FALL PROTECTION PROGRAM

REGULATORY STANDARDS: OSHA - 29 CFR 1910.66
29 CFR 1910.128, 129, 130, 131, (Proposed)
29 CFR 1910.23, 24, 25, 26, 27
29 CFR 1926.104
29 CFR 1926.500

BASIS

Approximately 300,000 disabling injuries occur in work-related falls each year. 85% of workers surviving falls lose time from their jobs. This poses a serious problem for exposed workers and their employer. The OSHA Safety Standards establish uniform requirements to make sure that the hazards elevated falls in U.S. workplaces are evaluated, and that this hazard information is transmitted to all affected workers.

GENERAL

D&D Tech Systems, Inc. will ensure that work areas that have a potential for falls over 4 feet in height, within our facilities are evaluated, and that information concerning their hazards is transmitted to all employees. This document is intended to address comprehensively the issues of; evaluating potential fall hazards, communicating information concerning these hazards, and establishing appropriate protective measures for employees.

RESPONSIBILITY

D&D Tech Systems, Inc. management is responsible for the administration of this program and has full authority to make necessary decisions to ensure success of the program. All company employees are responsible for safety at all times. This company has expressly authorized managers/supervisors to halt any company operation where there is danger of serious personal injury.

CONTENTS OF THE FALL PROTECTION PROGRAM

D&D TECH SYSTEMS, INC. FALL PROTECTION PROGRAM

1 WRITTEN PROGRAM.

D&D Tech Systems, Inc. will review and evaluate this standard practice instruction:

- On an annual basis. Last review conducted by_____ on _____
- When changes occur to 29 CFR, that prompt revision of this document
- When facility operational changes occur that require a revision of this document
- When there is an accident or close-call that relates to this area of safety
- Review the program any time fall protection procedures fail

Effective implementation of this program requires support from all levels of management within this company. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals, and objectives.

The following Job Hazard Evaluations and/or Accident/incident investigations have been conducted and have resulted in review/revision of this Fall Protection Program:

Document Title	Review/Revision Date

2 STATEMENT OF POLICY

The hazards of potential falls at heights of 4 feet and above will be addressed in this document. This instruction describes a systematic approach that must be used to prevent workers from falling. This instruction also lists some of the most common fall hazards, and provides recommendations and guidelines for selecting fall arrest systems.

Employees who fail to follow the safety procedures and protocols identified in this program will be subject to disciplinary action as specified in the company's Progressive Discipline Policy. The disciplinary actions taken can include verbal reprimand, written reprimand or immediate termination based upon the circumstances of the violation.

3 FACILITY/DEPARTMENT EVALUATION

The workplace will be assessed before each assigned job for potential fall hazards. Proper fall arrest equipment will be used for jobs requiring fall protection when elimination of the hazard(s) is not possible. This company will evaluate the facilities by department to determine fall hazards. This preliminary evaluation will detail the required steps for protecting employees from fall hazards. A fall hazards assessment sheet (see appendix) will be used to document fall hazard assessments. A complete list of fall hazard locations and protective measures procedures will be maintained.

Hazard Location List

Department	Specific Fall Hazard Location	Date Evaluated	Remarks

Employees Affected by the Fall Protection Program

Department	Job Title

4 TRAINING

A training program will be provided for all employees who will be exposed to fall hazards in the work area, and will be conducted by competent personnel. The program will include but will not be limited to:

- A description of fall hazards in the work area
- Evaluation for methods to eliminate fall hazards

- Procedures for using fall prevention and fall arrest systems
- Fall arrest equipment limitations
- Evaluation of total fall distance during fall arrest
- Inspection and storage procedures for fall arrest equipment

Generally, workers will be trained to recognize the hazards of falling from elevations and to avoid falls from grade level to lower levels through holes or openings in walking/working surfaces. Training programs will include elimination, prevention, control and fall arrest systems. It must be ensured that appropriate fall arrest systems are installed, and that employees know how to use them before beginning any work that requires fall protection.

4.1 Initial training

Training will be conducted prior to job assignment. D&D Tech Systems, Inc. will provide training to ensure that the purpose, function, and proper use of fall protection is understood by employees and that the knowledge and skills required for the safe application and usage is acquired by employees. This standard practice instruction will be provided to, and read by all employees receiving training. The training will include, as a minimum, the following:

4.1.1 Types of fall protection equipment appropriate for use.

4.1.2 Recognition of applicable fall hazards associated with the work to be completed and the locations of such.

4.1.3 Fall arrest anchor point capacity requirements.

4.1.4 Procedures for removal of fall protection and arrest devices from service for repair or replacement.

4.1.5 All other employees whose work operations are, or may be, in an area where fall protection devices may be utilized, will be instructed to an awareness level concerning hazards associated with fall protection operations.

4.1.6 Equipment maintenance and inspection requirements.

4.1.7 Equipment donning and doffing procedures.

4.1.8 Equipment strengths and limitations

4.1.9 Certification. D&D Tech Systems, Inc. will certify that employee training has been accomplished and is kept up to date. The certification will contain

each employee's name and dates of training. Training will be conducted by the following competent personnel:

Name/Title	Phone/Ext.

4.1.10 Training Materials have been developed and are located _____. The titles for documents and materials used for training include:

4.2 Refresher training

This standard practice instruction will be provided to, and read by all employees receiving refresher training. The training content will be identical to initial training. Refresher training will be conducted on a semi-annual basis or when the following conditions are met, whichever event occurs sooner.

4.2.1 Retraining will be provided for all authorized and affected employees whenever (and prior to) a change in their job assignments, a change in the type of fall protection equipment used, or when a known hazard is added to the work environment which affects the fall protection program.

4.2.2 Additional retraining will also be conducted whenever a periodic inspection reveals, or whenever this employer has reason to believe, that there are deviations from, or inadequacies in, the employee's knowledge or use of fall protection equipment or procedures.

4.2.3 Whenever a fall protection procedure fails.

4.2.4 The retraining will reestablish employee proficiency and introduce new or revised methods and procedures, as necessary.

4.2.5 Certification. D&D Tech Systems, Inc. will certify that employee training has been accomplished and is kept up to date. The certification will contain each employee's name and dates of training. Training will be conducted by the following competent personnel:

Name/Title	Phone/Ext.

4.2.6 Training Materials have been developed and are located _____. The titles for documents and materials used for training include:

5 FALL HAZARD CONTROL PROCEDURES (FALL PREVENTION)

5.1 Control Procedures Development

Once a facility evaluation has been accomplished, procedures will be developed, documented and utilized for the control of potential fall hazards. Fall prevention plans will be designed by competent personnel. Company engineers (where utilized) or other competent personnel will be provided with any required specialized training to recognize fall hazards, to understand and address fall prevention techniques, and to become familiar with fall arrest equipment and procedures. It is critical that they consider fall protection design for the safety of operations where employees must work at elevated heights. Safety during access and egress from elevated work sites will also be considered. The following guidelines will be used when planning work at elevated heights:

5.1.1 Involve the Safety Department early in the project planning/job planning so that they can recommend appropriate fall-protection measures and equipment.

Name	Department	Phone/ext.

5.1.2 Involve qualified Engineers when load rating of anchorage points must be determined or is in doubt. Required training will be provided as necessary.

Name	Department	Phone/ext.

5.1.3 Involve Engineering and Maintenance when anchorage points must be installed.

Name	Department	Phone/ext.

5.1.4 The Safety Responsible and Management will use the expertise of fall protection equipment manufacturers such as Insert approved vendors

5.1.5 D&D Tech Systems, Inc. will be specific in dealing with fall hazards when developing contracts. Contractors will be required to provide a written fall protection program which describes the Contractors' fall protection policies and procedures when they will be working at elevated heights.

5.2 Procedural Format

The following format will be followed when developing fall protection procedures. The Safety Officer will be responsible for the implementation of these procedures. The procedures will clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized to control fall hazards, and the means to enforce compliance including, but not limited to, the following:

5.2.1 A specific statement of the intended use of the procedure.

5.2.2 A review of accident records, including OSHA 300 logs and Workers' Compensation documentation.

5.2.3 Interviews with employees and groups of employees whose work environment includes or may include fall hazards.

5.2.4 Physical observations of the work environment(s) that involve fall hazards or the potential of such. 5.2.5 Observations of individuals and their job tasks and work habits that expose them to existing or potential fall hazards.

5.2.5 The procedures contained in the company fall protection program.

5.2.6 Specific procedural steps for the use and operation of body harness systems, and other fall protection systems.

5.2.7 Specific procedural steps for the placement, erection, inspection, maintenance, disassembly and transfer of fall protection systems or devices and the person(s) responsible for them.

5.2.8 Specific requirements for testing fall protection systems or equipment to determine and verify the effectiveness of the fall protection control measures (not load testing).

5.2.9 The correct procedures to rescue employees who have fallen.

5.2.10 The role of each employee in fall protection plans and applicable policies.

5.2.11 Specific requirements for testing fall protection systems or equipment.

5.3 Standard Operating Procedure Documents (SOP's). The following are the SOP documents that have been established for processes and work areas that require fall protection:

Procedure/work Area	Document Title

6 PROTECTIVE MATERIALS AND HARDWARE.

Appropriate fall protection devices will be provided for potential fall hazards. Selection of the equipment will be based on the fall protection evaluation. All fall protection equipment shall meet applicable requirements of ANSI, ASTM or ASHA. Evaluations will be conducted by the following personnel authorized to evaluate fall protection requirements:

Name/Title	Phone/ext.

6.1 Selection Criteria

6.1.1 Fall Protection devices will be singularly identified; will be the only devices(s) used for controlling falls; will not be used for other purposes; and will meet the following requirements:

6.1.1.1 Capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

6.1.1.2 Anchor points will not deteriorate when located in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

6.1.1.3 Capable of withstanding the ultimate load of 5,000 lbs., or 2 times the fall arrest impact load, for the maximum period of time that exposure is expected.

6.1.1.4 Standardization within company facilities. Fall protection devices will be standardized whenever possible.

6.1.2 Guard rails. Shall be able to withstand at least 200 pounds of force applied in any direction on the top rail.

6.1.2.1 Floor openings. All floor openings, including a stairway, ladder way, hatchway, chute, skylight, pit, and manhole must be guarded by fixed or removable railings, screens, or toe boards. The rule describes the applicable guard for each type of opening.

6.1.2.2 Wall openings. Every wall, window wall, and chute wall opening from which there is a drop of more than 4 feet must be guarded by one or more protection devices described in the rule. Every temporary wall opening must have adequate guards but these need not be of standard construction.

6.1.2.3 Open-sided floors, platforms, and runways. All open-sided floors, platforms, and runways must be guarded by a railing and, in certain cases, by a toe board.

7 FALL PROTECTION SYSTEMS

When fall hazards cannot be eliminated through any other means, fall arrest systems will be used to control falls. Proper training on the use of fall arrest equipment is essential and will be provided prior to use.

7.1 Full Body Harness Systems

A full body harness system consists of a full-body harness, lanyards with energy shock absorbers or retractable fall limiters, all with double-locking snap hooks. Before using a full body harness system, the supervisor and/or the user must address such issues as:

7.1.1 Has the user been trained to recognize fall hazards and to use fall arrest systems properly?

7.1.2 Are all components of the system compatible according to the manufacturer's instructions?

7.1.3 Have appropriate anchorage points and attachment techniques been reviewed?

7.1.4 Has free fall distance been considered so that a worker will not strike a lower surface or object before the fall is arrested?

7.1.5 Have swing fall hazards been eliminated?

7.1.6 Have safe methods to retrieve fallen workers been planned?

7.1.7 Has the full-body harness and all of its components been inspected both before each use and on a regular semi-annual basis?

7.1.8 Is any of the equipment, including lanyards, connectors, and lifelines, subject to such problems as welding damage, chemical corrosion, or sandblasting operations?

7.2 Retractable Lifelines

7.1.1 A properly inspected and maintained retractable fall limiter, when correctly installed and used as part of the fall arrest system, automatically stops a person's descent in a short distance after the onset of an accidental fall.

7.1.2 Retractable fall limiters may be considered when working in areas such as on roofs and scaffolds, or in tanks, towers, vessels, and manholes. Also, retractable fall limiters must be considered when climbing such equipment as vertical fixed ladders. Before using a retractable fall limiter, the supervisor and/or the user must address the following questions:

7.1.2.1 Has the user been trained to use a retractable fall limiter correctly?

7.1.2.2 Is the retractable fall limiter being used in conjunction with a complete fall arrest system?

7.1.2.3 Is the equipment under a regular maintenance program?

7.1.2.4 Has the equipment been inspected within the last six months?

7.2 Standard Harnesses

Harnesses for general purpose work must be Class III, constructed with a sliding back D-ring. Standard harnesses are suitable for continuous fall protection while climbing, riding, or working on elevated personnel platforms. They are suitable for positioning, fall arrest, and the rescue and evacuation of people who are working at elevated heights.

7.3 Guard Rails (General Industry)

Guard rails must be installed in any location where there is a possibility of a fall of 4 feet or more. The guard rails shall be 42 inches vertically, from the floor and a 4 inch toe board shall be installed at the edge of the hazard.

7.4.1 Typical locations that require guard rails include: Floor Openings, Wall Openings and Open-sided Floors, Platforms, and Runways.

8 INSPECTION AND MAINTENANCE

To ensure that fall protection systems are ready and able to perform their required tasks, a program of inspection and maintenance will be implemented and maintained. The following as a minimum, will comprise the basic requirements of the inspection and maintenance program:

8.1 Equipment manufacturer's instructions will be incorporated into the inspection and preventive maintenance procedures.

8.2 All fall protection equipment will be inspected prior to each use, and a documented inspection at intervals not to exceed 6 months, or in accordance with the manufacturers guidelines? Is 8.2 needed or does 8.3 cover it?

8.3 The user will inspect his/her equipment prior to each use and check the inspection date.

8.4 Any fall protection equipment subjected to a fall or impact load, will be removed from service immediately and inspected by a qualified person (sent back to the manufacturer).

8.5 Check all equipment for mold, damage, wear, mildew, or distortion.

8.6 Ensure that no straps are cut, broken, torn or scraped.

8.7 Special situations such as radiation, electrical conductivity, and chemical effects will be considered.

8.8 Equipment that is damaged or in need of maintenance will be tagged as unusable, and will not be stored in the same area as serviceable equipment.

8.9 A detailed inspection policy will be used for equipment stored for periods exceeding one month.

8.10 Anchors and mountings will be inspected before each use by the user and supervisor for signs of damage.

8.11 Guard rails will be sturdy, well anchored and in compliance with Federal and/or local regulations.

8.12 Ladders, Mobile Ladder Stands and Scaffolding shall meet or exceed the National and/or local regulatory requirements.

9 MOST COMMON AND MOST DANGEROUS FALL HAZARDS

The tasks and situations listed below present inherent fall hazards. Give special attention to providing fall prevention and/or fall control for them, remembering that this attention is necessary in the design, engineering, planning, and execution stages of work. Supervisors will give special consideration to fall protection for the following tasks:

9.1 Working from crane booms and tower cranes.

9.2 Working on top of machinery and equipment, such as overhead cranes, furnaces, conveyors and presses.

9.3 Other work that involves fall hazards, such as 'off-chutes' from main piping in duct work or boilers.

9.4 Working on roofs.

9.5 Working over chemical tanks or open pits.

9.6 Working from a fixed or portable ladders, or climbing systems.

9.7 Performing work on water towers, product tanks, silos, pipe racks, presses, and floor pits.

9.8 Working around unguarded edges of work platforms, racking systems and elevated surfaces

9.9 Working on Ladders, Mobile Ladder Platforms, and/or Scaffolding

10 CONTRACTOR RESPONSIBILITIES

In addition to complying with the fall protection requirements that apply to all company employees, each contractor who is retained to perform operations that involve fall protection will:

10.1 Obtain any available information regarding fall hazards and protective measures from this company.

10.2 Coordinate fall protection operations with the company, when both company personnel and contractor personnel will be working in or near recognized fall hazard locations.

10.3 Inform the company of the fall protection program that the contractor will follow and of any hazards confronted or created in conducting operations involving fall protection within company owned facilities through a debriefing immediately prior to the operation.

11 FALL PROTECTION RESCUE

11.1 General

This program provides an overview of the present state-of-the art in fall protection rescue. Decades of experience in protecting workers exposed to fall hazards has resulted in new codes of practice which include important provisions for retrieving workers after their fall has been arrested. A new national consensus standard, ANSI Z359.2 (proposed), “Requirements for a Managed Fall Protection Program,” addresses the need for prompt rescue after a fall. A companion standard, ANSI Z359.4 (proposed), “Safety Requirements for Assisted-Rescue and Self-Rescue Systems, Subsystems and Components,” will provide guidance on the design of rescue equipment for general industry. We will examine the requirements of these proposed new standards as they pertain to rescue planning, equipment and training.

11.2 Rescue planning

Rescue after a fall must be a pre-planned event. Current best-practices call for a thoughtful approach to retrieving a fallen worker as soon as possible without endangering the lives of those who must conduct the rescue operation. Planning for Rescue is Part of the Total Fall Protection Program Planning for rescue takes place in the context of a managed fall protection program. In such a program, as envisioned in the ANSI Z359.2 standard, rescue is the final piece in a systematic approach to worker protection.

11.2.1 The Rescue Plan and Rescue Procedures. The rescue plan is the overall approach to post-fall rescue and retrieval. The rescue plan is a strategy which establishes:

- the duties and responsibilities of the rescue team,
- principles of safe practice,
- general guidelines on the means and methods to be employed in rescue operations, and
- training guidelines and measures of competency for rescue personnel

The rescue plan is supplemented by detailed rescue procedures which provide step-by-step processes that describe the specific manner in which rescue is to be accomplished.

11.2.2 Rescue Procedures are linked to Fall Protection Procedures. Let's begin at the beginning, with the fall hazard survey, which identifies the potential fall hazards at a given location and job activity. In the managed approach to fall protection, each fall hazard is addressed by abatement procedures, which follow the hierarchy of controls. If the fall hazard cannot be eliminated or prevented by other means, then personal protective equipment (PPE) may be required. The use of fall protection PPE necessarily includes provisions for prompt rescue of the worker after a fall, as mandated in OSHA regulations.

So we see that rescue procedures are tied directly to the fall hazard abatement plan. For each fall hazard which is controlled by the use of PPE, we will have a specific location in mind. We will have identified a point for anchoring the fall protection system and taken into consideration the fall clearances required to stop the fall. We will also have knowledge of the worksite geometry and other potential hazards, such as obstructions in the path of a fall, energized electrical sources, hazardous chemicals, moving machinery, bad air (in confined spaces) and flammable vapors, etc.

Rescue procedures build on the knowledge developed in the fall protection procedures for each hazardous location. Rescue procedures then take the next step, to determine how best to retrieve an incapacitated worker after fall protection PPE has arrested their fall. Additional considerations that are part of a rescue procedure include:

• Location and strength of a rescue anchor
• Identification of the nearest safe working level

- Equipment required to transport the fallen worker to a safe working level
- Personnel needed to operate the rescue equipment
- Means to protect rescue personnel during rescue operations

11.2.3 The Role of Emergency Services. Reliance on professional emergency fire and rescue services is frequently cited by employers as the mainstay of their rescue plans. In some urban locations, local emergency services are available. To take advantage of these rescue professionals, however, also entails a degree of planning and coordination on the part of employers. If your facility or job-site is served by public emergency responders, you must consult them in advance and seek their input on the feasibility of using their rescue capabilities.

Questions to be considered before relying on professional emergency services include:

- Are emergency responders on duty throughout the time when they may be needed?
- Can they reach the location of a fallen worker in a timely manner?
- Do they have the equipment and training necessary to reach the elevation involved and access a fallen worker?
- Are provisions for multiple-worker or multiple-location falls within their capabilities?
- Does the emergency service have sufficient back-up capacity to respond to your needs in the event that the responders are occupied with another emergency when you call them?

Experience has shown that many emergency responders are not trained or equipped to deal effectively with post-fall rescue situations. A properly developed rescue plan will not assume that public emergency services are automatically the solution for any and all post-fall rescue events. Employers are advised that it is ultimately their responsibility to provide for the rescue of their workers.

One important role for emergency services is in rendering prompt emergency medical treatment to a fallen worker once that person has been evacuated to a safe working level. Rescue planning must include timely notification and arrival of medical assistance to the accident scene, since many accidental falls are precipitated by trauma, such as electrocution, blunt force injury, cardiac arrest, etc.

11.2.4 Medical Considerations in Post-Fall Rescue. At the recent International Technical Rescue Symposium, there was considerable discussion of how much and what kind of first aid should be rendered by rescue personnel during the rescue mission.

The consensus of rescue professionals was that the first priority in rescue is to bring the incapacitated person promptly to a safe level. At that point, emergency first aid can be administered by trained emergency medical technicians.
Some training in first aid for members of the rescue team is generally recommended. Training includes such topics as maintaining an airway, recognizing of the signs of orthostatic intolerance and shock, the use of a back-board for immobilizing the neck and spine, and CPR. However, the primary goal of rescue after a fall is quick, safe transportation to ground level.

While performing the rescue, and after arriving at a safe working level, rescuers are cautioned to keep the fallen person in an upright or seated posture to reduce sudden back-flow of de-oxygenated blood into the heart. Any worker who has been suspended in a harness following a fall, even for relatively short periods, is advised to seek medical attention for possible delayed onset of suspension trauma.

11.3 Rescue equipment

Historically, equipment used in industrial rescue work has been drawn from mountaineering and alpine rescue fields. This equipment emphasizes rope techniques and combinations of components rigged together for each rescue application. While the equipment is very light and versatile in the hands of professional rescue technicians, it requires considerable skill and experience to be used safely.

The current trend is toward equipment designed especially for the needs of industrial rescue teams. This equipment tends to have more redundant safety features and is often pre-rigged by the manufacturer to reduce the possibility of misuse during an emergency. New national standards are being developed to establish requirements for industrial rescue equipment. These new standards will simplify the task of selecting and using rescue equipment for industrial users.

11.3.1 Selecting the Right Equipment for the Job. A wide range of safety equipment is available for post-fall rescue. The type of equipment you select will depend on the circumstances of your pre-planned rescue response. Here again, we rely on the evaluation and planning performed by a competent person as part of the rescue plan to guide us in the selection of equipment suitable for specific applications.

There is no one-size-fits-all solution in rescue equipment. The equipment must be matched to the rescue plan and will vary to such a degree that equipment solutions for one rescue scenario could be completely inappropriate for another application. For recommendations on equipment designed for your rescue needs, contact your rescue equipment manufacturer.

11.3.2 Rescue Equipment Standards. The National Fire Protection Association, NFPA 1983 (2006 edition), provides guidelines to manufacturers of fiber ropes, harnesses and accessory equipment. This standard applies primarily to the professional fire services, but is also applicable to the needs of industrial rescue personnel. Equipment certified to NFPA 1983 (2006 edition) meets a very stringent set of strength and performance requirements suitable for the demands of emergency rescue.

The American National Standards Institute, ANSI Z359 Accredited Standards Committee for Fall Protection, has been working on a new standard for rescue equipment, ANSI Z359.4 (proposed). This new standard sets criteria for product design and testing. The ANSI Z359.4 standard will address requirements for the following types of equipment:

- Rescue Harnesses,
- Rescue Lanyards,
- Anchorage Connectors,
- Rope-and-Tackle Systems,
- Descender Devices,
- Three-Way Rescuers (self-retracting lanyards with emergency rescue capability), and
- Rescue Hoists

When it is published sometime early next year, look for rescue equipment marked as certified to the ANSI Z359.4 standard. This is your assurance of the highest level of product performance in components for the industrial rescue market.

11.4 Rescue training

11.4.1 Training and Competency. We often hear that training is fundamental to the successful implementation of any fall protection and rescue plan. But training, narrowly defined as education or instruction, is not sufficient to ensure a positive outcome in an emergency. Rescue personnel must be trained, and they must also demonstrate their working knowledge through a practical, hands-on demonstration of skill. Training plus assessment equals competency. And competency in an emergency is the ultimate measure of a successful rescue training program.

11.4.2 Training Requirements for Rescue. Proposed ANSI Z359.2 offers detailed guidance in the requirements for training personnel for post fall rescue. The standard begins by establishing the requirements for the rescue trainer. The rescue trainer must have:

- Documented experience, knowledge, expert training and education equal to or greater than any category of person that they are training,
- Documented experience, knowledge and skills in adult education methods, and
- An ongoing education in fall protection and rescue.
- Training for rescue personnel under the proposed standard includes requirements for different levels of responsibility. There are two levels of rescue personnel defined in the standard, the
- Competent Rescuer and the Authorized Rescuer:
- Competent Rescuer - An individual designated by the employer who, by training, knowledge and experience is capable of the implementation, supervision and monitoring of the employer's fall protection rescue program.
- Authorized Rescuer - A person assigned by the employer to perform fall protection rescue.
- Training for these two levels stresses the knowledge basis and skill sets of these two functions. For the Competent

- Rescuer, training must include all the training received by the Authorized Rescuer, plus:
- Training by a competent rescue trainer
- Physical demonstrations by trainees on how to properly select, inspect, anchor, assemble and use the fall protection and rescue equipment used in locations where they work
- Use of all types of equipment used in locations where rescues may be required, including inspecting systems prior to use, installation, component compatibility, descent control, secondary systems, packaging methods, dismantling, storage and the common hazards associated with each system and component.
- Detailed inspection and recording of rescue equipment components and systems
- Rescue system evaluation and how to determine when a system is unsafe
- Development of written fall protection rescue procedures
- The selection and use of fall protection anchors

12 DEFINITIONS

Anchorage: a secure point of attachment for lifelines, lanyards or deceleration devices.

Body belt: a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.

Body harness: straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

Competent person: a person who is capable of identifying hazardous or dangerous conditions in any personal fall arrest system or any component thereof, as well as in their application and use with related equipment.

Connector: a device which is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent

component of the system, such as a carabineer, or it may be an integral component of part of the system.

Deceleration device: any mechanism with a maximum length of 3.5 feet, such as a rope grab, rip stitch lanyard, tearing or deforming lanyards, self-retracting lifelines, etc. which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

Energy shock absorber: a device that limits shock-load forces on the body.

Failure: load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Fall arrest system: a system specifically designed to secure, suspend, or assist in retrieving a worker in or from a hazardous work area. The basic components of a fall arrest system include anchorage, anchorage connector, lanyard, shock absorber, harness, and self-locking snap hook.

Free fall: the act of falling before a personal fall arrest system begins to apply force to arrest the fall.

Free fall distance: the vertical displacement of the fall arrest attachment point on the employee's body belt or body harness between onset of the fall and just before the system begins to apply force to arrest the fall (maximum of 6 feet). This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

Hole: a gap or void 2 inches or more in its least dimension, in a floor, roof, or other walking/working surface.

Lanyard: a flexible line of rope, wire rope, or strap which generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline or anchorage.

Leading edge: the edge of a floor roof, or formwork for a floor or other walking/working surface which changes location as additional floor, roof, decking, or formwork sections are placed, formed or constructed. A leading edge is considered

to be an unprotected side and edge during periods when it is not actively and continuously under construction.

Lifeline: a component consisting of a flexible line for connection to an anchorage at one end to hang vertically or for connection to anchorages at both ends to stretch horizontally and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Opening: a gap or void 30 inches or more high and 18 inches or more wide, in a wall or partition, through which employees can fall to a lower level.

Personal fall arrest system: a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.

Positioning device system: a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

Qualified person: one with a recognized degree or professional certificate and extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation and specifications in the subject work, project, or product.

Retractable fall limiter: a fall arrest device that allows free travel without slack rope, but locks instantly when a fall begins.

Rope grab: a deceleration device which travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.

Safety-monitoring system: a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

Self-retracting fall limiter/lanyard: a deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight

tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

Snap hook: a connector comprised of a hook-shaped member with a double-locking mechanism that includes a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection.

Toe board: a low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

Walking/Working surface: any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

Warning line system: a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area where fall arrest equipment is required.

Work area: that portion of a walking/working surface where job duties are being performed.