Electrical Workers Safety Handbook

GCIU 1216-M
Kondik Advertising & Printing, Inc.

Handbook Acknowledgment

This is to acknowledge that I have received my copy of the Electrical Workers' Safety Handbook.

I agree to read and follow all safety rules outlined in this booklet.

I agree to report all injuries to my foreman immediately, no matter how minor the injury.

(Print) Last Name First Name MI

Signature Date

NOTICE:

Fill out, detach, and return this page to your foreman before the end of the first day of employment.

Please keep this book for future reference.

Electrical Workers' Safety Handbook

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About This Handbook

We urge everyone involved to take to heart the importance of safety by putting into practice the rules and guidelines contained here.

Information contained is current as of the printing of this book. This handbook is intended only as a guideline for safety. Please refer to OSHA Standard for the Construction Industry (29 CFR Part 1926).

It is the employer's exclusive responsibility to insure the safety of its employees and compliance with all safety rules and standards.

This safety handbook has been compiled by e-contractors to provide a uniform set of safety rules and guidelines for all employers and electricians in this area.

It is our belief that nothing is more important than safety in all of our workplaces.

This handbook is evidence of both the e-contractors' and the employers' desire to achieve the best safety results possible. We urge everyone involved to take heart the importance of safety by putting into practice the rules and guidelines contained here.

Why Are These Guidelines Important?

This information has been developed to protect you and prevent accidents on the job. If you understand and practice these safety procedures on all job-related tasks, you will reduce your risk of injury.

How do I use this handbook?

Read this handbook at least once all the way through. Carry it with you as you would carry any of your necessary tools, and refer to it often.

What are the limitations of this handbook?

We have summarized the most important basic safety regulations. Since we cannot include every situation or special condition that you might encounter, we do not intend for you to use this handbook as the complete electrical worker safety manual. Also, this handbook is not a work agreement or a contract and does not guarantee employment for a specific period of time.

Where can I get more information?

Ask your foreman or supervisor to clarify any guidelines or procedures that you don't understand once you have read this handbook. Refer to the OSHA Safety and Health Standards for Construction, Part 1926, NFPA 70E Standard for Electrical Safety in the Workplace and The National Electrical Code NFPA 70.

Conduct and Professionalism

What do we mean by professionalism?

Professionalism means that you represent the trade as a whole. Therefore, your personal habits, attitude, and behavior should reflect the skilled professional that you are. Always demonstrate self respect and courtesy.

What type of conduct interferes with professionalism?

Horseplay

Never roughhouse, run, play practical jokes, or otherwise "fool around" on the work site. These actions disturb co-workers and cause accidents.

Alcohol and Illegal Drugs

Being under the influence and possession of alcohol and illegal drugs is prohibited on all job sites.

Prescription Medication

Use prescription medication only as directed. Be aware of side effects such as drowsiness, dizziness, or slowed reflexes which could put you at high risk for an accident. Tell your supervisor if you experience any symptoms which limit your full mental and/or physical capabilities. Always keep prescription medication in its original container.

SAFETY TIP

If you think you might have a drug problem, discuss it with someone you trust, or tell your doctor. Help is available that could save your job and perhaps your life.

Your Employer's Obligations

Safe Environment

How does OSHA protect me?

OSHA obligates your employer to provide a safe place for you to work. Notify your foreman immediately if you feel that a hazard exists. If your foreman does not act promptly, contact your employer directly. Also, your employer can be fined for permitting dangerous conditions, even if another contractor is responsible for creating the hazard.

First Aid Requirements

You must be able to help quickly in case of injuries or emergencies. Therefore, your employer must provide you with the following:

- A first aid kit approved by a physician. Do you know its location at each site?
- A person trained to give first aid/CPR.
- Do you know who that person is?
- Telephone numbers of rescue squads, paramedics, fire departments, and the location of the nearest hospital. Are these posted in an obvious place?
- Be aware of emergency numbers other than 911.

NOTICE:

Remember... safety is your right!

Your Obligations: Responsibilities

What are my responsibilities?

OSHA states, "Each employee shall comply with Occupational Safety and Health Standards and all rules, regulations, and orders issued pursuant to this act which are applicable to his own actions and conduct." This means that you have responsibilities.

- Be safety conscious at all times and practice safe habits for everyone's sake, particularly the public and, specifically, children. You can prevent accidents and the expensive lawsuits that often follow.
- Protect the public from dangers from electrical shock, falling objects, fire, tripping, other dangers generated by electrical work, and blocked passageways.
- Be aware of curious children who may want to explore while you are working, or after you are gone for the day.
- Always use the proper tool for the job to prevent an accident.

Your Obligations: Secure Your Job Site

How do I secure my site?

- Practice "good housekeeping" by keeping the site clear of all obstructions, such as debris, boxes, conduit scraps, or other items that could cause accidents.
- Make sure materials are not lying around in passageways and near wall openings.
- Remove temporary ladders, and lay down mobile scaffolds whenever possible.
- Check the circuitry of wiring before energizing a system, and make sure you are certain what is present at the other end. If not, you can cause irreversible injury.
- Lock out electrical circuits which aren't being used.
- Lock up or secure trucks and other mechanized equipment, as well as tool boxes.
- Keep exposed material to a minimum to prevent theft.

Signs, Meetings, and Reporting

Why should I communicate with my foreman?

Your foreman will advise you of any hazards connected with your job and give you the necessary safety instructions. However, continue to communicate with your supervisor, fellow employees, and employees of other trades in order to perform your job without injury.

Why do we need signs?

Follow and obey the directions on all signs, for they exist for your benefit.

Why attend tool box safety meetings?

Attend the tool box safety meetings that should occur once a week at your job site. These meetings provide an opportunity to:

- Learn about any hazards in the work area.
- Discuss any changes in the work area.
- Ask your supervisor for specific training to best accompany your task.
- Address any safety concerns.

NOTICE:

Discussion of safety concerns, as well as any corrective actions, must always be documented.

Signs, Meetings, and Reporting

Unsafe Conditions

What do I need to report?

Report any unsafe or hazardous conditions to your foreman immediately to prevent injury to you or your fellow employees. If, in your opinion, the foreman does not act promptly to rectify the situation, notify your employer.

Accidents and Injuries

Report all accidents/injuries to your foreman immediately, no matter how minor. Also, report near misses, as remedial measures can prevent future accidents.

Your employer must post the following information at each site regarding accidents and injuries:

- Notice of workers' compensation carrier.
- Proper procedure for obtaining medical care when your employer uses a panel of doctors.

Hazardous Materials Disclosure

What are my rights concerning hazardous materials on the job?

▶ You have the right to know and should be informed about any hazardous materials in your work area.
▶ Containers of hazardous materials must be clearly labeled as such.
▶ Material Safety Data Sheets (MSDS) must be available for your reference.*

What if I need additional help?

You must receive training in Hazardous chemicals regulations before you begin work. If you are uncertain about any material, substance, or specific procedure involving a hazardous material, talk to your supervisor.

SAFETY TIP

Eye injuries account for 25-30% of all construction injuries.

* All General Contractors must have MSDS sheets on site for all sub trades.

Your Face, Eyes and Ears

You must wear safety glasses with fixed side shields at all times as minimum protection in all work areas. Use the chart below to determine additional protection to use.

Safety Glasses with Side Shields

Safety Goggles

Safety Glasses with Full Face Shields

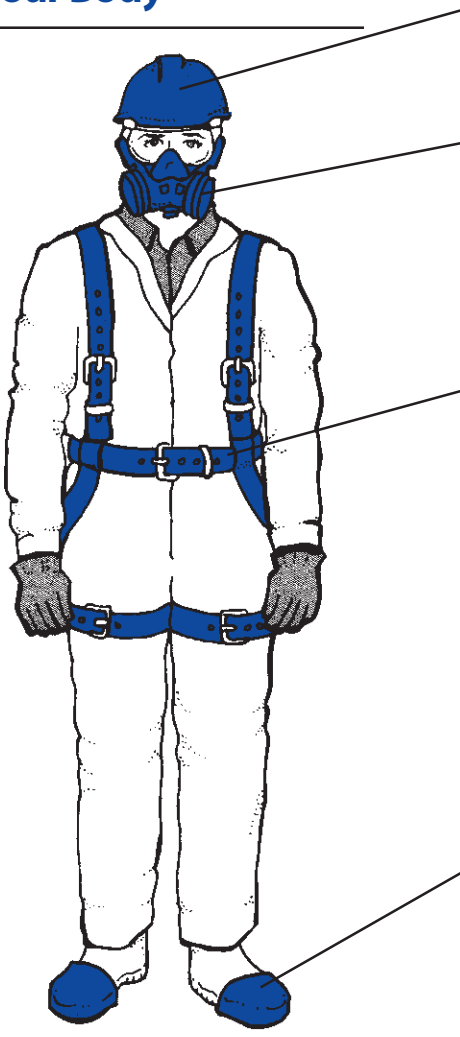
Minimum	Maximum	Maximum	***For what degree of protection?***
Impact Hazards	Airborne such as dust or chemical splashes	Airborne such as dust or chemical splashes	***For what type of hazard?***
Mandatory at all times, especially when grinding, chipping, or drilling through steel	Overhead drilling through masonry and steel, or dusty or windy conditions	Heavy grinding, or around acid-filled batteries	***When should I wear this protection?***

When should I use ear protection?

Noise levels exceeding 90 decibels require ear protection. Follow this rule of thumb: If you must shout to be heard, then you need hearing protection. If you are still unsure, check with your supervisor. Hearing problems develop gradually from continued exposure to high noise levels. This can result in temporary or permanent hearing loss.

What can I do to protect my body?

Your Body



SAFETY TIP

Make sure your hard hat is in good condition. If it is not, you cannot wear it on the job.

SAFETY TIP

Refrain from wearing torn or baggy clothing, jewelry, or rings, which can easily get caught in moving machinery.

Hard Hat

Wear your hard hat with the bill over your forehead. Do not wear it backwards or reverse the suspension.

Respiratory Protection

- Always wear the proper type of respirator.
- Take the required pulmonary function and fit test before you wear the half-mask, negative pressure canister type of respirator.
- Wear a dust mask in dusty environments.
- Ask your foreman if you do not know whether to wear a respirator or a mask.

Full Body Harnesses and Shock-Absorbing Lanyards

Full body harnesses with shock-absorbing lanyards will provide maximum protection when working from surfaces which are six or more feet above a lower level with no guardrails or nets.

- Use full body harnesses with shock-absorbing lanyards which are secured and rigged so that you cannot fall more than six feet, or make contact with anything below you.
- Use full body harnesses with shock-absorbing lanyards when operating aerial lifts such as bucket lifts and JLGs.

Guards

Wear guards when using tampers, jack hammers, or similar equipment.

Foot Wear

Always wear shoes or boots on all job sites. Sneakers or other soft shoes do not provide adequate protection.

Shirts and Long Pants

Always wear shirts and long pants, preferably 100% cotton, or wool, which is less flammable than other materials. Man-made materials or blends such as acetate, nylon, polyester, or rayon should not be worn.

Gloves

Always wear gloves when handling equipment and materials. When handling chemicals, use rubber, plastic-coated, or insulated gloves.

Proper Lifting Method to Avoid Back Injuries

Keep your back straight.

Center your weight over your feet.

Pull the object close to your body.

Lift with your legs, not your back.

Follow These Steps Whenever Lifting Material

What are the steps for proper lifting?

Protect yourself

▶ Wear the proper gloves and supportive work shoes.

Examine and evaluate the load

▶ Is the load too heavy or awkward for one person?
▶ Is anything protruding from the load, such as nails, splinters, sharp edges, or rough strapping?
▶ Is my path flat and clear of obstructions?

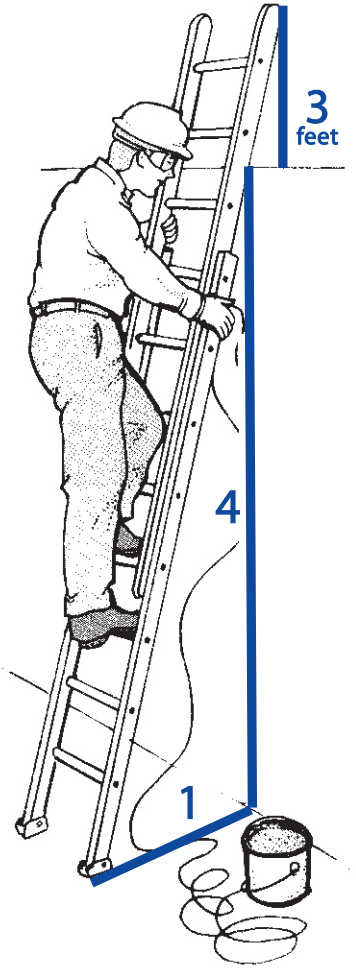
Get ready to lift

▶ Establish solid footing.
▶ Center your body weight over your feet.
▶ Keep your back straight.
▶ Don't slouch.

Lift the object properly

▶ Get a good grasp on the object.
▶ Pull the object close to your body.
▶ Lift with your legs, not your back.
▶ Move your feet when turning; never twist your back.

Ladders



Using The Ladder

▶ Make sure the top of the ladder extends three feet above the ladder's support point when using an extension ladder to gain access to a higher level.

▶ Follow this rule: Only one person is ever permitted on a ladder at any time.

▶ Always face a ladder when working from it.

▶ Overlap extension ladders by at least three rungs.

▶ Use both hands while climbing up and down a ladder.

▶ Place the foot of the ladder approximately ¼ of its length away from the vertical plane of its top support.

▶ Use a hand line to raise and lower tools and materials.

▶ Make sure the ladder rests on a solid and stable base.

Ladders

Maintenance

- Always inspect ladders for any defects before each use.
- Never use a ladder with broken or missing rungs or damaged side rails.
- Do not paint ladders except for periodic color coding for inspection, numbering, or identification purposes.
- Use ladders only according to the manufacturer's recommendations.

SAFETY TIP

Never use metal ladders near electrical services or lines or in electric welding operations. Do not use ladders to support scaffold boards, wire spools, or as work benches.

Stepladders

Open stepladders completely, resting all four feet on sound, level footing with braces locked.

- Do not stand on the top step or the top cap.
- Never use two stepladders as supports for scaffold boards.

Setting Up Safely

- Always secure ladders to prevent displacement.
- Keep the area around the top and bottom of the ladder completely clear of any materials.

SAFETY TIP

Always take special care when ascending, descending, or working from ladders.

Fall Protection

General Guidelines

- Fall Protection shall be provided when an employee can fall 6 feet (1.8m) or more.
- Fall Protection System shall be provided by the employer.
- Protection Systems shall include but not be limited to Guardrail Systems, Safety Net Systems, or Personal Fall Arrest Systems.

Fall Protection Area Requirements

- Hoist areas
- Floor openings (holes), including sky lights
- Ramps, runways, other walk ways
- Excavations
- Wall openings (including those with chutes attached)
- Unprotected sides and edges, leading edges
- Dangerous equipment (protection shall be provided to prevent falling into or onto the dangerous equipment regardless of height)
- Roofing work
- Precast concrete erection
- Formwork and reinforcing steel

Fall Protection

Personal Fall Arrest Systems

A system including but not limited to:

- Full Body Harness - Harness that distributes the fall-arrest forces over the thighs, pelvis, waist, chest, and shoulders.
- A Lanyard - A lanyard with a deceleration device is the preferred method.
- Connectors - All snap-hooks must be capable of supporting at least 5,000 pounds per person attached. All snap-hooks must be of the locking type.
- Anchorage Point - Must be capable of supporting at least 5,000 pounds per person attached.

The Personal Fall Arrest System must be inspected prior to each use. If damaged or defective components are found they shall not be used and must be removed from service immediately. Personal Fall Arrest Systems must be rigged such that an employee can neither free fall more than 6 feet nor contact any lower level.

NOTICE:

Refer to OSHA Safety and Health Standards for Construction, Part 1926.500.

Scaffolding

General Guidelines

- Do not ride on manually propelled scaffolds.
- Remedy slippery conditions on scaffolds promptly.
- Wear a full-body harness while working on any scaffold platform that doesn't have a standard guardrail or a complete deck.
- Consult your foreman or supervisor if any of these practices are unclear, or if you don't know if your scaffolding has been established safely.
- Check that an access ladder or equivalent safe means of access exists on all scaffolds.
- Erect scaffolds on sound, rigid footings.
- Do not use unstable objects such as loose brick, concrete blocks, barrels, boxes, ladders, etc., to support scaffold frames or planks.
- Always lock all wheels on mobile scaffolds before using.
- Erect all scaffolds plumb and level.

Scaffold Platform Construction

- Platforms fully planked or decked.
- Front edge of all platforms:
  - No more than 14" from the face of work.
  - 3" from the face for outrigger scaffolds.
  - 18" from the face for plastering and lathing operations.
- Platforms 10 feet and less to extend at least 6" but not more than 12" past support unless designed and installed and/or guarded properly.
- Platforms greater than 10 feet not more than 18" past support unless designed and installed and/or properly guarded.
  - No paint on wood platforms, except edges that may be marked for identification.
  - Do not mix scaffold components used unless compatible and integrity maintained.

NOTICE:

Refer to OSHA Safety and Health Standards for Construction, Part 1926.451. See Good and Bad Rigging Practices in the Appendix 46-47.

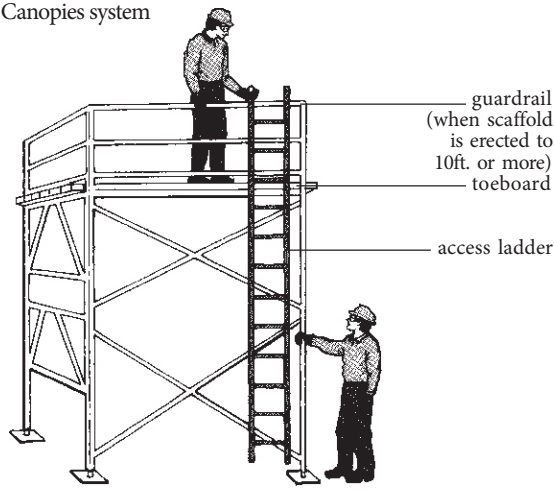
Setting Up Guidelines

Be sure standard guardrails and toe-boards are installed on all open ends and sides of scaffold platforms which are more than ten feet above the ground or floor.

- Secure scaffolds every 30 feet horizontally and every 26 feet vertically.
- Make sure guardrails are installed on all open sides of the platform of scaffolds which are 10 feet in height or higher.
- Do not extend screw to more than 12 inches.
- Do not work from mobile and tower scaffolds at levels exceeding four times the minimum base dimensions, unless suitable outriggers are provided.
- Do not use scaffold planks that extend over their end supports by more than 12 inches or less than six inches, unless otherwise secured.
- Top rail height 36 inches to 45 inches high maximum.
- Maintain clearance near power lines 10 feet minimum.

Falling Object Protection

- Hardhats required
- Protect employees below
- Barricades to exclude working below
- Toe boards at edges of platforms
- Use panels and/or screens
- Canopies system



Precautions

What are the first steps in working with hazardous materials?

Before using any hazardous materials, follow these steps to learn about the specific substance:

1 Locate the warning label.

2 Read the label carefully, making sure you understand it.

3 Locate the Material Safety Data Sheets (MSDS).

4 Consult the MSDS for specific information such as:

- Precautions to avoid exposure
- Limits of exposure
- Effects or dangers of overexposure
- Emergency and spill clean-up procedures
- First aid requirements

What are the general guidelines?

Protecting Others

- Passersby and other workers must observe the same safety precautions as you, or they may not enter the workplace. Act responsibly by informing them of the proper procedures.

Clean Air

- Never smoke or have any open flames around containers indicating a flammable substance.
- Insure you have proper ventilation before you use a substance with an inhalation warning. Consult the MSDS, if necessary, to determine whether you need respiratory or other protective equipment.

Precautions

Primary Containers

▶ Only use substances from marked containers.
▶ Never remove, deface, alter or otherwise mark any container labels.

Secondary Containers

▶ Use appropriate containers for secondary containers. For example, never use a soda bottle.
▶ While using a secondary container, always label contents accurately.
▶ Return contents to the original container as soon as you finish your task.

Mixing Chemicals

▶ Never mix substances or chemicals, as hazardous chemical reactions can result.
▶ Store oxidants and corrosives away from each other to avoid fire or explosion.

NOTICE:

For more information on hazardous materials, see the Appendix, pages 52-55.

Lead and Asbestos

What are the regulations concerning lead?

Notify your supervisor immediately if you suspect that lead exists and will be disturbed by your task. Lead is commonly found in the industrial paints which are applied to structural steel. OSHA requires that you have formal training and protective equipment before you may work on surfaces that contain lead.

What are the regulations concerning asbestos?

Notify your supervisor immediately if you suspect that asbestos exists in your work area. OSHA requires that you have formal training and protective equipment before you may work in any area containing asbestos. The employer shall ensure that no employee is exposed to airborne asbestos. Remember, you cannot see asbestos fiber. They are microscopic. Because of their minute size, they may be airborne for many hours.

NOTICE:

For more information on regulations concerning lead and asbestos, refer to OSHA Safety and Health Standards for Construction, Part 1926.1101 Appendix A.

Hand Tools

What is the proper care and maintenance of hand tools?

- Maintain all hand tools and similar equipment in top-notch working condition, whether they belong to you or the company.
- Store tools with sharp edges so that they cannot cause injury or damage.
- Do not carry tools with sharp edges in your pocket.
- Do not leave tools lying around where they could create an obstruction or a hazard, such as causing a person to trip.
- Clean, oil, or adjust machinery only when it is not in motion.
- Keep tools and accessories clean, sharp, and correctly oiled.
- Keep impact tools such as drift pins, wedges, and chisels free of mushroom heads.

How do I use tools appropriately?

- Select the appropriate hand tool for each specific task, and then properly use it, as it has been designed. For example, never use a wrench as a hammer or a screwdriver for prying.
- Only operate tools within the rate limits.
- Never try to increase a tool's capacity with bypasses, "cheaters," or other modifications.
- Never attempt to bypass the manufacturer's installed safety devices.

Electric Hand Tools

What are the general guidelines for using power tools?

▶ Maintain all power tools and similar equipment in top-notch working condition, whether they belong to you or the company.
▶ Never use electrical cords for hoisting or lowering tools or materials.
▶ Keep moving parts of a power tool pointed away from your body.
▶ Never leave a running power tool unattended.

Guarding

▶ Make sure the proper safety guards and shields exist and are in proper working order before operating any power tool.
▶ Never remove any factory-installed guards.

Turning Power Off

Make sure that the operational switch on any power tool or appliance is off before:
▶ Plugging the tool or appliance into an electrical outlet or extension cord. Surprise or accidental startups can be dangerous.
▶ Disconnecting the tool or appliance from its power source.
▶ Setting the tool down.
▶ Attempting repairs or adjustments, such as cleaning and oiling.
▶ Changing drill bits or blades.

SAFETY TIP

Always disconnect a tool from its power source before making any adjustments.

Electric Hand Tools

What are the general guidelines for grounding?

- Stand on a dry surface while operating electrical tools.
- Keep your hands dry at all times while operating electrical tools.
- Use the three-wire type of extension cords for portable electric tools and appliances.
- Use electric power tools that are the approved double-insulated type or grounded type.

What is the importance of GFCIs?

Ground Fault Circuit Interrupters detect low amounts of current leaking from electrical tools and cords. The interruption of the ground fault should occur fast enough to prevent electrocution of a worker contacting the cord or tool. Therefore:

- Always use GFCIs.
- Use GFCIs with extension cords.

Powder-Actuated Tools

What are the general guidelines for using powder-actuated tools?

Powder-actuated tools can be extremely dangerous if mishandled, so approach these tools with the same caution and respect as you would firearms.

- Wear eye protection when using powder-actuated fastening tools.
- Use the safety devices installed in the tool by the manufacturer at all times.
- Use only cartridges and fasteners supplied by the manufacturer of the tool.
- Load powder-actuated fastening tools just before you intend to fire, never in advance.

Is there any licensing or certification involved?

You must have training and certification from a manufacturer's representative to use powder-actuated fastening tools.

NOTICE:

For more information and precautions on using powder-actuated tools, refer to OSHA Safety and Health Standards for Construction, Part 1926.302(e).

Overview

What are the driver's responsibilities?

General Guidelines

- Make sure you are properly licensed to operate company vehicles.
- Understand that you are responsible for passenger safety and cargo stability while driving.
- Obey all speed limit and traffic signs.
- Always wear your seat belt.

Maintenance

- Check equipment at the beginning of each shift to be sure it is free of defects.
- Keep the cab area cleared of debris, such as cans, bottles, or other objects which could become lodged under the brake pedal.

Operating Guidelines

- Load properly, without overloading or allowing material to protrude from the sides of a vehicle.
- Chock the wheels of a vehicle parked on an incline.
- Only ride or allow personnel to ride in the bed of a truck that is equipped with seats and seat belts.
- Always turn off the motor before refueling.

Backing Up

- Make sure that back-up alarms exist and operate properly on all construction equipment with limited visibility.
- Use a flagman when backing up a vehicle in congested areas.

Cranes, Hoists, Elevators, and Conveyors

What are the general guidelines for using cranes, hoists, elevators, and conveyors?

Electricians do not usually provide or operate cranes, hoists, elevators, or conveyors. However, you will encounter this equipment at most construction sites, since it is used to move you and/or your materials. Therefore, you need to be familiar with the basic safety guidelines.

- Make sure that a knowledgeable person supervises each unit to insure safe conditions and compliance with operational procedures.
- Warn the operator immediately if you notice a crane or other such device approaching any overhead energized electrical wires. Act as a conscientious safety advisor.
- Make sure that any part of a crane is at least ten feet from any power lines.

Protecting Yourself

- Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.
- Stay out from under lifting areas, load paths, or conveyors if they are not properly guarded for people working below.
- Stay clear of cranes that rotate.
- Never ride on material hoists.
- Do not ride or use any machinery without permission from the operator.

NOTICE:

For more information on crane signals, see Crane Signals in the Appendix, pages 48-49.

Aerial Lifts

What are aerial lifts?

Aerial lifts are mechanical platforms commonly known as extendible booms, articulating booms, serial ladders, and vertical towers. They may be vehicle mounted, elevated, or rotating platforms. Examples are scissors lifts, bucket trucks, JLGs, ladder trucks, etc.

OSHA requires specific training for each type of equipment.

Maintenance

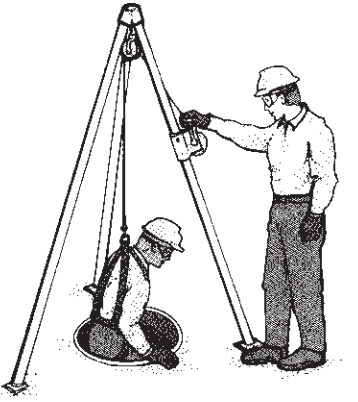
What are the general guidelines for working with aerial lifts?

- Test all controls every day, *before using.*
- Insure that override controls are operated only when conditions warrant.
- Lock the platform in stowed position before moving the truck upon which it is mounted.

Protecting Yourself

- Attach your full body harness and lanyard system to the boom or basket.
- Do not belt off to adjacent structures.
- Stand in the basket, not on it.
- Do not wear climbing spikes.
- Do not use a ladder in a boom or basket.
- When working from an elevated scissors lift (ANSI A92.6 series), a worker need only be protected from falling by a properly designed and maintained guardrail system. However, if the guardrail system is less than adequate, or the worker leaves the safety of the work platform, an additional fall protection device would be required. The general scaffolding fall protection provision found in 1926.451 (g)(1)(vii) reads in part, "all scaffolds not otherwise specified in this section, each employee shall be protected by the use of personal fall arrest systems or guardrails systems."

Confined Spaces



What is dangerous about working in a confined space?

NOTICE:

Types of confined spaces include but are not limited to: ventilation ducts, pipelines, exhaust ducts, sewers, storage tanks, tunnels, manholes, boilers, bins, and underground utility vaults.

Confined spaces can be a part of every work site. They are not meant to be occupied continuously.

When work is performed in a manhole or unvented vault:

▶ No entry shall be permitted unless forced ventilation is provided or the atmosphere is found to be safe by testing for oxygen deficiency and the presence of explosive gases or fumes.

▶ Where unsafe conditions are detected, by testing or other means, the work area shall be ventilated and otherwise made safe before entry.

▶ Provisions shall be made for an adequate continuous supply of air.

What are my safeguards?

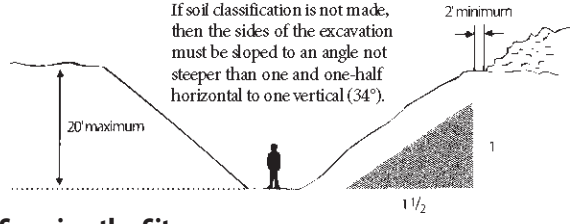
Protecting Yourself

Never enter a confined space without proper training and the required safety equipment. Your employer must provide you with a confined space program that includes guidelines, training, and the proper protective equipment you should wear.

Excavations and Trenching

What are the guidelines for excavations?

▶ All trenches, slopes, and shoring systems must be approved by a competent person.
▶ Keep excavations barricaded at all times.
▶ Deposit spoil dirt at least two feet from the edge of the excavation.
▶ Never go deeper than 5 feet without a protective system (shoring, sloping, benching or a trench box would be considered a protective system).



Securing the Site

▶ Slope or shore excavations to the proper angle when they are more than four feet deep.
▶ Always have available ladders or other means of safe access and egress.

Inspecting

▶ Check the air quality for oxygen deficiency or excess, and other gaseous conditions.
▶ Check shoring daily.
▶ Check more often in wet weather.
▶ Inspect excavation walls after rain and snow storms or after freezing and thawing.

NOTICE:

For additional information, refer to OSHA Safety and Health Standards for Construction, Parts 1926.651.

Gas Cylinders

What are the general guidelines for transporting gas cylinders?

Moving and Lifting

▶ When hoisting oxygen and acetylene cylinders, secure them on a cradle, swing board, or pallet.
▶ Never hoist or transport gas cylinders using maintenance or choker slings.
▶ Never use the valve protection cap for lifting a cylinder.

Transferring Contents

Never attempt to transfer compressed gas from one cylinder to another, or to compress acetylene into a cylinder.

What are the general guidelines for storing gas cylinders?

▶ Close outlet valves tightly and replace the valve caps when not using compressed gas cylinders, even though they might be considered empty.
▶ Store compressed gas cylinders in an upright position with the valve end up.
▶ Do not store compressed gas cylinders in "gang boxes."

Location

Store cylinders in a safe, dry, and well-ventilated place, where they will not be exposed to the heat from stoves, radiators, furnaces, and direct sunlight.

Oxygen and Acetylene

Separate oxygen and acetylene cylinders which are not in use by:
▶ A distance of 20 feet, or
▶ A five foot high, half-hour fire-rated wall.

Hot Work Policy

Introduction

NFPA 70 (N.E.C.) is the standard on "how you build it safely" in the electrical construction industry.

NFPA 70E (Standard for Electrical Safety in the Workplace) is the "how you work on it safely" in the maintenance and construction industry.

In the spirit of protecting our membership, this policy was created to help inform our members of the risk and hazards encountered while working hot (energized) and the necessary safety standards/protocols that must be followed, in order to save lives and protect families from the trauma caused by electrical shock and electrical burn injuries.

OSHA Fact

The OSHA Act of 1970, requires employers to provide employees with a workplace that is free from recognized hazards that could cause death or serious harm. OSHA states that no work is to be performed while energized. Proper lock-out, tag-out rules, voltage testing (confirm circuits are dead), stored energy sources released (electrical and mechanical), must be performed by a qualified person.

Energized Work

Every journeyman and apprentice involved in electrical "hot work" must learn the requirements of NFPA 70E, because OSHA and the NEC require its use. OSHA has adopted the NFPA 70E standard as an acceptable means of compliance to work energized.

When conditions require exposure to circuits (i.e. 24 VDC and above, 120 VAC, 208 VAC, 240 VAC, 277 VAC, 480 VAC), the qualified person, journeyman, must contact management (foreman, superintendent, shop owner, etc.) to review the electrical safety program and identify the procedures for working on or near live parts, operating at 50 VAC or more. An example of a typical electrical safety program is on page 106 of NFPA 70E Annex E.

Hot Work Policy

Key Points

A. Flash hazard analysis (NFPA 70E 130-3A)
B. Shock hazard analysis (NFPA 70E 130-2A)
C. The necessary PPE (personal protective equipment) to safely perform the assigned task.
D. Energize work approval (authorizing or responsible management, safety officer, or owner, etc.) signatures are required on energized work permit.

The Hazard/Risk Category Classification, in NFPA 70E, on Table 130-7 C9 (page 29) can be used to determine the type of clothing needed, if insulated tools should be used, and if rubber gloves are required. This table can be used in lieu of the detailed flash hazard analysis approach described in NFPA 70E 130-3A. It is very easy to use and understand.

Note: This table assumes short-circuit current capacities and fault clearing times for various tasks. They are listed in the notes to the tables, both larger and smaller available currents could result in larger arc flash energies.

Protective Clothing

NFPA 70E has created five different Hazard/Risk categories, based on the type of work, voltage involved, potential arc flash, and arc blast. See table below.

Hazard/Risk Category	Clothing Description (Typical number of clothing layers is given in parentheses)	Required Minimum Arc Rating of PPE (cal/cm squared)
0	Non-melting, flammable materials (i.e. untreated cotton, wool, rayon, or silk, or blends of these materials) with a fabric weight of at least 4.5 oz./yards squared (1)	N/A
1	FR shirt and FR pants or FR coveralls (1)	(4)
2	Cotton underwear – conventional short sleeve and brief/shorts, plus FR shirts and FR pants (1 or 2)	(8)
3	Cotton underwear plus FR shirt and FR pants plus FR coveralls, or cotton underwear plus two FR coveralls (2 or 3)	(25)
4	Cotton underwear plus FR shirt and FR pants plus multi-layered flash suite (3 or more)	(40)

Note: FR = Flame Resistant
This table is from NFPA 70E, page 34, 130.7C11

Hot Work Policy

85% of all arc-flash hazards fall below category 2 levels, or 8 calories per centimeter squared. Therefore, at a bare minimum, any "hot work" being performed, the journeyman should be outfitted with category 2 level PPE.

- All hand tools shall be double insulated to 1000 Volts minimum.
- Rubber gloves properly rated and tested to 500 Volts minimum must be used and must have leather protectors.
- Hard hats with full face shields with an arc rating suitable for the arc flash exposure shall be worn.
- Eye protection (safety glasses) shall always be worn under the face shield.
- Hearing protection.

Exemptions to Work Permit

Work performed by qualified persons near live parts, such as voltage measuring, troubleshooting and testing shall be permitted to be performed without an energized electrical work permit—provided appropriate PPE is used and Management is contacted.

Melting

Clothing made from flammable synthetic materials that melt at temperatures below 600 degrees F (315 degrees C) such as acetate, nylon, polyester, polypropylene, and spandex, either alone or in blends, shall not be used.

These materials melt, as a result of arc flash exposure and can aggravate the burn injury. It is the responsibility of the Journeyman to supply their own plain, 100% cotton underwear — conventional short sleeve shirt and brief/shorts, which must be worn under FR shirts and pants.

Care of Equipment

Protection equipment shall be maintained in a safe, reliable condition. The protective equipment shall be visually inspected before each use. Rubber gloves must be dielectrically retested at least once every six months, sleeves at least once every twelve months.

Hot Work Policy

Qualified Person

A qualified person shall be trained and knowledgeable of the construction and operation of equipment or a specific work method and be trained to recognize and avoid electrical hazards that might be present with respect to that equipment or work method.

Energized Work/Qualified Person

A qualified person must be familiar with and trained in

1. An understanding of NFPA 70E and the ability to interpret the intent of the code.
2. The ability to implement a lockout/tagout procedure – NFPA 70E, page 108, Annex G
3. The ability to prepare a job briefing and planning checklist – NFPA 70E, page 112, Annex I
4. The ability to prepare an energized work permit – NFPA 70E, page 113, Annex J
5. The ability to prepare a hazard/risk evaluation procedure – NFPA 70E, page 107, Annex F

Overhead Power Lines

The approach distance for unqualified persons, 50 KV and below, is 10 feet, from the ground or elevated positions, as stated in NPFA 70E 130-5D.

Note: Qualified workers must observe and comply with the approach boundaries in table 130-2C; they must be insulated or guarded from live parts operating at 50 Volts or more.

Emergency Procedures

- A job specific emergency procedure must be developed to notify available EMS.
- A 911 call may not be the fastest response path for your emergency condition. As an example: The Cleveland Clinic main campus, one must call 211 for an emergency.

Electrical Installations

Protecting Yourself

Protect yourself in areas where the exact location of underground electrical power lines is unknown by wearing insulated gloves when using jack hammers, bars, or other hand tools that could contact the lines.

Ohio Revised Code (ORC) states that you are responsible for calling a utilities protection service 48 hours, but no more than 10 days, before digging.

Ohio Utilities Protection Service (OUPS) 1-800-362-2764.

Securing the Site

▶ Suitable barriers with conspicuous warning signs or other means of guarding shall be provided to insure that workspace for electrical equipment will not be used as a passageway during periods when energized parts of electrical equipment are exposed.

▶ Sufficient space shall be provided and maintained in the area of electrical equipment to permit ready and safe maintenance and operation of such equipment.

▶ Attached locks and tags may only be removed by the Electrician that placed them.

▶ Working spaces, walkways, and similar locations shall be kept clear of cords so as not to create a hazard to employees.

Electrical Installations

Electrical installations made according to the 2005 National Electric Code comply with OSHA's electrical standards for construction. In addition, the following conditions must be met for all electrical installations.

Grounding Program

Since all construction sites must follow an acceptable program to protect employees from ground fault hazards, the employer must use ground-fault circuit-interrupters.

Ground-Fault Circuit Interrupters

▶ All 125 volt, single phase, 15-, 20-, and 30-ampere receptacle used by personnel shall have ground-fault circuit interrupter protection.

▶ If a receptacle(s) is installed or exists as part of the permanent wiring of the building or structure and is used for temporary electric power, GFCI protection for personnel shall be provided. The uses of cord sets or devices incorporating listed Ground Fault Circuit Interrupter protection must be used to accomplish this.

Electrical Installations

Assured Equipment Grounding Conductor Program

▶ The employer shall use ground-fault circuit interrupters; Assured Equipment Grounding Conductor Program may only be used in industrial establishments, the employers shall establish and implement the program. The program shall cover all cord sets, receptacles which are not part of the building or structure, and equipment connected by cord and plug which are available for use or used by employees.

▶ A competent person must be assigned to implement the program.

▶ A written description of the program must be posted at the job site.

▶ The following tests shall be performed on all cord sets, receptacles that are not part of the permanent wiring of the building or structure, and cord-and-plug-connected equipment required to be grounded.

What is needed to comply with OSHA and the NEC?

1. All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.
2. Each receptacle and attachment plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.
3. All required tests shall be performed
    a. Before first use on site.
    b. When there is evidence of damage.
    c. Before equipment is returned to service following any repairs.
    d. At intervals not exceeding 3 months.

▶ The tests required shall be recorded and made available to authority having jurisdiction and the OSHA compliance officer.

Electrical Installations

Lighting

▶ Lamps for general illumination must be protected from breakage.
▶ Metal shell sockets must be grounded.
▶ Portable lighting in wet or conductive locations, like tanks or boilers, must be within 12 volts or protected by GFCIs.
▶ Temporary lights must not be suspended by their cords, unless they are designed that way.

Extension Cords

▶ Extension cords must be of the three-wire, heavy duty type (S, ST, and SO).
▶ Visual inspections of extension cords and cord-plug connected equipment for defects must be performed daily.
▶ Never use worn or frayed electrical cords or cables.

Welding

What are my responsibilities?

Your responsibilities include not only welding and cutting, but also performing repairs and maintenance work on welding machines.

Protecting Yourself

When welding and cutting, you must have proper training and wear appropriate protection such as:

- Goggles, helmets, aprons, and gloves.
- Hard hats that will accommodate welding shields.
- It is essential that your eyes are protected from radiation exposure. Brief exposure to ultraviolet (UV) radiation can cause eye burn known as "welder's flash." Review the table on the following page for suggested protective shade number.

NOTICE:

For additional information on Gas Welding and Cutting refer to OSHA Safety and Health Standards for Construction 1926.350.

Guide For Shade Numbers

Operation	Electrode Size 1/32"(mm)	Arc Current(A)	Minimum Protective Shade	Suggested[1] Shade No. (Comfort)
Shielded metal arc welding	less than 3(2.5)	less than 60	7	—
	3-5(2.5-4)	60-160	8	10
	5-8(4-6.4)	160-250	10	12
	more than 8(8.4)	250-550	11	14
Gas metal arc welding and flux cored arc welding		less than 60	7	—
		60-160	10	11
		160-250	10	12
		250-500	10	14
Gas tungsten arc welding		less than 50	8	10
		50-150	8	12
		150-500	10	14
Air carbon arc cutting	(light)	less than 500	10	12
	(heavy)	500-1000	11	14
Plasma arc welding		less than 20	6	6-8
		20-100	8	10
		100-400	10	12
		400-800	10	14
Plasma arc cutting	(light)[2]	less than 300	8	9
	(medium)[2]	300-400	9	12
	(heavy)[2]	400-800	10	14
Torch brazing		—	—	3 or 4
Torch soldering		—	—	2
Carbon arc welding		—	—	14
	Plate Thickness			
	in	mm		
Gas welding				
light	under 1/8	under 3.2		4 or 5
medium	1/4 to 1/2	3.2 to 12.7		5 or 6
heavy	over 1/2	over 12.7		6 or 8
Oxygen cutting				
light	under 1	under 25		3 or 4
medium	1 to 6	25 to 150		4 or 5
heavy	over 6	over 150		5 or 6

[1] As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.

[2] These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the workpiece.

Data from ANSI/ASC Z49.1-88

Welding

Securing the Site

- Screen welding operations to protect workers and passersby from flashes.
- Post someone to keep people away in the event that you are unable to screen or rope off the area properly.
- Contain sparks and slag created by welding or burning operations.
- Remove combustible materials.

Leads and Hoses

- Never run welding leads or burning hoses through doorways.
- Protect welding leads and burning hoses by suspending or covering.
- Be sure that an adequate fire extinguisher is near all welding, burning, and open flame operations.
- Secure connections, couplings, and fittings.
- Inspect all gauges, hoses, leads, grounds, clamps, welding machines, torches, and solderers daily before using.
- Turn off welding machines at the end of each shift.

NOTICE:

See OSHA Safety and Health Standards for Construction, Part 1926.350-354, for specific regulations and welding safety. See Know Your Fire Extinguishers in the Appendix, pages 50-51.

What are the operational safeguards to consider when welding?

Welding

Proper eye protective equipment to prevent exposure of personnel shall be provided.

Grounding

- Make sure that all arc welding operations are adequately grounded.
- Never perform welding operations from metal ladders.
- Stand on a dry surface while welding.

Electrode Holders

- Check that the electrode holders and connecting cable are fully insulated.
- Do not use a light holder for heavy work.
- Always remove welding rods from electrodes.

Fire Prevention

Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention shall be taken in areas where welding or other "hot work" is being done. No welding, cutting, or heating shall be done where the application of flammable paints, or the presence of other flammable compounds, or heavy dust concentrations creates a fire hazard.

Ventilation

Mechanical ventilation or air line respirators shall be provided when welding, cutting or heating:

- zinc-, lead-, calcium-, mercury-, or beryllium-bearing, based or coated materials in enclosed spaces.
- stainless steel with inert-gas equipment.
- in confined spaces.
- where an unusual condition can cause an unsafe accumulation of contaminants.

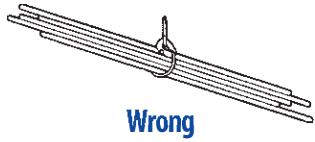
SAFETY TIP

Never use less than #10 filter lenses when welding.

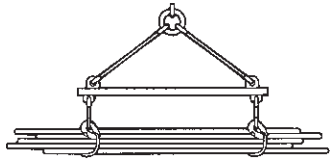
Good and Bad Rigging Practices

Double Slings

Double slings must be used when hoisting 2 or more pieces of material over 12 feet long.



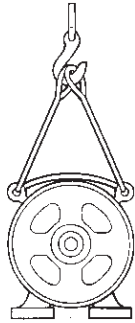
Wrong



Right

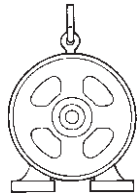
Eye Bolts

Lifting on eye bolts from an angle reduces safe load limits as much as 90%.



Bad Practice

Vertical lift on eye bolt



Good Practice

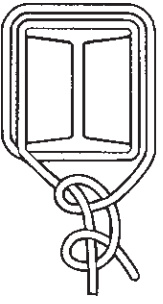
Good and Bad Rigging Practices

Suspending Needle Beams or Scaffolds

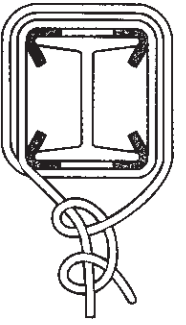
Bad Practice
This can bend flanges and cut rope.

Good Practice
Use space blocks and pad corners.

Hoisting Structural Steel



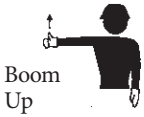
Bad Practice
Steel can cut rope.



Good Practice
Sharp corners are padded.

Crane Signals

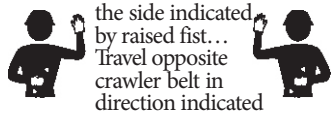
Basic Movements



Clam Bucket Signals

Telescoping Boom

Crawler or Track Signals



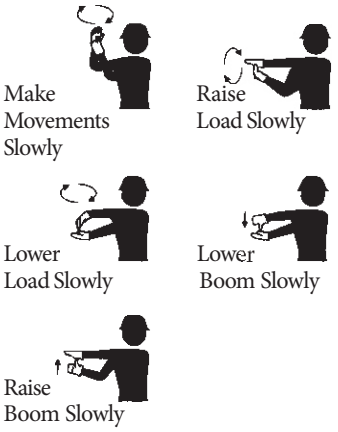
Lock the crawler on the side indicated by raised fist… Travel opposite crawler belt in direction indicated by revolving fist

Travel both crawler belts in direction indicated by revolving fists

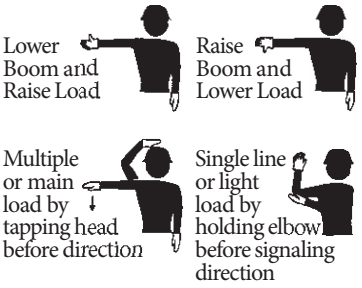
Crane Signals

Stop Signals

Slow Signals



Selecting Single or Multiple Reeved Lines



Fire Extinguishers

✓ Use this to extinguish this class of fire

✗ Do not use this to extinguish this class of fire, but to control small surface fires

✗ Do not use this to extinguish this class of fire

Special extinguishing agents approved by recognized testing laboratories are required

Type of Extinguishers	Class A A Ordinary Combustible	Class B B Flammable Liquids	Class C C Electrical Equipment	Class D D Combustible Metals
Water Type				
Stored Pressure	✓	✗	✗	
Cartridge Operated	✓	✗	✗	
Water Pump Tank	✓	✗	✗	
Soda Acid	✓	✗	✗	
Foam	✓	✓	✗	
Carbon Dioxide	✗	✓	✓	
Dry Chemical/Sodium or Potassium Bicarbonate				
Cartridge Operated	✗	✓	✓	
Stored Pressure	✗	✓	✓	
Dry Chemical/ Multipurpose ABC				
Cartridge Operated	✓	✓	✓	
Stored Pressure	✓	✓	✓	

Fire Extinguishers

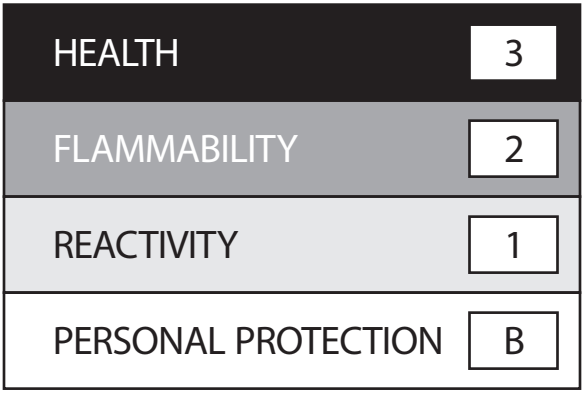
Type of Extinguishers	Method of Operation	Range	Upkeep
Water Type			
Stored Pressure	Pull Pin, Squeeze Handle	30′ – 40′	Check Air Pressure Gauge Monthly
Cartridge Operated	Turn Upside Down & Pump	30′ – 40′	Weigh Gas Cartridge, Add Water Annually
Water Pump Tank	Pump Handle	30′ – 40′	Discharge and Fill with Water Annually if Required
Soda Acid	Turn Upside Down	30′ – 40′	Discharge and Fill with Water Annually
Foam	Turn Upside Down	30′ – 40′	Discharge and Recharge Annually
Carbon Dioxide	Pull Pin, Squeeze Lever	3′ – 8′	Weigh Semi-Annually
Dry Chemical/Sodium or Potassium Bicarbonate Cartridge Operated	Rupture Cartridge, Squeeze Lever	5′ – 20′	Weigh Gas Cartridge Check Dry Chemical Annually
Stored Pressure	Pull Pin, Squeeze Handle	5′ – 20′	Check Pressure and Dry Chemical Annually
Dry Chemical/ Multipurpose ABC Cartridge Operated	Pull Pin, Squeeze Handle	5′ – 20′	Check Pressure Dry Chemical Annually
Stored Pressure	Rupture Cartridge, Squeeze Lever	5′ – 20′	Weigh Gas Cartridge, Check Dry Chemical Annually

Hazardous Materials Information

Examples of Container Labeling

HMIS

Hazardous Materials Identification System



4 Severe Hazard
3 Serious Hazard
2 Moderate Hazard
1 Slight Hazard
0 Minimal Hazard

The letter to the right of the personal protection category refers to the combination of safety equipment you should wear. Refer to the Personal Protection Index on the following page for examples of safety equipment and the combinations in which you should wear them.

Personal Protection Index

A	
B	+
C	+ +
D	+ +
E	+ +
F	+ + +
G	+ + +
H	+ + +
I	+ + +
J	+ + +
K	+ + +
X	Ask your supervisor for specialized handling instructions

Key

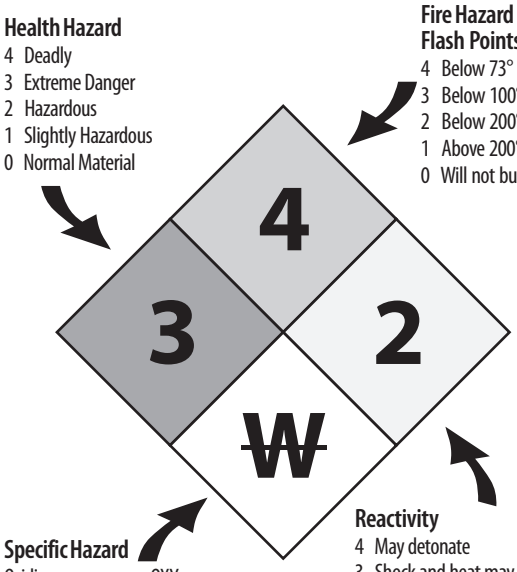
Safety Glasses	Dust Air Purifying Respirator
Splash Goggles	Vapor Air Purifying Respirator
Face Shiled	Chemical Resistant Apron
Supplied Air Respirator	Full Chemical Resistant Suit
Chemical Resistant Boots	Chemical Resistant Gloves
Combination Vapor/Dust Air Purifying Respirator	

Hazardous Materials Information

NFPA

National Fire Protection Association Label

Examples of Container Labeling

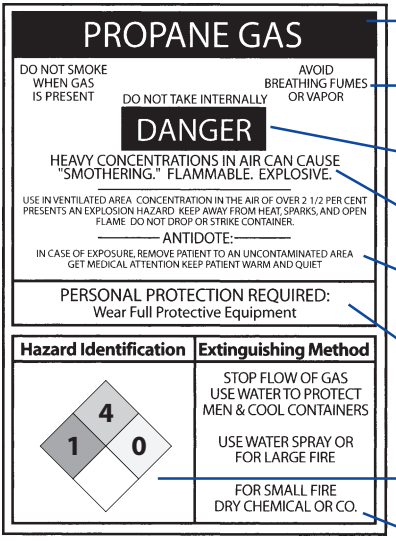


Hazardous Materials Information

Examples of Container Labeling

ANSI

American National Standards Institute Label



First Aid

General Direction for First Aid

Urgent Care

While help is being summoned, do the following:
1. Minimize injury - move victim only if necessary for safety reasons.
2. Control severe bleeding.
3. Maintain an open airway and give Rescue Breathing or CPR if necessary.
4. Treat for shock.

Bleeding

Urgent Care

First Aid:
1. Direct pressure and elevation:
▶ Place dressing and apply direct pressure directly over the wound, then elevate above the level of the heart, unless there is evidence of a fracture.
2. Apply pressure bandage:
▶ Wrap bandage snugly over the dressing.
3. Pressure points
▶ If bleeding doesn't stop after direct pressure, elevation, and the pressure bandage, compress the pressure point.
▶ Arm: Use the brachial artery - pushing the artery against the upper arm bone.
▶ Leg: Apply pressure on femoral artery, pushing it against the pelvic bone.

Nosebleed:
▶ To control a nosebleed, have the victim lean forward and pinch the nostrils together until bleeding stops.

First Aid

Urgent Care

Poisoning

Signals: Vomiting, heavy labored breathing, sudden onset of pain or illness, burns or odor around the tips of the mouth, unusual behavior.

First Aid:
If you think someone has been poisoned, call your poison control center or local emergency number and follow their directions.

If conscious:
- Call Poison Control and try to identify the poison.
- Be prepared to inform poison center of the type of poison, when incident occurred, victim's age, symptoms, and how much poison may have been ingested, inhaled, absorbed or injected.

If unconscious or nauseous:
1. Position victim on side and monitor vital signs (i.e. pulse and breathing).
2. Call Poison Control and identify poison.
3. DO NOT give anything by mouth.

First Aid

Shock

Urgent Care

Signals: Cool, moist, pale, bluish skin, weak rapid pulse (over 100), nausea, rate of breathing increased, apathetic.

First Aid:
1. Maintain open airway, have victim lie down.
2. Maintain normal body temperature (98.6), if too hot, cool down, and if too cold, use blankets, over and under, to warm the victim.

Burns

Urgent Care

Signals: Small, thin (surface) burns or large, thin burns: redness, pain, and swelling. Deep burns: blisters, deep tissue destruction, charred appearance.

First Aid:
1. Stop the burning - put out flames or remove the victim from the source of the burn.
2. Cool the burn - run or pour cool water on burn, immerse if possible. Cool until pain is reduced.
3. Cover the burn - Use dry, sterile dressing and bandage.
4. Keep victim as comfortable as possible from being chilled or overheated.

First Aid

Urgent Care

Burns

Chemical burn - must be flushed with large amounts of water until EMS arrives.

Electrical burn - make sure power is turned off before touching the victim.

Urgent Care

Electrical Shock

Signals: Unconsciousness, absence of breathing and pulse.

First Aid:
1. TURN OFF THE POWER SOURCE - Call EMS. (DO NOT approach victim until power has been turned off.)
2. DO NOT move a victim of electrical injury unless there is immediate danger.
3. Administer rescue breathing or CPR if necessary.
4. Treat for shock.

Check for other injuries and monitor victim until medical help arrives.

First Aid

Frostbite

Urgent Care

Signals: Flushed, white, or gray skin. Pain. The nose, cheeks, ears, fingers, and toes are most likely to be affected. Pain may be felt early and then subside. Blisters may appear later.

First Aid:

1. Cover the frozen part. Loosen restrictive clothing or boots.
2. Bring victim indoors ASAP.
3. Give the victim a warm drink. (DO NOT give alcoholic beverages, tea or coffee.)
4. Immerse frozen part in warm water (102°-105°), or wrap in a sheet and warm blankets. DO NOT rewarm if there is a possibility of refreezing.
5. Remove from water and discontinue warming once part becomes flushed.
6. After thawing, the victim should try to move the injured area a little.
7. Elevate the injured area and protect from further injury.
8. DO NOT rub the frozen part. DO NOT break the blisters. DO NOT use extreme or dry heat to rewarm the part.
9. If fingers or toes are involved, place dry, sterile gauze between them when bandaging.

First Aid

Urgent Care

Hypothermia

Signals: Lowered body core temperature. Persistent shivering, lips may be blue, slow slurred speech, memory lapses. Most cases occur when air temperatures range from 30°-50° or water temperature is below 70°F.

First Aid:

1. Move victim to shelter and remove wet clothing if necessary.
2. Rewarm victim with blankets or body-to-body contact in sleeping bag.
3. If victim is conscious and able to swallow, give warm liquids.
4. Keep victim warm and quiet.
5. DO NOT give alcoholic beverages, or beverages containing caffeine.

Constantly monitor victim and give Rescue Breathing and CPR if necessary.

First Aid

Heat Exhaustion/Heat Stoke

Urgent Care

Signals:

▶ Heat Exhaustion: Pale, clammy skin, profuse perspiration, weakness, nausea, headache.

▶ Heat Stroke: Hot, dry, red skin, no perspiration, rapid and strong pulse, high body temperature (105°). This is an immediate life threatening emergency.

First Aid:

1. Get the victim out of the heat.
2. Loosen tight clothing or restrictive clothing.
3. Remove perspiration soaked clothing.
4. Apply cool, wet cloths to the skin.
5. Fan the victim.
6. If victim is conscious, give cool water to drink.
7. Call for an ambulance if victim refuses water, vomits, or starts to lose consciousness.

First Aid

Urgent Care

Rescue Breathing

1. Check the victim.

▶ Tap and shout - "Are you okay?", to see if the person responds.

▶ If no response:

2. Call EMS.

3. Care for the victim.

Step 1: Look, listen and feel for breathing for about 5 seconds. If the person is not breathing or you can't tell -

Step 2: Position victim on back, while supporting head and neck.

Step 3: Tilt head back and lift chin.

Step 4: Look, listen, and feel for breathing for about 5 seconds.

▶ If not breathing …

Step 5: Give two slow gentle breaths.

Step 6: Check pulse for 5 to 10 seconds.

Step 7: Check for severe bleeding.

4. Give rescue breathing.

▶ If pulse is present but person is still not breathing …

Step 1: Give one slow breath about every 5 seconds. Do this for about 1 minute (12 breaths).

Step 2: Recheck pulse and breathing about every minute.

▶ Continue rescue breathing as long as pulse is present but person is not breathing.

▶ If there is no pulse and no breathing…

5. Begin Cardiopulmonary Resuscitation (CPR).

First Aid

Choking

Urgent Care

1. Check the victim.

When an adult is choking:
Step 1: Ask, "Are you choking?" If victim cannot cough, speak, or breathe, is coughing weakly or is making high-pitched noises…

Step 2: Shout, "HELP!"

Step 3: Phone EMS for help. Send someone to call for an ambulance.

Step 4: Do abdominal thrusts:

A. Wrap your arms around the victim's waist. Make a fist. Place thumbside of fist against middle of abdomen just above the naval. Grasp fist with other hand.

B. Give quick, upward thrusts. Repeat until object is coughed up or person becomes unconscious.

First Aid

Urgent Care

Choking

If victim becomes unconscious, lower victim to the floor.

Step 5: Do a finger sweep - Lift jaw and tongue, do a finger sweep to remove obstruction.

Step 6: Open airway - Tilt head back and lift chin.

Step 7: Attempt to give breaths. With head tilted back and chin lifted, pinch nose shut. Give two slow breaths for 1½ - 2 seconds each.

If air won't go in …
Step 8: Give 15 chest compressions.

- Find hand position on the breastbone.
- Position your shoulders over the hands.
- Compress the chest about 2 inches deep.

First Aid

Choking

Urgent Care

Step 9: Look for an object.
▶ Lift the jaw and tongue and look inside mouth.
▶ If you see an object, sweep it out with a finger.

Step 10: Give two rescue breaths.

Step 11: If the breaths still do not go in continue steps 7 thru 10
or
If the breaths go in …
Check for signs of circulation.
▶ Find the Adam's apple and slide your fingers toward you and down into the groove at the side of the neck.
▶ Check for sign of circulation and breathing for no more than 10 seconds.

Step 12: If there are signs of circulation but no breathing, give rescue breathing.
or
If there are no signs of circulation or breathing, give CPR.

Important Job Site Information

Job site _____

Telephone number _____

Location _____

_____

Foreman's name _____

Foreman's home number _____

Company phone number _____

Location of first aid kit _____

_____

_____

Location of fire extinguisher _____

_____

_____

_____

Name(s) of first aid trained personnel _____

_____

_____

_____

Location of resuscitation equipment _____

_____

_____

Important Job Site Information

_____ Hospital

_____ Ambulance

_____ Fire Department

_____ Other

Notes