ASTM/ISO 14042:2000, Life Cycle Assessment - Impact Assessment
The standard describes and gives guidance on a general framework for the life cycle impact assessment phase of life cycle assessment and the key features and inherent limitations of LCIA. It specifies requirements for conducting the LCIA phase and the relationship of this to other LCA phases. Order from: webstore.ansi.org

ASTM/ISO 14043:2000, Life Cycle Assessment - Interpretation
The standard provides requirements and recommendations for conducting the life cycle interpretation in LCA or LCI studies. It does not describe specific methodologies for the life cycle interpretation phase of LCI and LCA studies. Order from: webstore.ansi.org

ASTM/ISO 14049-2000, Environmental Management - Life Cycle Assessment - Examples of Application of ISO 14041 to Goal and Scope Definition and Inventory Analysis
The standard provides requirements and recommendations for conducting the life cycle interpretation in LCA or LCI studies. It does not describe specific methodologies for the life cycle interpretation phase of LCI and LCA studies. Available electronically through the ANSI Electronic Standards Store.

ASTM/ISO/IEC 17024-2005, Conformity assessment - General requirements for bodies operating certification of persons
ISO/IEC 17024:2003 specifies requirements for a body certifying persons against specific requirements, including the development and maintenance of a certification scheme for personnel.

IEEE/ASTM SI 10-2002, Standard for Use of the International System of Units (SI): The Modern Metric System
REFER TO WWW.ASTM.ORG

ATA (ARCNET Trade Association)

ANSI/ATA 878.1-1999, ARCNET Local Area Network: Token Bus (2.5 MBPS)
Specifies the formats and protocols used by the 878.1 token passing bus medium access control (MAC) sublayer and physical (PHY) layer. It defines the basic ARCNET technology and recommends certain practices that increase reliability and interoperability. The standard has been revised to add alternate data rates.

ATIS (Alliance for Telecommunications Industry)

ANSI ATIS 0100001-2004, User Plane Security Guidelines and Requirements for ETS
This Standard provides guidelines and requirements for security aspects of ETS communications relevant to the user plane. The user plane consists of those aspects related to the user and includes what is called the bearer plane. Security of the other planes in the telecommunications network model, i.e., the signaling and control plane, and the management plane is not within the scope of this Standard. Non-traceability and the impacts on performance of security for ETS are also outside the scope of this document and may be addressed in future documents.

ANSI ATIS 0100801.04-2005,
Telecommunications - Multimedia
Communications Delay, Synchronization,
and Frame Rate

This standard covers test methodologies for multimedia transmission systems utilizing digital transport facilities. It gives a set of measurement parameters, without providing limits, to characterize the following aspects of system performance: a) Active Video Frame inter-arrival time, which is the reciprocal of the elementary frame rate; b) Visual channel transmission time, also called video delay; c) Audio channel transmission time (or audio delay); d) Data channel transmission time or delay (and frame inter-arrival time); e) Temporal synchronization between channels.

ANSI ATIS 0150200-2005, System M-NTSC
Television Signals - Network Interface
Specifications and Performance
Parameters

This standard covers interface and performance specifications of television transmission service channels. Hypothetical reference channels have been defined and utilized to apportion performance parameters. Television signals created or transmitted in accordance with other standards or make-ups may not necessarily be compatible with the specifications of the standard.

ANSI ATIS 0152100-2005, Packet Loss
Concealment for Use with ITU-T
Recommendation G.711

To provide high-quality speech transmission in packetized systems that use G.711 and in which packet loss may occur, high quality methods for recovering from packet loss are required.

ANSI ATIS 0300002-2005, XML Schema
Interface for POTS Service Test

This standard provides an XML schema information model for POTS Service Test based on ANSI T1.262 and an XML schema interface for POTS Service Test function specified in the same ANSI standard.

ANSI ATIS 0300003-2005, XML Schema
Interface for Fault Management (Trouble
Administration)

This standard provides an XML schema information model for Trouble Administration based on ANSI T1.227/228 and an XML schema interface for Trouble Administration functions and services specified in the same ANSI standards.

ANSI ATIS 0300202.a.-2005, Internetwork
Operations - Guidelines for Network
Management of the Public
Telecommunications Networks under
Disaster Conditions, to clarify call
precedence strategy from Section 5.3

Implementation of the following strategies should help optimize the integrity of the network while obtaining the maximum use of network capability: inhibit switching congesting, optimize facilities, reroute traffic, and invoke national security emergency preparedness procedures.

ANSI ATIS 0300236-2005, Signaling System
7 (SS7) - ISDN User Part Compatibility
Testing

This standard addresses the testing required for internetwork connections employing Common Channel Signaling (CCS) based on Signaling System No. 7 (SS7) protocol used in North America. The internetwork connection may be either within or between North American countries. This standard provides a list of test scripts for testing compatibility between the interconnecting networks of the ISDN User Part (ISUP) of the SS7 protocol used for call control and circuit supervision. This standard referenced material in ANSI T1 SS7 protocol standards.

ANSI ATIS 0300276.a.-2005, Operations,
Administration, Maintenance, and
Provisioning - Security Requirements for
the Public Telecommunications Network: A
Baseline of Security Requirements for the
Management Plane, to add requirements to
support Packet Filtering for the Prevention
of Unwanted Traffic

To protect the management infrastructure, and the DCN in general, it is useful for the network operator to discard certain packets received from outside the perimeter of the DCN (i.e. from peers and customer).

ANSI ATIS 0322000-2005, Representation of
the Communications Industry
Manufacturers, Suppliers, and Related
Service Companies for Information
Exchange

This standard identifies the structure and the coded format representation of identifying the manufacturers, suppliers, and related service companies that provide products to the communications industry.

ANSI ATIS 0325300-2005, Identification of
Location Entities for Information Exchange

This standard is intended for general use to provide a common method of identification of location entities, in order to help ensure that unambiguous exchange and interpretation of information. The code described in this standard is intended to be used for information exchange between humans, between humans and machines, and between machines.

ANSI ATIS 0326400-2004,
Telecommunications - Operations,
Administration, Maintenance, and
Provisioning (OAM&P) - Model for Alarm
Synchronization

This alignment effort consists of adopting ITU-T Recommendation Q.821 to replace the previously published (1999) version of T1.264.

ANSI ATIS 0326600-2005,
Telecommunications - Information
Interchange - Structure for the Identification
of Telecommunications Circuits for the
North American Telecommunications
System

This standard addresses the code and format structures for identifying message trunks, message trunk groups and special services circuits.

ANSI ATIS 0326800-2004,
Telecommunications - TMN - PKI - Digital
Certificates and Certificate Revocation Lists
Profile

This alignment effort consists of adopting ITU-T Recommendation Q.817 to replace the previously published (2000) version of T1.268.

ANSI ATIS 0326900-2005,
Telecommunications - Information
Interchange - Structure and Representation
of Trace Message formats for the North
American Telecommunications System

This standard identifies the structure and the coded representation for trace message formats. Specifically, trace message formats are described in a manner that makes them independent transmission layer or technology, e.g., SONET, SDH, optical. Application of this standard to optical networks is for further study.

ANSI ATIS 0327000-2004,
Telecommunications - CORBA Generic
Network and NE Level Information Model

This alignment effort consists of adopting ITU-T Recommendation M.3120 to replace the previously published (2000) version of T1.270.

ANSI ATIS 0327100-2004,
Telecommunications - Framework for
CORBA-Based Telecommunications
Management Network Interfaces

This alignment effort consists of adopting ITU-T Recommendations Q.816, Q.816.1, X.780, and X.780.1 to replace the previously published (2000) version of T1.271.

ANSI ATIS 0600318-2005, Electrical Protection Applied to Telecommunications Network Plant at Entrances to Customer Structures or Buildings

This standard covers the electrical protection to be applied to telecommunications network plant at entrances to customer structures or buildings. Electrical protection refers to the application of electrical protection devices, such as primary protectors and fuse links, and to the bonding and grounding of the telecommunications network plant and primary protectors. The electrical protection, bonding, and grounding criteria presented in this standard are intended to assist in protecting persons and property from the effects of lightning, electrical power system faults, and Electromagnetic Interference (EMI) on the telecommunications network plant.

ANSI ATIS 0600321-2005, Telecommunications – Electrical Protection for Network Operator-Type Equipment Positions

This standard covers new installations of network operator-type equipment positions in which personnel are required to access a computer terminal keyboard while continually wearing a headset.

ANSI ATIS 0600332-2005, Telecommunications – Electrical Protection of Broadband Facilities

The electrical protection, bonding and grounding measure presented in this standard are intended to assist in protecting persons, equipment and property from the effects of lightning, commercial ac power system faults and electromagnetic interference (EMI) on the Network-powered broadband facilities.

ANSI ATIS 0600404.a-2005, Network and Customer Network Interfaces - DS3 Metallic Interfaces Specification

The M13/M23 Multiplex application provides as optional in-band method for activating a line loopback for trouble isolation. Use of an NIU on the carrier side of the network interface is optional at the discretion of the carrier. Support of the NIU in-band line loopback methodology is also optional at the discretion of the carrier. If NIU in-band line loopback is supported, the following method shall be used.

ANSI ATIS 0610700a-2005, Digital Hierarchy - Formats Specification (Virtual Concatenation and LCAS)

This supplement to T1.107-2002 adds the virtual concatenation applications for DS1 and DS3 signals. These virtual concatenation applications include the Link Capacity Adjustment Scheme (LCAS).

ANSI ATIS 0700004-2005, High Capacity-Spatial Division Multiple Access (HC-SDMA)

This document defines the radio (RF), Physical Layer (PHY), Medium Access Control (MAC), and Layer 3 (L3) specifications for the HC-SDMA (High Capacity-Spatial Division Multiple Access) protocol. This specification does not address functionality at the service and application layers. Typical deployments are expected to use a standardized data networking access paradigm, such as L2TP and PPP.

ANSI ATIS 1000006-2005, Signalling System No. 7 (SS7) - Emergency Telecommunications Service (ETS)

To ensure that a survivable and enduring National Security/Emergency Preparedness (NS/EP) telecommunications capability is available during emergencies, the U.S. government has endorsed the development and adoption of standards to support increased call completion capabilities for critical users. The Emergency Telecommunications Service (ETS) would be applied during the call setup by providing an identifier for those calls in the SS7 network protocol.

ANSI ATIS 1000008-2006, ANSI Extensions to Q.180.1 - The Narrowband Signaling Syntax (NSS)

This standard specifies extensions to ITU-T Recommendation Q.180.1, Narrowband Signaling Syntax (NSS), which specifies a flexible encoding syntax of narrowband signaling information to be transferred in protocols that cannot inherently transfer such information.

ANSI ATIS 1000111-2005, Signalling System Number 7 (SS7) - Message Transfer Part (MTP)

The overall objective of the SS7 Message Transfer Part (MTP) is to provide an internationally standardized general purpose common channel signaling system that provides a reliable means of transfer of information in correct sequence and without loss or duplication.

ANSI ATIS 1000112-2005, Signalling System Number 7 (SS7) - Signalling Connection Control Part (SCCP)

The Signalling Connection Control Part (SCCP) provides additional functions to the Message Transfer Part (MTP) to provide both connectionless as well as connection-oriented network services to transfer circuit-related and non-circuit related signalling information and other types of information between exchanges and specialized centers in telecommunication networks (e.g., for management and maintenance purposes) via a Signalling System No. 7 (SS7) network.

ANSI ATIS 1000113-2005, Signalling System No. 7 (SS7) - Integrated Services Digital Network (ISDN) User Part

The Integrated Services Digital Network (ISDN) User Part (UP) defines the protocol which supports the signalling functions required to provide voice and non-voice services in an Integrated Services Digital Network.

ANSI ATIS 1000631-2005, Signalling System No. 7 (SS7) - High Probability of Completion (HPC) Network Capability

The High Probability of completion (HPC) network capability would be applied during the call setup of NS/EP calls by providing for an identifier for those calls in the SS7 network protocol.

ANSI O5.1-2002, Wood Poles – Specifications and Dimensions

This standard provides minimum specifications for quality and dimensions of wood poles that are to be used in single-pole utility structures.

ANSI O5.1a-2003, Wood Products - Specifications and Dimensions

This standard provides minimum specifications for quality and dimensions of wood poles that are to be used in single-pole utility structures.

ANSI O5.1b-2003, Specifications and Dimensions

To update a requirement for Chilean radiata pine for kiln drying.

ANSI O5.1c-2004, Supplement to ANSI O5.1-2002- Wood Poles - Structural Glued Laminated Timber for Utility Structures

Updates to O5.1-2002 for modifications to Tables 1, 6, 6M, and C.1 for radiata pine.

ANSI O5.2-1996 (R2001), Wood Products - Structural Glued Laminated Timber for Utility Structures

Covers requirements for manufacturing and quality control of structural glued laminated timber of Southern Pine, Coast Region Douglas Fir, Hem Fir and other species of similar treatability for electric power and communication structures. The requirements are based on those in American National Standard for Structural Glued Laminated Timber, ANSI/AITC A190.1. This standard is supplemental to ANSI/AITC A190.1 and provides descriptions of the special manufacturing and design requirements for glued laminated utility structures.

ANSI O5.3-2002, Wood Products – Solid Sawn Wood Crossarms and Braces – Specifications and Dimensions

Consists of specifications covering solid sawn-wood crossarms and braces manufactured from coastal Douglas-fir (*Pseudotsuga menziesii* - variety *menziesii*) grown in the West Coast region, i.e., from the summit area of the Cascade Mountains of Washington and Oregon and from California; and from dense Southern pine of the following species: longleaf pine (*Pinus palustris*), shortleaf pine (*Pinus echinata*), loblolly pine (*Pinus taeda*), and slash pine (*Pinus elliottii*). The specifications are intended to cover communications crossarms, power crossarms, heavy-duty crossarms, and heavy-duty braces. Crossarms are intended primarily for use as beams. Heavy-duty crossarms may also be used as struts or columns in braced H-frames. Braces

ANSI T1.101-1999, Telecommunications – Synchronization Interface Standard

Includes synchronization interface standards for digital networks. Describes and specifies type of digital network interfaces carrying synchronization references and synchronization performance specifications for DS1 and SONET optical carrier (OC-N) references at network interfaces. This standard was first listed for public review in the March 26, 1999 issue of Standards Action. It is being resubmitted due to substantive changes. To obtain an electronic draft: URL Address: <ftp://ftp.t1.org/pub/ansi/bsr8/lb736-d.pdf>

ANSI T1.102-1993 (R2005), Telecommunications – Digital Hierarchy – Electrical Interfaces

The North American digital network is made up of sources of digital signals, including channel banks, digital switches, and multiplex equipment, interconnected by transmission facilities. These operate at several different bit rates. At any one level in the digital hierarchy there may be several signal sources with unique bit stream formats, but these need to have certain common characteristics to permit interconnection with transmission facilities at that level and with multiplex equipment connecting to a higher level.

ANSI T1.102.01-1996 (R2001), Telecommunications – Digital Hierarchy – VT1.5 Electrical Interface

Provides VT1.5 electrical interface specifications. The VT1.5 electrical interface line symbol rate is the same ternary 1.544-Mbaud rate used for existing DS1. However, the VT1.5 electrical interface is unique in that it replaces the traditional AMI and B8ZS DS1 line codes with a more efficient hybrid line coding scheme for the mapping of 2.056 Mbit/s binary information into a ternary 1.544-Mbaud DS1 line.

ANSI T1.104-1991 (R2003), Telecommunications – Exchange-Interexchange Carrier Interfaces – Individual Channel Signaling Protocols

Enables a wireline exchange carrier (EC) entity and an interexchange carrier (IC), international carrier (INC), or consolidated carrier entity to provide interconnecting equipment that operates compatibly. This standard gives individual-channel signaling protocol requirements for the interface located between a public-switched EC network within an access area and an IC, INC, or consolidated carrier network.

ANSI T1.105-2001, Telecommunications - Synchronous Optical Network (SONET) - Basic Description Including Multiplex Structures, Rates, and Formats

Describes a base rate and format along with a multiplexing scheme that will result in a modular family of rates and formats available for use in optical interfaces. Supplement T1.105a adds definitions and references for FDDI; extends the definition of the payload identifier (signal label) fields in the path overhead for STS and VT level mappings of the SONET digital hierarchy; adds the definition of a new Super-Rate mapping to 12.3 for asynchronous transport of FDDI (ISO 9314) physical layer data at 125,000 Megabits per second, and adds figure 61a to illustrate this.

ANSI T1.105.01-2000 (R200x), Telecommunications – Synchronous Optical Network (SONET) – Automatic Protection Switching

This document describes the protection switching protocols and algorithms for optical interfaces referred to as SONET. The SONET optical interface standard is specified in American National Standard for Telecommunications - Digital Hierarchy - Synchronous Optical Network (SONET) - Basic description including multiplex structures, rates, and formats, T1.105-1995. In its initial version, this standard addresses protection switching for linear 1+1 and 1:n topologies, and bidirectional line-switched ring network topologies. Nested protection is for further study.

ANSI T1.105.02-2001, Telecommunications – Synchronous Optical Network (SONET) – Payload Mappings

Describes standard mappings of digital hierarchy and non-digital hierarchy signals into the various SONET synchronous payload envelopes defined in ANSI T1.105. This standard was listed for public review in the 12/31/1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.105.02a-2002, Telecommunications - Synchronous Optical Network (SONET) - Payload Mappings (Mappings for GFP-based Signals)

Provides the mapping information for tributary signals comprised of Generic Framing Procedure frames.

ANSI T1.105.03-2003, Telecommunications – Synchronous Optical Network (SONET) - Jitter and Wander at Network and Equipment Interfaces

This revised standard describes the jitter specifications that are applicable to SONET network and equipment interfaces (OC-N and STS-N), and jitter and wander specifications that are applicable to certain SONET payload signals (e.g., DS1 and DS3). This revision of the standard includes what was in the previous version of T1.105.03, T1.105.03 supplement A and T1.105.03 supplement B. It also updates the jitter specifications to include the SONET OC-192 interface.

ANSI T1.105.04-1995 (R2005), Telecommunications – Synchronous Optical Network (SONET) – Data Communication Channel Protocols and Architectures

This document describes the usage and communications protocol stack to be employed on the Section and Line Data Communications Channels (DCC) that are part of the SONET format. The intent is to provide a channel that meets currently defined needs and can also accept additional functions in the future. In addition, the protocol is specified such that the data communications channel can function as an integral part of the Telecommunications Management Network (TMN) as specified in ANSI and ITU-T documents.

ANSI T1.105.05-2002, Telecommunications – Synchronous Optical Network (SONET) – Tandem Connection Maintenance

Establishes specifications for Tandem Connection Monitoring using the optical interface standard specified in "American National Standard for Telecommunications - Synchronous Optical Network (SONET) - Basic Description Including Multiplex Structures, Rates, and Formats," ANSI T1.105-2001. This standard defines the contents and use of the Tandem Connection Monitoring bytes within the SONET signal. Tandem Connection Monitoring provides enhanced maintenance capabilities for certain SONET applications.

ANSI T1.105.06-2002, Telecommunications – Synchronous Optical Network (SONET): Physical Layer Specifications

This standard describes a technical compatibility standard specification for a digital transmission interface. For optical applications, it addresses very short reach, short reach, intermediate reach, and long reach optical parameters at specific reference points (located close to the transmitter and receiver) in a manner consistent with ITU-T Recommendations G.957, G.691, and G.693. Except for OVTG, OC-1, and OC-24, all technical specifications are included in those ITU-T Recommendations.

ANSI T1.105.07-1996 (R2005),
Telecommunications - Synchronous Optical Network (SONET) - Sub STS-1 Interface Rates and Formats Specification

This document describes the rates, formats, and transport overhead for interfaces referred to as SONET with a rate less than STS-1. Specifically, the additional transport overhead is defined that allows the transport of virtual tributary (VT) payloads at the VT1.5 and VT Group level across an interface. The SONET optical interface standard is defined in American National Standard for Telecommunications - Digital Hierarchy - Optical Interface Rates and Formats Specifications (SONET), ANSI T1.105-1995, although the interfaces defined in this document are not restricted to either electrical or optical signals at the physical layer.

ANSI T1.105.07a-1997 (R2003),
Telecommunications - Synchronous Optical Network (SONET) - Sub STS-1 Interface Rates and Formats Specification (Inclusion of N X VT Group Interfaces)

This supplement expands the range of sub STS-1 interfaces to include payloads that are multiples of the VT Group. Specifically, sub STS-1 payloads of N x VT Group shall be allowed with N = 1-5, inclusive. The same single column of Line overhead is used regardless of the value of N that is used.

ANSI T1.105.08-2001 (R2005),
Telecommunications - Synchronous Optical Network (SONET) - In-Band Forward Error Correction Code Specification

This standard is for In-band Forward Error Correction (FEC) where the FEC check bits and status/control bits are carried within the existing Synchronous Optical Network (SONET) overhead. The scope of this standard is OC-48 and OC-192 SONET. Extensions to future higher rate systems are for further study.

ANSI T1.105.09-1996 (R2002),
Telecommunications - Synchronous Optical Network (SONET) - Network Element Timing and Synchronization

Describes and specifies the minimum synchronization-related performance parameters for SONET network interfaces. These specifications apply to all electrical and optical SONET network interfaces as defined in ANSI T1.105, whereas ANSI T1.101 applies only to network interfaces for carrying synchronization between carriers.

ANSI T1.105a-2002, Telecommunications - Synchronous Optical Network (SONET) - Basic Description including Multiplex Structure, Rates, and Formats (Link Capacity Adjustment Scheme (LCAS) Clarification and Signal Label Correction)

This supplement provides revised text for the description of the Link Capacity Adjustment Scheme (LCAS).

ANSI T1.107-2002, Telecommunications - Digital Hierarchy - Formats Specifications

Specifies digital hierarchy format requirements. This standard is intended to be used in conjunction with the American National Standard for Telecommunications - Digital Hierarchy - Electrical Interfaces, ANSI T1.102. Compliance with this standard is necessary if the various networks that comprise the hierarchy are to be interconnected. Since this is an interconnect specification, no equipment design requirements are provided. Such requirements, and additional format specifications enabling end-to-end communication between terminals, will be found in the appropriate equipment specifications.

ANSI T1.109-1990 (R2004),
Telecommunications - Exchange-Interexchange Carrier Interfaces - 950+XXXX EC-to-IC Access Signaling Protocols

Enables an exchange carrier (EC) entity and an interexchange carrier (IC), international carrier (INC), or consolidated carrier entity to provide interconnecting equipment that operates compatibly.

ANSI T1.110-1999 (R2005),
Telecommunications - Signalling System No. 7 (SS7) - General Information

ANSI T1.110-1999 was originally based on the 1988 Blue Book specification of Signalling System No.7 (SS7) for international use issued by the CCITT Study Group XI (Vol. VI Fascicles VI.7 and VI.8) and is intended to be generally compatible with the standard and its successors. It has been appropriately modified for use within and between U.S. networks to meet the anticipated needs and applications of those entities. In general these modifications fall into two categories: 1. The specification of options designated by the ITU-T (formerly CCITT) for national use; 2. Extensions to the 1992 protocol to provide for new applications of the SS7 protocol.

ANSI T1.111a-2002, Numbering of Signalling Point Codes

Describes the numbering scheme of signalling point codes for ANSI Common Signalling (CCS) System Number 7 (SS7) networks.

ANSI T1.113b-2001, Telecommunications - Signaling System No. 7, ISDN User Part
Revises ANSI T1.113-2000 to reflect the desired values of the SAP feature code indicator entries for Intercept - Trouble and Intercept - Blank Number.

ANSI T1.113b-2001, Telecommunications - Signaling System No. 7, ISDN User Part
Revises ANSI T1.113-2000 to reflect the desired values of the SAP feature code indicator entries for Intercept - Trouble and Intercept - Blank Number.

ANSI T1.114-2004, Telecommunications - Signalling System Number 7 (SS7) - Transaction Capabilities Application Part (TCAP)

This standard specifies Transaction Capabilities (TC) for Signalling System 7 (SS7). This specification is intended to provide, in an open-ended manner, the capabilities needed to support present and near-term ISDN and non ISDN services requiring transactions among exchanges, service control points, and databases.

ANSI T1.116-1996 (R2005),
Telecommunications - Signalling System Number 7 (SS7) - Operations, Maintenance, and Administration Part (OMAP)

This series of standards on the Operations, Maintenance, and Administration Part (OMAP) define the functions, procedures, and entities for managing the Signalling System Number 7 (SS7) network.

ANSI T1.116-2000, Telecommunications - Signalling System Number 7 (SS7) - Operations, Maintenance and Administration Part (OMAP)

This Standard is based on the ITU-T Recommendations Q.750 through Q.756 of Signalling System No. 7 (SS7) for international use and is intended to be compatible with that standard. It has been modified for use within and between U.S. Networks to meet the anticipated needs and applications of those entities. In general, these modifications fall into two categories: (1) The specification of options designated by the ITU-T for national use and (2) Extensions to the 1988 protocol to provide for new applications of the SS7 protocol. This is in accordance with current and projected ITU-T activity. An electronic copy of this standard can be found at URL: <ftp://ftp.t1.org/pub/ansi/bsr8/lb867.pdf>

ANSI T1.118-1992 (R2005),
Telecommunications - Signalling System Number 7 (SS7) - Intermediate Signalling Network Identification (ISNI)

The Intermediate Signalling Network Identification (ISNI) capability allows an application process in the origination network to specify intermediate signalling networks(s) for non-circuit-associated signalling messages, or to notify an application process in the destination network about such intermediate signalling network(s), or to do both. ISNI may be invoked by a variety of services.

ANSI T1.119-1994 (R2001),
Telecommunications – Synchronous Optical Network (SONET) – Operations, Administration, Maintenance, and Provisioning (OAM&P) Communications

Provides a description of a set of OAM&P functions and the management information model necessary to implement them within SONET network elements and their supporting operations systems. The current management information model describes the network element information.

ANSI T1.119.01-1995 (R2001),
Telecommunications – Synchronous Optical Network (SONET) – Operations, Administration, Maintenance, and Provisioning (OAM&P) Communications – Protection Switching Fragment

Presents the management of linear protection switching for Synchronous Optical Networks (SONET), encompassing specification of the following: a) A set of SONET protection switching functions carried out across an Open Systems Interconnection (OSI) interface to a Network Element; b) A Management Information Model fragment to support these functions across an OSI interface.

ANSI T1.119.02-1998 (R2004),
Telecommunications - Synchronous Optical Network (SONET) - Operations, Administration, Maintenance, and Provisioning (OAM&P) Communications - Performance Management Fragment

This standard provides a description of a set of OAM&P functions and the Management Information Model necessary to implement them within SONET network elements and their supporting operations systems. The current Management Information Model describes the network element information.

ANSI T1.202-2004, Telecommunications – Internetwork Operations – Guidelines for Network Management of the Public Switched Networks Under Disaster Conditions

These guidelines encompass the cooperative intercompany network management actions (that may be) required during emergency conditions associated with disasters that threaten life or property and cause congestion in the public telecommunications networks. These guidelines address the network actions required to relieve congestion in the public telecommunications networks caused by traffic overload and/or failure resulting from the disaster conditions.

ANSI T1.204-1997 (R2003),
Telecommunications - Operations, Administration, Maintenance, and Provisioning (OAM&P) - Lower-Layer Protocols for Telecommunications Management Network (TMN) Interfaces, Q3 and X Interfaces

Part of a series of American National Standards specifying Telecommunications Management Network (TMN) requirements. Specifically, this document addresses the lower-layer protocols for use with TMN entities. TMN entities include Operations Systems (OSs), Mediation Devices (MDs), Network Elements (NEs), and Data Communication Networks (DCNs). This standard describes protocols for the Physical, Data Link, Network, and Transport layers and defines a set of protocol profiles for use in TMN entities.

ANSI T1.206-2001 (R2005),
Telecommunications – Digital Exchanges and PBXs – Digital Circuit Loopback Test Line with N X DS0 Capability

In order to carry out maintenance in the public switched telephone network of switched 64-kbit/s digital circuits, digital circuits at sub-rates of 64-kbit/s, and N DS0 digital circuits (up to the maximum payload of a primary rate facility), a digital circuit test system is defined for digital exchanges and digital PBXs. Currently, only digital loopback testing is defined in this standard. Further study is required to develop other types of digital test lines (e.g., responder type testing).

ANSI T1.207-2000 (R2004),
Telecommunications – Operations, Administration, Maintenance, and Provisioning (OAM&P) – Terminating Test Line Capabilities and Access Arrangements

Describes types of terminating test lines and their operational functions, and provides numbering plan arrangements to access these capabilities for testing across interconnections in the public switched network.

ANSI T1.208-1997 (R2003),
Telecommunications - Operations, Administration, Maintenance, and Provisioning (OAM&P) - Upper-Layer Protocols for Telecommunications Management Network (TMN) Interfaces, Q3 and X Interfaces

Part of a series of standards that specifies interface requirements between OSs and NEs. It is intended to provide for the exchange of messages between Operations Systems (OSs) and Network Elements (NEs) for control, coordination, and monitoring of the Telecommunications Network.

ANSI T1.209-2003, Telecommunications - Operations, Administration, Maintenance, and Provisioning (OAM&P) - Network Tones and Announcements

This standard provides guidelines intended to standardize the application of tones and announcements to differentiate ineffective call conditions. This standard also provides guidelines to be used as a basis for the provisioning of tones and announcements in a Signaling System Number 7 (SS7) environment by interconnecting networks (ICNs).

ANSI T1.210-2004, Telecommunications – Operations, Administration, Maintenance, and Provisioning (OAM&P) – Principles of Functions, Architectures, and Protocols for Telecommunications Management Network (TMN) Interfaces

It is the intention of this standard to use and align with the relevant ITU-T Recommendations.

ANSI T1.211-2001, Information Interchange – Representation of National Security Emergency Preparedness – Telecommunications Service Priority

Provides the specifications, characteristics, and values of the National Security/Emergency Preparedness (NS/EP) - Telecommunications Service Priority (TSP) code. The TSP System is a system which superseded the Federal Communications Commission (FCC)/National Communications System (NCS) Restoration Priority (RP) System. This standard contains sections covering its purpose and scope, code representation, allowable code values, and relative importance of activities associated with services having NSEP TSP designations. This standard was listed for public review in the 6/1/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.212-1995 (R2004),
Telecommunications – Enhanced Telecommunications Charge Card Physical Characteristics and Numbering Structure

This standard applies to enhanced telecommunication charge cards issued within North America. The determination of eligibility to issue telecommunication charge cards is beyond the scope of this standard.

ANSI T1.213-2001, Coded Identification of Equipment Entities of the North American Telecommunications System for Information Exchange

Provides a form of coded identification for equipment entities in the North American Telecommunications System for the purpose of efficient information exchange. The standard describes the data elements within the format structure. This standard also contains clauses that cover its purpose and scope, definitions and references. This standard was listed for public review in the 3/9/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.213a-2001, Telecommunications - Coded Identification of Equipment Entities of the North American Telecommunications System for Information Exchange to correct the representation of the Basic Code in Figure B.1

Introduces a correction to Figure B.1 to represent the Basic Code as including Family and Subfamily, not just Family.

ANSI T1.216-1998 (R2003), Telecommunications – Integrated Services Digital Network (ISDN) Management – Basic Rate Physical Layer

Establishes required capabilities for the maintenance and operations needed for the basic rate physical layer associated with access to Integrated Services Digital Networks (ISDNs). This standard establishes needed maintenance functionality in customer and network equipment, particularly from the perspective of maintenance functionality available at the network boundary and from Operations Systems.

ANSI T1.217-1991 (R2003), Telecommunications – Integrated Services Digital Network (ISDN) Management – Primary Rate Physical Layer

Provides the maintenance operations requirements for primary rate physical layer ISDN access. It provides functional requirements to support maintenance and is not meant to be an equipment specification.

ANSI T1.218-1999 (R2004), Telecommunications – ISDN Management – Data Link and Network Layer

Covers maintenance of the layer 2 (data-link-layer) and layer 3 (network-layer) peer relationships between the exchange termination (ET) and customer equipment. The layer 2 and layer 3 peer relationships considered are signaling data on the D-channel, packet data on the D-channel, and packet data on a B-channel.

ANSI T1.219-1991 (R2003), Telecommunications – ISDN Management – Overview and Principles

Provides an overview of the set of standards on management operations for ISDNs and establishes the principles for the maintenance and operations needed for overall management of ISDNs. This document provides a general discussion of the models, terminology and principles utilized to define needed management functionality in customer and network equipment.

ANSI T1.221-1995 (R2004), Telecommunications – Operations, Administration, Maintenance, and Provisioning (OAM&P) – In-Service, Nonintrusive Measurement Device (INMD) – Voice Service Measurements

Provides specifications for transmission measurement devices utilized to measure various parameters of importance to voice service transmission maintenance of telecommunications networks.

ANSI T1.223-2004, Telecommunications – Information Interchange – Structure and Representation of Network Channel (NC) and Network Channel Interface (NCI) Codes for the North American Telecommunications System

This standard identifies the structure and the coded representation of Network Channel (NC) and Network Channel Interface (NCI) codes that shall be used to describe the channel and interface definitions. These codes are typically used by IntraLATA and InterLATA customers in their requests for service.

ANSI T1.226-2001 (R2005), Telecommunications – Operations, Administration, Maintenance, and Provisioning (OAM&P) – Management of Functions for Signalling System No. 7 (SS7) Network Interconnections

This standard addresses Operations, Administration, Maintenance, and Provisioning (OAM&P) for internetwork connections employing Common Channel Signalling (CCS) based on Signalling System Number 7 (SS7) protocol used in North America. The internetwork connection may be either within or between North American countries.

ANSI T1.227-2000, Telecommunications - Operations, Administration, Maintenance, and Provisioning (OAM&P) - Extension to Generic Network Information Model for Interfaces between Operations Systems Across Jurisdictional Boundaries to Support Fault Management (Trouble Administration)

Pertains to Operations System to Operations System interfaces for OSs used for network management and located in different jurisdictions. This Standard is one of a series of standards that will specify this interface. This document describes extensions to the Generic network information model needed for OS-OS Network Management interfaces across jurisdiction boundaries. The term, generic, is used here to imply that the managed object classes and their properties described are applicable across different network management technologies (between any managing system and any gateway system). Others in the series provide protocols, functions, and messages. OS-OS interfaces within jurisdictions are not specifically included. However, this Standard can be used for that purpose at the discretion of the jurisdiction. The scope is limited to

ANSI T1.227a-2001, Telecommunications - CORBA IDL Model for Interfaces Across Jurisdictional Boundaries to Support Fault Management (Trouble Administration) and Service Test

Defines an interface for the Trouble Administration (TA) and Service Test functions, as defined in T1.227/228 and T1.262. The interface is specified using the Common Object Request Broker Architecture (CORBA)/Interface Definition Language (IDL), as defined in the Common Object Request Broker Architecture and Specification, Revision 2.2, Object Management Group, Feb 1998. This standard was listed for public review in the 11/17/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.228-1995 (R1999), Telecommunications – Operations, Administration, Maintenance, and Provisioning (OAM&P) – Services for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration)

Specifies interface requirements between Operations Systems (OSs) across jurisdictional boundaries. It describes a set of Fault Management functional area services for Operations, Administration, Maintenance, and Provisioning (OAM&P) applications. This standard addresses only Trouble Administration. Part of a series of standards. It is the intention of this standard to use and align with Open Systems Interconnection (OSI) Systems Management standards, where appropriate. To obtain an electronic draft: URL Address: <ftp://ftp.t1.org/pub/ansi/bsr8/reaffirm.txt>.

ANSI T1.230-1994 (R2004),
Telecommunications –
Telecommunications Charge Card and
Billed Number Screening Validation
Message Components

This standard applies to telecommunications charge card and billed number screening validation messages for use within the North American Telecommunications interchange environment. The use of validation systems and networks also involves appropriate agreements between card issuers and service providers. Additionally card issuers and service provider agreements must comply with legal and regulatory requirements. Such agreements and requirements are beyond the scope of this standard.

ANSI T1.231-2003, Layer 1 In-Service
Transmission Performance Monitoring

This standard provides performance monitoring functions and requirements applicable to Layer 1 transmission signals for the covered levels of the North American transmission hierarchy. This standard provides functional requirements to support maintenance and is not meant to be an equipment specification. This standard, and its subparts supersedes and replaces ANSI T1.231-1997 in its entirety.

ANSI T1.231.01-2003, Digital Subscriber Line
(DSL) - Layer 1 In-Service Digital
Transmission Performance Monitoring

This standard provides performance monitoring functions and requirements applicable to DSL digital transmission lines. This standard provides functional requirements to support maintenance and is not meant to be an equipment specification. This standard is one of a set of standards which are applications utilizing the common criteria as specified in T1.231. This standard supersedes and replaces associated sections of T1.231-1997 in its entirety.

ANSI T1.231.02-2003, DS1 - Layer 1
In-Service Digital Transmission
Performance Monitoring

This standard provides performance monitoring functions and requirements applicable to DS1 digital transmission signals. This standard provides functional requirements to support maintenance and is not meant to be an equipment specification. This standard is one of a set of standards which are applications utilizing a common criteria as specified in T1.231. This standard supersedes and replaces associated sections in T1.231-1997 in its entirety.

ANSI T1.231.03-2003, DS3 - Layer 1
In-Service Digital Transmission
Performance Monitoring

This standard provides performance monitoring functions and requirements applicable to DS3 digital transmission. This standard provides functional requirements to support maintenance and is not meant to be an equipment specification. This standard is one of a set of standards which are applications utilizing the common criteria as specified in T1.231. This standard supersedes and replaces T1.231-1997 in its entirety.

ANSI T1.231.04-2003, SONET - Layer 1
In-Service Digital Transmission
Performance Monitoring

This standard provides performance monitoring functions and requirements applicable to SONET digital transmission. This standard provides functional requirements to support maintenance and is not meant to be an equipment specification. This standard is one of a set of standards which are applications utilizing the common criteria as specified in T1.231. This standard supersedes and replaces associated sections in T1.231-1997 in its entirety.

ANSI T1.232-1996 (R2001),
Telecommunications – Operations,
Administration, Maintenance, and
Provisioning (OAM&P) – G Interface
Specification for Use with the
Telecommunications Management Network
(TMN)

Establishes requirements for the G interface for the operations, administration, maintenance, and provisioning (OAM&P) functions of the Telecommunications Management Networks. The G interface couples the human user to a workstation for performing OAM&P functions. The G interface is the human-machine interface to the TMN. Current telecommunications networks are populated by a variety of elements and systems supplied by a variety of vendors. Many of these systems require human intervention. The user interfaces to such systems are often inconsistent, and are difficult to learn, remember, and use. This standard promotes an appropriate degree of consistency in the user interfaces to OAM&P functions of the TMN, with the goal of reducing the burden on the human user, reducing error rates and increasing the

ANSI T1.233-2004, Telecommunications -
Operations, Administration, Maintenance,
and Provisioning (OAM&P) - Security
Framework for Telecommunications
Management Network (TMN) Interfaces

It is the intention of this standard to use and align with the relevant ITU-T Recommendation. This alignment effort consists of adopting ITU-T Recommendation M-3016, TMN Security Overview, to replace the previously published version of T1.233-1993 (R1999).

ANSI T1.234-2000 (R2004),
Telecommunications – Signalling System
Number 7 (SS7) – MTP Levels 2 and 3
Compatibility Testing

Provides the testing requirements for internetwork connections employing Common Channel Signalling (CCS) based on Signalling System No. 7 (SS7) protocol used in North America. This standard provides a list of test scripts for testing the compatibility between the interconnecting networks for Message Transfer Part (MTP), level 2 and level 3, of the SS7 protocol. MTP level 1 tests are not included since they are transmission tests and are not related to the SS7 protocol. This standard references material in T1 SS7 protocol standards.

ANSI T1.235-2000 (R2004),
Telecommunications – Signalling System
Number 7 (SS7) – SCCP Class 0
Compatibility Testing

Addresses the testing required for internetwork connections employing Common Channel Signalling (CCS) based on Signalling System No. 7 (SS7) protocol used in North America. This standard provides a list of test scripts for testing compatibility between the interconnecting networks of the Signalling Connection Control Part (SCCP) Class 0 of the SS7 protocol. This standard references material in T1 SS7 protocol standards.

ANSI T1.238-2003, Telecommunications –
Information Interchange – Structure for the
Identification of Telecommunications
Facilities for the North American
Telecommunications System

This standard addresses the code and format structures for identifying various types of facilities, which include, but are not limited to cable, open wire, phantom groups, and analog/digital and fiber optic carriers. The facility format structures accommodate the depiction of facility data through four application-specific combinations of data unit representations (four format structures). The four format structures are: Cable facility format; Cable facility with pair identification format; Carrier facility format; and Carrier facility with channel/time slot identification slot.

ANSI T1.239-1994 (R2004),
Telecommunications -- Integrated Services
Digital Network (ISDN) Management –
User-Network Interface Protocol Profile

Specifies the application protocol and the use of layer 1-3 protocols at the ISDN user-network interface to provide management capabilities. The protocols defined in this standard are suitable for management interactions involving transaction-type information exchanges.

ANSI T1.240-1998 (R2003),
Telecommunications – Operations,
Administration, Maintenance, and
Provisioning (OAM&P) – Generic Network
Information Model for Interfaces between
Operations Systems and Network Elements

Part of a series of standards that specifies interface requirements for the interface between Operations Systems (OSs) and Network Elements (NEs). It describes a generic network model needed to develop OAM&P application message standard for modern telecommunications networks.

ANSI T1.241-1994 (R2004),
Telecommunications -- Integrated Services
Digital Network (ISDN) Management --
Service Profile Verification and Service
Profile Management -- ISDN Interface
Management Services

Service Profile Verification and Service Profile Management (SPV and SPM) are optional ISDN Interface management services. They are provided by the network to the customer to allow some real-time customer network management capabilities and to allow some management across the user-network interface by the network provider.

ANSI T1.245-1997 (R2003),
Telecommunications - Directory Service for
Telecommunications Management Network
(TMN) and Synchronous Optical Network
(SONET)

Specifies the usage of the X.500 Directory, protocols and services for communications between Directory Users and Directory Servers. These specifications are for use of the Director in support of management communications within the Telecommunications Management Network (TMN), and for specific technologies, such as Synchronous Optical Network (SONET).

ANSI T1.246-2000, Telecommunications –
Operations, Administration, Maintenance,
and Provisioning (OAM&P) – Information
Model and Services for Interfaces between
Operations Systems across Jurisdictional
Boundaries to Support Configuration
Management – Customer Account Record
Exchange (CARE)

The purpose of this standard is to provide an interactive (rather than bulk interface using the Common Management Information Service Element (CMISE) for conveying CARE information. The standard permits tracking of orders and inquiries, and other features that can be provided using CMISE. This revision of T1.246 is created to ensure the model can accommodate recent new OBF changes for new local competition requirement. The enhancement to the model also supports possible future OBF new CARE transactions.

ANSI T1.247-1998 (R2003),
Telecommunications – Operations,
Administration, Maintenance, and
Provisioning (OAM&P) – Performance
Management Functional Area Services and
Information Model for Interfaces between
Operations Systems and Network Elements

Part of a series of standards that specifies interface requirements between Operations Systems (OSs) and Network Elements (NEs). It describes a set of Performance Management functional area services and associated information model for Operations, Administration, Maintenance, and Provisioning (OAM&P) applications for DS1 and DS3 signals.

ANSI T1.250-1996 (R2005),
Telecommunications – Operations,
Administration, Maintenance, and
Provisioning (OAM&P) – Extension to
Generic Network Information Model for
Interfaces between Operations Systems
and Network Elements to Support
Configuration Management, Analog and
Digital Services

This standard is one of a series of standards that specify interface requirements for the interface between Operations Systems (OSs) and Network Elements (NEs). It describes a Customer Service Provisioning information model (object model and related Operations, Administration, Maintenance, and Provisioning (OAM&P) services) needed to configure analog and narrowband ISDN network service offerings for subscribers. This standard specializes and extends the ITU configuration model standards Q.824.0 to Q.824.2 to meet North American needs.

ANSI T1.251-2001a, Telecommunications –
Identification of Telecommunications
Service Provider Codes for the North
American Telecommunications System

Provides the specifications and characteristics of codes used to represent telecommunications service providers operating in North America. Its intended use is to provide a telecommunications standard that facilitates information interchange among humans and machines.

ANSI T1.252-1996 (R2002),
Telecommunications – Operations,
Administration, Maintenance, and
Provisioning (OAM&P) – Security for the
Telecommunications Management Network
(TMN) Directory

This standard defines the security scheme that is expected to be the basis of the TMN Directory security (where such security is deemed necessary). It is based on ITU-T Recommendation X.509, which includes a strong authentication scheme for the Directory based on public key encryption. This standard also proposes the use of X.500 Directory for the distribution of certified public keys to authorized entities. Communicating entities can use such keys for mutual authentication, integrity assurance, confidentiality, and non-repudiation.

ANSI T1.255-2003, Telecommunications -
In-Service, Nonintrusive Measurement
Device (INMD) - Methodology for Applying
INMD Measurements to Customer Opinion
Models

This standard provides algorithms for mapping measurements made with in-service, nonintrusive measurement devices (INMDs) to the parameters used in customer opinion models for voice services. These algorithms allow the INMD's measurements to be used to evaluate and compare the performance of connections and services carrying speech signals.

ANSI T1.256-2002, Telecommunications -
Operations, Administration, Maintenance,
and Provisioning (OAM&P) - Model for
Interface Across Jurisdictional Boundaries
to Support Electronic Access Service
Ordering: Inquiry Function

This standard defines an information model using CORBA IDL for the TMN X-interface (M.3010) to support the access service inquiry functions. This standard uses CORBA for conveying inquiry information across an interactive interface. This standard allows access service customers to do: Connecting Facility Assignment, and Service Availability.

ANSI T1.257-1997 (R2002),
Telecommunications - Operations,
Administration, Maintenance, and
Provisioning (OAM&P) - Traffic
Management Services and Information
Model for Interfaces between Operations
Systems and Network Elements

This standard is part of a series of standards that specify interface requirements between Operations Systems (OSs) and Network Elements (NEs). It describes a set of Traffic Management services and an associated information model for Operations, Administration, Maintenance, and Provisioning (OAM&P) applications for circuit-switched networks using hierarchical routing.

ANSI T1.258-1997 (R2002),
Telecommunications - OAM&P -
Information Model and Services for
Interfaces between Operations Systems
across Jurisdictional Boundaries to Support
Service Level Alarm Reporting and
Performance Monitoring

This standard describes an X interface at the service level between two Telecommunications Management Networks (TMNs). This standard abstracts from and builds on the Alarm Reporting and Performance Management information models and services already defined for Operating System to Network Element (OS-NE) interfaces within a single jurisdiction. Service affecting alarms and performance data are associated with service level abstractions of detailed network topology. Alarm conditions and performance measurements, however, are reported in network and element level terms that are commonly used by carriers today and readily available in current OSs. In the future, it may be desirable to report alarm conditions and performance measurements in service level terms (e.g., quality of service terms).

ANSI T1.259-1997 (R2003),
Telecommunications - STASE-ROSE
(document is on hold pending committee
resolution)

Supports security services for ROSE PDUs within the application layer. It is independent of the underlying communications protocol stack. This standard defines a new Application Service Element (ASE) called Security Transformations Application Service Element for ROSE (STASE-ROSE), which resides between the ROSE and the Presentation Layer in the OSI Protocol Stack.

ANSI T1.260-1998 (R2003),
Telecommunications - Operations,
Administration, Maintenance, and
Provisioning (OAM&P) - Extension to
Generic Network Information Model for
Interfaces between Service Provider
Administrative System and Network
Elements for Lawfully Authorized Electronic

Specifies information models and functional requirements for the interface between Network Elements and a Service Provider Administrative System for Lawfully Authorized Electronic Surveillance. The network reference model defining the interface is specified in J-STD-025. Standard describes a Service Provider Telecommunications Management Network specific configuration management information information model needed to administer the establishment of a law enforcement surveillance.

ANSI T1.261-1998 (R2004),
Telecommunications - Operations,
Administration, Management, and
Provisioning (OAM&P) - Security for TMN
Management Transactions over the TMN
Q3 Interface

Standard addresses the security of transaction oriented TMN management messages exchanged over tMN Q3 interfaces among Network Elements (NE) and Operations Systems (OSs). Offers the following four levels of security: authentication of the association initiator, peer entity authentication, data origin authentication, and access control and whole protocol data unit protection.

ANSI T1.261a-2004, Security for TMN
Management Transactions over the TMN
Q3 Interface

Standard addresses the security of transaction oriented TMN management messages exchanged over TMN Q3 interfaces among Network Elements (NE) and Operations Systems (OSs). Offers the following four levels of security: authentication of the association initiator, peer entity authentication, data origin authentication, and access control and whole protocol data protection.

ANSI T1.262-1998 (R2002),
Telecommunications - OAM&P - Extension
to Generic Network Model for Interfaces
Across Jurisdictional Boundaries to Support
the Service Test Function

This is the Service Test Function Standard. The object model contained in this standard allows the test function to be performed on Plain Old Telephone Service (POTS). The model was created based on requirements from the Trouble Administration subcommittee of the Electronic Communications Implementation Committee (ECIC).

ANSI T1.262a-2001, Telecommunications -
CORBA IDL Model for Interfaces Across
Jurisdictional Boundaries to Support
Service Test

Defines an interface for the Service Test functions, as defined in ANSI T1.262. The interface is specified using the Common Object Request Broker Architecture (CORBA) / Interface Definition Language (IDL), as defined in the Common Object Request Broker Architecture and Specification, Revision 2.2, Object Management Group, Feb 1998.

ANSI T1.262b-2004, Operations,
Administration, Maintenance, and
Provisioning (OAM&P) - Extension to
Generic Network Model for Interface across
Jurisdictional Boundaries to support the
Service Test Function

Proposal to add two test types to
T1.262-1998 (R2002) to allow for request of
tone on a pair, across the X interface.

ANSI T1.263-1998 (R2002),
Telecommunications - Operations,
Administration, Maintenance, and
Provisioning (OAM&P) - Model for
Interfaces Across Jurisdictional Boundaries
to Support Service Level Connection
Management

This scope of this standard is to define information models and to specify the basic set of management functions needed to support Connection Management. The focus of this standard is on the point-to-point, Reconfigurable Lease Circuit Service (LCS). The Reconfigurable LCS may be offered by one or more service providers (SP) and many be controlled by the service customer (SC) with different levels of visibility. The LCS is defined between a single SC and a single SP.

ANSI T1.265-1999, Telecommunications -
OAM&P - Model for Interface Across
Jurisdictional Boundaries to Support the
Local Service Preorder Inquiry Function

Defines an information model using CORBA IDL for the TMN X-interface (M.3010) to support the local service preorder inquiry functions. This standard uses CORBA for conveying inquiry information across an interactive interface. This standard allows local service customers to validate addresses, inquire about new telephone numbers, reserve new telephone numbers, inquire about local service availability, inquire about local service installation schedule, schedule an installation for local service and cancel a scheduled installation for local service. This standard was first listed for public review in the March 26, 1999 issue of Standards Action. It is being resubmitted due to substantive changes. To obtain an electronic draft: URL Address:
<ftp://ftp.t1.org/pub/ansi/bsr8/lb737-d.pdf>

ANSI T1.267-2003, OAM&P - Model for
Interface Across Jurisdictional Boundaries
to Support the Local Service Inquiry
Functions

This standard defines an information model using CORBA IDL for the TMN X-interface (ITU-T Recommendation M.3010) to support the local service inquiry functions. This standard uses CORBA for conveying inquiry information across an interactive interface.

ANSI T1.270a-2001, Telecommunications -
CORBA Generic Network and NE Level
Information Model

Provides a supplement to the T1M1 CORBA Generic Network and NE Level information Model (T1M1/2000-270). This supplement modifies all use of object references for attributes (applicable in value type definitions) to name types.

ANSI T1.272-2003, Information Interchange - Structure for the Identification of IP Network Elements for the North American Telecommunications System

Provides the code and format structures necessary for identification of Internet Protocol network elements with location identification information as their domain names, and describe the code structures with various combinations of data units represented within those structures. This standard contains sections that cover its purpose and scope, and that describe data elements and format structures for identifying IP network elements. It also contains definitions and references. This standard was listed for public review in the 8/11/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.274-2000 (R2005), Electronic Interactive Agent (IA)

This document specifies a U.S. standard for an Electronic Interactive Agent (IA) to transport Electronic Data Interchange/Electronic Data Interchange For Administration, Commerce, and Transport (EDI/EDIFACT), extensible Markup Language (XML), and/or plain text messages over a Transmission Control Protocol/Internet Protocol (TCP/IP) based network environment utilizing Transport Layer Security (TLS). This standard is based on ITU-T Recommendations Q.814 and Q.815 but has minor differences to improve its efficiency in the U.S. community.

ANSI T1.275-2003, Operations, Administration, Maintenance, and Provisioning (OAM&P) - Unified Ordering Model (UOM-ASR Volume III) for Interface Across Jurisdictional Boundaries to Support the Access Service Request Functions

This standard defines tML for the TMN X-interface (M.3010) to support the UOM-ASR. This standard uses tML Schemas for conveying request, response, notification, acknowledgement, and exception response information across an interactive interface. This standard allows access service customers to do the following interactions: Request, Response, Notification, Acknowledgement, and Exception Response.

ANSI T1.275.01-2003, Operations, Administration, Maintenance, and Provisioning (OAM&P) - Unified Ordering Model (UOM-ASR Volume III) for Interfaces Across Jurisdictional Boundaries to Support the Access Service Request Functions

This standard defines tML Schemas for the TMN X-interface (M.3010) to support the UOM-ASR. This standard uses tML Schemas for conveying request, response, notification, acknowledgement, and exception response information across an interactive interface. This standard allows access service customers to do the following interactions: Request, Response, Notification, Acknowledgement, and Exception Response.

ANSI T1.275.02-2004, Operations, Administration, Maintenance, and Provisioning (OAM&P) - Unified Ordering Model (UOM-ASR Volume III) for Interface Across Jurisdictional Boundaries to Support the Access Service Request ASR Version 28

The scope of this specification is to develop an American National Standards Institute (ANSI) standard that specifies an interface for the Unified Ordering Model - Access Service Request (UOM-ASR). The interface is specified using the telecommunications Markup Language (an extension of XML), as defined in tML Framework Document (ITU-T M.3030).

ANSI T1.276-2003, Operations, Administration, Maintenance, and Provisioning - Security Requirements for the Public Telecommunications Network: A Baseline of Security Requirements for the Management Plane

Contains a set of baseline security requirements for the Management Plane. The President's National Security Telecommunications Advisory Committee (NSTAC) Network Security Information Exchange (NSIE) and Government NSIE jointly established a Security Requirements Working Group (SRWG) to examine the security requirements for controlling access to the public switched network, in particular with respect to the emerging next generation network.

ANSI T1.302-1989 (R2001), Telecommunications – Digital Processing of Voice-Band Signals – Line Format for 32-kbit/s Adaptive Differential Pulse Code Modulation

Standardizes three line formats so that vendors can provide compatible equipment for the U.S. marketplace and so that both exchange and interchange carriers may operate compatibly. These line formats utilize Bundle, Transition, and Robbed-Bit signaling. The line format associated with Bundle signaling uses a separate bit-allocation channel to transport signaling for the adaptive differential pulse-code modulated (ADPCM) channels in the bundle. The line formats associated with Transition and Robbed-Bit signaling use the ADPCM channel to transport signaling. It is expected that both equipment manufacturers and carriers will utilize this standard. This standard provides only the line formats for Bundle, Transition, and Robbed-Bit signaling. The algorithms that are necessary for these line formats are specified in American National Standard for

ANSI T1.302a-1992 (R2002), Telecommunications – Digital Processing of Voice-Band Signals – Line Format for 32-kbit/s Adaptive Differential Pulse-Code Modulation (ADPCM) (Channel-Control Templates and Robbed-Bit Signaling Alarm Transmission)

Addresses two oversights of ANSI T1.302-1989, Digital Processing of Voice-Band Signals - Line format for 32-kbit/s Adaptive Differential Pulse-Code Modulation. Clause 3 describes the line format but does not specify a line format for channels that are programmed to bypass the ADPCM algorithm and that are transmitted as digital or PCM data. Clause 5 describes the line format for transcoders using robbed-bit signaling but does not specify a method for transmitting downstream alarms.

ANSI T1.304-1997, Telecommunications - Ambient Temperature and Humidity Requirements for Network Equipment in Controlled Environments

Standard specifies the ambient air temperature and humidity ranges of the controlled environment in which deployed telecommunications equipment remains functional. A testing methodology is also defined to verify the functionality of network equipment throughout the environmental range presented in this standard.

ANSI T1.307-2003, Telecommunications - Fire Resistance Criteria - Ignitability Requirements for Equipment Assemblies and Fire Spread Requirements for Wire and Cable

Covers the fire resistance characteristics of equipment assemblies and selected products and materials used within telecommunications network equipment facilities and spaces of similar function. This standard along with T1.319 shall be used as the means of appraising fire risk within a telecommunications network equipment facility or space with similar function.

ANSI T1.308-1996 (R2002), Telecommunications – Central Office Equipment – Electrostatic Discharge Immunity Requirements

Provides electrostatic discharge (ESD) immunity criteria and test procedures for equipment assemblies intended for use in telephone central offices. It is intended to establish the capability of central office equipment to function normally after receiving typically encountered electrostatic discharges.

ANSI T1.311-1998, DC Power Systems – Telecommunications Environment Protection

Addresses the installation of dc power systems within controlled or limited access areas that convert from one dc level to another of 160 volts or less. Standard identifies reasonable means of minimizing hazards associated with the interconnection of dc power systems.

ANSI T1.312-1991 (R2002),
Telecommunications – Voice Packetization
– Packetized Voice Protocol

To standardize the protocol for packetized speech, the Packetized Voice Protocol (PVP). PVP defines formats and procedures for the transport of voice information and channel-associated signaling over a packet network. This is to allow vendors to provide compatible equipment for the U.S. marketplace and to permit both exchange and interexchange carriers to operate compatibly.

ANSI T1.313-2003, Telecommunications –
Electrical Protection for
Telecommunications Central Offices and
Similar Type Facilities

Telecommunications central offices and similar type facilities are often subjected to disturbances from lightning and ac power line faults, either directly or indirectly, through the communications cables and ac power facilities that serve them. This standard proves the minimum electrical protection, grounding and bonding criteria necessary to mitigate the disruptive and damaging effects of lightning and ac power faults.

ANSI T1.315-2001, Telecommunications –
Voltage Levels for DC-Powered Equipment
– Used in the Telecommunications
Environment

Establishes requirements and objectives for voltage ranges and associated characteristics (transient and noise) of the input voltage for equipment powered from dc power systems in the telecommunications environment. This standard does not specify dc power plant voltage levels. Also, this standard does not specify the voltage applied to the interface between the network and customer installations (network interface).

ANSI T1.316-2002, Telecommunications –
Electrical Protection of Telecommunications
Outside Plant

Telecommunications outside plant, by nature of its outdoor location, and frequent joint-use or joint right-of-way installations with power utility facilities, is often subject to disturbances from lightning and ac power line faults. This standard provides the minimum electrical protection, grounding and bonding criteria necessary to mitigate the disruptive and damaging effects of lightning and ac power faults. It is intended to serve as a guide for designers of such facilities in the application of electrical protection, grounding and bonding, as a function of the electrical environment.

ANSI T1.317-1993 (R1999),
Telecommunications – Uniform Language
for Accessing Power Plants –
Human-Machine Language

Permits a uniform method of communicating with power systems in a telecommunications environment. This standard specifically addresses command language elements necessary for human-to-machine communication with systems that monitor and control power equipment. This standard is applicable to the design of power system monitoring and control systems.

ANSI T1.319-2002, Telecommunications –
Fire Propagation Hazard Testing Procedure
for Equipment

The fire hazard risk assessment criteria defined in this standard considered applicable to frame and cabinet-mounted equipment intended to be installed in environmentally controlled telecommunications network facilities. Examples of such locations are Central Offices, Controlled Environmental Vaults, and above ground Huts.

ANSI T1.328-2001, Protection of
Telecommunications Links from Physical
Stress and Radiation Effects and
Associated Requirements for DC Power
Systems

Provides baseline measures describing the durability (survivability) of outside plant copper-conductor and optical-fiber telecommunications distribution links to various levels of physical stress and radiation effects. The standard applies to optical-fiber and metallic links for trunk, feeder, and local distribution. The standard includes information for the design and installation of aerial, buried, and underground plant, and applies to all telecommunications networks including but not limited to exchange carriers and interexchange carriers. The standard is intended for new installations, and not necessarily for replacement of existing systems. The standard addresses protection against threats such as wind, temperature, fire, water penetration, and the means to keep the links energized (telecommunications power). This standard was listed for public

ANSI T1.329-2002, Telecommunications –
Network Equipment – Earthquake
Resistance

This standard, when used with established earthquake qualification practices, sets forth test methods, performance requirements, and acceptance criteria for determining the earthquake resistance of telecommunications equipment. Earthquake resistance is the equipment's ability to maintain a defined level of functionality, without physical damage, disruption of service, or personnel hazard, during and after an earthquake. This standard, when used with established earthquake qualification practices, sets forth test methods, performance requirements, and acceptance criteria for determining the earthquake resistance of telecommunications equipment. Earthquake resistance is the equipment's ability to maintain a defined level of functionality, without physical damage, disruption of service, or personnel hazard, during and after an earthquake. This standard

ANSI T1.330-1997 (R2002),
Telecommunications - Valve-Regulated
Lead-Acid Batteries Used in the
Telecommunications Environment

This standard established requirements for Value-Regulated Lead-Acid (immobilized electrolyte) stationary cells and batteries used in telecommunications applications. It covers both absorbed as well as gelled electrolyte types and addresses the issues of gas recombination and thermal runaway.

ANSI T1.331-1999 (R2004),
Telecommunications - Description of
Above-Baseline Physical Threats to
Telecommunications Links

This standard describes and defines above-baseline against stresses resulting from the threats. However, this standard does serve as a foundation to build specifications for concrete mitigative measures as needs arise. Such measures depend on specific stresses and are developed on a case-by-case basis. Because these are above-baseline threats, the stresses, application and methodology to mitigate against them shall be negotiated by the service requester with each individual carrier.

ANSI T1.333-2001, Telecommunications -
Grounding and Bonding of
Telecommunications Equipment

Defines and describe sthe grounding and bonding topologies commonly used for the installation of network telecommunications equipment in central offices and similar type facilities. It addresses the requirements for grounding and bonding of network telecommunication equipment, the associated dc and ac power facilities, and the interfacing of co-located telecommunications systems. This standard was listed for public review in the 6/30/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.334-2002, Telecommunications - Electrical Protection of Communications Towers and Associated Structures

Communications towers and the associated structures, by nature of their outdoor location, are often subject to disturbances from lightning. This standard provides the minimum electrical protection, grounding and bonding criteria necessary to mitigate the disruptive and damaging effects of lightning. It is intended to serve as a guide for designers or users of such facilities in the application of electrical protection, grounding and bonding.

ANSI T1.336-2003, Engineering Requirements for a Universal Telecom Framework

This standard sets forth-dimensional parameters, performance and the application criteria for the UTF when used to house electronics equipment in telecom facilities. The requirements shall be used in the design; construction and provisioning of UTF supplied to the telecommunications industry to house electronics equipment.

ANSI T1.337-2004, Requirements for Maximum Voltage, Current, and Power Levels in Network-Powered Transport System

This document provides maximum dc steady-state and duration limited voltage, current, and power limits to be observed when powering transport systems over conventional network telecommunications twisted-pair conductors. The technical requirements contained herein are based on industry-recognized safety and design standards, addresses both the network and customer premises environments, and are independent of the transport system technology employed.

ANSI T1.338-2004, Electrical coordination of Primary and Secondary Surge Protective Devices for Use in Telecommunications Circuits

This contribution provides basic information for the electrical coordination of primary and secondary surge protective devices.

ANSI T1.401-2000, Telecommunications – Interface between Carriers and Customer Installations – Analog Voicegrade Switched Access Lines Using Loop-Start and Ground-Start Signaling

This Standard provides requirements for loop-start and ground-start signaling for the analog voicegrade interface between carrier switched access lines and customer installations. These requirements are intended to assist carriers, manufacturers, and users of products to be used in the switched network to understand the parameters of the existing networks. This standard is a revision of T1.401-1993, which it replaces in its entirety. This standard was listed for public review in the 6/2/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.401.01-2000 (R2005), Network to Customer Installation Interfaces - Analog Voicegrade Switched Access Lines using Loop-Start and Ground-Start Signaling with Line-Side Answer Supervision Feature

This standard provides the signaling requirements associated with the line-side answer supervision feature on analog switched-access lines using loop-start or ground-start signaling when the network provides this capability. Requirements are specified at the interface between telecommunications carriers and customer premises wiring and equipment in.

ANSI T1.401.02-2000 (R2005), Network to Customer Installation Interfaces - Analog Voicegrade Switched Access Lines with Distinctive Ringing

This standard defines the interface between network analog-switched access lines and customer installations for distinctive ringing features. This standard is a companion standard to American National Standard for Telecommunications - Network-to-Customer Installation Interfaces - Analog Voicegrade Switched Access Lines Using Loop-Start and Ground-Start Signaling, T1.401-2000.

ANSI T1.401.03-1998 (R2005), Network to Customer Installation Interfaces - Analog Voicegrade Switched Access Lines with Calling Number Delivery, Calling Name Delivery, or Visual Message-Waiting Indicator Features

This standard provides the signaling and data transmission requirements associated with the following supplemental features that utilize network-originated on-hook data transmission on analog voicegrade switched access lines that use loop-start signaling: Calling Number Delivery (CND); Calling Name Delivery (CNAM); and Visual Message-Waiting Indicator (VMWI).

ANSI T1.401.04-2000 (R2005), Network to Customer Installation Interfaces - Analog Voicegrade Switched Access Lines with Call Waiting, Distinctive Call Waiting, or Calling Identity Delivery on Call Waiting Feature

This standard provides the requirements associated with three different types of call waiting supplemental features that may be used on analog voicegrade switched access lines with loop-start signaling. The three features are called: Call Waiting (CW); Distinctive Call Waiting (DCW); Calling Identity Delivery on Call Waiting (CIDCW).

ANSI T1.401.05-2000 (R2005), Network-to-Customer Installation Interfaces - Analog Voicegrade Switched Access Lines with Network-Implemented Coin-Operated Payphone Feature

This standard provides the signaling requirements associated with analog, voicegrade, switched access lines with the network-implemented coin-operated payphone (NICOP) feature. This standard is intended to be used in conjunction with American National Standard for Telecommunications - Interface Between Carriers and Customer Installations - Analog Voicegrade Switched Access Lines Using Loop-Start and Ground-Start Signaling, T1.401.

ANSI T1.401a-2001, Telecommunications - Network-to-Customer Installation Interfaces - Analog Voicegrade Switched-Access Lines Using Loop-Start and Ground-Start Signaling

Replaces subclause 8.1.2.1 and figure 16 to reflect the allowance of a maximum Customer Installation (CI) resistance of 430 W during dial pulsing, and to provide additional clarification of requirements.

ANSI T1.401b-2002, Telecommunications - Network-to-Customer Installation Interfaces - Analog Voicegrade Switched Access Lines Using Loop-Start and Ground-Start Signaling

This supplement replaces Table C.1 in order to provide new information for the Message Waiting Indicator Tones for the EWSD and DCO switch types.

ANSI T1.403-1999, Telecommunications - Network and Customer Installation Interfaces - DS1 Electrical Interface

Specifies a DS1-rate electrical interface at the network interface (NI) between the network and a customer installation (CI). Requirements include electrical characteristics, former parameters, and physical characteristics at the NI. Standard provides NI compatibility information and is not meant to be an equipment specification. Standard is a revision of ANSI T1.403-1995, and replaces it in its entirety.

ANSI T1.403.01-1999 (R2005), Telecommunications - Network and Customer Installation Interfaces - Integrated Services Digital Network (ISDN) Primary Rate Layer 1 Electrical Interface Specification

This standard establishes performance and technical criteria for interfacing and interconnecting the various functional groups shown in Figure 1. Compliance with this standard is intended to ensure compatibility at the interface points (Figure 1) and should not be construed as a constraint on the internal operation of the Network Terminations (NT), or Terminal Equipment (TE).

ANSI T1.403.02-1999 (R2005), Network and Customer Installation Interfaces - DS1 Robbed-Bit Signaling State Definitions
This standard specifies robbed-bit signaling state definitions at the DS1 electrical interface between the network and customer installations. It is intended for use in conjunction with ANSI T1.403.

ANSI T1.403.02a-2001 (R2005), Network and Customer Installation Interfaces - DS1 Robbed-Bit Signaling State Definitions
This supplement renames Annex A, Bibliography, of T1.403.02-1999 as Annex B, adds several references to renamed Annex B, and adds a new Annex A (informative) on V.90 modem compatibility.

ANSI T1.403a-2001 (R2005), Supplement to T1.403-1999, Network and Customer Installation Interfaces - DS1 Electrical Interface
This supplement adds a transverse balance requirement, an associated test figure, a related normative reference and an informative annex to T1.403-1999.

ANSI T1.403b-2002 (R2005), Telecommunications - Network and Customer Installation Interfaces - DS1 Electrical Interface
This supplement replaces Annex E of T1.403-1999 in its entirety. The replacement clarifies, but does not change, the requirements of Annex E.

ANSI T1.404-2002, Network and Customer Installation Interfaces - DS3 Metallic Interface Specification
Describes network and customer installation DS3 metallic interfaces. Requirements on DS3 electrical parameters, basic framing format, M23 multiplex and C-Bit Parity applications, and physical signal characteristics are included or referenced.

ANSI T1.404.01-2002, Network and Customer Installation Interfaces - DS3 Physical Layer Interface and Mapping Specifications for ATM Applications
This standard provides physical layer (Layer 1) specifications for DS3 User-Network Interfaces (UNIs) that are used to transport asynchronous transfer mode (ATM) cells in the DS3 payload. The term User-Network Interface (UNI) is used in this standard to refer to both the Network Interface (NI) and interfaces within the Customer Installation (CI).

ANSI T1.405-2002, Telecommunications - Installation Interfaces - Direct-Inward-Dialing Analog Voicegrade Switched Access Using Loop Reverse-Battery Signaling
Provides requirements for the Network-to-Customer Installation interface for Direct-Inward-Dialing analog voicegrade switched access using loop reverse-battery signaling with a customer-installation-provided battery source. These requirements are intended to assist carriers, manufacturers, and users of products to be used in or connected to a switched network to understand the parameters of the existing networks. This revision replaces T1.405-1995 in its entirety.

ANSI T1.407-2002, Telecommunications - Network to Customer Installation Interfaces - Analog Voicegrade Special Access Lines Using Customer-Installation-Provided Loop-Start Supervision
This standard provides signaling requirements for the interface between telecommunication networks and customer installations where the customer installation provides loop-start supervision. These requirements are intended to assist network operators, manufacturers, and user of products to be used with telecommunication networks to understand the parameters of the existing networks. This standard is a revision of T1.407-1997, which it replaces in its entirety.

ANSI T1.409-2002, Telecommunications - Network to Customer Installation Interfaces - Analog Voicegrade Special Access Lines Using E&M Signaling
Provides signaling requirements for the analog voicegrade interface between telecommunication carriers and customer installations when E&M signaling is used across the interface. These requirements are intended to assist carriers, manufacturers, and users of products to be used with telecommunication networks to understand the parameters of the existing networks. This standard is a revision of T1.409-1996, which is replaced in its entirety.

ANSI T1.410-2001, Telecommunications - Carrier-to-Customer Metallic Interface - Digital Data at 64 kbit/s and Subrates
Provides the requirements for a Carrier-to-Customer Installation (CI) synchronous digital data at 64 kbit/s and subrates electrical interface, referred to as the Network Interface (NI). Requirements include electrical characteristics, format parameters, and physical characteristics. This standard provides interface compatibility information and is not meant to be an equipment specification. This standard was listed for public review in the 11/17/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.411-2001, Telecommunications - Network-to-Customer Installation Interfaces - Analog Voicegrade Enhanced 911 Switched Access Using Network-Provided Reverse-Battery Signaling
Presents requirements for the interconnection of Customer Installations (CIs), such as Private Branch Exchanges, to Enhanced 911 systems. The analog interface allows the CI to transmit the caller's emergency service identification information to an Enhanced 911 system in applications where multiple terminals share Enhanced 911 switched access. These requirements are intended to assist carriers, end-users, and manufacturers. This revision replaces ANSI T1.411-1995 and ANSI T1.411a-1996 in their entirety.

ANSI T1.413-2004, ADSL
Describes the interface between the telecommunications network and the customer installation in terms of their interaction and electrical characteristics. The requirements of this standard apply to a single asymmetric digital subscriber line (ADSL).

ANSI T1.414-1998 (R2003), Telecommunications - Network to Customer Installation Interfaces - Enhanced 911 Analog Voicegrade PSAP Access Using Loop Reverse-Battery Signaling
Provides network-to-customer installation interface requirements for analog voicegrade Enhanced 911 switched access to a Public Safety Answering Point (PSAP) customer installation (CI). The interface allows a user of the Enhanced 911 System to communicate with the PSAP CI and allows the Enhanced 911 switching system to transmit the caller's emergency service identification information to the PSAP CI. These requirements are intended to assist carriers, end-users, and manufacturers.

ANSI T1.416-1999 (R2005), Network to Customer Installation Interfaces - Synchronous Optical Network (SONET) Physical Layer Specification: Common Criteria
This standard establishes common criteria for Synchronous Optical Network (SONET) interfaces at standard rates associated with the Network Interface (NI). Criteria covered in this standard include maintenance and operation functionality at the SONET Section, Line and Path layers, and other necessary criteria for compliance with the proper interfacing of the connecting customer installation equipment. Compliance with this standard is intended to ensure compatibility at the SONET NI and should not be construed as a constraint on the internal operations of the network or customer installation equipment.

ANSI T1.416.01-1999 (R2005), Network to Customer Installation Interfaces - Synchronous Optical NETWORK (SONET) Physical Media Dependent Specification: Multi-Mode Fiber

This standard establishes physical media dependent (PMD) specifications for Multi-Mode Fiber Synchronous Optical NETWORK (SONET) network to customer installation interfaces. Criteria covered herein include SONET PDM criteria (such as optical parameters and connectors), and other necessary criteria for compliance with the optical specification at the NI and the proper interfacing of the connecting customer installation equipment. Compliance with this standard is intended to ensure compatibility of the SONET NI and should not be construed as a constraint on the internal operations of the network or customer installation equipment.

ANSI T1.416.02-1999 (R2005), Network to Customer Installation Interfaces - Synchronous Optical NETWORK (SONET) Physical Media Dependent Specification : Single-Mode Fiber

This standard establishes physical characteristics and technical criteria for Synchronous Optical NETWORK (SONET) interfaces at standard rates associated with the network (NI) for Single Mode Fiber (SMF) applications. The criteria covered herein include SONET Physical Media Dependent (PMD) criteria (such as optical parameters and connectors), and other necessary criteria for compliance with the optical specification at the NI and the proper interfacing of the connecting customer installation equipment.

ANSI T1.416.02a-2001 (R2005), Supplement to T1.416.02, Network to Customer Installation Interfaces - Synchronous Optical NETWORK (SONET) Physical Media Dependent Specification: Single-Mode Fiber

This supplement corrects references to other members of the T1.416 family of standards that are listed in the Foreword and in the Scope.

ANSI T1.416.03-1999 (R2005), Network to Customer Installation Interfaces - Synchronous Optical NETWORK (SONET) Physical Media Dependent Specification: Electrical

This standard establishes physical characteristics and technical criteria for Synchronous Optical NETWORK (SONET) interfaces at standard rates associated with the Network Interface (NI), for electrical interface applications. Covered herein are SONET Physical Media Dependent (PMD) specifications (such as electrical parameters and connectors). Other necessary criteria for compliance with the proper interfacing of the connecting customer installation equipment are found in the base document of this series.

ANSI T1.416.04-2005, Network and Customer Installation Interfaces - SONET Physical Layer Interface and Mapping Specifications for ATM Applications

This standard provides the physical layer (Layer 1) specifications for SONET User-Network Interfaces (UNIs) that are used to transport asynchronous transfer mode (ATM) cells in the SONET payload. The term User-Network Interface (UNI) is used in this standard to refer to both the Network Interface (NI) and interfaces within the Customer Installation (CI).

ANSI T1.417-2003, Spectrum Management for Loop Transmission Systems

This standard provides spectrum management requirements and recommendations for the administration of services and technologies that use metallic subscriber loop cables. Spectrum management is the administration of the loop plant in a way that provides spectral compatibility, services and technologies that use pairs in the same cable.

ANSI T1.418-2002, High Bit Rate Digital Subscriber Line - 2nd Generation (HDSL2)

This standard presents the electrical characteristics of the High bit rate Digital Subscriber Line - Second Generation (HDSL2) signals appearing at the network and remote ends of the twisted-wire pair line. The transport medium for the signals is, a single twisted-wire pair or two twisted-wire pairs (HDSL4) that supports full-duplex transmission with a payload of 1.544 Mbps. This interface standard provides the minimal set of requirements for satisfactory transmission between the network and the remote installation. Equipment may be implemented with additional functions and procedures.

ANSI T1.418a-2004, High Bit Rate Subscriber Line - 2nd Generation (HDSL2/HDSL4) Issue 2

This supplement provides an enhancement to T1.418-2000 to clarify the operation of the Embedded Operations Channel (EOE) for HDSL2 and HDSL4 equipment.

ANSI T1.419-2000, Splitterless Asymmetric Digital Subscriber Line (ADSL) Transceivers

Defines operation of Asymmetric Digital Subscriber Line (ADSL) with provisions to facilitate installation and for operation in conjunction with other services for use in the United States. This Standard is identical to ITU-T Recommendation G.992.2, Splitterless Asymmetric Digital Subscriber Line (ADSL) Transceivers with the changes specified in Clause 4. This standard was first listed in the November 5, 1999 issue of Standards Action. It is being resubmitted due to substantive changes. To obtain an electronic draft: URL: <ftp://ftp.t1.org/pub/ansi/bsr8/lb802-d.pdf>

ANSI T1.421-2001, In-Line Filter for Use with Voiceband Terminal Equipment Operating on the Same Wire Pair with High Frequency (up to 10 MHz) Devices

Presents the electrical and physical characteristics of an In-Line filter (initially, and sometimes still called a micro-filter), that is used to protect voiceband premises equipment from the high frequencies of digital data over voice services in the 25 kHz to 12 MHz range. It is also used to protect data over voice services from impedance changes and other detrimental impairments caused by voiceband equipment. Some applications such as alarm systems and series stacking are beyond the scope of this standard. This standard was listed for public review in the 1/12/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.422-2001, Telecommunications - Single-Pair High-Speed Digital Subscriber Line (SHDSL) Transceivers

Specifies ITU-T Recommendation G.991.2, Single-Pair High-Speed Digital Subscriber Line (SHDSL) Transceivers as a normative reference and identifies the requirements in ITU-T G.991.2 that are different in the United States. This standard specifies ITU-T Recommendation G.991.2, Single-Pair High-Speed Digital Subscriber Line (SHDSL) Transceivers as a normative reference and identifies the requirements in ITU-T G.991.2 that are different in the United States. This standard was listed for public review in the 6/1/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.423-2001, Telecommunications - Asymmetric Digital Subscriber Line (ADSL) Transceivers

Specifies requirements for Asymmetrical Digital Subscriber Line (ADSL) transceivers for use in the United States. This standard specifies ITU-T Recommendation G.992.1, Asymmetrical Digital Subscriber Line (ADSL) Transceivers as a normative reference, identifies the optional requirements of ITU-T G.992.1 that shall be implemented for use in the United States, and identifies additional requirements applicable in the United States. This standard was listed for public review in the 6/1/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.424-2004, Very-high-bit-rate Digital Subscriber Line (VDSL) Metallic Interface (DMT based)

Describes the electrical and functional characteristics of Very high bit rate Digital Subscriber Line (VDSL). VDSL is designed to operate on a single pair of unshielded metallic cable. It offers a variety of bit rates (22/3 Mbps, 6/6 Mbps,...) on loops that are typically shorter than 4500 ft. VDSL can operate over loops of various gauges, including loops with bridged taps.

ANSI T1.426 -2004, Enhanced Single-Pair High Speed Digital Subscriber Line (E-SHDSL) Transceivers

This standard specifies the requirement for Single-Pair High-Speed Digital Subscriber Line (SHDSL) transceivers for use in the United States. This standard specifies ITU-T Recommendation G.991.2, Single-Pair High-Speed Digital Subscriber Line (SHDSL) Transceiver as a normative reference and identifies the requirements in ITU-T G.991.2 that are different in the United States.

ANSI T1.427.01-2004, ATM based Multi-pair Bonding

This document provides requirements for advanced bonding of multiple digital subscriber lines (DSL) to transport ATM streams. The specifications of this standard provide a complete description of startup, operational, and contingency modes of operation which allows for interoperability between vendors.

ANSI T1.427.02-2005, Ethernet-based Multi-Pair Bonding

This standard specifies portions of Clause 61 of IEEE Standard 802.3ah-2004 Amendment to Carrier Sense Multiple Access with Collision Detection (CSMA/CD) access method and physical layer specification as a normative reference and identifies the requirements for multi-pair bonding in IEEE 802.3ah-2004 that are different in the United States. Further, this standard specifies the requirements for extending the bonding methods in IEEE 802.3ah-2004 to xDSL technologies other than VDSL and SHDSL.

ANSI T1.427.03 -2004, TDIM Bonding Protocol

This standard defines the bonding function for the TDIM based bonding method, the purpose of which is to provide inverse multiplexing of various service data streams (Ethernet, ATM, TDM) over multiple DSL physical links and to retrieve the original stream at the far-end from these physical links.

ANSI T1.501-1994 (R2004), Telecommunications – Network Performance – Tandem Encoding Limits for 32-kbit/s Adaptive Differential Pulse-Code Modulation (ADPCM)

Addresses the use of 32-kbit/s Adaptive Differential Pulse-Code Modulation (G.726 32-kbit/s ADPCM) in 4-kHz voice-band network connections and limits the number of G.726 32-kbit/s ADPCM links allowed.

ANSI T1.503-2002, Telecommunications – Network Performance Parameters for Dedicated Digital Services – Definitions and Measurements

This standard applies to Layer 1, dedicated digital services, which are characterized by established transmission paths (i.e., no access or disengagement functions). Therefore, this standard defines performance parameters relevant to the information transfer phase only. Also, parameters such as absolute delay, although recognized as important to user applications, are not specified as they are not expected, on a connection basis, to change significantly over time. Specific dedicated digital services are defined in separate ANSI Standards, i.e., T1.102, T1.105, T1.107, T1.410, etc.

ANSI T1.504-1998 (R2002), Telecommunications – Packet-Switched Data Communication Service – Performance Parameters

Defines a set of parameters that may be used in specifying and measuring the performance of packet switched data communication services provided in accordance with ITU-T Recommendations X.25 and X.75. The defined parameters are applicable to switched virtual-circuit services as well. They describe four general service performance characteristics: speed, accuracy, dependability, and availability.

ANSI T1.506-1997 (R2001), Telecommunications – Network Performance – Switched Exchange Access Network Transmission Specifications

Provides performance specifications for the two-way digital or digital equivalent transmission path between an exchange carrier's end office and an interexchange carrier's point of termination. This set of specifications will enable the provision of quality end-to-end performance for switched voice and voiceband data telephone services. This standard defines analog performance-related transmission parameters and specifies limits.

ANSI T1.507-2002, Telecommunications – Network Performance Parameters for Circuit Switched Digital Services – Definitions and Measurements

This standard applies to circuit-switched digital services and as such, provides and defines the performance parameters and measurements needed by users, vendors, and providers of circuit-switched digital services, to characterize the user-observable performance of these services (i.e., it does not address the causes of errors). It also includes parameters to be considered in determining whether or not a service is in the available or unavailable state. A given service will only reference those parameters or thresholds applicable to that service. The network-specific parameters are for performance allocation and network control. Standard performance parameter definitions and measurements are provided to ensure an understanding of: measured performance values, performance allocation among network elements, and compatibility of

ANSI T1.508-2003, Telecommunications – Network Performance – Loss Plan for Evolving Digital Networks

Provides loss plan requirements for digital networks, including Digital End Offices, taking into account different network configurations and elements, and their associated transmission characteristics.

ANSI T1.508a-2000, Network Performance - Loss Plan for Evolving Digital Networks (Guidelines for Implementation of Local Number Portability)

Provides an extension of ANSI T1.508-1998 to incorporate new requirements to support the introduction of local number portability. This standard was first listed in the October 8, 1999 issue of Standards Action. It is being resubmitted due to substantive changes. To obtain an electronic draft: URL: <ftp://ftp.t1.org/pub/ansi/bsr8/lb797-d.pdf>

ANSI T1.509-1995 (R2004), Telecommunications – Packetized Circuit Multiplication Equipment – Interface Specification

Intended as a base document for the specification and interconnection of packetized circuit multiplication equipment (PCME) and Packet Circuit Multiplication Systems (PCMS) from various manufacturers.

ANSI T1.510-1999 (R2004), Telecommunications – Network Performance Parameters for Dedicated Digital Services – Specifications

Applies to Dedicated Digital Services operating at nominal rates of 56/64 kbit/s, 1.544 Mbit/s and 44.736 Mbit/s with objectives based on the longest and most complex circuits.

ANSI T1.511-2003, Telecommunications - B-ISDN ATM Layer Cell Transfer Performance

Defines speed, accuracy, and dependability performance parameters for cell transfer in the ATM layer of a national public B-ISDN through its normative reference to ITU-T Recommendation I.356; defines a national ATM performance model and provisionally allocates the ITU-T Recommendation I.356 performance values to defined portions of an end-to-end national ATM connection; and provides supplemental information intended to assist performance characterization of national ATM services.

ANSI T1.512-1994 (R2004), Telecommunications – Network Performance – Point-to-Point Voice-Grade Special Access Network Voiceband Data Transmission Objectives

Provides transmission performance objectives for point-to-point voiceband data (VBD), voice-grade special access (VGSA) services covering the bi-directional path between an exchange carrier's (EC) end-user network interface (NI) and an interexchange carrier's (IC) point of termination (POT).

ANSI T1.513-2003, Telecommunications – Frame Relay Data Communication Service – User Information Transfer Performance Parameters

This standard defines speed, accuracy, dependability, and availability parameters that may be used in specifying and assessing the performance of public frame relay data communication services. The defined parameters apply to end-to-end, point-to-point frame relay connections and to specified portions of such connections when provided in accordance with the American National Standards specified in clause 2.

ANSI T1.514-2001, Telecommunications – Network Performance Parameters and Objectives for Dedicated Digital Services – SONET Bit Rates

Defines the parameters and establishes objectives for assessing the performance of dedicated digital services operating at the nominal 51.84 Mbit/s, 155.52 Mbit/s, 622.08 Mbit/s, 2.488 Gbit/s, and 9.865 Gbit/s interface rates of the SONET (Synchronous Optical Network) digital hierarchy. Rates above 9.865 Gbit/s and SONET virtual tributaries are for further study. This standard defines the framework for specifying accuracy and availability performance and the allocation of end-to-end performance objectives among service providers. The performance objectives are applicable to each direction of the service between network interfaces. Performance impairments originated outside the network interfaces, such as those due to end-user actions are not included in evaluating performance. The parameter definitions are block based,

ANSI T1.517-1995 (R2001), Telecommunications - Integrated Services Digital Network (ISDN) - Performance Parameters and Objectives

Defines a comprehensive basis for assessing the performance of Integrated Services Digital Networks (ISDNs) providing telecommunication service in accordance with the American National Standards and ITU-T Recommendations identified in this standard. This standard: (a) defines parameters that may be used to describe the performance of ISDN bearer services and (b) specifies worst-case objectives for the ISDN performance parameters. The parameters and objectives are applicable to circuit-mode and packet-mode ISDN bearer services. Unless noted otherwise in this standard, the defined parameters and specified objectives apply to ISDN services using a single B channel and/or D channel; planned revisions to this standard will address other ISDN bearer services (e.g., n x 64 kbit/s). Practical methods for measuring ISDN parameter

ANSI T1.518-1998 (R2003), Telecommunications - Objective Measurement of Telephone Band Speech Quality Using Measuring Normalizing Blocks (MNBs)

Subjective quality assessment of speech codecs can be made in listening-only (one-way) tests or in conversational (two-way) tests. The objective quality measurement described in this American National Standard (ANS) estimates the subjective quality in listening-only tests of telephone band speech.

ANSI T1.519-1999 (R2004), Telecommunications - Specifications for Transport of Generic Packets (including MPEG-2 Transport Packets) Over the DS Hierarchy

Describes the methods and practices for the transmission of a type of generic packet data over the digital hierarchy described in ANSI T1.107-1995.

ANSI T1.522-2000 (R2004), Quality of Service for Business Multimedia Conferencing

Specifies classes of Quality of Service (QOS) sufficient to support Business Multimedia Conferencing on Internet Protocol (IP) networks, defined as equivalent to legacy conference system performance.

ANSI T1.523-2001, Telecommunications Glossary 2000

Comprises terms and accompanying definitions that address the disciplines of: telephony, NS/EP (National Security/Emergency Preparedness), NII (National Information Infrastructure), spectrum sharing, radar, radio communications (including HF ALE radio), television (including UHF, VHF, cable TV, and HDTV), facsimile, networks (e.g., intelligent networks, open network architecture, ISDN, broadband ISDN, and network management), fiber optic communications, communications security, data processing, premises wiring, photonics, and telegraphy. The intent is to provide a uniform, up-to-date set of definitions for the general terminology used in telecommunications. The benefits of such a standard include: a) better communications among U.S. providers and user of telecommunications equipment and services,

ANSI T1.524-2004, Reliability-related Metrics and Terminology for Network Elements in Evolving Communications Networks

Defines Functional Element (FE) and Network Element (NE) reliability-related terminology, metrics and features for evolving communications networks. The term 'reliability-related' refers to 'reliability, availability, maintainability, and survivability'. The standard is applicable to any layer 1 to 8 FE and NE.

ANSI T1.601-1999 (R2004), Telecommunications – Integrated Services Digital Network (ISDN) – Basic Access Interface for Use on Metallic Loops for Application on the Network Side of the NT (Layer 1 Specification)

The requirements of this standard apply to a single digital subscriber line (DSL) consisting of a line termination (LT), a two-wire metallic cable pair, and a network termination (NT) (see clause 3). The transmission system is designed to operate on two-wire twisted metallic cable pairs with mixed gauges.

ANSI T1.602-1996 (R2004), Telecommunications – Integrated Services Digital Network (ISDN) – Data-Link Layer Signaling Specification for Application at the User–Network Interface

Specifies the Link Access Procedure on the D-channel, LAPD.

ANSI T1.603-1990 (R2004), Telecommunications – Integrated Services Digital Network (ISDN) - Minimal Set of Bearer Services for the ISDN Primary Rate Interface

In this standard, the minimal set of bearer services for the primary rate interface for the integrated services digital network (ISDN) that conforms closely to the architectural concepts described by CCITT are defined.

ANSI T1.604-1990 (R2004),
Telecommunications – Integrated Services
Digital Network (ISDN) - Minimal Set of
Bearer Services for the ISDN Basic Rate
Interface

In this standard, the minimal set of bearer services for the basic rate interface for the integrated services digital network (ISDN) that conforms closely to the architectural concepts described by CCITT are defined.

ANSI T1.605-1991 (R2004),
Telecommunications – Integrated Services
Digital Network (ISDN) – Basic Access
Interface for S and T Reference Points
(Layer 1 Specification)

This standard defines the layer 1 characteristics of the user-network interface to be applied at the S or T reference points for the basic interface structure defined in CCITT Recommendation I.412. The reference configurations for the interface are defined in CCITT Recommendation I.411 and are reproduced in figure 1.

ANSI T1.607-2000 (R2004),
Telecommunications - Integrated Services
Digital Network (ISDN) - Layer 3 Signaling
Specification for Circuit-Switched Bearer
Service for Digital Subscriber Signaling
System No. 1 (DSS1)

This standard specifies the procedures for the establishing, maintaining, and clearing of network connections at the Integrated Services Digital Network (ISDN) user-network interface for support of circuit-switched calls. These procedures are defined in terms of messages exchanged over the D-channel. The functions and procedures of this protocol, and the relationship with other layers, are described in general terms in ITU-T Recommendation Q.930, ISDN User-Network Interface: Layer 3 General Aspects.

ANSI T1.608-1991 (R2002),
Telecommunications – Integrated Services
Digital Network (ISDN) – Signaling
Specification for X.25 Packet-Switched
Bearer Service for Digital Subscriber
Signaling System Number 1 (DSS1)

Presents the procedures at the S, T, or U reference point for B-channel, and D-channel access connection on basic rate interfaces and primary rate interfaces to a Packet-Handling (PH) function within the Integrated Services Digital Network (ISDN) to support ISDN virtual circuit service. Procedures at the S, T, or U reference point for B-channel access to a Packet-Switched Public Data Network (PSPDN) are also specified.

ANSI T1.609-1999 (R2004),
Telecommunications – Interworking
between the ISDN User–Network Interwork
Interface Protocol and the Signalling
System Number 7 ISDN User Part

This standard defines the interworking relationship between the D-channel layer-3 functions and protocol employed across an ISDN User-Network Interface and the ISDN User Part functions and protocol of Signalling System Number 7 (SS7).

ANSI T1.610-1998 (R2003),
Telecommunications – Generic Procedures
for the Control of ISDN Supplementary
Services

This standard specifies the generic procedures applicable for the control of Integrated Services Digital Network (ISDN) supplementary services at the user-network interface. This standard is identical to the 1993 Recommendation Q.932 issued by the International Telecommunications Union - Telecommunications Standardization Sector (ITU-T) with the changes described in clause 3.

ANSI T1.610a-1998 (R2003),
Telecommunications - Generic Procedures
for the Control of ISDN Supplementary
Services - Modification to the Redirecting
Number Information Element

This supplement to American National Standard for Telecommunications - Generic Procedures for the Control of ISDN Supplementary Services, ANSI T1.610-1998, revises the standard to improve and clarify the standard based on related advances in other standards bodies.

ANSI T1.611-1991 (R2003),
Telecommunications – Signalling System
Number 7 (SS7) – Supplementary Services
for non-ISDN Subscribers

Describes thirteen services for non-integrated services digital network (non-ISDN) subscribers along with their supporting SS7 protocols. They provide enhanced functionality for user with non-ISDN interfaces who access SS7 capable networks.

ANSI T1.612-1992 (R2003),
Telecommunications – Integrated Services
Digital Network (ISDN) – Terminal
Adaptation Using Statistical Multiplexing

This standard describes a protocol for use in ISDN point to point 64 kbit/s, H0, H10, H11 or D (for Frame Relay) connections to accommodate lower speed devices conforming to other standards. It does not define the specific mapping between those standards and the protocol defined as this is viewed as an implementation matter and does not require standardization.

ANSI T1.613-1991 (R2002),
Telecommunications – Integrated Services
Digital Network (ISDN) – Call Waiting
Supplementary Service

One of a series that defines and describes supplementary services within the context of an Integrated Services Digital Network (ISDN). The interaction of this service with other ISDN services is also included. The purpose of the standard is to allow maximum compatibility among network- and user-owned telecommunication equipment in order to increase the attractiveness and usefulness of ISDN-based capabilities.

ANSI T1.614-1991 (R2002),
Telecommunications – Integrated Services
Digital Network (ISDN) – Packet Mode
Bearer Service Category Description

Defines a recommended set of packet mode bearer service categories, describes individual packet mode bearer services, and recommends their provision as ISDN-based services in North America. The definitions and descriptions in this standard form the basis for defining the network capabilities required for the support of ISDN-based packet mode bearer services.

ANSI T1.615-1992 (R2004),
Telecommunications – Digital Subscriber
Signalling System No. 1 (DSS1) – Layer 3
Overview

The Digital Subscriber Signalling System No. 1 (DSS1) is a suite of protocols that provide the means for users to invoke the full range of services and capabilities available from an ISDN.

ANSI T1.616-1992 (R2004),
Telecommunications – Integrated Services
Digital Network (ISDN) – Call Hold
Supplementary Service

Specifies the service capabilities of the Call Hold service within the context of an ISDN.

ANSI T1.618-1991 (R2003),
Telecommunications – Integrated Services
Digital Network (ISDN) – Core Aspects of
Frame Protocol for Use with Frame Relay
Bearer Service

Provides a description of the protocol to support the data transfer phase of the Frame Relay bearer service as defined in ANSI T1.606, Frame relaying bearer service - Architectural framework and service description including Addendum 1. The protocol defined in this standard is a protocol operating in the lowest sublayer of the data link layer of the OSI reference model and is based on a subset of ANSI T1.602 (LAPD) called the "core aspects."

ANSI T1.619-1992 (R2005),
Telecommunications – Integrated Services
Digital Network (ISDN) – Multi-Level
Precedence and Preemption (MLPP)
Service Capability

This standard is one of a series that defines and describes service capabilities within the context of an integrated services digital network (ISDN). This service capability may be made available on a demand or subscription arrangements. The interaction of this service capability with other service capabilities defined in other American National Standards is also included. The purpose of this standard is to allow maximum compatibility among network and user-owned telecommunications equipments in order to increase the attractiveness and usefulness of ISDN-based capabilities.

ANSI T1.619a-1994 (R1999),
Telecommunications – Integrated Services
Digital Network (ISDN) – Multi-Level
Precedence and Preemption (MLPP)
Service Capability (MLPP Service Domain
and Cause Value Changes)

Revises the standard ANSI T1.619-1992 so that the exchange-to-exchange signaling is consistent with ITU-T Recommendations Q.955.3 (1993) and Q.735.3 (1993), which were approved after the publication of ANSI T1.619-1992.

ANSI T1.620-1991 (R2002),
Telecommunications – Integrated Services
Digital Network (ISDN) – Circuit-Mode
Bearer Service Category Description

Explains the ISDN Circuit-Mode Bearer Services from the user-s perspective. It covers on-demand circuit-mode 64-kbit/s services and on demand H0, H10, and H11 channels. This standard is based on the CCITT Recommendations I.220, I.230, and I.231 and applies to both ISDN Basic Rate Access and ISDN Primary Rate Access. It provides the service user with a description of what these services provide as well as possible options.

ANSI T1.620a-1992 (R2003), Multi-Rate
Circuit-Mode Bearer Service for ISDN -
Addendum to the Circuit-Mode Bearer
Service Category Description

This supplement to American National Standard for Telecommunications - Integrated Services Digital Network (ISDN) - Circuit-Mode Bearer Service Category Description, ANSI T1.620-1991, revised the standard to add the category for the multi-rate circuit-mode bearer service.

ANSI T1.621-1992 (R2004),
Telecommunications – Integrated Services
Digital Network (ISDN) – User-to-User
Signaling Supplementary Service

The user-to-user signaling supplementary service provides a means of communication used to exchange user information between two users.

ANSI T1.622-1999 (R2003),
Telecommunications - Message Waiting
Indicator Control and Notification
Supplementary Services and Associated
Switching and Signaling Specifications

This standard specifies the service capabilities of Message Waiting Indicator Control and Notification (MWICN) services within the context of an Integrated Services Digital Network (ISDN). Message Waiting Indicator Control and Notification service allows a Message Storage and Retrieval (MSR) System to inform its client users about the status of messages recorded at the MSR System.

ANSI T1.622a-1998 (R2003),
Telecommunications - Message Waiting
Indicator and Notification Supplementary
Services and Associated Switching and
Signaling Specifications

This supplement to American National Standard for Telecommunications - Message Waiting Indicator and Notification Supplementary Services and Associated Switching and Signaling Specifications, ANSI T1.622-1992, revises the standard to improve and expand the applicability of this standard, in particular, when interfacing to an NT2.

ANSI T1.623-1993 (R2004),
Telecommunications – Digital Subscriber
Signalling System Number 1 (DSS1) –
Signalling Specification for the User
Signalling Bearer Service

This interface standard was written to provide a set of requirements for User-Network Signalling for ISDN support of user signalling bearer service, while conforming, wherever possible, with the Q- and I- Series Recommendations of the International Telegraph and Telephone Consultative Committee (CCITT), and adhering to the principles of evolution expressed therein. Equipment may be implemented with additional functions and procedures.

ANSI T1.625-1993 (R2003),
Telecommunications – Integrated Services
Digital Network (ISDN) – Calling Line
Identification Presentation and Restriction
Supplementary Services

The ISDN supplementary service called Calling Line Identification Presentation and Calling Line Identification Restriction are defined in three parts: 1) a description from the user's point of view, 2) an abstract analysis of the functional capabilities needed in network and user equipment, and 3) a precise specification of access and interexchange signaling capabilities that can be used to implement Calling Line Identification Presentation and Calling Line Identification Restriction.

ANSI T1.625a-1998 (R2003),
Telecommunications - Integrated Services
Digital Network (ISDN) - Calling Line
Identification Presentation and Restriction
Supplementary Services, Application of
Standard to Wireless PCS Applications

This supplement to American National Standard for Telecommunications - Integrated Services Digital Network (ISDN) - Calling Line Identification Presentation and Restriction Supplementary Services, ANSI T1.625-1993, revises the standard to add a statement to the Scope and Purpose indicating that the standard can also be applied to wireless PCS applications.

ANSI T1.627-1993 (R2004),
Telecommunications – Broadband ISDN –
ATM Layer Functionality and Specification

One in a series of ANSI standards that describes the B-ISDN capabilities, architectural model, and network interfaces including protocol functionalities and specifications, and signaling characteristics.

ANSI T1.628-2000 (R2005),
Telecommunications – Emergency Calling
Service

This standard specifies the capabilities required to support the passing of location and callback information associated with the calling user to a Public Safety Answering Point (PSAP) attendant, to provide network routing and transfer features associated with emergency service calls, and to deliver control indications (e.g. flashing display) to the PSAP attendant. Emergency Calling Service (ECS) allows emergency service calls to be completed through the network to an appropriate emergency service attendant, and to provide the PSAP attendant with location information (if available) regarding the calling user.

ANSI T1.628a-2001 (R2005),
Telecommunications - Routing, Bridging,
and Transfer of Emergency Service Calls
(RBTECS)

This addendum to T1.628-2000 specifies the use of the Connection Hold network capability by the Emergency Calling Service (ECS) to support ECS call hold and ring back. This addendum also specifies the TCAP messages exchanged between a switching node routing ECS calls and a Selective Routing Database (SRDB) that contains information determining the PSAP that should receive the emergency calls originating from a given caller or calling location.

ANSI T1.630-1999 (R2005),
Telecommunications – Broadband ISDN –
ATM Adaptation Layer for Constant Bit
Rate Services Functionality and
Specification

This standard references the complete text of ITU-T (Formerly CCITT) AAL Type 1, Recommendation I.363.1, 1996. This standard describes a protocol of the Common Part of the ATM Adaptation Layer type 1 to support Constant Bit Rate (CBR) services.

ANSI T1.630a-2002 (R2005), Broadband
ISDN - ATM Adaptation Layer for Constant
Bit Rate Services Functionality and
Specifications

This supplement to American National Standard for Telecommunications, T1.630-1999, Network - Broadband ISDN - ATM Adaptation Layer for Constant Bit Rate Services, provides an extension of this document to incorporate new requirements that define a new AAL Type 1 format to facilitate AAL Type 1 and AAL Type 2 interworking.

ANSI T1.632-1993 (R2004),
Telecommunications – ISDN
Supplementary Service Normal Call
Transfer

Describes the ISDN Normal Call Transfer Service in terms of service definition and protocol and procedures needed for implementation.

ANSI T1.634-1993 (R2006),
Telecommunications – Frame Relaying
Service Specific Convergence Sublayer
(FR-SSCS)

This standard specifies the Frame Relaying Service Specific Convergence Sublayer (FR-SSCS). The FR-SSCS is located in the upper part of the ATM Adaptation Layer on top of the Common Part Convergence Sublayer (CPCS) of AAL type 5, as specified in ITU-T (formerly CCITT) Recommendation I.363, section 6. The FR-SSCS is used at the B-ISDN TE to emulate the Frame Relaying Bearer Service (FRBS) in B-ISDN. It is also used for interworking between a B-ISDN and a Frame Relaying Network.

ANSI T1.635-1999 (R2005),
Telecommunications – Broadband ISDN –
ATM Adaptation Layer Type 5, Common
Part Functions and Specification

The requirements of this standard are the same as those contained in ITU-T Recommendation I.363.5 (08/96), B-ISDN ATM Adaptation Layer specification: type 5 AAL.

ANSI T1.636-1999 (R2005),
Telecommunications – B-ISDN Signaling
ATM Adaptation Layer – Overview
Description

This standard briefly describes the various components that make up the AAL functions necessary to support signaling (SAAL). It is intended to serve as a guide to all other standards required by a user who intends to construct an AAL for the purpose of signaling.

ANSI T1.637-1999 (R2005), B-ISDN ATM
Adaptation Layer - Service Specific
Connection Oriented Protocol (SSCOP)

The intent of this standard is to provide a new protocol specification that can be used in the B-ISDN ATM Adaptation Layer (AAL). This protocol, called the Service Specific Connection Oriented Protocol (SSCOP), provides assured data delivery between AAL connection endpoints.

ANSI T1.638-1999 (R2005), B-ISDN ATM
Adaptation Layer - Service Specific
Coordination Function for Support of
Signaling at the User-to-Network Interface
(SSCF at the UNI)

The intent of this standard is to provide a function that is part of the ATM Adaptation Layer for the support of signaling (SAAL) at the UNI of the B-ISDN. This function is used to map the service of the Service Specific Connection Oriented Protocol (SSCOP) of the AAL to the needs of layer 3 protocols for access signaling across the UNI (e.g., Q.2931). This function is called Service Specific Coordination Function (SSCF) for signaling at the UNI.

ANSI T1.639-1995 (R2006),
Telecommunications – Calling Name
Identification Restriction

This standard is one of a series that defines and describes supplementary services. These services may be made available for users with non-ISDN interfaces who access SS7 capable networks and also within the context of an Integrated Services Digital Network (ISDN). This standard describes Calling Name Identification Restriction, which is an originating service that allows a user to alter the network stored or subscribed privacy status associated with the user's Calling Name.

ANSI T1.639a-2001 (R2006), Supplement to
Calling Name Identification Restriction

This supplement to T1.639-1995 (R2001), American National Telecommunications - Calling Name Identification Restriction, addresses certain regulatory requirements that may exist regarding Caller Identification services. Such regulations may require the service provider to conceal the name of a caller when the caller requests his or her calling party number be concealed. In particular, this addendum adds the requirements for a service provider to link the presentation status of CLIR and CNIR. This supplement also includes a minor technical correction to error handling for the functional signaling procedures described in 6.3.3.1.

ANSI T1.640-2001 (R2006),
Telecommunications – Broadband ISDN
Network Node Interfaces and Inter-Network
Interfaces – Rates and Formats
Specifications

This standard provides specifications of the rates and formats of signals for use at Network Node Interfaces (NNIs) and Inter-Network Interfaces (INIs) in a Broadband Integrated Services Digital Network (B-ISDN). The term, NNI, was originally used in ITU-T (formerly CCITT) for the description of SDH-based systems, and its use has been carried over to SONET-based systems. The meaning of NNI is further expanded in these B-ISDN specifications to include non-SONET interfaces such as DS3. INI applies to interfaces between network nodes in different networks, and has been previously established in American National Standards for other applications.

ANSI T1.641-1995 (R2004),
Telecommunications – Calling Name
Identification Presentation

One of a series which defines and describes supplementary services.

ANSI T1.641a-2002, Telecommunications -
Calling Name Identification Presentation

This supplement addresses certain regulatory requirements that may exist regarding Caller Identification services. Such regulations may require the service provider to conceal the name of a caller when the calling party number is to be concealed. In particular, this supplement adds new requirements for a service provider option to link the presentation of Calling Name with the presentation of a private Calling Number. An update to some references is also included.

ANSI T1.642-1995 (R2004),
Telecommunications – Integrated Services
Digital Network (ISDN) – Call Deflection
Supplementary Service

One in a series that defines and describes supplementary services within the context of an ISDN.

ANSI T1.643-1998 (R2003),
Telecommunications – Integrated Services
Digital Network (ISDN) – Explicit Call
Transfer Supplementary Service

This standard describes the ISDN Explicit Call Transfer (ECT) Service in terms of service definition and protocol and procedures needed for implementation. The ECT service allows the served user having two independent calls to connect together the distant parties of the two calls, thereby releasing the served user from the call, in a single request from the user.

ANSI T1.644-1995 (R2005),
Telecommunications – Broadband ISDN –
Meta-Signalling Protocol

This standard defines the B-ISDN meta-signalling protocol (Version 1) that is used to establish and maintain user-network signalling connections that are applicable for multipoint configurations at the SB or TB reference points.

ANSI T1.645-1995 (R2003),
Telecommunications – B-ISDN Signaling
ATM Adaptation Layer – Service Specific
Coordination Function for Support of
Signaling at the Network Node Interface
(SSCF at the NNI)

Provides a function that is part of the ATM Adaptation layer for the support of signaling (SAAL) at the Network Node Interface (NNI) of the B-ISDN. This function is used to map the service of the Service Specific Connection Oriented Protocol (SSCOP) of the AAL to the requirements of an SAAL user at the NNI as defined in ANSI T1.111. These requirements cover the needs for signaling between network nodes and networks.

ANSI T1.646-2003, Telecommunications –
Broadband ISDN – Physical Layer
Specification for User-Network Interfaces
Including DS1/ATM

This standard is a revision of the common criteria for broadband ISDN in T1.646-1995 and replaces the relevant clauses of that standard in their entirety. This standard provides NI compatibility information and is not meant to be an equipment specification. Information requirements specific to particular transmission technologies has been removed to standards associated with those technologies.

ANSI T1.646a-1997, Telecommunications -
Broadband ISDN - Physical Layer
Specification for User-Network Interfaces
Including DS1/ATM

Adds a 622 Mbit/s Multi-mode fiber interface to ANSI T1.646. It also adds two normative annexes for 51.84 and 25.6 Mbit/s UTP Metallic Physical Layers to ANSI T1.646.

ANSI T1.647-1995 (R2005),
Telecommunications - Integrated Services
Digital Network (ISDN) - Conference
Calling Supplementary Service

This standard is one of a series, which defines and describes supplementary services within the context of an Integrated Services Digital Network (ISDN). The interaction of this service with other ISDN services is also included. The purpose of the standard is to allow maximum compatibility among network and user owned telecommunications equipment in order to increase the attractiveness and usefulness of ISDN-based capabilities.

ANSI T1.647a-1998 (R2005),
Telecommunications - Integrated Services
Digital Network (ISDN) - Conference
Calling Supplementary Service - Operation
Across Multiple Interfaces

Enhancements to Conference Calling are provided to expand and improve the applicability of the ISDN Conference Calling service.

ANSI T1.650-1995 (R2005),
Telecommunications – Integrated Services
Digital Network (ISDN) – Usage of the
Cause Information Element in Digital
Subscriber Signalling System Number 1
(DSS1)

This standard defines the usage, format, and encoding of the cause information element within the context of the Digital Subscriber Signaling System Number 1 (DSS1) of an Integrated Services Digital Network (ISDN). It also defines the meaning of specific causes, and the usage of the location and diagnostic fields.

ANSI T1.651-1996 (R2001),
Telecommunications – Mobility
Management Application Protocol (MMAP)

Provides an application layer protocol for the exchange of information between peer applications running in a radio system and other network elements (e.g., mobility management platforms, switching systems, and other radio systems). The basic provisions of the protocol provide the semantics and syntax for operations necessary to support the mobility aspects of telecommunication services and call control in a wireless environment.

ANSI T1.651a-1996 (R2006),
Telecommunications - Mobility
Management Application Protocol (MMAP)
- Extensions

The Mobility Management Application Protocol (MMAP) is a communication protocol between a radio system and other network elements (e.g., mobility management platforms, switching systems, and other radio systems). The scope of the radio systems supported are the wireless Personal Communications Services (PCS) radio systems defined by T1 and T1A. The scope of the information and operations is the support of personal and terminal mobility in a wireless environment and includes functionality such as registration, location updating, authentication, roaming, handover, and billing.

ANSI T1.652-1996 (R2006),
Telecommunications – B-ISDN Signaling
ATM Adaptation Layer – Layer
Management for the SAAL at the NNI

This standard specifies the Layer Management functions for the Signaling ATM Adaptation Layer (SAAL) at the Network Node Interface (NNI). These include the interfaces to the Service Specific Connection Oriented Protocol (SSCOP), (ANSI T1.637), to the Service Specific Coordination Function (SSCF) at the NNI (ANSI T1.645), and to systems management. Layer Management provides, or supports, the following functions for the Service Specific Convergence Sublayer (SSCS) at the NNI: error processing; measurements; notification of processor outage status; determination of link quality during proving; and determination of link quality during normal operation.

ANSI T1.653-1996 (R2005),
Telecommunications – Integrated Services
Digital Network (ISDN) – Call Park
Supplementary Service

This standard specifies the service capabilities of the Call Park service within the context of an Integrated Services Digital Network (ISDN). Call Park is a Circuit-Switched service that allows a user to interrupt a voice or voice-band data communication on an existing call, and then reestablish communications from the same or different terminal equipment within the same Call Park Subscriber Group.

ANSI T1.653a-1998 (R2005),
Telecommunications - Generic Procedures
for the Control of Integrated Services Digital
Network (ISDN) Supplementary Services,
Clarification of Number Identification

This supplement to ANSI T1.653-1996, revises the standard to improve and clarify the standard based on related advances in other standards bodies.

ANSI T1.654-1996 (R2003),
Telecommunications – Broadband
Integrated Services Digital Network
(B-ISDN) – Operations and Maintenance
(OAM) Principles and Functions

This standard specifies the Operations and Maintenance (OAM) principles and functions for the Broadband aspects of the Integrated Services Digital Network (B-ISDN). Specifically, it defines the OAM flow mechanisms for B-ISDNs and specifies OAM functions for the Physical and Asynchronous Transfer Mode (ATM) layers of the B-ISDN protocol reference model. The categories of operations addressed are Fault Management and Performance Management.

ANSI T1.655-2001 (R2006),
Telecommunications – Signalling System
Number 7 (SS7) – Upper Layer Security
Capability

The Security capability allows an end user service in the originating Signalling Point (SP) to invoke various security functions in the originating and/or destination SP. The Security capability can be used for identification and authentication of the communicating entities. It also provides information that supports resource access control, system access control, and encryption and decryption functions. The Security capability may be invoked by a variety of services.

ANSI T1.659-1996 (R2006),
Telecommunications - Mobility
Management Application Protocol (MMAP)
RCF-RACF Operations

The Mobility Management Application Protocol (MMAP) is a communication protocol between a radio system and other network elements (e.g. mobility management platforms, switching systems, and other radio systems). The scope of the radio systems supported are the wireless Personal Communications Services (PCS) radio systems defined by T1 and TIA. The scope of the information and operations is the support of personal and terminal mobility in a wireless environment and includes functionality such as registration, location updating, authentication, roaming, handover, and billing.

ANSI T1.660-1998 (R2003),
Telecommunications - Signalling System
Number 7 (SS7) - Call Completion to a
Portable Number - Integrated Text

Describes the SS7 network capabilities for completing calls to end users with portable numbers. The SS7 network capability, known as CCPN provides the core functionality. CCPN also includes optional network capabilities for obtaining the routing information outlined in 4.1 and described in Annexes A-C to supplement the CCPN capability. These optional network capabilities are: NP Query-Response, NP Release to Pivot, and NP Query on Release.

ANSI T1.661-2000 (R2005),
Telecommunications - Signalling System
Number 7 (SS7) - Release to Pivot (RTP)

The Release To Pivot (RTP) network capability permits an SS7 Signalling Point that has received a call from another Node, and has determined the call should be connected to a Destination Node other than itself, to have the connection established from a Node earlier in the call path. RTP functionality is shared between the Release Node and the Pivot Node. The RTP capability may be invoked by an end user service or other network capability on a per call basis. The specific end user service or other network capability that may invoke RTP is not within the scope of this network capability description.

ANSI T1.665-1997 (R2003),
Telecommunications - Broadband ISDN -
Overview of ANSI B-ISDN NNI Signaling
Capability Set 2, Step 1

Provides an overview of the capabilities of the ANSI Broadband ISDN Network Node Interface (B-ISDN NNI) for the Broadband ISDN Signaling Capability Set 2, Step 1 (B-ISDN NNI CS 2.1). This standard should thus be seen as an increment to ANSI T1.648, Section 1 which provides an overview of the B-ISUP for Signaling Capability Set 1.

ANSI T1.666-1999 (R2004),
Telecommunications - Signalling System
Number 7 (SS7) - Operator Services
Network Capabilities

Describes the operator services originating connection network capability, which permits the establishment and release of a network connection between a user and an operator service or services. This capability builds upon the existing basic call control procedures, defined in ANSI T1.113, for establishing and releasing connections.

ANSI T1.666a-2000 (R2004),
Telecommunications - Interactions Between
the Operator Services Network Capability
and Release to Pivot

This Annex describes the additional functions that the Operator Services Network Capability (OSNC)--described in T1.666-1999--will need to perform when invoking the Release to Pivot (RTP) network capability--described in T1.661-1997. These functions are activated on a per-switch basis and are only activated when the Release to Pivot network capability is also active. In particular, the originating end office and the operator services switch may activate these functions independently, though RTP will not be invoked for a given call unless both switches have these functions active.

ANSI T1.667-2002, Telecommunications -
Intelligent Network

Establishes an architectural framework in which the model of the Intelligent Network (IN) is defined. The architecture is intended to provide the flexibility to support a wide range of services and facilitates the evolution of future IN functional capabilities through its evolvable, modular structure to achieve service independence.

ANSI T1.668-1999 (R2005),
Telecommunications - Signaling System
Number 7 (SS7) - Facility Request to Pivot
(FRP)

The Facility Request to Pivot (FRP) network capability permits an ISUP-capable SS7 Signalling Point that has received a call from another ISUP capable node, and has determined that the call should be connected to a Destination node other than itself, to have the connection established from a node earlier in the call path. FRP functionality is shared between the Request and Pivot nodes. The FRP capability may be invoked by an end user service or other network capability on a per-call basis. The specific end-user service or other network capability that may invoke FRP is not within the scope of this network capability description.

ANSI T1.669-1999 (R2005),
Telecommunications - Intermediate
Network Selection (INS) Network Capability

The Intermediate Network Selection (INS) network capability allows an application process in the origination network to specify a single intermediate signalling network for non-circuit-associated signalling messages. The network capability also includes functionality that may be used to route non-circuit-associated messages in a number portability environment.

ANSI T1.671-2000 (R2005), Signalling
System Number 7 (SS7) - Carrier Service
Provider Identification (CSPI)

Carrier Service Provider Identification (CSPI) information is intended to identify to intermediate switches all presubscribed carriers associated with a calling party. Identifiable carrier service providers include the preferred intraLATA toll carrier, the preferred interLATA carrier, and the international carrier. Other carrier types may be included as the need arises.

ANSI T1.672-2000 (R2005),
Telecommunications - Bearer Independent
Call Control

This standard describes the adaptation of the narrowband ISDN User Part (ISUP) for the support of narrowband ISDN services independent of the bearer technology and signalling message transport technology used.

ANSI T1.673-2002, T1.BICC Capability Set 1+

Provides the signalling functions required to support narrowband ISDN services independent of the bearer technology and signalling transport technology used. The BICC protocol used the Signalling Transport Converter (STC) layer for signalling message transport. The STCs are defined in T1.stc. Several arrangements are possible for nodes that support BICC signalling. These nodes may have an associated Bearer Control Function (BCF) in which case they are referred to as Serving Nodes (SN). A node without an associated BCF is referred to as Call Mediation Node (CMN). Between Serving Nodes the control of bearers is provided by other protocols not specified by this standard.

ANSI T1.674-2002, BICC CS1+: Signalling Transport Converters (STCs)

Describes the Generic Signaling Transport Service. It allows the definition of signaling specifications without considerations of the idiosyncrasies of the underlying signaling transport mechanisms. This standard also describes the interface states and the definition of the service by a number of primitives. The Generic Signaling Transport Service can be deployed by means of Signaling Transport Converters over a range of signaling transport protocol stacks. This standard was listed for public review in the 6/15/2001 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI T1.676-2001 (R2006), BICC IP Bearer Control Protocol (IPBCP)

This standard defines IPBCP, which is suitable for use in IP network environments where the Bearer Independent Call Control (BICC) protocol is deployed. IPBCP can be used also in other environments. BICC IPBCP is used for the exchange of media stream characteristics, port numbers, and IP addresses of the source and sink of a media stream to establish and allow the modification of IP bearers. The exchange of information with IPBCP is done during BICC call establishment and after a call has been established. IPBCP uses the Session Description Protocol (SDP) defined in RFC 2327 to encode this information.

ANSI T1.677-2001 (R2006), BICC Bearer Control Tunneling Protocol

The purpose of this Standard is to define the BICC Bearer Control Tunneling Protocol. The BICC Bearer Control Tunneling Protocol is a generic tunneling mechanism for the purpose of tunneling Bearer control Protocols (BCP) over the "horizontal" BICC interface between CCUs.

ANSI T1.678-2004, Lawfully Authorized Electronic Surveillance (LAES) for Voice over Packet Technologies in Wireline Telecommunications Networks

The purpose of this Standard is to facilitate a TSP's compliance with the assistance capability requirements defined in Section 103 of CALEA [Ref 1]. This Standard defines capabilities to support LAES and the interfaces to deliver intercepted communications and reasonably available call-identifying information to an LEA when authorized. This Standard also defines a protocol for delivering content and call identifying information to LEAs. Compliance with this Standard addresses the "safe harbor" provisions of Section 107 of CALEA [Ref 1] and helps ensure efficient and industry-wide implementation of capabilities to assist LEAs.

ANSI T1.679-2004, T1.SIPInterworking Output Baseline Document

This Standard defines the signaling interworking between the Bearer Independent Call Control (BICC) or ISDN User Part (ISUP) protocols and Session Initiation Protocol (SIP) with its associated Session Description Protocol (SDP) at an Interworking Unit (IWU). The capabilities of SIP and SDP that are needed to interwork with BICC or ISUP are defined in Annex C of this Standard.

ANSI T1.703-1995 (R2005), Telecommunications – Allocation of Letters to the Keys of Numeric Keypads

Increasingly, telecommunications services are making use of letters, as well as numbers, on numeric keypads for tasks such as directory, dial-by-name, entry of alphabetic numbers, and the like. In addition, it is recognized that many users of telecommunication services prefer to use letters instead of digits to code and remember numbers. Hence, there is a need for a standard allocation of letters to the keys of numeric keypads used for telecommunications.

ANSI T1.706-1997 (R2003), Stage 1 Service Description for Personal Communications Service - Enhanced Priority Access and Channel Assignment (PACA-E) Supplementary Service

Defines and describes the Enhanced Priority Access and Channel Assignment (PACA-E) service for PCS. This service is intended to provide preferential treatment to a special group of PCS users, e.g., National Security and Emergency Preparedness (NS/EP) users. PACA-E requires modifications to basic PCS call set-up procedures in order to provide prioritization, by queuing, of the assignment of radio channel resources involved in call origination from a PACA-E subscriber (priority access) and, separately, call delivery to a PACA-E subscriber (priority egress).

ANSI T1.708-1998 (R2003), Telecommunications - PCS 1900 Service Provider Number Portability

Number Portability (NP) allows subscribers to retain their Directory Number (DN) when they change their service provider (service provider portability), location (location portability), or service (service portability). The focus of this specification is to allow PCS1900 systems to support "service provider portability." Location and service portability are outside the scope of this document.

ANSI T1.711-1999 (R2004), Telecommunications - Number Portability for PCS 1900 Short Message Service and Other Services

This standard defines the PCS 1900 requirements needed to support Short Message Service and other Services in a Number Portability environment. In this document, the phrase "Number Portability environment" refers to an environment where Service Provider Number Portability is active in the PCS 1900 networks. The phrase "Number Portability" and "Service Provider Number Portability" is used interchangeably throughout this document.

ANSI T1.713-2000, Personal Communications Services PCS 1900 Specifications

Describes in detail a complete specification suitable for Personal Communication Services (PCS) operating in the licensed North American PCS bands (1850-1910 MHz paired with 1930-1990 MHz). Since this technology is related to GSM/DCS, which has been standardized in Europe by the European Telecommunications Standards Institute (ETSI), these PCS1900 standards have now been integrated and harmonized with the set of GSM/DCS Specifications. This harmonization has resulted in a specification for GSM/DCS/PCS based on the Release 98 (SMG28/SMG29) Series of GSM Specifications. This standard was previously listed for Public Review in the October 22, 1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text. To obtain an electronic draft: URL: <ftp://ftp.t1.org/pub/ansi/bsr8/lb800-d.pdf>.

ANSI T1.714-2000 (R2005), Stage 2 Service Description for Personal Communications Service - Enhanced Priority Access and Channel Assignment (PACA-E) Supplementary Service

Defines and describes the stage 2 description for the Enhanced Priority Access and Channel Assignment (PACA-E) service to support call set-up requests invoked by authorized PACA-E subscribers (access) and call completion to a PACA-E subscriber (egress). PACA-E requires modifications to basic PCS call set-up procedures in order to provide prioritization, by queuing, of the assignment of radio channel resources involved in call origination from a PACA-E subscriber (priority access) and, separately, call delivery to a PACA-E subscriber (priority egress). To obtain an electronic draft: URL: <ftp://ftp.t1.org/pub/ansi/bsr8/lb808-d2.pdf>

ANSI T1.715-2000, IMT- 2000 CDMA DS and TDD Radio Interface Specifications

Describes in detail the specification for the IMT-2000 Radio Access Network Interface suitable for a third generation wireless mobile system to operate in any licensed North American band of frequencies. The frequencies to be used for IMT-2000 operation in North America will include the PCS band of frequencies at 1900 MHz. The list of 3GPP Radio Access Network Interface Specifications are defined and described. Also contained in Section 4 of this document is the Master List of Normative References for the North American version of the IMT-2000 Radio Access Network Interface Specification (consisting of 3GPP Specifications from the 21 Series, 22 Series, 23 Series, 24 Series, 25 Series, 26 Series, 27 Series and 33 Series). This standard was first listed in the February 11, 2000 issue of Standards Action. It is being resubmitted due to substantive changes. To

ANSI T1.716-2000 (R2004), Broadband Direct Sequence CDMA for Fixed Wireless PSTN Access - Layer 1

This document specifies the transmit functions of Layer 1 to define the air interface for a Broadband Direct Sequence CDMA system for Fixed Wireless PSTN Access (FWPA). This air interface satisfies the requirements defined in T1.TR.67-2001 for the single-line subscriber architecture. This standard provides the detailed definition of all component entities within Layer 1, and the services and primitives provided to other layers by Layer 1.

ANSI T1.717-2000 (R2004), Broadband Direct Sequence CDMA for Fixed Wireless PSTN Access - Layer 2

This standard specifies the transmit functions of Layer 2 to define the air interface for a Broadband Direct Sequence CDMA system for Fixed Wireless PSTN Access (FWPA). This air interface satisfies the requirements defined in T1.TR.67-2001 for the single-line subscriber architecture. This standard provides the detailed definition of all component entities within Layer 2, and the services and primitives provided to other layers by Layer 2.

ANSI T1.718-2001, PCS 1900 - Cellular Text Telephone Modem (CTM) Transmitter Bit Exact C-Code

Provides the bit exact C-Code for the Cellular Text Telephone Modem (CTM) transmitter. CTM allows reliable transmission of a text telephone conversation alternating with a speech conversation through the existing speech communication paths in cellular mobile phone systems. This reliability is achieved by an improved modulation technique, including error protection, interleaving and synchronization. This document standardizes the attached specific version of a 3GPP Technical Specification to meet the requirements for support of TTY devices within North America.

ANSI T1.719-2001, PCS 1900 - Cellular Text Telephone Modem (CTM) General Description

Describes the Cellular Text Telephone Modem (CTM). CTM allows reliable transmission of a text telephone conversation alternating with a speech conversation through the existing speech communication paths in cellular mobile phone systems. This reliability is achieved by an improved modulation technique, including error protection, interleaving and synchronization. This document standardizes the attached specific version of a 3GPP Technical Specification to meet the requirements for support of TTY devices within North America.

ANSI T1.720-2001, Telecommunications - PCS 1900 - Cellular Text Telephone Modem Minimum Performance Requirements

Describes the Minimum Performance Requirements for the Cellular Text Telephone Modem (CTM). CTM allows reliable transmission of a text telephone conversation alternating with a speech conversation through the existing speech communication paths in cellular mobile phone systems. This reliability is achieved by an improved modulation technique, including error protection, interleaving and synchronization. This document specifies tests to be used to ensure that CTM receiver implementations meet minimum performance criteria. This document standardizes a specific version of a 3GPP Technical Specification to meet the requirements for support of TTY devices within North America.

ANSI T1.721-2003, PCS1900 and GSM 850 References - GSM specifications (Release 99 & Release 4 & GTT)

Provides the North American GSM industry with information on PCS1900 and GSM 850 technologies to ensure interoperability between equipment and includes core standards for PCS1900 and GSM 850 which are Radio Interface, A-Interface and MAP Specifications, which also provide support for 3-digit MNC and the Enhanced Full Rate Vocoder; and supports features for General Packet Radio Service, Enhanced Data Rate for GSM Evolution, Number Portability, Customized Application for Mobile Network Enhanced Logic and Location Services.

ANSI T1.722-2002, UMTS References - 3G specifications (Release 99, Release 4 & GTT)

Provides the North American PCS industry with information on the Third Generation (3G) technology known as Wideband CDMA in order to ensure interoperability between equipment. This standard includes the core standards for evolution to 3rd generation, and includes the Radio Interface and the Core Network Specifications for Universal Mobile Telecommunications System (UMTS).

ANSI T1.723-2002, I-CDMA Spread Spectrum Systems Air Interface Standard - Stage 3 Text

This document contains all requirements of the air interface for I-CDMA compatible ATs and BSRs, either directly or by reference to another published document. The I-CDMA air interface is composed of three specific layers analogous to the OSI Network Layer model. These are specified in the following sections of this document: The Physical Layer is specified in Section 2, the Link Layer is specified in Section 3, and the Network Layer is specified in Section 4.

ANSI T1.724-2004, UMTS Handover Interface for Lawful Interception

This specification addresses the handover interfaces for Lawful Interception (LI) of Packet-Data Services, Circuit Switched Services, and Multimedia Services within GSM and UMTS. The handover interface in this context includes the delivery of Intercept Related Information (HI2) and Content of Communication (HI3) to the Law Enforcement Monitoring Facility.

ANSI T1.801.01-1995 (R2001), Digital Transport of Video Teleconferencing/Video Telephony Signals - Video Test Scenes for Subjective and Objective Performance Assessment

Specifies a collection of test scenes that have been used for subjective assessment and may be used in future objective assessment of Video Teleconferencing/Video Telephony (VTC/VT). The scenes represent limited examples of the content that may be found in VTC/VT usage. The collection does not constitute a balanced set of scenes in any known way, and use of the scenes to determine an overall performance assessment is beyond the scope of this standard. Other test scenes may be used in video performance assessment, but their specification is also beyond the scope at this time. The test scenes identified within this standard are applied at the analog input interface shown in figure 1 of this standard. Service channel interfaces (analog input and analog output) are between VTC/VT transmission service providers and

ANSI T1.801.02-1996 (R2001), Telecommunications – Digital Transport of Video Teleconferencing/Video Telephony Signals – Performance Terms, Definitions, and Examples

Specifies terms useful for describing the performance of video teleconferencing/video telephony systems and gives their definitions. The standard also supplies examples of the terms were appropriate, as an aid to understanding the definitions.

ANSI T1.801.03-2003, Telecommunications – Digital Transport of One-Way Video Signals – Parameters for Objective Performance Assessment

The purpose of this standard is to provide a standard performance measurement method for one-way signals transported digitally by portions of the telecommunications network. The standard provides a video performance measurement method necessary to support the interconnection and interoperability of telecommunications networks at interfaces with end-user systems, carriers, information and enhanced-service providers, and customer premise equipment.

ANSI T1.802.01-1996 (R2001), Telecommunications – North American Adaptation for Domestic-International Interfaces of ETSI 300 174 Digital Component Television Signals – Interface and Coding Specifications at DS-3

Provides the North American adaptation for Domestic-International interfaces of the ETSI ETS 300 174 standard for the coding and transmission of digital component television signal at a bit rate of 45 mbit/s. It provides a detailed description of the digital coding algorithm to be implemented in equipment designed to terminate digital transmission systems when those systems are employed to carry ITU-R 601-2 digital television video signals, AES/EBU digital audio signals and ancillary signals such as SMPTE time-code, and SMPTE machine control. Each television signal is formatted to be compatible with the North American DS-3 transport network. The video coding algorithms are based on a hybrid predictive/transform scheme incorporating arrangements for variable word-length coding (VLC), synchronization, and video framing. Provision is made for the

ANSI T1.803-1998 (R2003), Telecommunications - Overview and Reference for GSTN Multimedia Terminals

This document is to be a general overview of the implementation of multimedia terminals targeting audio-visual conferencing applications on the GSTN. This document also provides elaboration of implementation details in areas which the ITU-T documents have been found to be vague or unclear. Detailed standards for implementation of compatible terminals are provided by normative reference to approved ITU-T Recommendations.

ANSI/ATIS 0300007-2005, Identification of Physical Network Resources

The area of interest is the communication between operators about network interconnections, extended to include the identification of all pertinent Physical Network Resources (PNR). The objects of communications are physical network resources and their interconnection points. The application schema defined in this document provides correct terms for these objects.

ANSI/ATIS 0632000-2005, Telecommunications – Above-Baseline Electrical Protection for Designated Telecommunications Central Offices and Similar-Type Facilities against High-Altitude Electromagnetic Pulse (HEMP)

This above-baseline standard applies to central offices and similar-type facilities in public telecommunications networks in which a special measure of resistance to damage from high-altitude electromagnetic pulse (HEMP) is desired. It describes electrical protection measures that extend beyond the baseline-level measures against the normally encountered electromagnetic threats included in T1.308-1990 and T1.313-1991.

ANSI/ATIS 0700001-2004, MCSB Physical, MAC/LLC, & Network Layer Specification

This document describes the characteristics and requirements of the Multi-carrier Synchronous Beamforming (MCSB) Air Interface technology. The technology is based in part on existing Code Division Multiple Access (CDMA) and Smart Antenna technologies; however, a new protocol shall be developed to enhance transmission quality and security, and to achieve broadband data rates.

AWEA (American Wind Energy Association)

AWS (American Welding Society)

ANSI Z49.1-2005, Welding, Cutting and Allied Processes, Safety in

This standard covers all aspects of safety and health in the welding environment, emphasizing oxygen gas and arc welding processes with some coverage given to resistance welding. It contains information on protection of personnel and the general area, ventilation, fire prevention and protection, and confined spaces. A significant section is devoted to precautionary information, showing examples, and an extensive bibliography is included.

AWS A1.1-2001, Metric Practice Guide for the Welding Industry

Provides a metric practice guide that is based on the International System of Units (SI) as defined in the U. S. Federal Register notice of July 28, 1998, "Metric System of Measurement: Interpretation of the International System of Units for the United States". It includes the base units, derived units, and rules for their use. Also covered are conversion factors and rules for their use in converting inch-pound units to SI Units. Recommendations are presented for style and usage in such areas as prefixes, punctuation, number grouping, etc. There are also suggestions to industry for managing the transition.

AWS A2.4-1998, Symbols for Welding, Brazing, and Nondestructive Examination

Establishes a method of specifying certain welding, brazing, and nondestructive examination information by means of symbols. Detailed information and examples are provided for the construction and interpretation of these symbols. This system provides a means of specifying a sequence of welding or brazing operations and nondestructive examination, as well as the examination method, frequency, and extent.

AWS A3.0-2001, Standard Welding Terms and Definitions

Provides a glossary of the technical terms used in the welding industry. Its purpose is to establish standard terms to aid in the communication of welding information. Since it is intended to be a comprehensive compilation of welding terminology, nonstandard terms used in the welding industry are also included. This standard was listed for public review in the 9/22/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

AWS A4.2M/A4.2-1997, Calibrating Magnetic Instruments to Measure the Delta Ferrite Content of Austenitic and Duplex Austenitic-Ferrite Stainless Steel Weld Metal, Procedures for

Specifies the calibration procedures for a number of commercial instruments that can then provide reproducible measurements of the ferrite content of austenitic stainless steel weld metals. Some of these instruments can be further calibrated for measurements of the ferrite content of duplex ferritic-austenitic stainless steel weld metals. Calibration with primary standards (nonmagnetic coating thickness standards from the U.S. National Institute of Standards and Technology) is the preferred methods for appropriate instruments. Alternatively, these and other instruments can be calibrated with weld-metal-like secondary standards.

AWS A4.3-93 (R97), Standard Methods for Determination of the Diffusible Hydrogen Content of Martensitic, Bainitic, and Ferritic Steel Weld Metal Produced by Arc Welding

Describes a standard 25 x 12 x 80 mm test specimen and method of preparation, along with two standard methods of diffusible hydrogen analysis, mercury displacement and gas chromatography. The methods are suitable for shielded metal arc welding, gas metal arc welding, flux cored arc welding, and submerged arc welding using welding conditions and electrodes given in several applicable AWS filler metal specification.

AWS A4.4M-2001, Standard Procedures for Determination of Moisture Content of Welding Fluxes and Welding Electrode Flux Coverings

Establishes standard procedures for determination of moisture content of welding fluxes and welding electrode coverings. The test involves combustion of a sample in an oxygen carrier gas at elevated temperature. Any water evolved from the sample or formed by the combustion process is measured by means of either Karl Fischer titration or infrared detection. The key differences between these methods and traditional thermogravimetric techniques are the inclusion of instrument calibration procedures, system verification checks and use of more accurate analytical techniques for water detection.

AWS A5.01-93 (R99), Filler Metal Procurement Guidelines

Provides a means by which the information needed for the procurement of filler metals to an AWS filler metal specification can be stated clearly, concisely, and completely. It includes a method by which the heat, lot testing, and certification requirements that are essential to so many of today's welding applications can be specified in the procurement document.

AWS A5.1/A5.1M-2003, Carbon Steel Covered Arc-Welding Electrodes, Specification for

This specification establishes the requirements for classification of carbon steel electrodes for shielded metal arc welding. The requirements include mechanical properties of weld metal, weld metal soundness, and usability of electrode. Requirements for composition of the weld metal, moisture content of low-hydrogen electrode coverings, standard sizes and lengths, marking, manufacturing, and packaging are also included. A guide to the use of the standard is included in an Annex.

AWS A5.10/A5.10M-1999, Bare Aluminum and Aluminum Alloy Welding Electrodes and Rods, Specification for

Provides a guideline and rules that must be followed by a candidate for AWS certification. Qualification and subsequent certification requires the use of an AWS accredited test facility.

AWS A5.11-97/A5.11M-2005, Nickel and Nickel-Alloy Welding Electrodes for Shielded Metal Arc Welding, Specification for

This specification prescribes the composition, dimensions, soundness, and properties of weld metal from more than 30 classifications of nickel and nickel-alloy covered electrodes. Major topics include general requirements, testing, manufacturing, identification, and packaging. A guide to using the specification is included in an annex. This specification makes use of both U.S. Customary Units and the International System of Units (SI). Since these are not equivalent, each system must be used independently of the other.

AWS A5.12/A5.12M-98, Tungsten and Tungsten Alloy Electrodes for Arc Welding and Cutting

Prescribes the requirements for the classification of bare tungsten and tungsten-alloy electrodes for gas tungsten arc welding and cutting and plasma arc welding and cutting. Classification is based upon the chemical composition of the electrode. Standard sizes, finish, lengths, quantities, product identification, color coding and chemical composition limits are specified. This specification make use of both U.S. Customary units and the International System of Units (SI). Since these are not equivalent, each system must be used independently of the other.

AWS A5.13-2000, Specification for Surfacing Electrodes for Shielded Metal Arc Welding

Prescribes the requirements for classification of surfacing electrodes for shielded metal arc welding. Classification is based upon the chemical composition of the deposited weld metal except for tungsten carbide electrodes where classification is based on the mesh range, quantity, and composition of the tungsten carbide granules. A guide is appended to the specification as a source of information as to the characteristics and applications of the classified electrodes. This standard was first listed in the July 19, 1996 issue of Standards Action. It is being resubmitted due to substantive changes.

AWS A5.14/A5.14M-2005, Specification for Nickel and Nickel-Alloy Bare Welding Rods and Electrodes

The chemical compositions of more than thirty nickel and nickel-alloy welding electrodes and rods are specified, including ten compositions not previously classified. Major topics include general requirements, testing, packaging and application guidelines. This specification makes use of both U.S. Customary Units and the International System of Units (SI). Since these are not equivalent, each system must be used independently of the other.

AWS A5.15-90 (R1997), Specification for Welding Electrodes and Rods for Cast Iron

Specifies the chemical composition requirements for electrodes and rods for welding cast iron. Copper-base rods used for braze welding of cast iron are not included. Major topics include general requirements, testing, packaging, and application guidelines.

AWS A5.16/A5.16M-2003, Specification for Titanium and Titanium Alloy Welding Electrodes and Rods

AWS A5.16/A5.16M:200X is a revision of the titanium welding electrode document last revised in 1990. The compositions specified for each classification represent the state of the art. The specification contains testing procedures, standard sizes and forms and identification and marking practices. This specification makes use of both U.S. Customary Units and the International System of Units (SI). Since these are not equivalent, each system must be used independently of the other.

AWS A5.17/A5.17M-97, Specification for Carbon Steel Electrodes and Fluxes for Submerged-Arc Welding

Provides the requirements for the classification of solid and composite carbon steel electrodes and fluxes for submerged arc welding. Electrode classification is based on chemical composition of the solid electrode or low dilution weld metal produced with a composite electrode. Flux classification is based on the soundness and mechanical properties of weld metal produced with the flux and an electrode classified herein. Other requirements include sizes, marking, manufacturing, and packaging. The form and usability of the flux are also included.

AWS A5.18/A5.18M-2005, Specification for Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding

This specification prescribes the requirements for classification of solid carbon steel electrodes and rods, composite stranded carbon steel electrodes, and composite metal cored carbon steel electrodes for gas shielded arc welding. Classification is based on chemical composition of the electrode for solid electrodes and rods, chemical composition of weld metal for composite stranded and composite metal cored electrodes and the as-welded mechanical properties of the weld metal for each. Additional requirements are included for manufacture, sizes, lengths, and packaging. A guide is appended to the specification as a source of information concerning the classification system employed and the intended use of the electrodes and rods. This specification makes use of both U.S. Customary Units and the International System

AWS A5.19-1992 (R2006), Magnesium Alloy Welding Electrodes and Rods

This specification prescribes requirements for the classification of bare magnesium alloy welding electrodes and rods for use with the gas metal arc, gas tungsten arc, oxyfuel gas, and plasma arc welding processes. Classification is based upon chemical composition of the welding wire. Standard sizes, finish, winding requirements, package forms and weights, product identification, and chemical composition limits are specified.

AWS A5.2-92 (R97), Specification for Carbon and Low Alloy Steel Rods for Oxyfuel Gas Welding

Prescribes the requirements for classification of carbon and low alloy steel rods for oxyfuel gas welding. The classification requirements include the mechanical properties of the weld metal. Additional requirements are included for chemical composition of the rod and for manufacture, sizes, lengths, and packaging. A guide is appended to the specification as a source of information concerning the classification system employed and the intended use of the rods.

AWS A5.21-2001, Specification for Bare Electrodes and Rods for Surfacing

Prescribes the requirements for classification of bare electrodes and rods for surfacing. Solid surfacing electrodes and rods are classified on the basis of the composition of the material as manufactured. Metal-cored and flux-cored composite (tubular) surfacing electrodes and rods are classified on the basis of the chemical composition of the deposited weld metal. Tubular tungsten carbide bare rods are classified on the basis of the mesh range, quantity, and composition of the tungsten carbide granules. A guide is appended to the specification as a source of information concerning the characteristics and applications of the classified electrodes.

AWS A5.22-2005, Specification for Stainless Steel Electrodes for Flux Cored Arc Welding and Stainless Steel Flux Cored Rods for Gas Tungsten Arc Welding

Classification and other requirements are specified for more than 40 grades of flux cored stainless steel electrodes and rods. New classifications include duplex alloys not previously classified and flux cored rods for gas tungsten arc welding. Designations indicate the chemical composition of the weld metal, the position of welding (newly introduced in this revision of the standard), and the external shielding medium required (for those classifications for which one is required). A special designation (k) is used to identify those classifications that are intended specifically for cryogenic service. The requirements include general requirements, testing, and packaging. The Annex provides general application guidelines for individual alloys and other useful information about welding electrodes.

AWS A5.23/A5.23M-97, Specification for Low-Alloy Steel Electrodes and Fluxes for Submerged Arc Welding

Provides requirements for the classification of solid and composite low-alloy steel electrodes and fluxes for submerged arc welding. Electrode classification is based on chemical composition of the electrode for solid electrodes and chemical composition of the weld metal for composite electrodes. Flux classification is based on the mechanical properties and deposit composition of weld metal produced with the flux and an electrode (solid or composite) classified in this standard. Other requirements include sizes, marking, manufacturing, and packaging. The form and usability of the flux are also included.

AWS A5.24/A5.24M-2004, Specification for Zirconium and Zirconium Alloy Welding Electrodes and Rods

Prescribes the requirements for classification of zirconium and zirconium alloy electrodes and rods for GTA, GMA, and PA arc welding. AWS A5.24/A5.24M:200X is a revision of the zirconium welding electrode document last revised in 1990. The compositions specified for each classification represent the latest state-of-the-art. Additional requirements are included for testing procedures, manufacture, sizes, lengths, and packaging. A guide is appended to the specification as a source of information concerning the classification system employed and the intended use of the zirconium alloy filler metal.

AWS A5.25/A.25M-1997 (R2003), Specification for Carbon and Low-Alloy Steel Electrodes and Fluxes for Electroslag Welding

This specification prescribes requirements for the classification of electrodes (both solid and composite metal cored) and fluxes for electroslag welding of carbon and low-alloy steels.

AWS A5.26/A5.26M-1997 (R2003), Specification for Consumables Used for Electrogas Welding of Carbon and High-Strength Low-Alloy Steels

Prescribes requirements for the classification of carbon and low-alloy steel electrodes for electrogas welding. It covers solid and composite (flux cored and metal cored) electrodes used with external gas shielding, and composite (self-shielded flux cored) electrodes used without external shielding.

AWS A5.28/A5.28M-2005, Low-Alloy Steel Electrodes and Rods for Gas Shielded Arc Welding

This specification prescribes the requirements for classification of solid low-alloy steel electrodes and rods, composite stranded low-alloy steel electrodes, and composite metal cored low-alloy steel electrodes for gas shielded arc welding. Classification is based on chemical composition of the electrode for solid electrodes and rods, chemical composition of weld metal for composite stranded and composite metal cored electrodes and the as-welded or postweld heat treated mechanical properties of the weld metal for each. Additional requirements are included for manufacture, sizes, lengths and packaging. A guide is appended to the specification as a source of information concerning the classification system employed and the intended use of the electrodes and rods. This specification makes use of both U.S. Customary Units and the

AWS A5.29/A5.29M-2005, Specification for Low-Alloy Steel Electrodes for Flux Cored Arc Welding

This specification prescribes the requirements for classification of low-alloy steel electrodes for flux cored arc welding. The requirements include chemical composition and mechanical properties of the weld metal and certain usability characteristics. Optional, supplemental designators are also included for improved toughness and diffusible hydrogen. Additional requirements are included for standard sizes, marking, manufacturing and packaging. A guide is appended to the specification as a source of information concerning the classification system employed and the intended use of low-alloy steel flux cored electrodes. This specification makes use of both U.S. Customary Units and the International System of Units (SI). Since these are not equivalent, each system must be used independently of the other.

AWS A5.3/A5.3M-99, Aluminum and Aluminum Alloy Electrodes for Shielded Metal Arc Welding

Prescribes requirements for the classification of covered (flux coated) E1100, E3003 and E4043 aluminum alloy electrodes for shielded metal arc welding. Tests conducted for classification are chemical analysis of the core and tensile and bend tests on specimens from a groove weld test assembly fabricated with two sizes of electrodes for each classification. Standard electrode sizes, electrode identification, and chemical composition limits are specified. This standard makes use of both U.S. Customary Units and the International System of Units (SI). Since these are not equivalent, each system must be used independently of the other.

AWS A5.30-1997, Consumable Inserts, Specification for

Describes five classes (cross-sectional design) of consumable inserts of various chemical compositions. Each class is subdivided into two or three (based on the shape of the insert). Topics include the chemical composition, general dimensional requirements, packaging, and application guidelines.

AWS A5.31-1993 (R2003), Fluxes for Brazing and Braze Welding

Fifteen fluxes for brazing and braze welding are classified according to the filler metal, form, and activity temperature range. Classification is in accordance with a new classification system that employs the designator "FB" to indicate fluxes for brazing and braze welding applications. In addition to selected tests for each classification, major topics include general requirements, testing procedures, and packaging requirements. The Appendix suggests some general application guidelines.

AWS A5.32/A5.32M-97, Specifications for Welding Shielding Gases

Specifies minimum requirements for the composition and purity of the most popular single-component shielding gases. Classification designators for both single- and multicomponent gases are introduced. Other topics include testing procedures, package marking, and general application guidelines. This specification makes use of both U.S. Customary Units and the International System of Units (SI).

AWS A5.4-92 (R2000), Stainless Steel Welding Electrodes for Shielded Metal Arc Welding

Composition and other requirements are specified for more than forty classifications of covered stainless steel welding electrodes. These classifications include the "duplex" stainless steels which previously were not classified. A new designation of electrode coverings, EXXX-17, has been added. The "EXXX-25" and "EXXX-26" designations have been restored for electrodes intended specifically for welding only in the flat and horizontal positions. Requirements include general requirements, testing, and packaging. The Appendix provides application guidelines and other useful information about the electrodes.

AWS A5.5-1996, Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc Welding

AWS A5.6-84 (R2000), Copper and Copper-Alloy, Covered Electrodes, Specification for

Prescribes requirements for the classification of covered copper and copper alloy electrodes for shielded metal arc welding. It includes compositions in which the copper content exceeds that of any other element.

AWS A5.7-1984 (R2000), Copper and Copper-Alloy Bare Welding Rods, and Electrodes, Specification for

Prescribes requirements for the classification of copper and copper alloy bare welding rods and electrodes for plasma arc, gas metal arc, and gas tungsten arc welding. It includes compositions in which the copper content exceeds that of any other element.

AWS A5.8/A5.8M-2004, Specification for Brazing Filler Metals

Prescribes the requirements for the classification of filler metals for brazing and braze welding. The chemical composition, physical form, and packaging of more than 75 brazing filler metals are specified. The filler metal groups described include aluminum, cobalt, copper, gold, magnesium, nickel, silver, and brazing filler metals for vacuum service. Information is provided concerning the liquidus, the solidus, the brazing temperature range, and general areas of application recommended for each filler metal. Additional requirements are included for manufacture, sizes, lengths, and packaging. A guide is appended to the specification as a source of information concerning the classification system employed and the intended use of the filler metals for brazing and braze welding.

AWS A5.9-93 (R1999), Corrosion-Resisting Chromium and Chromium-Nickel Steel Bare and Composite Metal Cored and Stranded Arc Welding Electrodes and Welding Rods

Specifies the classification and other requirements for more than forty-five bare stainless steel electrodes (solid and composite), rods, and strips, including a number of duplex alloys previously unclassified.

AWS B1.10-1999, Inspection of Welds, Guide for the Nondestructive

Acquaints the reader with the common nondestructive inspection (NDT) methods available, and aids in selecting the method best suited for inspection of a given weld. The inspection methods included are Visual, Penetrant, Magnetic Particle, Radiography, Ultrasonic, and Eddy Current Inspection. This standard was first listed in the August 16, 1996 issue of Standards Action. It is being resubmitted due to substantive changes.

AWS B1.11-2000, Guide for the Visual Inspection of Welds

Contains information to assist in the visual examination of welds. Included are sections on prerequisites, fundamentals, surface conditions, and equipment. Sketches and full-color photographs illustrate weld discontinuities commonly found in welds.

AWS B2.1-1-003-2002, Gas Metal Arc Welding of Galvanized Steel, 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding galvanized steel in the thickness range of 18 gauge through 10 gauge, using semiautomatic gas metal arc welding (short circuiting transfer mode). It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for groove welds and fillet welds.

AWS B2.1-1-004-2002, Gas Metal Arc Welding of Carbon Steel (M1, Group 1), 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding carbon steel in the thickness range of 18 gauge through 10 gauge, using semiautomatic gas metal arc welding (short circuiting transfer mode). It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-1-007-2002, Gas Tungsten Arc Welding of Galvanized Steel, 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding galvanized steel in the thickness range of 18 gauge through 10 gauge, using manual gas tungsten arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-1-008-2002, Gas Tungsten Arc Welding of Carbon Steel (M-1, Group 1), 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding carbon steel in the thickness range of 18 gauge through 10 gauge, using manual gas tungsten arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-1-011-2002, Standard Welding Procedure Specification – Shielded Metal Arc Welding of Galvanized Steel, 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding galvanized steel in the thickness range of 10 gauge through 18 gauge, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-1-012-2002, Standard Welding Procedure Specification – Shielded Metal Arc Welding of Carbon Steel (M-1, Group 1), 10 through 18 Gage in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding carbon steel in the thickness range of 10 gauge through 18 gauge, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-1-016-05, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, E7018, As-Welded or PWHT Condition

This standard contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1-1/2 inch, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for plate and structural applications.

AWS B2.1-1-017-05, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, E6010, As-Welded or PWHT Condition

This standard contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1-1/2 inch, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for plate and structural applications.

AWS B2.1-1-018-05, Standard Welding Procedure Specification (WPS) for Self-Shielded Flux Cored Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, E71T-8, As-Welded Condition

This standard contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1-1/2 inch, using semiautomatic self-shielded flux cored arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for plate and structural applications.

AWS B2.1-1-019-05, Standard Welding Procedure Specification (WPS) for CO₂ Shielded Flux Cored Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, E70T-1 and E71T-1, As-Welded Condition

This standard contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1-1/2 inch, using semiautomatic CO₂ shielded flux cored arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for plate and structural applications.

AWS B2.1-1-020-05, Standard Welding Procedure Specification (WPS) for 75% Ar/25% CO₂ Shielded Flux Cored Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, E70T-1 and E71T-1, As-Welded or PWHT Condition

This standard contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1-1/2 inch, using semiautomatic Ar/CO₂ shielded flux cored arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for plate and structural applications.

AWS B2.1-1-021-05, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding Followed by Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, ER70S-2 and E7018, As-Welded or PWHT Condition

This standard contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1-1/2 inch, using manual gas tungsten arc welding followed by shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for plate and structural applications.

AWS B2.1-1-022-05, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, E6010 (Vertical Uphill) Followed by E7018, As-Welded or PWHT Condition

This standard contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1-1/2 inch, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for plate and structural applications.

AWS B2.1-1-026-05, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, E6010 (Vertical Downhill) Followed by E7018, As-Welded or PWHT Condition

This standard contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1-1/2 inch, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for plate and structural applications.

AWS B2.1-1-027-1998, Welding Procedure Specification (WPS) for Self-Shielded Flux Cored Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2) 1/8 through 3/4 inch Thick, E71T-11 As-Welded Condition

Contains the essential welding variables for carbon steel in the thickness range of 1/8 through 3/4 inch, using semi-welding, necessary to make the weldments, the filler metal specifications and the allowable joint designs for fillet and groove welds. This WPS is intended primarily for plate and structural applications.

AWS B2.1-1-201-96, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welded of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 3/4 inch Thick, E6010 (Vertical Uphill) followed by E7018 (Vertical Uphill), As-Welded or PWHT Condition, Primarily Pipe Applications

Contains the essential welding variables for carbon steel in the thickness range of 1/8 through 3/4 inch, using manual shielded metal arc welding with E6010 (vertical uphill) followed by E7018 (vertical uphill). Cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joints designs for fillet and groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-1-202-96, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 3/4 inch Thick, E6010 (Vertical Downhill) followed by E7018 (Vertical Uphill), As-Welded Condition, Primarily Pipe Applications

Contains the essential welding variables for carbon steel in the thickness range of 1/8 through 3/4 inch, using manual shielded metal arc welding with E6010 (vertical downhill) followed by E7018 (vertical uphill). Cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-1-203-96, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 3/4 inch Thick, E6010 (Vertical Uphill), As-Welded Condition, Primarily Pipe Applications

Contains the essential welding variables for carbon steel in the thickness range of 1/8 through 3/4 inch, using manual shielded metal arc welding with E6010 (vertical uphill). Cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joints designs for fillet and groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-1-204-96, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 3/4 inch Thick, E6010 (Vertical Downhill Root with the Balance Vertical Uphill), As-Welded Condition, Primarily Pipe Applications

Contains the essential welding variables for carbon steel pipe welding using shielded metal arc welding process. The filler metal is E6010 (welded downhill for the root pass only.)

AWS B2.1-1-205-96, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, E6010 (Vertical Uphill), Followed by E7018 (Vertical Uphill), As-Welded or PWHT Condition, Primarily Pipe Applications

Contains the essential welding variables for carbon steel pipe welding using shielded metal arc welding process. The initial pass is with E6010 (vertical downhill) with the balance of passes E7018 with the vertical progression uphill.

AWS B2.1-1-206-96, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, E6010 (Vertical Downhill), Followed by E7018 (Vertical Uphill), As-Welded or PWHT Condition, Primarily Pipe Applications

Contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1 1/2 inch, using manual shielded metal arc welding with E6010 (vertical downhill) followed by E7018 (vertical uphill). Cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joints designs for fillet and groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-1-207-96, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, ER70S-2, As Welded or PWHT Condition, Primarily Pipe Applications

Contains essential welding variables for carbon steel in the thickness range of 1/8 through 1 1/2 inch, using manual gas tungsten arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-1-208-96, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, E7018, As-Welded or PWHT Condition, Primarily Pipe Applications

Contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1 1/2 inch, using manual shielded metal arc welding. Cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-1-209-96, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding Followed by Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, ER70S-2 and E7018, As-Welded or PWHT Condition, Primarily Pipe Applications

Contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1-1/2 inch, using manual gas tungsten arc welding followed by shielded metal arc welding. Cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-1-210:2001, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding with Consumable Inserts of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, INMs-1 and ER70S-2, As-Welded or PWHT Condition, Primarily Pipe Applications

Provides specific instructions for GTAW welding with a consumable insert root pass of carbon steel pipe.

AWS B2.1-1-211:2001, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding with Consumable Inserts Followed by Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2), 1/8 through 1-1/2 inch Thick, INMs-1, ER70S-2, and E7018, As-Welded or PWHT Condition, Primarily Pipe Applications

Provides specific instructions for GTAW welding with a consumable insert root pass of carbon steel pipe.

AWS B2.1-1/8-006-2002, Gas Metal Arc Welding of Carbon Steel to Austenitic Stainless Steel (M-1 to M-18, or P-8), 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding carbon steel to austenitic stainless steel in the thickness range of 18 gauge through 10 gauge, using semiautomatic gas metal arc welding (short circuiting transfer mode). It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-1/8-010-2002, Gas Tungsten Arc Welding of Carbon Steel to Austenitic Stainless Steel (M-1 to M-8 or P-8), 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding carbon steel to austenitic stainless steel in the thickness range of 18 gauge through 10 gauge, using manual gas tungsten arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-1/8-014-2002, Standard Welding Procedure Specification – Shielded Metal Arc Welding of Carbon Steel to Austenitic Stainless Steel (M-1 to M-8 or P-8), 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding carbon steel to austenitic stainless steel in the thickness range of 10 gauge through 18 gauge, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-1/8-227-2002, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding of Carbon Steel to Austenitic Stainless Steel (M-1/P-1/S-1 Groups 1 and 2 Welded to M-8/P-8/S-8, Group 1) 1/16 through 1-1/2 inch thick, ER309, As-Welded Condition, Primarily Pipe Applications

This standard contains the essential welding variables for carbon steel to austenitic stainless steel in the thickness range of 1/16 through 1-1/2 inch, using manual gas tungsten arc welding. It cites the base metals and operating conditions necessary to make the weldment. The filler metal specifications, and the allowable joint designs for groove and fillet welds. This SWPS was developed primarily for pipe applications.

AWS B2.1-1/8-228-2002, Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Carbon Steel to Austenitic Stainless Steel (M-1/P-1/S-1 Groups 1 and 2 Welded to M-8/P-8/S-8, Group 1) 1/8 through 1-1/2 inch thick, ER309-15, 16 or, 17, As-Welded Condition, Primarily Pipe Applications

This standard contains the essential welding variables for welding carbon steel to austenitic stainless steel in the thickness range of 1/8 through 1-1/2 inch, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment. The filler metal specifications, and the allowable joint designs for groove and fillet welds. This SWPS was developed primarily for pipe applications.

AWS B2.1-1/8-229-2002, Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding Followed by Carbon Steel to Austenitic Stainless Steel (M-1/P-1/S-1 Groups 1 and 2 Welded to M-8/P-8/S-8, Group 1) 1/8 through 1-1/2 inch thick, ER309 and E309-15, 16, or 17, As-Welded Condition, Primarily Pipe Applications

This standard contains the essential welding variables for welding carbon steel to austenitic stainless steel in the thickness range of 1/8 through 1-1/2 inch, using manual gas tungsten arc welding followed by shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment. The filler metal specifications, and the allowable joint designs for groove and fillet welds. This SWPS was developed primarily for pipe applications.

AWS B2.1-1/8-230-2002, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding, with Consumable Insert Root, of Carbon Steel to Austenitic Stainless Steel (M-1/P-1/S-1, Groups 1 and 2 Welded to M-8/P-8/S-8, Group 1) 1/16 through 1-1/2 inch thick, IN309 and ER309, As-Welded Condition, Primarily Pipe Applications

Contains the essential welding variables for welding carbon steel to austenitic stainless steel in the thickness range of 1/16 through 1-1/2 inch, using manual gas tungsten arc welding with consumable insert root. It cites the base metals and operating conditions necessary to make the weldment. The filler metal specifications, and the allowable joint designs for groove welds. This SWPS was developed primarily for pipe applications.

AWS B2.1-1/8-231-2002, Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding, with Consumable Insert Root, Followed by Shielded Metal Arc Welding of Carbon Steel to Austenitic Stainless Steel (M-1/P-1/S-1, Groups 1 and 2 Welded to M-8/P-8/S-8, Group 1) 1/8 through 1-1/2 inch thick, IN309, ER309, and E309-15, 16 or, 17, As-Welded Condition, Primarily Pipe Applications

This standard contains the essential welding variables for welding carbon steel to austenitic stainless steel in the thickness range of 1/8 through 1-1/2 inch, using manual gas tungsten arc welding with consumable insert root, followed by shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment. The filler metal specifications, and the allowable joint designs for groove welds. This SWPS was developed primarily for pipe applications.

AWS B2.1-2004, Specification for Welding Procedure and Performance Qualification

Provides rules for qualifying welding procedure specifications and for using Standard Welding Procedure Specifications. The standard also provides rules to qualify welders, and welding operators.

AWS B2.1-4-217-1999, Standard Welding Procedure Specification (WPS) Gas Tungsten Arc Welding of Chromium-Molybdenum Steel (M-4/P-4/S-4, Group 1 or 2) ER80S-B2, 1/8 through 1/2-in. Thick, As-Welded Condition or 1/8 through 3/4-in. Thick PWHT Condition, Primarily Pipe Applications

Contains the essential welding variables for chromium-molybdenum steel in the thickness range of 1/8 through 1/2 inch in the as-welded condition, or 1/8 through 3/4 inch in the PWHT condition using manual gas tungsten arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-4-218-1999, Standard Welding Procedure Specification (WPS) Shielded Metal Arc Welding of Chromium-Molybdenum Steel (M-4/P-4/S-4, Group 1 or 2) E8018-B2, 1/8 through 1/2 in. Thick, As-Welded Condition or 1/8 through 1-1/2 in. Thick PWHT Condition, Primarily Pipe Application

Contains the essential welding variables for chromium-molybdenum steel in the thickness range of 1/8 through 1/2 inch in the as-welded condition, or 1/8 through 1-1/2 inch in the PWHT condition, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications and the allowable joint designs for groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-4-219-1999, Standard Welding Procedure Specification (WPS) Gas Tungsten Arc Welding Followed by Shielded Metal Arc Welding of Chromium-Molybdenum Steel (M-4/P-4/S-4, Group 1 or 2) 1/8 through 1/2 in. thick, As-Welded Condition or 1/8 through 1-1/2 in. Thick PWHT Condition, Primarily Pipe Application

Contains the essential welding variables for chromium-molybdenum steel in the thickness range of 1/8 through 1/2 inch in the as-welded condition, or 1/8 through 1-1/2 inch in the PWHT condition, using manual gas tungsten arc welding followed by manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-4-220-1999, Standard Welding Procedure Specification (WPS) Gas Tungsten Arc Welding (Consumable Insert Root) of Chromium-Molybdenum Steel (M-4/P-4/S-4, Group 1 or 2) 1/8 through 1/2-in. Thick, As-Welded Condition or 1/8 through 3/4-in. Thick, PWHT Condition, Primarily Pipe Application

Contains the essential welding variables for chromium-molybdenum steel in the thickness range of 1/8 through 1/2 inch in the as-welded condition, or 1/8 through 3/4 inch in the PWHT condition, using manual gas tungsten arc welding with a consumable insert root. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-4-221-1999, Standard Welding Procedure Specification (WPS) Gas Tungsten Arc Welding (Consumable Insert Root) Followed by Shielded Metal Arc Welding of Chromium-Molybdenum Steel (M-4/P-4/S-4, Group 1 or 2) 1/8 through 1/2-in. Thick, As-Welded Condition or 1/8 through 1-1/2 in. Thick PWHT Condition, Primarily Pipe Application

Contains the essential welding variables for chromium-molybdenum steel in the thickness range of 1/8 through 1/2 inch in the as-welded condition, or 1/8 through 1-1/2 inch in the PWHT condition, using manual gas tungsten arc welding with a consumable insert root, followed by shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-5A-222-1999, Standard Welding Procedure Specification (WPS) Gas Tungsten Arc Welding of Chromium-Molybdenum Steel (M-5A or P-5A) ER90S-B3 1/8 through 1/2-in. Thick, As-Welded Condition or 1/8 through 3/4-in. Thick, PWHT Condition, Primarily Pipe Application

Contains the essential welding variables for chromium-molybdenum steel in the thickness range of 1/8 through 1/2 inch in the as-welded condition, or 1/8 through 3/4 inch in the PWHT condition, using manual gas tungsten arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-5A-223-1999, Standard Welding Procedure Specification (WPS) Shielded Metal Arc Welding of Chromium-Molybdenum Steel (M-5A or P-5A) ER9018-B3 1/8 through 1/2-in. Thick, As-Welded Condition or 1/8 through 1-1/2-in. Thick, PWHT Condition, Primarily Pipe Application

Contains the essential welding variables for chromium-molybdenum steel in the thickness range of 1/8 through 1/2 inch in the as-welded condition, or 1/8 through 1-1/2 inch in the PWHT condition, using manual gas shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-5A-224-1999, Standard Welding Procedure Specification (WPS) Gas Tungsten Arc Welding Followed by Shielded Metal Arc Welding of Chromium-Molybdenum Steel (M-5A or P-5A) 1/8 through 1/2-in. Thick As-Welded Condition, or 1/8 through 1-1/2-in. Thick PWHT Condition, ER90S-B3, ER9018-B3, Primarily Pipe Application

Contains the essential welding variables for chromium-molybdenum steel in the thickness range of 1/8 through 1/2 inch in the as-welded condition or 1/8 through 1-1/2 inch in the PWHT condition, using manual gas tungsten arc welding followed by manual shielded arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-5A-225-1999, Standard Welding Procedure Specification (WPS) Gas Tungsten Arc Welding (Consumable Insert Root) of Chromium-Molybdenum Steel (M-5A or P-5A) 1/8 through 1/2 in. thick, As-Welded Condition or 1/8 through 3/4 in. thick, PWHT Condition IN521, ER90S-B3, Primarily Pipe Application

Contains the essential welding variables for chromium-molybdenum steel in the thickness range of 1/8 through 1/2 inch in the as-welded condition, or 1/8 through 3/4 inch in the PWHT condition, using manual gas tungsten arc welding with a consumable insert root. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-5A-226-1999, Standard Welding Procedure Specification (WPS) Gas Tungsten Arc Welding (Consumable Insert Root) Followed by Shielded Metal Arc Welding of Chromium-Molybdenum Steel (M-5A or P-5A) 1/8 through 1/2-in. Thick As-Welded Condition, or 1/8 through 1-1/2 in. Thick PWHT Condition, IN521, ER90S-B3, Primarily Pipe Application

Contains the essential welding variables for chromium-molybdenum steel in the thickness range of 1/8 through 1/2 inch in the as-welded condition, or 1/8 through 1-1/2 inch in the PWHT condition, using manual gas tungsten arc welding with a consumable insert root followed by shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-8-005-2002, Gas Metal Arc Welding of Austenitic Stainless Steel (M-8 or P-8) 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding austenitic stainless steel in the thickness range of 18 gauge through 10 gauge, using semiautomatic gas metal arc welding (short circuiting transfer mode). It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-8-009-2002, Gas Tungsten Arc Welding of Stainless Steel (M-8 or P-8), 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding austenitic stainless steel in the thickness range of 18 gauge through 10 gauge, using manual gas tungsten arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-8-013-2002, Standard Welding Procedure Specification – Shielded Metal Arc Welding of Austenitic – Stainless Steel (M-8/P-8), 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for welding austenitic stainless steel in the thickness range of 18 gauge through 10 gauge, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.1-8-023-05, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Austenitic Stainless Steel (M-8/P-8/S-8, Group 1), 1/8 through 1-1/2 inch Thick, As-Welded Condition

This standard contains the essential welding variables for austenitic stainless steel in the thickness range of 1/8 through 1-1/2 inch, using manual shielded metal arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for plate and structural applications.

AWS B2.1-8-024:2001, Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding of Austenitic Stainless Steel (M-8/P-8/S-8, Group 1), 1/8 through 1-1/2 inch thick, As-Welded Condition

Provides specific instructions for GTAW welding with a consumable insert root pass of carbon steel pipe.

AWS B2.1-8-025:2001, Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding followed by Shielded Metal Arc Welding of Austenitic Stainless Steel (M-8/P-8/S-8, Group 1) 1/8 through 1-1/2 inch thick, As-Welded Condition

Provides specific instructions for GTAW welding with a consumable insert root pass of carbon steel pipe.

AWS B2.1-8-212:2001, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding of Austenitic Stainless Steel (M-8/P-8/S-8, Group), 1/8 through 1-1/2 inch Thick ERXX, As-Welded Condition, Primarily Pipe Applications

Provides specific instructions for GTAW welding with a consumable insert root pass of carbon steel pipe.

AWS B2.1-8-213-97, Standard Welding Procedure Specification (WPS) for Shielded Metal Arc Welding of Austenitic Stainless Steel (M-8/P-8/S-8, Group), 1/8 through 1-1/2 inch Thick E3XX-XX, As-Welded Condition, Primarily Pipe Applications

Contains the essential welding variables for austenitic stainless steel in the thickness range of 1/8 through 1-1/2 inch, using shielded metal arc welding. Cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for pipe applications.

AWS B2.1-8-214:2001, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding Followed by Shielded Metal Arc Welding of Austenitic Stainless Steel (M-8/P-8/S-8, Group), 1/8 through 1-1/2 Inch Thick ER3XX, E3XX-XX, As-Welded Condition, Primarily Pipe Applications

Provides specific instructions for GTAW welding with a consumable insert root pass of carbon steel pipe.

AWS B2.1-8-215:2001, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding, with Consumable Insert of Austenitic Stainless Steel (M-8/P-8/S-8, Group 1) 1/8 through 1-1/2 Inch Thick IN3XX and ER3XX, As-Welded Condition

Provides specific instructions for GTAW welding with a consumable insert root pass of carbon steel pipe.

AWS B2.1-8-216:2001, Standard Welding Procedure Specification (WPS) for Gas Tungsten Arc Welding, with Consumable Insert Followed by Shielded Metal Arc Welding of Austenitic Stainless Steel (M-8/P-8/S-8, Group 1) 1/8 through 1-1/2 inch Thick IN3XX, ER3XX, and E3XX-XX, As-Welded Condition

Provides specific instructions for GTAW welding with a consumable insert root pass of carbon steel pipe.

AWS B2.1.22-015-2002, Standard Welding Procedure Specification – Gas Tungsten Arc Welding of Aluminum (M-22 or P-22), 10 through 18 Gage, in the as-Welded Condition, with or without Backing

Contains the essential welding variables for aluminum in the thickness range of 10 gauge through 18 gauge, using manual gas tungsten arc welding. It cites the base metals and operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet welds and groove welds.

AWS B2.4-2006, Specification for Welding Procedure and Performance Qualification for Thermoplastics

This specification provides the requirements for qualification of welding procedure specifications, welders, and welding operators for manual, semi-automatic, mechanized, and automatic welding. The welding processes included are electrofusion, hot gas, socket fusion, butt contact fusion, infrared, extrusion welding and flow fusion welding. Base materials, filler materials, qualification variables, and testing requirements are also included.

AWS B4.0M-2000, Methods for Mechanical Testing of Welds

Describes mechanical test methods that are applicable to welds and welded joints. For each testing method, information is provided concerning applicable American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), and American Petroleum Institute (API) documents; the required testing apparatus, specimen preparation, procedure to be followed, and report requirements are also described.

AWS B5.1-2003, Specification for the Qualification of Welding Inspectors

Defines the qualification requirements to qualify welding inspectors. The qualification requirements for visual welding inspectors include experience, satisfactory completion of an examination, which includes demonstrated capabilities, and proof of visual acuity. The examination tests the inspector's knowledge of welding processes, welding procedures, nondestructive examinations, destructive tests, terms definitions, symbols, reports, welding metallurgy, related mathematics, safety, quality assurance and responsibility.

AWS B5.14-2002, Specification for the Qualification of Welding Sales Representatives

This specification defines the requirements for qualification of Welding Sales Representatives employed in the welding industry. The typical functions, required education and experience, examination requirements, requalification, and suggested reference material are defined herein.

AWS B5.15-2003, Specification for the Qualification of Radiographic Interpreters

Establishes the requirements for qualification of radiographic interpreters. It describes how these personnel shall be qualified, establishes training requirements, defines experience requirements, and establishes areas and levels of knowledge required to perform the functions related to radiographic interpretation.

AWS B5.16-2001, Specification for the Qualification of Welding Engineers

Establishes the requirements for qualification of Welding Engineers employed in the welding industry. The minimum experience, examination, application, qualification, and requalification requirements and methods are defined herein. This specification is a method for engineers to establish a record of their qualification and abilities in welding industry work such as development of procedures, processes controls, quality standards, problem solving, etc. This standard was first listed for public review in the September 24, 1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

AWS B5.17-2004, Specification for the Qualification of Welding Fabricators

Establishes the minimum requirements necessary to qualify as a Welding Fabricator. The qualification is determined based on an examination of the implementation of its quality control manual to verify compliance to the requirements defined in this specification. This document also defines the Welding Fabricator's functions and lists the minimum reference materials that the Welding Fabricator should possess.

AWS B5.2-2001, Specification for the Qualification of Welding Inspector Specialists and Welding Inspector Assistants

Defines the requirements and program for an employer (company) to qualify Welding Inspector Specialists and Welding Inspector Assistants to contract or industry-specific inspector standards. The qualification program is developed and controlled by an employer. The qualification requires documentation of experience, training, and satisfactory completion of an examination. The examination tests knowledge of welding processes, welding procedures, welder qualification, destructive testing, nondestructive testing, terms, definitions, symbols, reports, records, safety, and responsibility as specifically applied by the contract or industry standards applicable to the employer.

AWS B5.4-2005, Specification for the Qualification of Welder Test Facilities

Defines the requirements to qualify welder test facilities. It details the methods of qualification, test facility requirements, and the assessment requirements. A mandatory annex is included on the qualification of assessors.

AWS B5.5-2000, Specification for the Qualification of Welding Educators

Defines the requirements and program to qualify Welding Educators. The qualification of a Welding Educator is determined by a combination of education and experience, satisfactory demonstration of welding performance qualification tests, and written and practical examinations. The written examination demonstrates the educator's knowledge of welding processes, weld discontinuities, destructive and nondestructive test methods, safety, welding metallurgy, weld symbols, basic arithmetic, codes, and other standards. This is the second public review for this standard. It was first listed in the November 20, 1998 issue of Standards Action. It is being resubmitted due to substantive changes.

AWS B5.9-2000, Specification for the Qualification of Welding Supervisor

Describes the requirements for qualification as a Welding Supervisor. Requirements include education, experience, and a written examination. This standard also covers the levels of qualification and the job functions a qualified Welding Supervisor should be able to perform. Renewal of qualification based on continued experience is required after five years.

AWS C1.1M/C1.1-2000, Recommended Practices for Resistance Welding

Provides a collection of data and procedures that are intended to assist the user in setting up resistance welding equipment to produce resistance welded production parts.

AWS C1.4M/C1.4-2000, Specification for Resistance Welding of Carbon and Low-alloy Steels

Provides the minimum shear strength and weld button diameter requirements for carbon steel and low-alloy steel sheet resistance and projection welds. This standard is intended to replace MIL-W-12332A, Welding, Resistance, Spot, Seam and Projection, for Fabricating Assemblies of Low Carbon Steel; MIL-W-45223A, Welding, Spot, Hardenable Steel; and MIL-W-46154, Welding, Resistance, Spot and Projection for Fabricating Assemblies of Carbon Steel Sheets. For certain applications, MIL-W-6858 may take precedence over this standard.

AWS C1.5-2005, Specification for the Qualification of Resistance Welding Technician

This specification establishes the requirements for qualification of Resistance Welding Technicians employed in the welding industry. The minimum experience, examination, application, qualification, and requalification requirements and methods are defined herein. This specification is a method for technicians to establish a record of their qualification and abilities in welding industry work such as development of machine trouble shooting, processes controls, quality standards, problem solving, etc.

AWS C2.16-2002, Guide for Thermal Spray Operator Qualification

This guide contains recommendations for thermal-spray-operator qualification based on knowledge and skill testing. Twelve individual thermal-spray operator qualification tests (TSOQT) are included for engineering and corrosion control applications: one each for job knowledge, high velocity oxygen fuel (HVOF) spraying and flame spray-fusing, two for arc spraying, and three each for flame spraying and air-plasma spraying.

AWS C2.18-93 (R2000), Protection of Steel with Thermal Sprayed Coatings of Aluminum and Zinc and their Alloys and Composites

Presents an industrial process for the application of thermal spray coatings (TSC) on steel. It covers safety, job/contract description, background and requirements, selection of TSCs, TSC operator qualification, materials and equipment, application-process method with quality-control check points, Job Control Record, maintenance and repair of TSCs, records, debris containment and control, warranty.

AWS C2.20/C2.20M-2002, Specification for Thermal Spraying Zinc Anodes on Steel Reinforced Concrete

Specification for thermal spraying zinc anodes on steel reinforced concrete. This standard is formatted as an industrial process instruction. The scope includes: job description, safety, pass/fail job reference standards, feedstock materials, equipment, a step-by-step process instruction for surface preparation, thermal spraying, and quality control. There are two annexes: job control record, and portable adhesion testing.

AWS C2.21M/C2.21-2003, Specification for Thermal Spray Equipment Acceptance Inspection

This document specifies the thermal spray equipment acceptance requirements for plasma, arc-wire, flame-powder, -wire, -rod, and -cord, high velocity oxygen fuel (HVOF) equipment. Proof of suitability shall be provided by the equipment supplier. Inspection reports are provided in five mandatory annexes.

AWS C2.23/C2.23M-2003, Specification for the Application of Thermal Spray Coatings (Metallizing) of Aluminum, Zinc, and Their Alloys and Composites for the Corrosion Protection of Steel

Presents an industrial process for the application of thermal spray coating (TSC) on steel. It covers safety, job reference standards, equipment setup and preparation, surface preparation, Aluminum and Zinc Application and Sealer and Topcoat Application.

AWS C2.25/C2.25M-2002, Specification for Thermal Spray Feedstock - Solid and Composite Wire and Ceramic Rods

This specification provides the as-manufactured chemical composition classification requirements for solid and composite wires and ceramic rods for thermal spraying. Requirements for standard sizes, marking, manufacturing, and packaging are included.

AWS C3.2-2001, Method for Evaluating the Strength of Brazed Joints in Shear

Pertains to specimen preparation methods, brazing procedures, testing techniques, and methods for data analysis, which are detailed. A standardized single lap shear brazed specimen was developed as the result of inter-laboratory testing program. Additional test specimens have been added to obtain brazed strength data in butt tension, stress rupture, creep strength and four-point bending. Sample forms for recording data are presented. A graphical method of data presentation relates shear stress to overlap distance.

AWS C3.3/C3.3M-2002, Braze Components, Design, Manufacture, and Inspection of Critical

Lists the necessary steps to assure the suitability of braze components for critical applications. Although such applications vary widely, they have certain common considerations with respect to materials, design, manufacture, and inspection. It is the intent of this document to identify and explain these common considerations and the best techniques for dealing with them. It is beyond the scope of this document to provide specific details to these techniques, which the user must adapt to fit each particular application.

AWS C3.4-1999, Specification for Torch Brazing

Provides minimum fabrication, material, process procedure requirements, and inspection requirements for the torch brazing of steels, copper, copper alloys, and heat- and corrosion-resistant alloys and other materials that can be adequately torch brazed.

AWS C3.5-1999, Specification for Induction Brazing

Provides minimum fabrication, equipment, material, process procedure requirements, and inspection requirements for the induction brazing of steels, copper alloys, and heat- and corrosion-resistant alloys and other materials that can be adequately induction brazed.

AWS C3.6-1999, Specification for Furnace Brazing

Provides minimum fabrication, equipment, material, process procedure requirements, and inspection requirements for the furnace brazing of steels, copper, copper alloys, and heat- and corrosion-resistant alloys and other materials that can be adequately furnace brazed.

AWS C3.7M/C3.7-2005, Specification for Aluminum Brazing

This specification presents the minimum fabrication, equipment, material, process procedure and inspection requirements for the brazing of aluminum by all of the processes commonly used - atmosphere furnace, vacuum furnace, and flux processes. Its purpose is to standardize aluminum brazing requirements for all applications in which brazed aluminum joints of assured quality are required. It provides criteria for classifying aluminum brazed joints based on loading and the consequences of failure and quality assurance criteria defining the limits of acceptability of each class. The specification defines acceptable brazing equipment, materials and procedures, as well as the required inspection for each class of joint.

AWS C3.8M/C3.8-2005, Recommended Practices for the Ultrasonic Examination of Brazed Joints

This specification presents minimum fabrication, equipment, and process procedure requirements for the ultrasonic examination of brazed joints. Its purpose is to standardize brazed joint ultrasonic examination requirements for all applications in which brazed joints of assured quality are required. It provides minimum requirements for equipment, procedures, and the documentation of such tests.

AWS C4.2/C4.2M-2006, Recommended Practices for Safe Oxyfuel Gas Cutting Torch Operation

The new revised manual for oxyfuel gas cutting includes the latest procedures to be used in conjunction with oxyfuel gas cutting equipment. The manual also includes the latest safety recommendations. Complete lists of equipment are available from individual manufacturers.

AWS C4.3/C4.3M-2004, Recommended Practices for Safe Oxyfuel Gas Heating Torch Operation

The newly revised manual for oxyfuel gas heating torch operation includes the latest procedure to be used in conjunction with oxyfuel gas heating equipment. The manual also includes the latest safety requirements. Complete lists of equipment are available from individual manufactures.

AWS C4.4/C4.4M-2004, Recommended Practices for Heat Shaping and Straightening with Oxyfuel Gas Heating Torches

This Recommended Practices for Heat Shaping and Straightening covers the shaping of metal products by prudent use of heat to obtain a desired configuration. The text reviews the theory and analytical calculations that explain how heat shaping and straightening occurs. Sample calculations and tables are presented for typical materials. General heating patterns and heat shaping and straightening techniques are discussed. Specific heating applications are illustrated for various sections.

AWS C4.5M-2006, Uniform Designation System for Oxyfuel Nozzles

This document presents recommendations to oxyfuel welding, cutting, and heating/brazing torch nozzle manufacturers regarding the identification markings to be permanently applied to the torch nozzle to identify its intended application. The identification will provide information to improve the safe operation and application of nozzles by torch operators. This standard makes use of the International /System of Units (SI).

AWS C5.10/C5.10M-2003, Recommended Practices for Shielding Gases for Welding and Plasma Arc Cutting

Concerned with six industrial gases: argon (Ar), carbon dioxide (CO₂), helium (He), hydrogen (H₂), Nitrogen (N₂), and oxygen (O₂). Properties, uses, safe handling, distribution, mixtures and effects on arc characteristics and welds are presented for flux cored arc welding (FCAW), gas tungsten arc welding (GTAW), gas metal arc welding (GMAW), electrogas welding (EGW), plasma arc welding (PAW), plasma arc cutting (PAC), laser welding (LW) and laser cutting (LC). Gas purging, gas distribution and safety practices are also covered.

AWS C5.2-2001, Plasma-Arc Cutting, Recommended Practices for

Provides information regarding current practices for plasma arc cutting and gouging. The document explains the basic principles of operation, methods of operation, system components and their installation, optimization of cut quality, and cost considerations. Safety aspects associated with the process are also discussed.

AWS C5.3-2000, Recommended Practices for Air-Carbon-Arc Gouging and Cutting

Establishes a method of conveying to the welder/operator the proper setup and use of air carbon arc gouging and cutting. Instructions and procedures are supplied in detail so the welder/operator can establish the correct air pressure, amperage, voltage, and techniques. This standard was originally listed for public review in the June 20, 1997 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

AWS C5.5/C5.5M-2003, Recommended Practices for Gas-Tungsten-Arc Welding

This document is designed to assist anyone who is associated with gas tungsten arc welding (GTAW). This includes welders, welding technicians, welding engineers, quality control personnel, welding supervisors, purchasing personnel, educators, and students. This document discusses welding principles, equipment, gas shielding, and techniques for manual and automatic GTAW. Welding safety, trouble shooting, and related items are included for understanding by all types of personnel in establishing better production welding operations.

AWS C5.7-2000, Recommended Practices for Electrogas Welding

Provides recommended practices for electrogas welding low carbon and structural steels. Aluminum and stainless steel are excluded because of a lack of general commercial use of electrogas welding for these materials.

AWS C6.1-89 (R1998), Recommended Practices for Friction Welding

Describes friction welding fundamentals and basic equipment requirements. Suggested procedure qualification, inspection methods, and joint designs are detailed. Typical mechanical property data are referenced.

AWS C7.1M/C7.1-2004, Recommended Practices for Electron Beam Welding

This document presents recommended practices for electron beam welding. It is intended to cover common applications of the process. Processes definitions, safe practices, general process requirements, and inspection criteria are provided.

AWS C7.2-1998, Recommended Practices for Laser Beam Welding, Cutting, and Drilling

Presents recommended practices for laser beam welding, cutting, and drilling. Intended to cover common applications of the process. Process definitions, safe practices, general process requirements and inspection criteria are provided. This standard was first listed for public review in the February 28, 1997 issue of Standards Action. It is being resubmitted now due to substantive changes to the text.

AWS C7.3-1999 (R2003), Process Specification for Electron Beam Welding

This specification on electron beam welding discusses applicable specifications, safety, requirements, fabrication, quality examination, equipment calibration and maintenance, approval of work, and delivery of work.

AWS D1.1/D1.1M-2006, Structural Welding Code – Steel

This code covers the welding requirements for any type of welded structure made from the commonly used carbon and low-alloy constructional steels. Sections 1 through 8 constitute a body of rules for the regulation of welding in steel construction. There are twelve mandatory and fourteen nonmandatory annexes in this code. A Commentary of the code is included with the document.

AWS D1.2/D1.2M-2003, Structural Welding Code – Aluminum (includes ANSI/AWS D1.2A-83, Commentary)

This code covers the welding requirements for any type structure made from aluminum structural alloys, except for aluminum pressure vessels and fluid-carrying pipe lines. Sections 1 through 7 constitute a body of rules for the regulation of welding in aluminum construction. This edition has been reorganized extensively for the 1997 edition. A commentary on the code is also included with the document.

AWS D1.3-1998, Structural Welding Code – Sheet Steel

Covers the requirements associated with welding sheet steel having a minimum specified yield point no greater than 80 000 psi. The Code requirements cover any welded joint made from the commonly used structural quality low carbon hot rolled sheet and strip steel with or without zinc coating (galvanized).

AWS D1.4/D1.4M-2005, Structural Welding Code – Reinforcing Steel

This code covers the requirements for welding reinforcing steel in most reinforced concrete applications. It contains a body of rules for the regulations of welding reinforcing steel and provides suitable acceptance criteria for such welds.

AWS D1.5-2002, Bridge Welding Code

Covers the welding requirements for AASHTO welded highway bridges made from carbon and low-alloy constructional steels. This 2001 edition contains dimensions in metric SI Units and U.S. Customary Units. Sections 1 through 7 constitute a body of rules for the regulation of welding in steel construction. Section 9 of the previous edition has had its provisions distributed throughout the 2001 edition. Sections 8, 10, and 11 do not contain provisions, as their analogue D1.1 sections are not applicable to the D1.5 Code. Section 12 contains the requirements for fabricating fracture critical members.

AWS D1.6-1999, Structural Welding Code - Stainless Steel

Covers the requirements for welding nonpressure vessel or piping stainless steel assemblies.

AWS D1.8/D1.8M-2005, Structural Welding Code - Seismic Supplement

This code supplements the requirements of AWS D1.1, Structural Welding Code - Steel. This code is intended to be applicable to welded joints in seismic load resisting systems designed in accordance with the AISC Seismic Provisions. Sections 1-5 constitute a body of rules for the regulation of welding in seismic load resisting systems. There are seven mandatory annexes in this code. A commentary of the code is included with the document.

AWS D10.10-1999, Recommended Practices for Local Heating of Welds in Piping and Tubing

Provides information on equipment, temperature control, insulation, and advantages and disadvantages for the methods presently available for local heat treating of welded joints in pipe and tubing.

AWS D10.12M/D10.12-2000, Guide for Welding Mild Steel Pipe

Presents recommended practices for welding low-carbon steel pipe. It is intended to cover piping systems such as for low-pressure heating, air-conditioning, refrigeration, water supplies, as well as some gas or chemical systems. It provides welding techniques for oxyacetylene shielded metal arc and gas metal arc welding. This document does not address the needs of pipe steels or service conditions which may require postweld heat treatment.

AWS D10.13/D10.13M-2001, Recommended Practices for the Brazing of Copper Pipe and Tubing for Medical Gas Systems

Provides the minimum requirements for brazing of copper tubing for use in medical gas distribution systems and also contains criteria for cleanliness, fabrication, and installation and various inspection and testing options.

AWS D10.4-86 (R2000), Welding Austenitic Chromium-Nickel Stainless Steel Piping and Tubing, Recommended Practices for

Presents a detailed discussion of the metallurgical characteristics and weldability of many grades of austenitic stainless steel used in piping and tubing. The delta ferrite content as expressed by ferrite number (FN) is explained, and its importance in minimizing hot cracking is discussed.

A number of Figures and Tables illustrate recommended joint designs and procedures. Appendix A presents information on the welding of high-carbon stainless steel cast pipe fittings.

AWS D10.6-2000, Gas Tungsten Arc Welding of Titanium Piping and Tubing, Recommended Practice for

Summarizes information on the welding of titanium. Explains the special precautions necessary to shield the molten and hot metal from atmospheric contamination. Various methods of checking weld quality are also presented.

AWS D10.7M/D10.7-2000, Gas Shielded Arc Welding of Aluminum and Aluminum Alloy Pipe, Recommended Practices for

Presents information concerning those properties of aluminum that affect its weldability and that cause specific problems in the fabrication of aluminum pipe. Recommendations are made for solving these problems and suggested procedures are presented for welding aluminum pipe joints with the Gas Tungsten Arc and Gas Metal Arc Welding Processes.

AWS D10.8-1996, Piping and Tubing, Welding of Chromium-Molybdenum Steel Piping and Tubing

Presents recommendations for welding chromium-molybdenum steel pipe and tubing to itself and to various other materials. Subjects covered in detail are filler metal selection, joint design, preheating, and postheating. Particular emphasis is placed on the importance of maintaining interpass temperature and dangers inherent in interrupted heating cycles.

AWS D14.1/D14.1M-2005, Specification for Welding of Industrial and Mill Cranes and Other Material Handling Equipment

Requirements are presented for the design and fabrication of constructional steel weldments that are used in industrial and mill cranes, lifting devices and other material handling equipment. Requirements are also included for modification, weld repair and postweld treatments of new and existing weldments. Filler metal and welding procedure guidelines are recommended for the applicable base metals, which are limited to carbon and low-alloy steels. Allowable unit stresses are provided for weld metal and base metal for various cyclically loaded joint designs.

AWS D14.3/D14.3M-2005, Specification for Welding, Earthmoving, Construction, and Agricultural Equipment

This specification provides standards for producing structural welds used in the manufacture of earthmoving, construction, and agricultural equipment. Such equipment is defined as self-propelled, on and off-highway machinery and associated implements. Manufacturer's responsibilities are presented as they relate to the welding practices that have been proven successful within the industry in the production of weldments on this equipment. Basic dimensional weld details are defined and interpreted for application throughout the document. Provisions are made to identify base metals used in these weldments. Procedures to assure they are welded with compatible, identifiable welding processes and consumables are included with consideration given to factors that affect weldability.

AWS D14.4/D14.4M-200x, Specification for Welded Joints in Machinery and Equipment

This specification establishes common acceptance criteria for classifying and applying carbon and low-alloy steel welded joints used in the manufacture of machines and equipment. It also covers weld joint design, workmanship, quality control requirements and procedures, welding operator and welding procedure qualification, weld joint inspection (visual, radiographic, ultrasonic, magnetic particle, liquid penetrant), repair of weld defects, and heat treatment.

AWS D14.5-1997, Specification for Welding of Presses and Press Components

Presents requirements for the design and fabrication of cyclically loaded press weldments, which includes the weld repair of new and existing components. Filler metals and weld procedure specifications are recommended for the applicable base metals that are limited to those consisting of carbon and low-alloy steels. Allowable unit stresses are provided for weld metal and base metal for various cyclically loaded joint designs.

AWS D14.6-2004, Specification for Welding of Rotating Elements of Equipment

Establishes material and workmanship standards for manufacturers, fabricators, repair organizations, purchasers, and owner/operators of rotating equipment which are fabricated or repaired by welding. Included are sections defining process qualifications, operator qualifications, quality control, inspection requirements, and repair requirements.

AWS D14.7/D14.7M-2005, Recommended Practices for Surfacing and Reconditioning of Industrial Mill Rolls

This standard provides guidance, based upon experience, for preparing, building up and overlaying by welding, postweld heat treating, finish machining, inspecting, and record keeping of new and reconditioned industrial mill rolls used in the primary metal-working industry.

AWS D15.1-2001, Railroad Welding Specification – Cars and Locomotives

Establishes minimum standards for the manufacture and maintenance of railroad equipment. Part I covers the general requirements for welding in the railroad industry. Part II covers specific requirements for the welding of base metals thinner than 1/8 in. (3.2 mm).

AWS D15.2-2003, Recommended Practices for the Welding of Rails and Related Rail Components for Use by Rail Vehicles

This document recommends minimum standards for the maintenance welding of rails and related rail components used by rail vehicles. Repair procedures for rails and austenitic manganese steel components are covered. Thermite welding and electric flash butt welding guidelines are discussed. Procedure qualification, welder qualification, and general welding safety procedures are addressed.

AWS D16.1M/D16-2004, Specification for Robotic Arc Welding Safety

Establishes safety requirements with respect to the design, manufacture, maintenance, and operation of arc welding robot systems and ancillary equipment. It also helps to identify and minimize hazards involved in maintaining, operating, and setting up of arc welding robot systems.

AWS D16.2/D16.2M-2001, Components of Robotic and Automatic Welding

Provides performance recommendations for evaluating components of a typical robotic or automatic welding installation. Emphasis is placed on the role of the welding interface. A pin arrangement and specific pin function for each location in a standardized 37-pin connector are proposed.

AWS D16.3-2001, Risk Assessment Guide for Robotic Welding

Provides recommendations and guidelines for the safe application of robotic arc welding. Emphasis is placed on conformance of this process with prevailing industry standards for hazard analysis and proper safeguarding. This is the second public review for this standard. It was originally listed for public review in the March 13, 1998 issue of Standards Action. It is being resubmitted due to substantive changes in the text.

AWS D16.4M/D16.4-2005, Specification for the Qualification of Robotic Arc Welding Personnel

This specification provides requirements for the qualification of robotic arc welding support personnel at three different levels - CRAW-L1, CRAW-O, and CRAW-T. The revisions in this edition align education and experience requirements more realistically with those in industry.

AWS D17.1-2001, Specification for Fusion Welding for Aerospace Applications

Provides the general welding requirements for welding aircraft and space hardware. It includes but is not limited to the fusion welding of aluminum-based, nickel-based, iron-based, cobalt-based, magnesium-based, and titanium-based alloys using electric arc and high energy beam processes. There are requirements for welding design, personnel and procedure qualification, inspection, and acceptance criteria for aerospace, support and nonflight hardware. Additional requirements cover repair welding of existing hardware. A commentary for the specification is included.

AWS D18.1-1999, Specification for Welding of Austenitic Stainless Steel Tube and Pipe Systems in Sanitary (Hygienic) Applications

Provides the requirements for welds in tubing systems in dairy and other food processing plants. The document addresses qualifications, fabrication, extent of visual examination, acceptance criteria, and documentation requirements. This is the second public review for this standard. It was originally listed for public review in the May 22, 1998 issue of Standards Action. It is being resubmitted due to substantive changes in the text.

AWS D18.2-1999, Guide to Weld Discoloration Levels on Inside of Austenitic Stainless Steel Tube

Provides a visual comparison guide that can be used to specify surface discoloration criteria for sanitary (hygienic) welds in austenitic stainless steel tube.

AWS D18.3/D18.3M-2005, Specification for Welding of Tanks, Vessels, and Other Equipment in Sanitary (Hygienic) Applications

This specification provides the requirements for welding of tanks, vessels, and other equipment used in food processing plants and other areas where sanitary (hygienic) applications are required. The document addresses qualification, fabrication, extent of visual examination, acceptance criteria, and documentation requirements.

AWS D3.5-93 (R2000), Steel Hull Welding, Guide for

This Guide discusses shipyard practices for steel hull construction. It includes steel products used, erection, and fitting practices, and qualification of welding procedures and personnel. Safety and health of yard workers is also included.

AWS D3.6M-99, Underwater Welding

Covers underwater welding in both dry and wet environments. Operations required at the surface related to and in support of underwater welding are within the scope of this document, but welding above the surface is not. All provisions of this document apply equally to new construction and to modification and repair of existing structures underwater. This standard was first listed for public review in the May 8, 1998 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

AWS D3.7-2004, Guide for Aluminum Hull Welding

Provides information on the welding of sea going aluminum hulls and other structures in marine construction. Included are sections on hull materials, construction preparation, welding equipment and processes, qualification requirements, welding techniques, and safety precautions.

AWS D8.14-2000, Specification for Automotive Components Weld Quality - Aluminum Arc Welding

Defines the practical tolerances and requirements needed to achieve satisfactory weld quality when dealing with the production volumes associated with automotive structural parts made of aluminum. Gaps in the weld joints have a significant effect on structural performance and weld quality. Automatic and robotic arc welding requires specified part fit-up in the weld joints for consistent weld quality. Therefore, metal stampings and press-formed parts must be made to produce weld joint fits within the ranges allowed by this specification.

AWS D8.6/D8.6M-2005, Specification for Automatic Resistance Spot Welding Electrodes

This standard outlines the requirements for Resistance welding electrodes relating to the Automotive welding industry.

AWS D8.7-2004, Recommended Practice for Automotiv Weld Quality – Resistance Spot Welding

This document presents recommended practices and criteria for evaluating resistance spot welds typical of automotive sheet steel applications. The document contains weld characteristics, metrics, and testing methods useful in evaluation spot welding quality on coated and uncoated automotive sheet steels of all strength levels and compositions. The test methods described are designed to assess both static and dynamic properties of automotive sheet steel welds.

AWS D8.8-97, Specification for Automotive Frame Weld Quality - Arc Welding

Defines practical tolerances needed to achieve satisfactory weld quality when dealing with the production volumes associated with automotive structural parts.

AWS D8.9-2002, Recommended Practices for Test Methods for Evaluating the Resistance Spot Welding Behavior of Automotive Sheet Steel Materials

Presents recommended practices for evaluating the resistance spot welding behavior of automotive sheet steels. The document contains a number of tests and test methods useful in determining the spot welding performance of coated and uncoated automotive sheet steels of all strength levels and compositions. The test methods are designed to assess current range, electrode endurance, and weld properties of automotive sheet steels. The weld property tests include tests for hold time sensitivity, weld hardness, shear-tension strength, and cross-tension strength. The document and the test methods, parameters, and test criteria it contains are designed exclusively for laboratory testing and are not intended as recommended practices or standards for manufacturing operations.

AWS D9.1M/D9.1-2000, Sheet Metal Welding Code

Covers the arc and braze welding requirements for nonstructural sheet metal fabrications using the commonly welded metals available in sheet form. Requirements and limitations governing procedure and performance qualification are presented, and workmanship and inspection standards are supplied. The nonmandatory annexes provide useful information on materials and processes. This standard was originally listed for public review in the September 25, 1998 and the September 10, 1999 issues of Standard Action. It is being resubmitted due to substantive changes to the text.

AWS F1.1-1999, Method for Sampling Airborne Particulates Generated by Welding and Allied Processes

Aids the reader in the proper technique for sampling welding fume in the workplace. Emphasis is placed on positioning the sampling device and calibration of the equipment.

AWS F1.2-1999, Laboratory Method for Measuring Fume Generation Rates and Total Fume Emission of Welding and Allied Processes

Outlines a laboratory method for the determination of fume generation rates and total fume emission. A test chamber is used to collect representative samples under carefully controlled conditions.

AWS F1.3-1999, A Sample Strategy Guide for Evaluating Contaminants in the Welding Environment

Provides advice on contaminants that may be present in the welding environment, and presents a strategy for collecting valid samples from the welder's breathing zone. Recommendations for fume analysis for various elements found in AWS filler metal specifications are presented in a table. A checklist to use in observing the workplace is provided in Annex B.

AWS F1.5M-2003, Sampling and Analyzing Gases from Welding and Allied Processes, Methods for

This standard contains recommended sampling methods and analytical techniques for ozone, carbon monoxide, nitric oxide, nitrogen dioxide, and gaseous fluoride in welding environments. It complements AWS F1.1, Methods for Sampling Airborne Particulates Generated by Welding and Allied Processes.

AWS F1.6-2003, Guide for Estimating Welding Emissions from EPA and Ventilation Permit Reporting

This document assists companies in estimating emissions from welding processes for EPA reporting purposes in a concise, easily understandable guide.

AWS F2.2-2001, Lens Shade Selector

Provides a chart that lists the minimum suggested protective lens shades and suggested comfort lens shades for a variety of commonly used welding and cutting processes.

AWS F2.3M-2001, Specification for Use and Performance of Transparent Welding Curtains and Screens

Informs the reader of reasonable and adequate means, ways, and methods for the testing, selection, and safe use of transparent welding curtains and screens. These devices are designed to provide outside viewers, at some distance from the welding arc or operation, a safe view of the operation and operator.

AWS F3.2M/F3.2-2001, Ventilation Guide for Weld Fume

Introduces the reader to various types of ventilation systems, including general supply and exhaust and local exhaust, for control of welding fumes. It contains or refers to information on air contaminants found in the welding fumes, principles of systems design and selection, and drawings that illustrate ventilation techniques. This standard was listed for public review in the 11/5/1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

AWS F4.1-1999, Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping

Informs the reader of the necessary safe practices to be followed in the cleaning and preparation for welding or cutting of containers and piping. It describes various methods for cleaning, including water, steam, hot chemical and mechanical, and techniques to be used for their proper preparation, such as inerting.

AWS F6.1-1978 (R1989), Method for Sound Level Measurement of Manual Arc Welding and Cutting Processes

Describes the equipment and procedure to be used in measuring sound levels of manual arc welding processes. It allows the user to measure sound levels in a reproducible manner that permits comparison with other processes.

AWS G1.10M-2001, Guide for the Evaluation of Hot Gas, Hot Gas Extrusion, and Heated Tool Butt Thermoplastic Welds

Lists and describes faults in hot gas, hot gas extrusion, and heated tool butt welded joints in thermoplastics. Its intent is to make possible a generally valid evaluation giving consideration to graded quality requirements. This standard encompasses the classification, requirements, testing, evaluation, and acceptance of the welds. Details in recording engineering data are described. Tables illustrating cracks, cavities, solid inclusions, lack of fusion, defects of shape, and other defects in thermoplastic welds are included. Fault features with descriptions and illustrations are compiled into tables to aid in the evaluation of welds. This standard was originally listed in the September 10, 1999 issue of Standards Action. It is being resubmitted due to substantive changes.

AWS G1.2M/G1.2-1999, Specification for Standardized Ultrasonic Welding Test Specimens for Thermoplastics

Outlines the requirements for a standard ultrasonic welding test sample for thermoplastics and its welding and testing. As used in this specification, the word "shall" denotes a requirement; the word "should" denotes a guideline or recommendation; and the word "may" denotes a choice. This standard was first listed in the April 9, 1999 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

AWS G2.1M/G2.1-2002, Guide for the Joining of Wrought Nickel-Base Alloys

Describes the welding of different wrought nickel alloys, including solid solution and precipitation hardening alloys. A safety section is included.

AWS QC1-96, AWS Certification of Welding Inspectors

Defines the requirements and program for the AWS to certify welding inspectors. The certification of visual welding inspector requires documentation of experience and tests the inspector's knowledge of welding processes, welding procedures, destructive tests, terms, and definitions, symbols, reports, safety, and responsibilities.

AWWA (American Water Works Association)

ANSI/AWWA A100-1997, Water Wells

Covers the minimum requirements for vertical water supply wells.

ANSI/AWWA B100-2001, Filtering Material

Covers gravel, silica sand, high-density media, anthracite filter materials, and the placement of the materials in filters for water supply service application. ANSI/AWWA B604, Standard for Granular Activated Carbon, addresses use of GAC as a filter medium and as an adsorbent.

ANSI/AWWA B101-2001, Precoat Filter Media

Covers diatomaceous earth (DE), perlite, and other disposable filter materials used to precoat filters for water supply service application.

ANSI/AWWA B101a-2001, Precoat Filter Media

This standard covers diatomaceous earth (DE), perlite, and other disposable filter materials used to precoat filters for water supply service application.

ANSI/AWWA B102-2004, Manganese Greensand for Filters

Describes manganese greensand used in pressure and gravity filters to remove dissolved iron, manganese, radium, arsenic and hydrogen sulfide. It discusses the placement, handling, preparation and regeneration of manganese greensand media. Although manganese greensand filters frequently employ gravel and anthracite filter materials, they have been omitted from this standard with reference to the document ANSI/AWWA B100, Standard for Filtering Material, which covers these material in detail.

ANSI/AWWA B200-2003, Water Treatment – Sodium Chloride

This standard covers sodium chloride in the form of rock, vacuum-granulated, compressed vacuum-granulated, solar, or compressed solar salt for use in the recharging of cation-exchange materials in water supply service for softening municipal and industrial water supplies.

ANSI/AWWA B201-2003, Soda Ash

This standard describes soda ash for use in the treatment of municipal and industrial water supplies.

ANSI/AWWA B201a-1997, Soda Ash

Replaces Section III, Acceptance, with the revised/approved wording in accordance with ANSI/NSF 60 (61).

ANSI/AWWA B202-2002, Water Treatment – Quicklime and Hydrated Lime

This standard covers copper sulfate for use in the treatment of municipal and industrial water supplies.

ANSI/AWWA B300-2004, Hypochlorites

Describes chlorinated lime, calcium hypochlorite, and sodium hypochlorite for use in the treatment of municipal and industrial water supplies.

ANSI/AWWA B300a-1999, Addendum to B300-92, Standard for Hypochlorites

Replaces Section III, Acceptance, with the revised/approved wording in accordance with ANSI/NSF 60 (61).

ANSI/AWWA B301-2004, Liquid Chlorine

Describes liquid chlorine for use in the treatment of potable and industrial water supplies.

ANSI/AWWA B302-2005, Ammonium Sulfate

This standard describes ammonium sulfate for use in water supply service.

ANSI/AWWA B303-2005, Sodium Chlorite

This standard describes sodium chlorite, in either solid (granular, flake, or powdered) or aqueous-solution form, for use in making chlorine dioxide for use in water supply service. Sodium chlorite must be packaged, labeled, and registered according to the Federal Insecticide, Fungicide, and Rodenticide Act as administered by the US Environmental Protection Agency (USEPA).

ANSI/AWWA B304-2005, Liquid Oxygen for Ozone Generation

This standard describes liquid oxygen (LOX) for use in the generation of ozone for water treatment purposes.

ANSI/AWWA B402-2000, Water Treatment – Ferrous Sulfate

Covers ferrous sulfate in moist, dried and solution (liquid) forms, for water supply service application.

ANSI/AWWA B403-2003, Aluminum Sulfate – Liquid, Ground, or Lump

This standard describes purified aluminum sulfate in liquid, ground, or lump form for use in water treatment.

ANSI/AWWA B403a-1997, Aluminum Sulfate – Liquid, Ground, or Lump

Replaces Section I.C, Acceptance, with the revised/approved wording in accordance with ANSI/NSF 60 (61).

ANSI/AWWA B404-2003, Liquid Sodium Silicate

This standard describes liquid sodium silicate used in the preparation of activated silica, which is used as a coagulant aid for the treatment of municipal and industrial water supplies for (1) the control of corrosion, and (2) stabilization of iron and manganese in water systems.

ANSI/AWWA B405-2000, Sodium Aluminate

Covers sodium aluminate in both liquid and solid form for use in water supply service. Sodium aluminate, as covered by this standard, is a combination of sodium oxide and aluminum oxide with sufficient excess causticity (sodium oxide) for stabilization.

ANSI/AWWA B406-2006, Ferric Sulfate

This standard describes dry form ferric sulfate and liquid ferric sulfate for use in water treatment.

ANSI/AWWA B407-2005, Liquid Ferric Chloride

Describes ferric chloride in aqueous (liquid) form for use in the treatment of municipal and industrial water supplies. Applications of the chemical include (1) water softening with lime or a combination of lime and soda ash to improve hardness reduction and coagulation, and (2) water clarification, as a coagulant, followed by settling or filtration.

ANSI/AWWA B407a-1996, Standard for Liquid Ferric Chloride

Adds additional sections at the end of Section 5: Verification, regarding Iron Alternative Method, Ferrous Iron Alternative Method and Ferric Iron Alternative Method.

ANSI/AWWA B408-2003, Liquid Polyaluminum Chloride

Describes polyaluminum chloride (PACl) in aqueous (liquid) form for use in water supply service.

ANSI/AWWA B408a-1997, Liquid Polyaluminum Chloride

Replaces Section I.C, Acceptance, with the revised/approved wording in accordance with ANSI/NSF 60 (61).

ANSI/AWWA B451-2004, Poly(Diallyldimethylammonium Chloride)

This standard describes poly(diallyldimethylammonium chloride) for use in water supply service applications.

ANSI/AWWA B452-1998, EPI-DMA Polyamines

Covers epichlorohydrin dimethylamine (EPI-DMA) polyamines for use in the treatment of potable water supplies.

ANSI/AWWA B453-2001, Polyacrylamide

Covers polyacrylamide (PAM) for use in water supply service.

ANSI/AWWA B453a-1997, Polyacrylamide

Replaces Section I.C, Acceptance, with the revised/approved wording in accordance with ANSI/NSF 60 (61).

ANSI/AWWA B501-2003, Sodium Hydroxide (Caustic Soda)

This standard describes sodium hydroxide, anhydrous and liquid, for use in the treatment of municipal and industrial water supplies.

ANSI/AWWA B501a-1997, Sodium Hydroxide

Replaces Section I.C, Acceptance, with the revised/approved wording in accordance with ANSI/NSF 60 (61).

ANSI/AWWA B502-2005, Water Treatment – Sodium Polyphosphate, Glassy (Sodium Hexametaphosphate)

This standard describes sodium polyphosphate, glassy, for use in water supply service. This material is also known as sodium hexametaphosphate, sodium tetrapolyphosphate, and Graham's salt.

ANSI/AWWA B503-2005, Sodium Tripolyphosphate (Includes addendum B503a-97)

This standard describes sodium tripolyphosphate for use in water supply service.

ANSI/AWWA B504-2005, Monosodium Phosphate, Anhydrous (Includes addendum B504a-97)

This standard describes monosodium phosphate, anhydrous, for water supply service. The product described is an orthophosphate used as formulated and in blends to inhibit corrosion of potable water conveyance systems. The product described by this standard is also known as sodium phosphate, monobasic, anhydrous.

ANSI/AWWA B505-2005, Disodium Phosphate, Anhydrous (Includes addendum B505a-97)

This standard describes disodium phosphate, anhydrous, for water supply service. The product described is an orthophosphate used, as formulated and in blends, to inhibit corrosion of potable water conveyance systems. The product described by this standard is also known as sodium phosphate, dibasic, anhydrous.

ANSI/AWWA B510-2000, Carbon Dioxide

Covers carbon dioxide for use in recarbonation and pH adjustment in water supply service.

ANSI/AWWA B510a-1997, Carbon Dioxide

Replaces Section I.C, Acceptance, with the revised/approved wording in accordance with ANSI/NSF 60 (61).

ANSI/AWWA B511-2005, Potassium Hydroxide

This standard describes the use of potassium hydroxide (KOH), dry and liquid, for water supply service application.

ANSI/AWWA B512-2002, Sulfur Dioxide

This standard covers sulfur dioxide, a compressed, nonflammable liquified gas, for use in the treatment of municipal and industrial water supplies to remove excess residual chlorine.

ANSI/AWWA B512a-1997, Sulfur Dioxide

Replaces Section VI, Acceptance, with the revised/approved wording in accordance with ANSI/NSF 60 (61).

ANSI/AWWA B550-2005, Calcium Chloride

This standard describes calcium chloride (CaCl₂), in the form of powder, pellet, granule, flake, or briquette for use in water supply treatment.

ANSI/AWWA B600-2005, Powdered Activated Carbon

This standard covers powdered activated carbon for use in adsorption of impurities for water supply service applications.

ANSI/AWWA B601-2005, Sodium Meta bisulfite

This standard describes the use of sodium metabisulfite (NA₂S₂O₅) in the treatment of municipal and industrial water supplies.

ANSI/AWWA B602-2002, Copper Sulfate

This standard covers copper sulfate for use in the treatment of municipal and industrial water supplies.

ANSI/AWWA B602a-1997, Copper Sulfate

Replaces Section III, Acceptance, with the revised/approved wording in accordance with ANSI/NSF 60 (61).

ANSI/AWWA B603-2003, Potassium Permanganate

This standard describes both dry potassium permanganate (KMnO₄) crystals, CAS No. 7722-64-7, as well as liquid sodium permanganate (NaMnO₄) solutions, CAS No. 10101-5-5, for water supply service applications.

ANSI/AWWA B604-2005, Granular Activated Carbon

This standard describes virgin granular and extruded activated carbons for use as a filter medium and adsorbent in water treatment. It involves the selection, placement, and use of granular activated carbon (GAC) in filter-adsorbers where the GAC must function as both a filter medium and adsorbent, as well as those systems where the primary function is adsorption.

ANSI/AWWA B605-1999, Reactivation of Granular Activated Carbon

Covers the procurement of GAC reactivation services and the use of reactivated GAC used for water treatment.

ANSI/AWWA B701-2006, Sodium Fluoride

This standard describes sodium fluoride (NaF), coarse crystalline grade, for water supply service application.

ANSI/AWWA B702-2006, Sodium Fluorosilicate

This standard describes sodium fluorosilicate (Na₂SiF₆) for water supply service application.

ANSI/AWWA B703-2006, Fluorosilicic Acid

This standard describes fluorosilicic acid (H₂SiF₆) for water supply service application.

ANSI/AWWA C104/A21.4-2004, Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water

This standard cover shop-applied, cement-mortar linings specified in the ANSI/AWWA C100/A21 series of standards for ductile-iron pipe and ductile-iron and gray-iron fittings for water and is intended to be used as a supplement to those standards.

ANSI/AWWA C105/A21.5-2005, Polyethylene Encasement for Ductile-Iron Pipe Systems

This standard covers materials and installation procedures for polyethylene encasement to be applied to underground installations of ductile-iron pipe. This standard also may be used for polyethylene encasement of fittings, valves, and other appurtenances to ductile-iron pipe systems.

ANSI/AWWA C110/A21.10-2003, Ductile-Iron and Gray-Iron Fittings, 3 in through 48 in (75 mm through 1200 mm), for Water and Other Liquids

This standard covers 3- to 48-in. (76- to 1,219-mm) gray-iron and/or ductile-iron fittings to be used with ductile-iron pipe for water. Requirements for fittings with mechanical joints and flanged joints are listed in Table 1 through 20 at the end of this standard.

ANSI/AWWA C111/A21.11-2000, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings

Covers rubber-gasket joints of the following types for ductile-iron pressure pipe and ductile-iron and gray-iron fittings, valves, hydrants, and other appurtenances for water supply service.

ANSI/AWWA C115/A21.15-2005, Flanged Ductile-Iron Pipe With Ductile-Iron or Gray-Iron Threaded Flanges

This standard describes 3-in. through 64-in. flanged ductile-iron pipe with ductile-iron or gray-iron threaded flanges for water supply service. Flanged pipe and flanges are rated for a maximum working pressure of 250 psi (1,720 kPa). However, 24-in. and smaller flanged joints with ductile-iron flanges may be rated for a maximum working pressure of 350 psi (2,413 kPa) as noted in the footnote of Table 1.

ANSI/AWWA C116/A21.16-2003, Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings for Water Supply Service

This standard covers protective fusion-bonded epoxy coatings for the interior and exterior surfaces of ductile-iron and gray-iron fittings used for water supply service. The standard covers the material, application, and performance requirements for these coatings.

ANSI/AWWA C150/A21.50-2002, Thickness Design of Ductile-Iron Pipe

This standard covers the thickness design of ductile-iron pipe complying with the requirements of ANSI/AWWA C151/A21.51, Ductile-Iron Pipe, Centrifugally Cast, for water.

ANSI/AWWA C151/A21.51-2002, Ductile-Iron Pipe, Centrifugally Cast, for Water

This standard covers 3-in. through 64-in. ductile-iron pipe, centrifugally cast, for water, with push-on joints or mechanical joints. Requirements for pipe covered by this standard are discussed in the text and are shown in Tables 1 through 7 and Figures 1, 2, and 3. This standard may be used for pipe with such other types of joints as may be agreed on at the time of purchase.

ANSI/AWWA C153/A21.53-2000, Ductile-Iron Compact Fittings, 3 in. through 24 in. (76 mm Through 610 mm) and 54 in. through 64 in. (1,400 mm Through 1,600 mm), for Water Service

Covers 3-in. through 64-in. (76-mm through 1,600-mm) ductile-iron compact fittings to be used with ductile-iron pipe or pipe made of other materials with similar outside diameters for conveying water.

ANSI/AWWA C200-1997, Steel Water Pipe – 6 in (150 mm) and Larger

Covers electrically butt-welded straight-seam or spiral-seam pipe and seamless pipe 6 in (150 mm) in nominal diameter and larger for the transmission and distribution of water or for use in other water system facilities.

ANSI/AWWA C203-2002, Coal-Tar Protective Coatings and Linings for Steel Water Pipelines – Enamel and Tape – Hot-Applied

This standard provides the requirements for coal-tar protective exterior coatings and interior linings used in the potable water supply industry for buried steel water pipelines.

ANSI/AWWA C203a-1999, Standard for Coal-Tar Protective Coatings and Linings for Steel Water Pipelines - Enamel and Tape - Hot Applied

Concerns Section 1C in which "Acceptance," is to be replaced with the revised/approved wording in accordance with ANSI/NSF 60 (61).

ANSI/AWWA C205-2000, Cement-Mortar Protective Lining and Coating for Steel Water Pipe – 4 in (100 mm) and Larger – Shop Applied

Covers the material, application, and curing of shop-applied, cement-mortar protective linings and coatings for steel water pipe and fittings, and field jointing of cement-mortar-lined-and-coated steel water pipe and fittings.

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ANSI/AWWA C205a-1996, Cement-Mortar Protective Lining and Coating for Steel Water Pipe – 4 in and Larger – Shop Applied

Substitutes the following for Section 4.4.3.1, Lining:

4.4.3.1 Lining. Straight sections of pipe shall be lined by use of a spinning machine designed and built for the purpose of rotating the pipe section and centrifugally applying cement-mortar linings to the interior of steel pipe or by a method known to provide equivalent results.

ANSI/AWWA C206-1997, Field Welding of Steel Water Pipe

Covers manual, semiautomatic, and automatic field welding by the metal arc welding processes for steel water pipe manufactured in accordance with American National Standard for Steel Water Pipe - 6 in (150 mm) and Larger, ANSI/AWWA C200-91. This standard covers field welding of three types of circumferential pipe joints: (1) lap joints, (2) butt joints, and (3) butt-strap joints. The design of field-welded joints is not covered.

ANSI/AWWA C207-2001, Steel Pipe Flanges for Waterworks Service -- Sizes 4 in. through 144 in. (100 mm through 3,600 mm)

Covers two types of slip-on flanges, ring-type and hub-type, that may be used interchangeably if the dimensions given in the standard are used. The standard also covers blind flanges. The flange types and the tables that describe them are 1.) Ring type, slip-on flanges. 2.) Hub-type, slip-on flanges. 3.) Blind Flanges. Unless otherwise specified by the purchaser, the manufacturer will select the type to be used.

ANSI/AWWA C208-2001, Fabricated Steel Water Pipe Fittings, Dimensions for

Provides overall dimensions for fabricating steel water pipe fittings for sizes 6 in. through 144 in. (150 mm through 3,600 mm) for steel water transmission and distribution facilities.

ANSI/AWWA C209-2000, Cold-Applied Tape Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines

Covers protective exterior coatings that consist of cold-applied liquid adhesives and prefabricated tapes and their applications to special sections, connections, and fittings to be used with underground and underwater steel water pipelines protected with organic coatings.

ANSI/AWWA C210-2003, Liquid-Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines

Sets minimum requirements for shop- and field-applied, liquid-epoxy interior linings and exterior coatings used in the potable-water supply industry for steel water pipelines installed underground or underwater, under normal construction conditions.

ANSI/AWWA C213-2001, Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines

Covers the material and application requirements for fusion-bonded epoxy coatings for the interior and exterior of steel water pipe, special sections, welded joints, connections, and fittings for steel water pipelines installed underground or underwater. Fusion-bonded epoxy coatings are heat-activated, chemically cured coating systems.

ANSI/AWWA C213a-2002, Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines

P. 14 and 15, Sec. 5.3.2.5 Impact, revise to read:5.3.2.5 Impact: Prepare two cold-rolled steel panels 3 in. x 3 in. x 0.125 in (76 mm x 76 mm x 3.2 mm) by blast cleaning one side according to Sec. 4.4.2.2.

ANSI/AWWA C214-2000, Tape Coating Systems for the Exterior of Steel Water Pipelines

Covers the materials and application of tape coating systems in coating plants at fixed sites, using coating techniques and equipment as recommended by the tape coating manufacturer.

ANSI/AWWA C215-2004, Extruded Polyolefin Coatings for the Exterior of Steel Water Pipelines

Describes the materials, systems, and application requirements for shop-applied, extruded polyolefin coatings for the exterior of steel water pipe up to 146 in. (3,650 mm) diameter.

ANSI/AWWA C216-2000, Heat Shrinkable Crosslinked Polyolefin Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines

This standard covers the material, application, and field procedure requirements for protective exterior coatings consisting of heat-shrinkable cross-linked polyolefin coatings and their application to special sections, connections, and fittings to be used in underground and underwater steel water pipelines.

ANSI/AWWA C217-1999, Cold-Applied Petrolatum Tape and Petroleum Wax Tape Coating for the Exterior of Special Sections, Connections, and Fittings for Buried Steel Water Pipelines

Establishes minimum requirements for cold-applied petrolatum tape and petroleum wax tape coatings used on the exterior of steel water pipelines.

ANSI/AWWA C218-2002, Coating the Exterior of Aboveground Steel Water Pipelines and Fittings

Covers nine coating systems designed to protect the exterior surfaces of steel pipelines and the associated fittings used by the water supply industry in above ground locations. The coating systems described may not perform or cost the same, but they are presented so that the appropriate coating system can be selected for the site-specific project requirements.

ANSI/AWWA C219-2001, Bolted, Sleeve-Type Couplings for Plain-End Pipe

Covers bolted, sleeve-type couplings, reducing or transition couplings, and flanged coupling adapters used to join plain-end steel and ductile-iron pipe. They may be manufactured from carbon steel, stainless steel, ductile iron, or malleable iron, and are intended for use in systems conveying water. This standard covers nominal pipe sizes from 1/2 in. (13 mm) through 144 in. (3,600 mm).

ANSI/AWWA C220-1998, Stainless Steel Pipe 4 in (100 mm) and Larger

Pertains to unannealed austenitic stainless-steel pipe that is electrically butt-seam, straight-seam, or spiral-seam welded; 4 in. (100 mm) in nominal diameter and larger; and that is intended for the transmission and distribution of water and for use in other water-system facilities.

ANSI/AWWA C220a-1999, Stainless Steel Pipe, 4 In. (100 mm) and Larger, Addendum to ANSI/AWWA C220a-98

Pertains to unannealed austenitic stainless-steel pipe that is straight-seam or spiral-seam welded; 4-in. (100 mm) in nominal diameter and larger; and that is intended for the transmission and distribution of water and for use in other water-supply system facilities.

ANSI/AWWA C221-2001, Fabricated Steel Mechanical Slip-Type Expansion Joints

Covers fabricated steel mechanical slip-type expansion joints having packing chambers for use on pipe with plain, flanged, grooved, or shouldered ends in nominal pipe sizes from 3 in. (75 mm) through 144 in. (3,600 mm). They shall be manufactured from steel and are intended for use in systems conveying water.

ANSI/AWWA C222-1999, Polyurethane Coatings for the Interior and Exterior of Steel Water Pipe and Fittings

Sets minimum requirements for shop- and field-applied polyurethane interior linings and exterior coatings used in the potable water supply industry for steel water pipe, special sections, welded joints, connections or fittings for steel water pipelines installed underground or underwater operating under normal conditions.

ANSI/AWWA C223-2002, Fabricated Steel and Stainless Steel Tapping Sleeves

This standard covers fabricated steel and stainless steel tapping sleeves used to provide outlets on pipe. They are intended for pipe sizes 4 in. (100 mm) through 48 in. (1,200 mm), with branch outlets through 36 in. (900 mm). This standards includes requirements for materials, dimensions, tolerances, finishes, and testing.

ANSI/AWWA C224-2001, Two Layer Nylon-11 Based Polyamide Coating System for Interior and Exterior of Steel Water Pipe, Connections, Fittings and Special Sections

Addresses two-layer polyamide (Nylon-11 based) coating systems for interior and exterior of steel pipe, connections, fittings and special sections that are used in potable water handling equipment that is installed above ground, below ground, or underwater. Polyamide coating systems are thermoplastic, and are ordinarily applied in a shop/manufacturing facility.

ANSI/AWWA C225-2002, Fused Polyolefin Coating Systems for the Exterior of Steel Water Pipelines

Covers the materials and application of fused polyolefin coating systems for buried service. This system is applied in pipe coating plants, both portable and fixed, using coating techniques and equipment as recommended by the manufacturer.

ANSI/AWWA C300-2004, Reinforced Concrete Pressure Pipe, Steel Cylinder Type, for Water and Other Liquids

This standard covers the manufacture of reinforced concrete cylinder pipe that is not prestressed or pretensioned in sizes 30 in. to 144 in. (760 mm to 3,660 mm), inclusive.

ANSI/AWWA C301-1999, Prestressed Concrete Pressure Pipe, Steel Cylinder Type, for Water and Other Liquids

Covers the manufacture of circumferentially prestressed concrete pressure pipe with a steel cylinder and wire reinforcement in sizes 16 in. (410 mm) through 144 in. (3660 mm). Larger sizes have been manufactured based on the concepts of this standard. The standard covers two types of prestressed pipe: (1) lined-cylinder pipe, with a core composed of a steel cylinder lined with concrete and subsequently wire-wrapped and coated with premixed mortar, and (2) embedded-cylinder pipe, with a core composed of a steel cylinder encased in concrete and subsequently wire-wrapped and coated with premixed cement mortar.

ANSI/AWWA C302-2004, Reinforced Concrete Pressure Pipe, Noncylinder Type

This standard describes the manufacture of circumferentially reinforced concrete pressure pipe, without a steel cylinder and not prestressed, in sizes from 12 to 144 in. (300 to 3,660 mm) inclusive and for working pressures not exceeding 55 psi (380 kPa) and working plus surge pressures not exceeding a total pressure of 65 psi (450 kPa).

ANSI/AWWA C303-2002, Concrete Pressure Pipe, Bar-Wrapped, Steel Cylinder Type

This standard covers the manufacture of concrete pressure pipe, reinforced with a steel cylinder that is helically wrapped with mild steel bar reinforcement, in sizes ranging from 10 in. through 72 in. (250 mm through 1,830 mm), inclusive, and for working pressures up to 400 psi (2,760 kPa).

ANSI/AWWA C304-1999, Design of Prestressed Concrete Cylinder Pipe

This standard defines methods to be used in the structural design of buried prestressed concrete cylinder pipe (PCCP) under internal pressure. These methods are provided for the design of pipe subjected to the effects of working, transient, and field-test load and internal pressure combinations.

ANSI/AWWA C400-2003, Asbestos-Cement Distribution Pipe, 4 in through 16 in, for Water and Other Liquids

Covers type I and type II asbestos-cement pressure pipe sizes from 4 in. (100 mm) through 16 in. (400 mm) in pressure classes 100, 150, and 200. The pipe is intended for the underground conveyance of water in distribution systems

ANSI/AWWA C401-2003, Selection of Asbestos-Cement Pressure Pipe, 4-in through 16-in (100-mm through 400-mm) for Water Distribution Systems

This standard has been prepared so that the user may quickly determine the correct pressure classification of asbestos-cement pressure pipe to use under various combinations of internal pressure (working and surge) and external load (earth and superimposed live loads) in water distribution systems.

ANSI/AWWA C402-1989, Asbestos-Cement Transmission Pipe, 18 in. Through 42 in. (450 mm through 1050 mm), for Supply Service

Covers nine pressure classifications of type 1 and type 2 asbestos-cement pipe, 18 in. through 42 in. (450 mm through 1050 mm) in diameter, for underground installation to convey water in water supply service systems.

ANSI/AWWA C402-2005, Asbestos-Cement Transmission Pipe, 18 in through 42 in (450 mm through 1,050 mm), for Water Supply Service

This standard describes nine pressure classification of type 1 and type II asbestos-cement pipe, 18 in. through 42 in. (450 mm through 1,050 mm) in diameter, for underground installation to convey water in water supply service systems.

ANSI/AWWA C403-1995, Selection of Asbestos-Cement Transmission Pipe, Sizes 18 In. through 42 In. (450 mm through 1050 mm) for Water Supply Service

Details the correct pressure classification of asbestos-cement transmission pipe to use under various combinations of internal pressure (static, operating, and surge) and external load (earth and superimposed live loads). Combined loading curves depicting the relationship between hydrostatic loading and external loading capabilities are included to expedite the selection of the correct pipe strength classification.

ANSI/AWWA C403-2005, Selection of Asbestos-Cement Transmission and Feeder Main Pipe, Sizes 18 in through 42 in (450 mm through 1050 mm), Practice for the

This standard has been prepared so that design engineers may determine the correct pressure classification of asbestos-cement transmission pipe to use under various combinations of internal pressure (static, operating, and surge) and external load (earth and superimposed live loads). Combined loading curves depicting the relationship between hydrostatic loading and external loading capabilities are included to expedite the selection of the correct pipe strength classification. This standard also presents criteria for determining the type of pipe to be used under various soil and water conditions.

ANSI/AWWA C500-2002, Gate Valves for Water and Sewage Systems

This standard covers iron-body, brass-mounted, nonrising-stem (NRS) gate valves including tapping gate valves, 3 in. (75 mm) NPS through 48 in. (1200 mm) NPS, and outside screw and yoke (OS&Y) rising-stem gate valves, 3 in. (75 mm) NPS through 12 in. (300 mm) NPS, with either double-disc gates having parallel or inclined seats, or solid-wedge gates.

ANSI/AWWA C502-2005, Dry Barrel Fire Hydrants

Covers post-type, dry-barrel fire hydrants with compression shut-off (opening against or with the pressure) or gate shutoff for use in water supply Service in all climates, including those where freezing occurs.

ANSI/AWWA C503-2005, Wet-Barrel Fire Hydrants

This standard pertains to the various types and classes of wet-barrel fire hydrants for use in water-supply service in areas where the climate is mild and freezing temperatures do not occur. A wet-barrel hydrant has one or more valve openings above the ground line and, under normal operating conditions, the entire interior of the hydrant is subjected to water pressure at all times. Each outlet nozzle has an independent, compression-type valve (i.e., working with or against the pressure) that controls discharge from that particular outlet.

ANSI/AWWA C504-2006, Rubber-Seated Butterfly Valves

This standard establishes minimum requirements for rubber-seated butterfly valves, 3 in. (75 mm) through 72 in. (1,800 mm) in diameter, with various body and end types, for fresh water having a pH range from 6-12 and a temperature range from 33°-125°F (0.6°-52°C). This standard covers rubber-seated butterfly valves suitable for a maximum steady-state fluid working pressure of 250 psig (1,723 kPa [gauge]), a maximum steady-state differential pressure of 250 psi (1,723 kPa), and a maximum full open velocity of 16 ft/sec (4.9 m/sec).

ANSI/AWWA C507-2005, Ball Valves 6 in (150 mm) through 48 in (1200 mm)

Covers gray-iron, ductile-iron, and cast-steel, flanged-end, tight-shutoff, shaft- or trunnion-mounted, full-port, double- and single-seated ball valves for pressures up to 300 psi (2,100 kPa) in sizes from 6-in. through 48-in. (150-mm through 1,200-mm) diameter for use in water systems having fresh water with a pH greater than 6 and less than 12 and with temperatures greater than 32 degrees F (0 degrees C) and less than 125 degrees F (52 degrees C).

ANSI/AWWA C508-2001, Swing-Check Valves for Waterworks Service, 2 in (50 mm) through 24 in (600 mm) NPS

Covers only iron-body, nonassisted, swing-check valves, 2 in. through 24 in. (50 mm through 600 mm) NPS, with mechanical-joint or flanged ends that are installed in approximately level settings in water systems.

ANSI/AWWA C509-2001, Resilient-Seated Gate Valves for Water Supply Service

Covers iron-body, resilient-seated gate valves with nonrising stems (NRS) and outside screw-and-yoke (OS&Y) rising stems, including tapping gate valves, for water supply service having a temperature range of 33° - 125°F (0.6° - 52°C).

ANSI/AWWA C509a-1995, Resilient-Seated Gate Valves for Water Supply Service

ANSI/AWWA C510-1997, Double Check Valve Backflow-Prevention Assembly

Covers the double check valve backflow-prevention assembly. The assembly shall be for operation on hot- or cold-water lines and capable of withstanding a working water pressure of at least 150 psi (1,034 kPa) without damage to the working parts or impairment of function. Covers hot-and cold-water double check valve backflow-prevention assemblies. All assemblies shall be designed to, at a minimum, operate at a temperature range of 33oF-110oF (1oC-43oC). Hot-water assemblies shall be designed to operate in water at a minimum temperature range of 33oF-180oF (1oC-82oC). A complete assembly consists of two internally loaded, independently operating check valves, located between two tightly closing, resilient-seated shutoff valves, with four properly placed resilient-seated test cocks.

ANSI/AWWA C511-1997, Reduced Pressure Principle Backflow Prevention Assembly

Covers the reduced-pressure principle backflow-prevention assembly. The assembly shall be capable of withstanding a working water pressure of at least 150 psi (1.034 kPa) without damage to working parts or impairment of function and for operation on hot or cold water lines. Covers hot and cold water reduced-pressure principle backflow-prevention assemblies. All assemblies shall be designed at a minimum to operate in water at a temperature range of 33-110°F (1-43°C). Hot water assemblies shall be designed at a minimum to operate in water at a temperature range 33-180°F (1-82°C). A complete assembly consists of a mechanical, independently operating, hydraulically dependent relief valve located between two independently operating, internally loaded check valves that are located between two tightly closing,

ANSI/AWWA C512-2004, Air Release, Air/Vacuum, and Combination Air Valves for Water Works Service

This standard describes ½-in. (13-mm) through 6-in (150-mm) air-release valves and ½-in. (13-mm) through 20-in. (500-mm) air/vacuum and combination air valves having gray cast-iron or ductile-iron bodies and covers. The valves are designed for use in water systems with maximum working pressures of 300 psig (2,070 kPa [gauge]) and water temperatures ranging from above freezing to a maximum of 125 F (52 C).

ANSI/AWWA C513-2005, Open-Channel, Fabricated-Metal Slide Gates and Open-Channel, Fabricated-Metal Weir Gates

Covers open-channel, fabricated-metal slide gates and open-channel, fabricated-metal weir gates for water supply service. This standard also covers manual slide lift mechanisms and standard gate appurtenances. Power driven actuators are specified in ANSI/AWWA C540, Standard for Power-Actuating Devices for Valves and Slide Gates.

ANSI/AWWA C515-2001, Reduced Wall, Resilient-Seated Gate Valves for Water Supply Service

Covers reduced wall, resilient-seated gate valves with nonrising stems (NRS) and outside screw-and-yoke (OS&Y) rising stems, including tapping gate valves, for water supply service having a temperature range of 33° to 125°F (0.6° to 52°C). These valves are intended for applications where fluid velocity does not exceed 16 ft/second (4.9 m/s) when the valve is in the full open position.

ANSI/AWWA C517-2005, Resilient-Seated Cast Iron Eccentric Plug Valves

This standard describes resilient-seated cast iron eccentric plug valves, 3 in. (75 mm) through 72 in. (1,800 mm) in diameter, with flanged, grooved or mechanical-joint ends, for water having a pH range from 6 to 12 and a temperature range from 33°F to 176°F; to 125°C; F (0.6 MPa; to 52 MPa; C). The minimum design pressure shall be 175 psig (1,208 kPa) for 3 in. through 12 in. (75 mm through 300 mm) sizes and 150 psig (1,034 kPa) for 14 in. through 72 in. (350 mm through 1,800 mm) sizes.

ANSI/AWWA C540-2002, Power-Actuating Devices for Valves and Sluice Gates

Covers power-actuating devices for valves 3 in. (75 mm) in diameter and larger and slide gates in ordinary water service.

ANSI/AWWA C550-2005, Protective Interior Coatings for Valves and Hydrants

This standard describes the special protective interior coatings for valves and hydrants used for water supply service. The standard describes the material, application, and performance requirements for these special interior coatings. The coating shall be either a liquid or powder system and shall not contain coal tar. These coating are applied to interior ferrous surfaces of valves and hydrants where corrosion protection is specified.

ANSI/AWWA C560-2001, Cast-Iron Sluice Gates

Covers vertically mounted, cast-iron slide gates designed for either seating head or unseating head, or both, in ordinary water-supply service. The cast-iron slide gates have machined metal faces and machined adjustable wedging devices. The cast-iron slide gates may be used for square, rectangular, or round openings. They may be of the conventional-closure or the flush-bottom-closure type. This standard also covers manual slide gate actuator mechanisms together with standard accessories. Other actuator mechanisms, including electric or hydraulic mechanisms, are covered in ANSI/AWA C540 with an exception noted in Sec. 4.4.15 or this standard.

ANSI/AWWA C561-04, AWWA Standard for Fabricated Stainless Steel Slide Gates

This standard describes fabricated stainless steel slide gates with full aperture closure, designed for either seating or unseating head, or both, in ordinary water supply service.

ANSI/AWWA C563-2004, Fabricated Composite Slide Gates

Covers vertically mounted, fabricated composite, resilient seated slide gates designed for either seating head or unseating head, or both, in ordinary water supply service. The gates are primarily used to shut off water flow through a rectangular or round orifice, end of channel, or in-channel openings. They may be of conventional closure or the flush bottom-closure type and may be opened either upward or downward. The gates shall have ultra-high-molecular-weight (UHMW) polyethylene or resilient rubber sealing surfaces as required to meet leakage requirements. This standard also covers manual gate actuator mechanisms together with standard accessories.

ANSI/AWWA C600-2005, Installation of Ductile-Iron Water Mains and Their Appurtenances

This standard describes installation procedures for ductile-iron mains and their appurtenances for water service.

ANSI/AWWA C602-2000, Cement-Mortar Lining of Water Pipelines in Place – 4 in (100 mm) and Larger

Covers the requirements for the materials and application of a cement-mortar lining to the inside surface of 4-in. (100 mm) and larger new and old steel, ductile-iron, and cast-iron water pipelines that have been previously installed, as well as related work.

ANSI/AWWA C603-1996 (R2005), Installation of Asbestos-Cement Pressure Pipe

This standard describes the installation of water pipelines constructed of asbestos-cement pressure pipe with fittings and appurtenances of asbestos-cement, cast iron, other materials, or a combination of any of these.

ANSI/AWWA C605-2005, Water Treatment – Underground Installation of Polyvinyl Chloride PVC Pressure Pipe and Fittings for Water

This standard describes underground installation and hydrostatic testing procedures for polyvinyl chloride (PVC) pressure pipe and fittings that comply with either ANSI/AWWA C900, ANSI/AWWA C905, ANSI/AWWA C907 or ANSI/AWWA C909.

ANSI/AWWA C606-2004, Joints, Grooved and Shouldered Type

Covers grooved and shouldered joints for ductile-iron pipe, metallic pressure pipe of iron pipe size, and fittings and other components for water service. The standard covers 4-in. through 24-in. (102-mm through 610 mm) diameter grooved ductile-iron pipe; ¾-in. through 24-in. (19 mm through 610 mm) diameter grooved steel, aluminum, brass, and other metallic pipe of iron pipe size (IPS) dimensions; and 4-in. through 64-in. (102-mm through 1,626-mm) nominal diameter shouldered ends for ductile-iron pipe of IPS dimensions.

ANSI/AWWA C651-2005, Disinfecting Water Mains

This standard describes essential procedures for the disinfection of new and repaired potable water mains. New water mains shall be disinfected before they are placed in service. Water mains taken out of service for inspection, repair, or other activities that might lead to contamination of water shall be disinfected before they are returned to service.

ANSI/AWWA C652-2002, Disinfection of Water-Storage Facilities

This standard for disinfection of water-storage facilities covers materials, facility preparation, application of disinfectant to the facilities' interior surfaces, and sampling and testing for the presence of coliform bacteria. The standard also includes disinfection procedures for underwater inspection of on-line potable water storage facilities but does not cover the technical aspects of underwater inspection. All new storage facilities shall be disinfected before they are placed in service. All storage facilities taken out of service for inspecting, repairing, painting, cleaning, or other activity that might lead to contamination of water shall be disinfected before they are returned to service."This standard for disinfection of water-storage facilities covers materials, facility preparation, application of disinfectant to interior surfaces of facilities, and sampling

ANSI/AWWA C653-2002, Disinfection of Water Treatment Plants

This standard covers chlorination materials, procedures, and requirements for disinfection of new treatment facilities and existing water treatment facilities temporarily taken out of service for cleaning, inspection, maintenance, painting, repair, or any other activity that might lead to contamination of water.

ANSI/AWWA C654-2003, Disinfection of Wells

Covers the procedures for shock chlorination and bacteriological testing for the disinfection of wells for potable water service. These procedures shall be followed prior to using any new or existing well for potable water service if the well may have been contaminated as a result of construction, servicing, or maintenance.

ANSI/AWWA C700-1990, Cold-Water Meters--Displacement Type, Bronze Main Case

Covers the various types and classes of cold-water displacement meters with bronze main cases, in sizes 1/2 in. (13mm) through 2 in. (51mm) and the materials and workmanship employed in their fabrication. Displacement meters covered, known as nutating-disc or oscillating-piston meters, are positive in action because the pistons and disc displace or carry over a fixed quantity of water for each nutation or oscillation when operated under positive pressure.

ANSI/AWWA C700-2002, Cold-Water Meters – Displacement Type, Bronze Main Case

This standard covers the various types and classes of cold-water displacement meters with plastic main cases, in sizes 1/2 in. (13 mm) through 2 in. (50 mm), and the materials and workmanship employed in their fabrication.

ANSI/AWWA C701-2002, Cold Water Meters – Turbine Type for Customer Service

Covers the various classes of cold-water turbine meters in sizes 3/4 in. through 20 in. for water supply customer service and the materials and workmanship employed in their fabrication. The turbine meters covered by this standard are divided into class I and class II meters. Both classes of meters register by recording the revolutions of a turbine set in motion by the force of flowing water striking its blades.

ANSI/AWWA C702-2001, Cold Water Meters – Compound Type

Covers the various types and classes of cold-water compound-type meters in sizes 2 in. (50 mm) through 8 in. (200 mm) and the materials and workmanship used in their fabrication. Compound meters shall consist of a combination of a turbine-type, main-line meter for measuring high rates of flow and a bypass meter of an appropriate size for measuring low rates of flow. The compound meter shall have an automatic valve mechanism for diverting low rates of flow through the bypass meter.

ANSI/AWWA C703-1996 (R2004), Cold Water Meters – Fire Service Type

Covers the various types and classes of cold-water fire-service-type meters in sizes 3 in. (75 mm) through 10 in. (250 mm) and the materials and workmanship used in their fabrication.

ANSI/AWWA C704-2002, Cold-Water Meters – Propeller Type for Main Line Applications

This standard covers the various types and classes of propeller meters in sizes 2 in. (50 mm) through 72 in. (1,800 mm) for waterworks applications. These meters register by recording the revolutions of a propeller set in motion by the force of flowing water striking the blades.

ANSI/AWWA C706-96 (R2005), Direct-Reading Remote-Registration Systems for Cold-Water Meters

This standard covers direct-reading, remote-registration systems for use on cold-water meters for water utility customer service and the materials and workmanship employed in the fabrication and assembly of these systems.

ANSI/AWWA C707-2005, Encoder-Type Remote-Registration Systems for Cold-Water Meters

This standard covers encoder-type remote registration systems for use on cold-water meters for water-utility customer service, particularly the materials and workmanship employed in the fabrication and assembly of the on-meter registers.

ANSI/AWWA C708-2005, Cold-Water Meters - Multijet Type

This standard describes cold-water, multijet meters in sizes 5/8 in. (15 mm) through 2 in. (50 mm) for water utilities' customer service and the materials and workmanship employed in their fabrication. These meters register by recording the revolutions of a rotor set in motion by the force of flowing water striking the blades.

ANSI/AWWA C710-1990, Cold-Water Meters--Displacement Type, Plastic Main Case

Covers the various types and classes of cold-water displacement meters with plastic main cases, in sizes 1/2 in. (13mm) through 1 in. (25mm), for water utility customer service, and the materials and workmanship employed in their fabrication. Displacement meters covered, known as nutating-disc or oscillating-piston meters, are positive in action because the pistons displace or carry over a fixed quantity of water for each nutation or oscillation when operated under positive pressure.

ANSI/AWWA C710-2002, Cold Water Meters – Displacement Type – Plastic Main Case

This standard covers the various types and classes of cold-water displacement meters with plastic main cases, in sizes 1/2 in. (13 mm) through 1 in. (25 mm), for water utility customer service and the materials and workmanship employed in their fabrication.

ANSI/AWWA C712-2002, Cold-Water Meters - Singlejet Type

This standard describes the various types and classes of cold-water, singlejet meters in sizes 1 1/2 in. (40 mm) through 6 in. (150 mm) for water utilities' customer service and the materials and workmanship employed in their fabrication. These meters register by recording the revolutions of rotor set in motion by the force of flowing water striking the blades.

ANSI/AWWA C713-2005, Cold-Water Meters - Fluidic Oscillator Type

This standard describes cold-water fluidic oscillator meters with brass main cases in sizes 1/2 in. (13 mm) through 2 in. (50 mm), and the materials and workmanship employed in their fabrication. The basis for volume measurement is a transducer element that senses and utilizes fluidic oscillation rather than a moving measurement element as required in traditional cold-water volumetric meters.

ANSI/AWWA C750-2003, Transit-Time Flowmeters in Full Closed Conduits

Describes transit-time ultrasonic flowmeters for water supply service application.

ANSI/AWWA C800-2005, Underground Service Line Valves and Fittings

This standard covers valves, fittings, service saddles, and meter setters for use in service line from the main through the meter valve or meter setting appurtenance. Valves, fittings, service saddles and meter setters covered in this standard include 1/2 in. (12.7 mm) through 2 in. (50.8 mm).

ANSI/AWWA C900-1997, Polyvinyl Chloride (PVC) Pressure Pipe, 4 Inch through 12 Inch for Water Distribution

Covers 4-in through 12-in (100-mm through 300-mm) polyvinyl chloride (PVC) pressure pipe and fabricated fittings with cast-iron-pipe-equivalent (C) outside diameter (OD) dimensions and with wall thickness dimension-ratios (DRs) 14, 18, and 25.

ANSI/AWWA C901-2002, Polyethylene (PE) Pressure Pipe and Tubing, 1/2 in (13 mm) through 3 in (76 mm), for Water Service

This standard covers polyethylene (PE) pressure pipe and tubing made from material having standard PE and designations PE 2406, PE 3406, and PE 3408 and primarily intended for use in the transportation of water and other liquids.

ANSI/AWWA C903-2005, Polyethylene-Aluminum-Polyethylene & Crosslinked Polyethylene-Aluminum-Crosslinked Polyethylene Composite Pressure Pipes, 1/2 In. (12 mm) Through 2 In. (50 mm), for Water Service

This standard describes coextruded polyethylene (PE) composite pressure pipes with a welded aluminum tube reinforcement between the inner and outer layers of polyethylene, primarily for use as underground water service lines.

ANSI/AWWA C905-1997, Polyvinyl Chloride (PVC) Water Transmission Pipe (Nominal Diameters 14-36 inches)

Covers 14-in through 48-in (350 mm through 1200 mm) polyvinyl chloride (PVC) pressure pipe and fabricated fittings, with cast-iron-pipe equivalent (CI) and steel-pipe-equivalent (IPS) outside diameter (OD) dimensions, and with wall thickness dimension-ratios (DRs) 14, 18, 21, 25, 26, 32.5, 41, and 51.

ANSI/AWWA C906-1999, Polyethylene (PE) Pressure Pipe and Fittings, 4 in through 63 in for Water Distribution

Covers polyethylene (PE) pressure pipe made from materials conforming to standard PE code designations PE 2406, PE 3406, and PE 3408. The pipe is primarily intended for use in transporting potable water in either buried or aboveground installations.

ANSI/AWWA C907-2004, Injection-Molded Polyvinyl Chloride (PVC) Pressure Fittings, 4 In. to 12 In. for Water Distribution

This standard describes Pressure Class 150 polyvinyl chloride (PVC) injection-molded fittings with push-on rubber-gasketed joints in nominal sizes 4 in. (100 mm), to 12 in. (300 mm). The fittings are for use with PVC water distribution pipe having an outside diameter conforming to the dimensions of cast-iron pipe, and with dimension ratios (DR) of 18 (Class 150) or 25 (Class 100) as described in ANSI/AWWA C900, Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in., (100 mm through 300 mm) for Water Distribution.

ANSI/AWWA C908-2001, PVC Self-Tapping Saddle Tees for Use on PVC Pipe

Covers self-tapping saddle tees, hereafter referred to as self-tapping saddle(s), molded from polyvinyl chloride (PVC) material (ASTM D1784). The self-tapping saddles are for use with PVC water pipe described in ANSI/AWWA C900, having cast iron outside diameters (CIOD) and are for self-tapping saddles designed for iron pipe size (IPS-OD) PVC water pipes in nominal sizes 1 1/4 in. through 8 in. (32 mm through 200 mm).

ANSI/AWWA C909-2002, Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe, 4 in. Through 12 in. (100 mm Through 300 mm), for Water Distribution

This standard pertains to molecularly oriented polyvinyl chloride (PVCO) pressure pipe that is manufactured from starting stock pipe made from ASTM D1784 cell class 12454 material. The starting stock materials are then oriented through circumferential expansion to provide a hydrostatic design basis (HDB) of 7,100 psi (49.0 MPa). The pipe has cast-iron pipe-equivalent (CI) outside diameter (OD) dimensions and with wall thicknesses designed for pressure classes 100, 150, and 200 psi, in 4 in. through 24 in. Design considerations are provided in appendix A of this document.

ANSI/AWWA C950-2001, Fiberglass Pressure Pipe

Covers the fabrication and the testing of nominal 1-in. through 144-in. (25-mm through 3,600 mm) fiberglass pipe and joining systems for use in both aboveground and belowground water systems. Service and distribution piping systems and transmission piping systems are included.

ANSI/AWWA D100-2005, Welded Carbon Steel Tanks for Water Storage

The purpose of this standard is to provide minimum requirements for the design, construction, inspection, and testing of new welded carbon steel tanks for the storage of water at atmospheric pressure.

ANSI/AWWA D102-2003, Coating Steel Water - Storage Tanks

Covers coating systems for coating and recoating the inside and outside surfaces of steel tanks used for potable water storage in water supply service. Coating systems for new bolted steel tanks are not covered by this standard (see ANI/AWWA D103).

ANSI/AWWA D103-1997, Water Storage, Factory-Coated Bolted Steel Tanks for

Facilitates the manufacture, installation, and procurement of cylindrical bolted steel tanks for the storage of water.

ANSI/AWWA D104-2004, Automatically Controlled, Impressed-Current Cathodic Protection for the Interior of Steel Water Tanks

Describes impressed-current cathodic protection systems intended to minimize corrosion of submerged interior steel surfaces of water storage tanks and 30-in. (750-mm) diameter and larger wet risers of elevated tanks.

ANSI/AWWA D110-2004, Wire-Wound, Circular Prestressed Concrete Water Tanks

The intent of this standard is to describe current recommended practice for the design, construction, inspection, and maintenance of wire- and strand-wound, circular, prestressed concrete water-containing structures with the following four types of core walls: type I - cast-in-place concrete with vertical prestressed reinforcement; type II - shotcrete with a steel diaphragm; type III - precast concrete with a steel diaphragm; type IV - cast-in-place concrete with a steel diaphragm.

ANSI/AWWA D115-1995, Standard for Circular Prestressed Concrete Water Tanks with Circumferential Tendons

Covers current and recommended practice for the design, construction, and field observations of circular prestressed concrete tanks using tendons for circumferential prestressing. This standard covers tanks using bonded circumferential (horizontal) prestressing tendons in the wall or on the wall's exterior surface. This standard does not cover tanks using unbonded circumferential (horizontal) prestressing tendons in the wall or on the wall's exterior surface. This standard also covers bonded or unbonded prestressing tendons, or conventional reinforcing, vertically in the wall and in the floor and roof. This standard applies to containment structures for use with potable water or raw water.

ANSI/AWWA D120-2002, Thermosetting Fiberglass-Reinforced Plastic Tanks

Covers the composition, performance requirements, construction practices and workmanship, design, and methods of testing thermosetting fiberglass-reinforced plastic (FRP) tanks for the storage of water or other liquids used in water supply service.

ANSI/AWWA D130-2002, Flexible-Membrane-Lining and Floating-Cover Materials for Potable Water Storage

Pertains to flexible-membrane materials supplied in sheet form for lining, covering, or lining and covering potable water reservoirs.

ANSI/AWWA F101-2002, Contact Molded, Fiberglass Reinforced Plastic Washwater Troughs and Launderers

This standard covers the minimum requirements for glass-fiber molding process, including flatbottom, round-bottom, and V-bottom troughs and launders. Requirements are included for materials, properties, design, construction, dimensions, tolerances, workmanship, and appearance.

ANSI/AWWA F102-2002, Matched-Die Molded, Fiberglass Reinforced Plastic Weir Plates, Scum Baffles, and Mounting Brackets

This standard covers the minimum requirements for glass-fiber reinforced plastic weir plates, scum baffles, mounting brackets, lap plates, cover washers, and weir pans, fabricated with the matched-die molding process. Included are requirements are design, construction, dimensions, tolerances, physical properties, workmanship, appearance, and installation.

ANSI/AWWA G100-2005, Water Treatment Plant Operation & Management

This standard covers the critical requirements for the effective operation and management of drinking water treatment plants. For purposes of this standard, the drinking water treatment plant is defined as a group or assemblage of structures, equipment, and processes that treat or condition a water supply, affecting the physical, chemical, or bacteriological quality of water distributed or otherwise offered to the public for domestic use by a public water system.

ANSI/AWWA G200-2004, Distribution Systems Operation and Management

This standard describes the critical requirements for the effective operation and management of drinking water distribution systems.

BHMA (Builders Hardware Manufacturers Association)

ANSI/BHMA A156.1-2000, Butts and Hinges

Establishes requirements for light weight, standard weight, heavy weight and detention hinges. Cycle tests, lateral and vertical wear tests, friction tests, strength tests, finish tests, and material and dimensional requirements are included.

ANSI/BHMA A156.10-2005, Power Operated Pedestrian Doors

Requirements in this Standard apply to power operated doors for pedestrian use which open automatically when approached by pedestrians and some small vehicular traffic or by a knowing act. Included are provisions to reduce the chance of user injury or entrapment. Power operated doors for industrial or trained traffic are not covered in this Standard.

ANSI/BHMA A156.11-2004, Cabinet Locks

This standard establishes requirements for Cabinet Locks used on doors, drawers and furniture. Cycle tests, operational tests, strength tests and finish tests are included.

ANSI/BHMA A156.12-2005, Interconnected Locks and Latches

This Standard establishes requirements for Interconnected Locks and includes operational tests, strength tests, security tests, cycle tests, finish tests and dimensional criteria.

ANSI/BHMA A156.13-2005, Mortise Locks and Latches

This Standard establishes requirements for Mortise Locks and Latches and includes operational tests, security tests, cycle tests, finish tests, material evaluation tests and dimensional criteria.

ANSI/BHMA A156.14-2002, Sliding and Folding Door Hardware

This Standard establishes requirements for Sliding and Folding Door Hardware. Cycle tests, abuse, durability static load, smoothness, static friction, kinetic friction and finish tests are included. Hardware for light to very heavy doors is covered including both residential and industrial applications.

ANSI/BHMA A156.15-2001, Closer Holder Release Devices

Establishes requirements for door closers combined with hold-open devices or free-swinging door closers combined with releasing devices and includes performance tests covering operational, cyclical and finish criteria.

ANSI/BHMA A156.16-2002, Auxiliary Hardware

Establishes requirements for various types of auxiliary hardware and includes performance tests covering operational, cyclical, strength or finish criteria. A type numbering system is also provided.

ANSI/BHMA A156.17-2004, Self-Closing Hinges and Pivots

Establishes requirements for Self Closing Hinges & Pivots. Cycle tests, operational tests, finish tests, material and dimensional requirements are included.

ANSI/BHMA A156.18-2000, Hardware – Materials and Finishes

Establishes finish test methods and code numbers for architectural finishes on various base materials.

ANSI/BHMA A156.19-2002, Power Assist and Low-Energy Power-Operated Doors

Requirements in this Standard apply to power assist doors, low energy power operated doors or low energy power open doors for pedestrian use, and some small vehicular use and not provided for in ANSI/BHMA A156.10 for Power Operated Pedestrian Doors. Included are provisions intended to reduce the chance of user injury or entrapment.

ANSI/BHMA A156.2-2003, Bored and Preassembled Locks and Latches

This Standard establishes performance requirements for bored and preassembled locks and latches, and includes cycle tests, strength tests, operational tests, security tests, material evaluation tests, finish tests, and dimensional criteria.

ANSI/BHMA A156.20-1989 (R1996), Strap and Tee Hinges and Hasps

Establishes requirements for strap and tee hinges and hasps, and includes performance tests covering operational and strength criteria.

ANSI/BHMA A156.20-2001, Tee Hinges and Hasps

Establishes requirements for Strap Hinges, Tee Hinges, and Hasps, and includes performance tests covering operational and strength criteria.

ANSI/BHMA A156.21-2001, Thresholds

Establishes requirements for thresholds. Types are described with identifying numbers. Strength tests, fastening systems, and gasketing tests are included.

ANSI/BHMA A156.22-2005, Door Gasketing and Edge Seal Systems

This Standard establishes requirements for the performance and installation of gasketing systems including intumescent applied to, or mortised to doors, frames or both. Included are performance tests intended to provide installation guidelines, resistance to smoke and air infiltration, and measure the life and durability of gasketing materials.

ANSI/BHMA A156.23-2004, Electromagnetic Locks

establishes requirements for electromagnetic locks and includes cyclical, dynamic, operational, strength and finish tests. This product is used for access control.

ANSI/BHMA A156.24-2003, Delayed Egress Locks

This standard covers products used in connection with conventional exit devices or locks causing the doors to remain locked after releasing actuation for a predetermined length of time. Performance criteria are included for functional, cycle, operational, fail-safe and overload requirements.

ANSI/BHMA A156.25-2002, Electrified Locking Devices

Establishes requirements for electrified locking devices, which control door access. When the input or controlling device or both are an integral part of the locking device, they shall also be covered by this standard. This standard includes requirements for cyclical, security, operational, strength, environmental, and finish tests for these products.

ANSI/BHMA A156.26-2000, Continuous Hinges

Establishes requirements for architectural continuous hinges used in building construction. Cycle, finish, abuse, overload, vertical wear, and strength tests are included.

ANSI/BHMA A156.27-2003, Power and Manual Operated Revolving Pedestrian Doors

Requirements in this standard apply to power operated revolving type doors which rotate automatically when approached by pedestrians, some small vehicular use, and manual revolving type doors for pedestrians. Included are provisions to reduce the chance of user injury and entrapment. Revolving doors for industrial or trained traffic are not covered in this Standard.

ANSI/BHMA A156.28-2000, Recommended Practices for Keying Systems

The scope of this recommended practice is limited to mechanical key biting, cylinder pinning and multiplex key systems. The purpose of this document is to recommend the approach to selecting the optimal keying system, once the type of cylinder has been selected by other criteria. This recommended practice is not intended to provide sufficient information for a full understanding of master key systems.

ANSI/BHMA A156.29-2001, Exit Locks, Exit Locks With Exit Alarms, Exit Alarms, Alarms for Exit Devices

Establishes requirements for Exit Locks, and Exit Locks with Exit Alarms, Exit Alarms and Alarms for Exit Devices and includes operational and finish tests. Alarms for Exit Devices include operational tests only.

ANSI/BHMA A156.3-2001, Exit Devices

Establishes requirements for exit devices and trim, automatic and self-latching flush bolts, removable mullions, coordinators, and carry-open bars. Performance criteria include cycle, operational, strength, material evaluation, and finish tests. Functions and types are described and numbered.

ANSI/BHMA A156.30-2002, Mortise Locks

This standard includes security performance based requirements for both mechanical and electrified high security cylinders. For the purpose of this standard, High Security Cylinder includes mechanical lock cylinders, electromechanical cylinders, and the electronic lock sub assemblies that are analogous to the cylinder assemblies. Cylinders include their keys or electronic credentials; their retainers (mechanical pins, levers, discs) or electronic control device; and their cylinder tailpiece or cam or electronic output port.

ANSI/BHMA A156.31-2001, Electric Strikes and Frame Mounted Actuators

Establishes requirements for Electric Strikes and Frame Mounted Actuators, and includes operational and finish tests

ANSI/BHMA A156.4-2000, Door Controls – Closers

Contains requirements for door closers that are surface mounted, concealed in the door, overhead concealed, or concealed in the floor. Also included are pivots for floor closers. Criteria for conformance include cycle, operational, closing force and finish tests.

ANSI/BHMA A156.5-2001, Auxiliary Locks and Associated Products

Establishes requirements for Auxiliary Bored and Mortise Locks, Rim Locks, Cylinders and Push Button Mechanisms and includes security tests, operational tests, finish tests, and dimensional criteria. It also establishes requirements for Indexed Key Control Systems and includes operational and finish tests.

ANSI/BHMA A156.6-2005, Architectural Door Trim

This Standard contains requirements for door protection plates, door edgings, push plates, door pulls, push bars, and pull bars. Included are strength and finish tests, and dimensional and material criteria.

ANSI/BHMA A156.7-2002, Template Hinge Dimensions

Covers the requirements for the length, width, thickness, offset, and screw hole spacing for builders template hinges. Included in the standard are hinge identification symbols and screw sizes. Methods for identifying template hinges that conform to the Standard are provided.

ANSI/BHMA A156.8-2005, Door Controls - Overhead Stops and Holders

This Standard establishes requirements for overhead door stops and holders and includes performance tests covering operational, cyclical, strength and finish criteria.

Tests described in this Standard are performed under laboratory conditions. In actual usage, results vary because of installation, maintenance and environmental conditions.

ANSI/BHMA A156.9-2003, Cabinet Hardware

This Standard contains requirements for cabinet hardware and includes hinges, knobs, pulls, catches, shelf rests, standards and brackets, drawer slides, rotating shelves and track with guides for sliding panels. Included are performance tests covering operational, cyclical, strength, and finish criteria.

BICSI (Building Industry Consulting Service International)

BIFMA (Business and Institutional Furniture Manufacturers Association)

ANSI/BIFMA X5.1-2002, Office Furnishings – General-Purpose Office Chairs – Tests

ANSI/BIFMA X5.3-1997, Files, Tests for Vertical

Provides tests for vertical files.

ANSI/BIFMA X5.4-2005, Standard for Office Furnishing - Lounge Seating - Tests

The standard describes the means of evaluating lounge seating, independent of construction materials, manufacturing processes, mechanical designs or aesthetic designs. The standard defines specific tests, the laboratory equipment that may be used, the conditions of test and the minimum acceptance levels to be used in evaluating lounge seating.

ANSI/BIFMA X5.5-1998, Desk Products, Tests for

Provides a common basis for evaluating the safety, durability, and structural adequacy of freestanding desk/table products (units). The standard defines tests used to determine the acceptability of the product and specifies the acceptance levels of performance. These tests are not intended to assess a product that has been in use.

ANSI/BIFMA X5.6-2003, Office Furnishings – Panel Systems – Tests

Provides performance and safety requirements for panel-supported office furniture systems as well as non-load bearing screen panels. Including modular systems and panel supported components such as work surfaces and storage units.

ANSI/BIFMA X5.9-2004, Standard for Office Furniture Storage Units - Tests

Performance and Safety requirements for Office Furniture Storage Units

ANSI/BIFMA/SOHO S6.5-2001, Small Office/Home Office Furniture -Tests

Provides performance and safety requirements for storage and desking furniture intended for use in the small office and/or home office applications.

BOMA (Building Owners and Managers Association)

ANSI/BOMA Z65.1-1996, Method for Measuring Floor Area in Office Buildings

Sets out methods for measuring square footage in Office Buildings, Including Rentable Area, Usable Area, Store Area, and Construction Area.

CAGI (Compressed Air and Gas Institute)

ANSI/CAGI ADF 100-1998, Pneumatic Fluid Power – Compressed Air Dryers – Methods for Rating and Testing

This standard includes standard rating conditions of inlet temperature, ambient temperature, cooling water temperatures, inlet pressure dew point, operating pressure, outlet pressure dew point and pressure drop to enable a compressed air dryer to be classified; Test procedure for measuring performance to determine the capabilities; and provides basis on which to rate and measure the performance of compressed air dryers.

ANSI/CAGI ADF 100-1998, Pneumatic Fluid Power – Compressed Air Dryers – Methods for Rating and Testing

This standard includes standard rating conditions of inlet temperature, ambient temperature, cooling water temperatures, inlet pressure dew point, operating pressure, outlet pressure dew point and pressure drop to enable a compressed air dryer to be classified; Test procedure for measuring performance to determine the capabilities; and provides basis on which to rate and measure the performance of compressed air dryers.

ANSI/CAGI ADF 300-1998, Single Tower (Non-Regenerative) Desiccant Compressed Air Dryers - Methods for Testing and Rating

Includes testing conditions and performance measurements to be used for rating single tower (non-regenerative) desiccant compressed air dryers and their corresponding desiccants; test procedures and reference conditions for measuring performance to determine the capabilities of single tower (non-regenerative) desiccant compressed air dryers and their corresponding desiccants. This standard also provides a uniform basis of measuring the performance of single tower (non-regenerative) desiccant compressed air dryers and the corresponding desiccants and a uniform basis on which to rate single tower (non-regenerative) desiccant compressed air dryers and their corresponding desiccants.

ANSI/CAGI ADF 400-1999, Testing and Rating Coalescing Filters

Specifies the test layout and test procedures for testing coalescing filters used in industrial air systems.

ANSI/CAGI ADF 500-1998, Measurement of Absorption Capacity of Oil Vapor Removal Absorbent Filters

Specifies the test layout and test procedures required for testing hydrocarbon vapor absorbent filters used in industrial compressed air systems. The procedures cover the testing of granular absorbent filters and those constructed using paper, felt and cloth absorbents.

ANSI/CAGI ADF 700-1998, Membrane Compressed Air Dryers - Methods for Testing and Rating

Includes testing conditions and performance measurements to enable a membrane compressed air dryer to be rated. Test procedures and reference conditions for measuring performance to determine the capabilities of membrane compressed air dryers. This standard provides a uniform basis of measuring the performance of membrane compressed air dryers. A uniform basis on which to rate the performance of membrane compressed air dryers.

CAM-I (Consortium for Advanced Manufacturing International)

ANSI/CAM-I 104.0-2001, Part 1, Dimensional Measuring Interface Standard (DMIS)

Provides a standard for the bi-directional communication of inspection data between computer systems and inspection equipment. The standard is a vocabulary of terms, which establishes a neutral format for inspection programs and inspection results data. It is primarily designed for communication between automated equipment, but is designed to be both man-readable and man-writable, allowing inspection programs to be written and inspection results to be analyzed without the use of computer aids. DMIS can function and be implemented as a Dimensional Measuring Equipment (DME) language. DMIS provides the vocabulary to pass inspection programs to dimensional measuring equipment and to pass measurement and process data back to an analysis, collection, and/or archiving system.

ANSI/CAM-I 104.0-2003, Part 2, Dimensional Measuring Interface Standard - Part 2 - Object Interface Specification

DMIS Part 2 defines a collection of object interfaces, based on DMIS Part 1, that provide interoperability between DMIS client applications, a DMIS server, and DMIS mathematics and equipment modules. This DMIS part standard also documents the behavior of each object interface in the context of DMIS Part 1. The documented interfaces provide a window into "black boxes," enabling access to and control of the implementation using the capabilities defined in DMIS. Conformance to this DMIS part standard enables a DMIS component to "plug-and-play" with other conforming DMIS components. (497 Characters)

ANSI/CAM-I 105.0-2005, Part 1, Dimensional Measuring Interface Standard (DMIS Rev. 5.0, Part 1)

Provides for the bi-directional communication of inspection data between computer systems and inspection equipment. DMIS provides the vocabulary to pass inspection programs to measuring equipment and to pass measurement and process data back to an analysis, collection, or archiving system. DMIS defines a neutral format for data exchange, and is designed to be man readable and man writable. * A "Difference Document," identifying the changes between DMIS 4.0 and 5.0 may be ordered for Public Review for \$100 US. Download only.

CAP (College of American Pathologists)

ANSI/CAP SNOMED-1-2003, Healthcare Terminology Structure

Healthcare Terminology Structure is proposed to become the ANSI standard for the delivery of healthcare terminology, which uses numeric identifiers, provides multiple descriptions for each concept, and supports semantic relationships between concepts, with description logic foundation and a structure for inclusion of multiple languages and dialects. This proposed standard contains substantive changes to the earlier proposed standard SNOMED CT Structure.

CAPA (Certified Automotive Parts Association)

CCPA (Cemented Carbide Producers Association)

ANSI B212.1-2002, Carbide Blanks, Brazed and Solid Single-Point Tools

Covers designations, shapes, and dimensional specifications of carbide blanks and single point carbide tools.

ANSI B212.10-2000, Cutting Tools – Precision Indexable Insert Cartridges

Covers dimensional specifications, styles and designations of cartridges for indexable inserts.

ANSI B212.10-2000, Cutting Tools - Precision Indexable Insert Cartridges - Type A

Covers dimensional specifications, styles and designations of cartridges for indexable inserts.

ANSI B212.11-1988 (R2002), Cutting Tools – Indexable Insert Shank-Type Milling Cutters (Inch Series) – Designation

Establishes a code of indexable insert shank-type milling cutters designed in U.S. customary inch units for the purpose of simplifying orders and referencing specifications.

ANSI B212.12-1991 (R2002), Turning Tools – Commonly Used Indexable Inserts

Covers dimensional specifications and styles of indexable inserts commonly, but not exclusively used in turning.

ANSI B212.12.1-1995 (R2002), Indexable Screw-On Inserts with Partly Cylindrical Fixing Holes Commonly Used for Turning

Covers dimensional specifications and styles of indexable screw-on inserts commonly, but not exclusively used for turning.

ANSI B212.13-1979 (R2002), Roller Turner Type Cutting Tools, Single Point

Covers the dimensional envelope for various styles of single-point roller-turner tools covering brazed, solid, or indexable insert types.

ANSI B212.14-2002, Carbide Seats Used with Indexable Inserts for Pin Lock-Type Holders

Covers dimensional specifications and styles for negative rake pin lock-type holders. The values stated in U.S. customary units are to be regarded as the standard.

ANSI B212.15-1994 (R2005), Cutting Tools - Carbide-Tipped Masonry Drills & Blanks for Carbide Masonary Drills

Covers dimensional specifications and designations for carbide-tipped masonry drills, blanks for carbide-tipped masonry drills, and blanks for rotary hammer drills.

ANSI B212.16-2000 (R2005), Cutting Tools - Blanks for Carbide Tools

Covers dimensional specifications and designations for standard blanks for carbide burrs.

ANSI B212.17-1995 (R2002), Cutting Tools – Bore Type Milling Cutters (Inch Series) – Designation

Establishes a code for the designation of indexable insert bore type milling cutters in the U.S. customary inch units for the purpose of simplifying orders and referencing specifications.

ANSI B212.18-2002, Inch Boring Bars for Indexable Inserts – Designation and Dimensions

Covers dimensional specifications, styles, and designations of boring bars for indexable inserts.

ANSI B212.19-1996 (R2002), Cutting Tools – Designation System for Extra Hard Cutting Surfaces, Bonded to Indexable Inserts and Other Carriers

Covers the identification system for indexable-type inserts for both single-point cutting tools and multi-point cutting tools.

ANSI B212.1a-1990 (R2002), Carbide Tips for Brazing on Turning Tools

Presents the dimensions of carbide tips for turning tools intended to be fixed on the shanks of tools by brazing. It is the identical equivalent to International Standard ISO 242.

ANSI B212.2-1984 (R1999), Carbide Seats Used with Indexable Inserts for Clamp Type Holders

Covers dimensional specs and styles of solid sintered carbide seats excluding seats used in conjunction with inserts that are locked by a pin.

ANSI B212.20-1980 (R2002), Carbide Chip Breakers Used with Indexable Inserts for Clamp Type Holders

Covers dimensional specifications and styles of solid sintered carbide chip breakers.

ANSI B212.3-2002, Cutting Tools – Precision Holders for Indexable Inserts

Covers dimensional specifications, styles, and designations of precision holders for indexable inserts. This standard covers dimensional specifications, styles, and designations of precision holders for indexable inserts. This standard was listed for public review in the 1/28/2000 issue of Standards Action. It is being resubmitted due to substantive changes to the text.

ANSI B212.4-2002, Cutting Tools – Indexable Inserts – Identification

Covers the identification system for indexable-type inserts for both single-point and multiple-point cutting tools such as milling cutters.

ANSI B212.5-2002, Metric Holders for Indexable Inserts

Covers dimensional specifications, styles, and designations of metric holders for indexable inserts.

ANSI B212.7-1993 (R1999), Cutting Tools – Threaded Fasteners Used in the Carbide Tooling Industry

Incorporates dimensional specifications, styles, etc. of threaded screw products used in the carbide tooling industry for mechanical clamping, locating, and adjusting purposes.

ANSI B212.8-2002, Cutting Tools – Carbide Blanks for Twist Drills, Reamers, End Mills, and Random Rod

Covers dimensional specifications and designations for carbide blanks for twist drills, reamers, end mills, and random rod.

ANSI B212.9-1994 (R2005), Cutting Tools - Carbide Blanks for Tipping Circular Saws

Covers dimensional specifications and designation for carbide blanks for tipping circular saws. The values stated in US customary units are to be regarded as the standard.

ANSI/ISO 513-2005, Classification and application of hard cutting materials for metal removal with defined cutting edges - Designation of the main groups and groups of application

This International Standard specified the classification and application of hard cutting materials including hard metals (carbides), ceramics, diamond and boron nitride, for machining by chip removal, and establishes their application. It is not applicable for other uses, like mining and other percussion tools, wire-drawing dies, tools operating by deformation of the metal, comparator contact tips, etc.

ANSI/ISO 5609-2004, Boring bars for indexable inserts - Dimensions

This International Standard specifies the general dimensions of solid steel boring bars with cylindrical shank for indexable inserts, and specifies preferred boring bars.

ANSI/ISO 6462-1983 (R2002), Face Milling Cutters with Indexable Inserts – Dimensions

Lays down the dimensions of face milling cutters with indexable inserts. The form and dimensions of the inserts are left to the choice of the manufacturers.

ANSI/ISO 6986-1983 (R2002), Side and Face Milling (Slotting) Cutters with Indexable Inserts – Dimensions

Specifies the dimensions of side and face milling (slotting) cutters with indexable inserts.

ANSI/ISO/IEC 11529-1-2004, Milling cutters - Designation - Part 1: Shank type end mills of solid or tipped design

This part of ISO 11529 establishes a designation system for shank type end mills of solid or tipped design with a maximum diameter of 99.9mm, with the purpose of simplifying communication between users and suppliers

ANSI/ISO/IEC 11529-2-2004, Milling cutters - Designation - Part 2 - Shank type and bore type milling cutters with the indexable inserts

This part of ISO 11529 establishes a designation system for shank type and bore type milling cutters embodying hardmaterial indexable inserts, with the purpose of simplifying communication between users and suppliers of such tools.

CEA (Consumer Electronics Association)

ANSI/CEA 2009-A-2005, Performance Specification for Public Alert Receivers

Defines minimum performance criteria for consumer electronic products designed to receive SAME alert signals broadcast by the National Oceanic and Atmospheric Administration's Weather Radio network and Environment Canada's Meteorological Services of Canada Radio network. This standard does not apply to receivers not equipped to receive SAME messages (e.g., tone-alert receivers).

ANSI/CEA 2028-2005, Color Codes for Outdoor TV Receiving Antennas

This standard defines color codes to be associated with minimum performance parameters of outdoor television (TV) receiving antennas. This standard applies only to devices that can be connected to a transmission line for purposes of converting an electromagnetic wave propagating in free space to a radiofrequency voltage. Couplers and distribution components that are not permanently integrated with an antenna are not covered by this standard.

ANSI/CEA 2030-2005, Multi Room Audio Cabling Standard

This standard defines cabling and connectors for use in distributing analog and digital audio signals throughout a home.

ANSI/CEA 2032-2005, Indoor TV Receiving Antenna Performance Standard

This standard defines test and measurement procedures for determining the performance of indoor TV receiving antennas. It replaces CEA CEB7, TV Receiving Antenna Manufacturers Guide to Indoor Antennas for Use with the CEA Indoor TV Antenna Certification Program.

ANSI/CEA 426-B-1998 (R2005), Loudspeakers, Optimum Amplifier Power

This standard defines test methods and criteria of acceptability for testing the performance of a loudspeaker or loudspeaker system designed for consumer use within defined limits in the areas of power compression, harmonic distortion, and accelerated life testing, when operated at or below the optimum amplifier power.

ANSI/CEA 556-B-1999, Electronics – Outer Shipping Container Bar Code Label Standard

This document provides instructions for producing and applying labels containing bar code symbols or labels containing bar code and two-dimensional symbols on outer shipping containers. A brief description of the integration of Electronic Data Interchange (EDI) and ar codes in a distribution environment is included. Both labels and direct marking methods are covered in this standard under the general term "label."

ANSI/CEA 600.10-2000, Introduction to the CEBusR Standard

Comprises Section 1 of the complete EIA-600 standard and is intended to provide a general introduction to the entire standard. The complete set of documents that comprise EIA-600 provide the necessary specifications for the Consumer Electronic Bus (CEBusP) standard, a local communications and control network designed specifically for the home. The EIA-600 network provides a standardized communication facility for exchange of control information and data among devices and services in the home. To obtain an electronic draft: Email Shazia Azhar: shaziaa@eia.org

ANSI/CEA 600.31-1997 (R2004), Power Line Physical Layer and Medium Specification

preliminary specification for the CEBus Power Line (PL) Physical Layer and Media portion of the Physical Layer and Media Specifications of EIA-600. Its purpose is to present the information necessary for the development of a PL physical network and devices to communicate and share information over the network. This is one of a series of documents covering the various media that comprise the CEBus standard

ANSI/CEA 600.32-1997 (R2004), Twisted Pair Physical Layer and Medium Specification

specification for the CEBus Twisted Pair (TP) Physical Layer and Medium. Its purpose is to present all the information necessary for the development of a TP physical network and devices to communicate and share information over that network in an orderly manner. This is one of a series of documents covering the various media that comprise the CEBus standard

ANSI/CEA 600.33-1997 (R2004), Coax Cable Physical Layer and Medium Specification

preliminary specification for the CEBus Coax (CX) Physical Layer and Medium. Its purpose is to present all the information necessary for the development of a CX physical network and devices to communicate and share information over that network in an orderly manner. This is one of a series of documents covering the various media that comprise the CEBus standard

ANSI/CEA 600.34-1997 (R2004), Infrared Physical Layer and Medium Specification

preliminary specification for the CEBus Infrared (IR) Physical Layer and Medium portion of the Physical Layer and Medium specifications of EIA-600. Its purpose is to present all the information necessary for the development of a IR physical network and devices to communicate and share information over that network to and from IR and other CEBus media in an orderly manner. This is one of a series of documents covering the various media that comprise the CEBus standard

ANSI/CEA 600.35-1997 (R2004), RF Physical Layer and Medium Specification

preliminary specification for the CEBus Radio Frequency (RF) Physical Layer and Medium portion of the Physical Layer and Medium specifications of EIA-600. Its purpose is to present all of the information necessary for the development of a RF physical layer for the CEBus device. This is one of a series of documents covering various media that comprise the CEBus standard

ANSI/CEA 600.37-1997 (R2004), Symbol Encoding Sublayer

describes the portion of the Node Physical Layer that interfaces to the Medium Access Control (MAC) Sublayer and to Layer System Management (LSM). This sublayer is called the Symbol Encoding (SE) Sublayer

ANSI/CEA 600.38-1997 (R2004), Power Line/RF Symbol Encoding Sublayer

describes the portion of the Power Line or RF Physical Layer that interfaces to the Medium Access Control (MAC) Sublayer and to Layer System Management (LSM). This sublayer is called the Power Line/RF Symbol Encoding (PL/RF SE) Sublayer

ANSI/CEA 600.41-1997 (R2004), Description of the Data Link Layer

provides a prose description of the Data Link Layer Design for the CEBus Network. The intent of is to be descriptive, rather than provide a formal specification, and contains a discussion of the Data Link Layer interfaces to the Network Layer and Physical Layer, as well as a functional description of the Data Link Layer

ANSI/CEA 600.42-1997 (R2004), Node Medium Access Control Sublayer

This part of the CEBus standard technical specification of the services and protocol for the Node Medium Access Control Sublayer

ANSI/CEA 600.43-1997 (R2004), Node Logical Link Control Sublayer

This part of the CEBus standard technical specification of the services and protocol for the Node Logical Link Control Sublayer

ANSI/CEA 600.81-1997 (R2004), Common Application Language (CAL) Specification

describes the basic framework of CAL. It is intended as an introduction to CAL operation and syntax that stresses the object-oriented aspects of CAL. It is believed that the object-oriented methodology offers the best means of understanding the complex interaction between devices, controls, and controllers present in the CEBus environment

ANSI/CEA 600.82-1997 (R2004), CAL Context Description

describes the contexts, or main subsystems within a device, supported by the Common Application Language (CAL)

ANSI/CEA 621-A-2004, Electronic Industries Association – Consumer Electronics Group Product and Packaging Bar Code Standard

Assists manufacturers of consumer electronic products in properly applying bar code symbols to products that will move through the retail channel of distribution to the ultimate consumer. The Universal Product Code (UPC) and the International Article Numbering Association (EAN), bar code symbols are being accepted worldwide for point-of-sale data capture by retailers. These bar codes uniquely identify the manufacturer and the product at the stock keeping unit (SKU) level.

ANSI/CEA 633.31-2000, Power Line Physical Layer Conformance

Specifies tests to determine conformance of a Node's Power Line Physical Layer to EIA-600.31. This standard was first listed in the May 23, 1997, June 5, 1998, and March 12, 1999 issues of Standards Action. It is being resubmitted due to substantive changes to the text. To obtain an electronic draft: shaziaa@eia.org.

ANSI/CEA 633.32-1997 (R2004), CEBus Twisted Pair Physical Layer Conformance

specifies tests to determine conformance of a device's Twisted Pair Physical Layer to EIA-600

ANSI/CEA 633.34-1997, CEBus Infrared Physical Layer Conformance

Specifies the tests necessary to determine conformance of a Node's IR Physical Layer to IS-60.

ANSI/CEA 633.37-1997 (R2004), CEBus Symbol Encoding Sublayer Physical Layer Conformance

specifies tests to determine conformance of a Node's Symbol Encoding Sublayer to EIA-600

ANSI/CEA 633.38-1997 (R2004), CEBus PL and RF Symbol Encoding Sublayer Physical Layer Conformance

specifies tests to determine conformance of a Node's Power Line or RF Symbol Encoding Sublayer to EIA-600

ANSI/CEA 633.42-2000, Data Link Layer Conformance Specification

Specifies tests to determine conformance of a Node's Data Link Layer to IS-60. Part One of this standard provides an overview of the conformance philosophy. The reader is urged to review that material before attempting to use the details provided in this part. Three subsections under the following Test Specification heading provide Test Cases, Test Steps, and Test Case Dynamic Behavior, respectively. Test Cases are a terse description of each test to be run on a Unit Under Test (UUT). Test Steps are building blocks for Test Cases. Test Case Dynamic Behavior is the formal expansion of each Test Case, written in the form of a series of Test Steps with a Pass or Fail outcome. Was previously approved: ANSI/EIA 633.42-1998 on 12/10/1998.

ANSI/CEA 633.81-2000, Common Application Language Conformance

Specifies tests to determine conformance of a Node's CAL to EIA-600.81. This standard was first listed in the May 23, 1997 and March 12, 1999 issues of Standards Action. It is being resubmitted due to substantive changes to the text. To obtain an electronic draft: shaziaa@eia.org.

ANSI/CEA 706-1997, Component Marking Standard

Describes the requirements for using formatted two dimensional machine readable symbols for the marking of electronic components of first level assemblies.

ANSI/CEA 709.1-B-2002, Control Network Protocol Specification

(SP-4997) This specification applies to a communication protocol for networked control systems. The protocol provides peer-to-peer communication for networked control and is suitable for implementing both peer-to-peer and master-slave control strategies. This specification describes services in layers 2-7.

ANSI/CEA 709.2-A-2000, Control Network Powerline (PL) Channel Specification

Specifies the EIA-709 Control Network Powerline Channel and serves as a companion document to EIA-709.1. Its purpose is to present the information necessary for the development of the PL physical network and nodes to communicate and share information over that network. To obtain an electronic draft: Email: Shazia Azhar, shaziaa@eia.org

ANSI/CEA 709.3-1999 (R2004), Free-Topology Twisted-Pair Channel Specification

defines the free topology twisted pair channel and acts as a companion document to CEA-709.1

ANSI/CEA 709.4-2000, Fiber Optic Channel Standard

Specifies the physical layer (OSI Layer 1) requirements for the EIA-709.4 fiber optic channel, which encompasses the interface to the Media Access Control (MAC) layer and the interface to the medium.

ANSI/CEA 721.1-1999 (R2004), Generic CAL Specification - Generic CAL Syntax, Methods, and Objects

Describes the basic framework of Generic CAL. It is intended as an introduction to Generic CAL operation and syntax that stresses the object-oriented aspects of Generic CAL. It is believed that the object-oriented methodology offers the best means of understanding the complex interaction between devices, controls, and controllers present in a Generic Network environment

ANSI/CEA 721.2-1999 (R2004), Generic CAL Context Description Specification

Describes the contexts, or main subsystems within a device, supported by the Generic Common Application Language (Generic CAL)

ANSI/CEA 721.3-1999 (R2004), Node Application Layer Specification

This Application Layer consists of four main elements. The application Process interface to the Application Layer. Services are provided by the Generic Common Application Language (Generic CAL) Element to the User Element of the Application Process. Generic CAL language framework through which Resource Allocation and Control functions are executed. Services are provided by the Message Transfer Element to the Generic CAL Element. The Message Transfer Element interfaces to the lower layers of the Generic Network either directly or through the Association Control Element. The lower layers are representative of some home automation networks. Additional OSI layers may be included. An adaptation layer may be required between the Generic CAL Application Layer and the Generic Network lower layers

ANSI/CEA 721.4-1999 (R2004), Generic CAL Quality of Service

This specification for Generic CAL consists of an Application Layer containing a command language and a Message Transfer Service Element. The specifications of the lower OSI layers are not within the scope of this standard. However, the services provided by the lower layers affect the performance and composition of messages issued from the Application Layer. These lower layer service options are collectively called the Quality-of-Service (QOS) available from the communications protocol. This portion of EIA-721 standard describes the lower layer QOS options that may impact the Application Layer. Recommended capabilities are specified. Also, a mechanism to convey these options to the Generic CAL Application Layer using Layer System Management functions is presented

ANSI/CEA 776.1-1999, Description of the CEBus-EIB Router

A copy of this draft standard may be obtained via E-mail at shaziaa@eia.org.

Describes the operation of a CEBus-EIB Router. This document is not intended to define how a router should operate, but to provide an overview of the operation and the coordination of various router elements.

ANSI/CEA 776.2-1999, CEBus-EIB Router Medium Access Control Sublayer

A copy of this draft standard may be obtained via E-mail at shaziaa@eia.org.

The CEBus-EIB Router Medium Access Control (MAC) Sublayer is almost identical to the CEBus or EIB Node MAC Sublayer corresponding to the "CEBus side" or the "EIB side" of the Router. The differences are in the way the Router does address matching on a received packet and on the information exchanged in some of the service primitives. Rather than copy the Node MAC specification here and make minor changes, the Router MAC is specified by exception to the Node MAC for both the CEBus and EIB specifications. The reader should have a clear understanding of the Node MAC and Logical Link Control (LLC) Sublayers before reading this specification. A prose description of the CEBus Node MAC and LLC is

ANSI/CEA 776.3-1999, CEBus-EIB Router Logical Link Control Sublayer

A copy of this draft standard may be obtained via E-mail at shaziaa@eia.org.

This section specifies the CEBus-EIB Router Logical Link Control Sublayer interfaces to the Router Network Layer and to the Layer System Management. The interfaces are described in terms of service primitives, which are abstract interfaces across a layer boundary. A service primitive represents an exchange of information into or out of a layer. Although service primitives are defined using a format similar to that of programming language procedure calls, no implementation technique is implied.

ANSI/CEA 776.4-1999, CEBus-EIB Router Network Layer

A copy of this draft standard may be obtained via E-mail at shaziaa@eia.org.

Defines the inter-element interfaces of the CEBus-EIB Router Network Layer and the operation of each element. The CEBus-EIB Router Network Layer is conceptually divided into several elements, each performing distinct, well-defined services. Each element may be thought of as an independent process that communicates with the other elements and protocol layers through specified interfaces. Another part of this standard, Description of the CEBUS-EIB Router, BSR/EIA SP-4565, provides an overview of router operation, and should be read first.

ANSI/CEA 776.5-1999, The EIB Communications Protocol

A copy of this draft standard may be obtained via E-mail at shaziaa@eia.org.

Describes the communications protocol of the EIB system. EIB is a control system for related applications in homes and buildings. The EIB system offers standardized basic and system components, e.g., Bus Coupling Units (BCU), Power Supply Units (PSU), Bus Interface Modules (BIM), Routers, and RS-232 data interfaces.

ANSI/CEA 844-2001, XML Encoding of Generic Common Application Language (CAL)

Encodes Generic Common Application Language (CAL) into XML.

ANSI/CEA 852-2002, Tunneling Component Network Protocols Over Internet Protocol Channels

This standard specifies the method to use for IP tunneling with EIA/CEA-709.1B and ANSI/EIA-600.81.

ANSI/CEA 863-A-2005, Connection Color Codes of Home Theater Systems

This standard defines the colors for marking connections commonly used for electronic devices in a home theater system. This standard adds continuity to installation information, and ensures consistency of information to installers.

ANSI/CEA 936-A-2006, USB Carkit Specification

CEA-936-A defines a standard method for routing audio and Universal Asynchronous Receiver Transmitter (UART) signals through a USB receptacle on a phone to a USB analog carkit and to other accessories such as chargers and RS232 devices. This specification is intended for developers of On-The-Go (OTG) transceivers, cell phones, carkits, and car stereos.

CEMA (Conveyor Equipment Manufacturers Association)

ANSI/CEMA 102-2002, Conveyor Terms and Definitions

Comprises a compendium of standard terms and definitions for use throughout the United States conveying industry. This revision includes 51 new terms and definitions, 12 modifications to existing terms and definitions and 10 new or modified cross-references. When Published, this document will be the Seventh Edition of Conveyor Terms and Definitions since it was begun in 1956. The document has already been published as CEMA Standard 102-2000. CEMA conducted a ballot for this same document earlier in 200-2001 but had an imbalance in the consensus group that favored Producers. The consensus group has been revised but still could use more User and General Interest involvement. CEMA invites additional User and General Interest participation in this canvass. CEMA is conducting a concurrent ballot with this announcement. Its due date is

ANSI/CEMA 300-2003, Screw Conveyor Dimensional Standards

Establishes recommended dimensional standards for major screw conveyor components. All dimensions and tolerances are based on Carbon Steel Fabrication

ANSI/CEMA 350-2003, Screw Conveyors for Bulk Materials

Provides a common basis for selection and installation of screw conveyors of standard sizes and capacities to handle the most commonly encountered bulk materials in commerce and industry.

ANSI/CEMA 401-2003, Roller Conveyors Non-Powered

Establishes nomenclature, certain minimum standards, and application guidelines for use in manufacturing and applying unit handling, non-powered, roller conveyors.

ANSI/CEMA 402-2003, Belt Conveyors

Establishes nomenclature, certain minimum standards, and application guidelines for use in manufacturing and applying unit handling, belt conveyors.

ANSI/CEMA 403-2003, Belt Driven Live Roller Conveyors

Establishes nomenclature, certain minimum standards, and application guidelines for use in manufacturing and applying unit handling, belt driven, live roller conveyors.

ANSI/CEMA 404-2003, Chain Driven Live Roller Conveyors

Establishes nomenclature, certain minimum standards, and application guidelines for use in manufacturing and applying unit handling, chain driven, live roller conveyors

ANSI/CEMA 405-2003, Slat Conveyors

Establishes nomenclature, certain minimum standards, and application guidelines for use in manufacturing and applying unit handling, slat conveyors.

ANSI/CEMA 406-2003, Lineshaft Driven Live Roller Conveyors

Establishes nomenclature, certain minimum standards, and application guidelines for use in manufacturing and applying unit handling, lineshaft driven, live roller conveyors.

ANSI/CEMA 501.1-2003, Welded Steel Wing Pulleys, Specifications for

Establishes load ratings, allowable variation from nominal dimensions, permissible crown dimensions and such overall dimensions as are normally necessary to establish clearances for location of adjacent parts.

ANSI/CEMA 550-2003, Classification and Definitions of Bulk Materials

Provides materials classifications with physical characteristics of each, hazards that affect conveyability, and suggested test procedures for new materials. Aids in establishment of design criteria for bulk conveying machinery and ancillary equipment.

ANSI/CEMA B105.1-2003, Specifications for Welded Steel Conveyor Pulleys With Compression Type Hubs

Establishes load ratings, allowable variation from nominal dimensions, permissible crown dimensions and such overall dimensions as are normally necessary to establish clearances for location of adjacent parts.

CFPMI (Cold Formed Parts & Machine Institute)

ANSI B154.1-2004, Rivet Setting Equipment, Safety Requirements for Construction, Care, and Use of

The requirements of this Standard apply to powered machines designed to insert and clinch fasteners commonly called rivets. Special machines built by adapting rivet setting machines with special tooling and assembly machines, for example, rivet setting machines in combination with dial indexing machines, are included when the primary purpose is fastening. Rivet spinners, rivet guns, and similar fastener applicators are excluded.

CGA (Compressed Gas Association)

ANSI K61.1-1999, Safety Requirements for the Storage and Handling of Anhydrous Ammonia

This standard applies to the design, construction, repair, alteration, location, installation and operation of anhydrous ammonia systems including refrigerated ammonia storage systems. This standard does not apply to ammonia manufacturing plants. It does not apply to refrigeration systems where ammonia is used solely as a refrigerant, ammonia transportation pipelines, or ammonia barges and tankers.

CI (The Chlorine Institute)

ANSI/CI Pamphlet 1-1997, The Chlorine Manual, Edition 6

Contains basic information, including properties and physiological effects of chlorine, description and rules for handling chlorine containers, emergency measures and first aid, and chemical and physical characteristics.

CLSI (Clinical and Laboratory Standards Institute (formerly

ANSI/NCCLS C46-A-2001, Blood Gas and pH Analysis and Related Measurements; Approved Guideline

Provides clear definitions of the several quantities in current use, and provides a single source of information on appropriate specimen collection, preanalytical variables, calibration, and quality control for blood pH and gas analysis and related measurements.

ANSI/NCCLS GP17-A2-2004, Clinical Laboratory Safety; Approved Guideline

This document contains general guidelines for implementing a high-quality laboratory safety program. The framework is adaptable to any laboratory.

ANSI/NCCLS H1-A4-1997, Evacuated Tubes for Blood Specimen Collection – Third Edition

This document presents requirements for blood collection tubes and additives including heparin, EDTA, and sodium citrate.

ANSI/NCCLS H11-A3-2000, Percutaneous Collection of Arterial Blood for Laboratory Analysis

Focuses on arterial puncture and includes discussion of arterial cannulation. It addresses principles for collecting, handling, and transporting arterial blood specimens. Its primary purpose is to reduce potential hazards to the patient and maintain the integrity of the arterial blood specimen. While providing some specific guidance, it is not intended to provide an exhaustive discussion of related subjects, such as pH/blood gas analysis and the technical implications of improper sampling.