Tool Box Safety Talks

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Safety Talks may need to be modified to address specific tasks, environmental conditions or organizational established safety procedures or manuals.

Daily or weekly Safety Talks can help reinforce key safety procedures and involve workers in discussion of safety and health procedures and program requirements.

Document safety training by having attendees sign an attendance roster. Maintain records of safety training and safety talks for safety inspections and audits.
SAFETY MEETING ATTENDANCE FORM

Safety Meeting Topic and Date ________________________________

Leader / Presenter: ________________________________

Location: ________________________________

Workers Attending Meeting (sign-in):

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Signature of Presenter: ________________________________

Document safety training. Maintain this form as evidence of safety training.
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CHAIN SAWS

More people are killed while felling trees than during any other logging activity.

The Consumer Product Safety Commission information found that most injuries occur on the lower left leg and the left arm. Be sure to protect those areas well.

CPSC data for comparison: Head injuries 3,418, Injuries to Upper Body Area 2,141, Injuries to Arm and Hand Area 17,994 (primarily left arm), Injuries to Leg Area 16,348 (primarily lower left leg), Injuries to Foot Area 2,885.

Training

Only qualified personnel will operate chain saws. Proper training gives chain saw operators the skills to perform their work efficiently and safely. Employers involved in logging are required to assure that their employees are able to safely perform their assigned tasks.

Training must include specific work procedures, practices and requirements of the work site, including the recognition, prevention, and control of general safety and health hazards. How to safely use, operate, and maintain tools, machines and vehicles which the employee will be required to utilize in completing the assigned requirements. Emphasis must be placed on the manufacturer's recommended operating and maintenance instructions.

Before Starting

– Keep the chain sharp and the lubrication reservoir full

– Check chain tension, controls, bolts, and handles to ensure they are functioning properly and that they are adjusted to manufacturer specifications

– Take the saw at least 10 feet from the fueling area and engage the chain brake when starting

– Place the saw on the ground or another firm surface while starting (NEVER drop start)

– Be sure gas powered chain saws are equipped with a protective device to minimize kickback
When Fueling

– Never attempt to fuel a running or HOT saw
– Only use approved containers to transport fuel
– Dispense fuel at least 10 feet away from any potential source of ignition—and NEVER smoke while fueling

While Sawing

– Always wear proper personal protective equipment, including hand, foot, leg, eye, face, hearing, and head protection
– Do NOT wear loose-fitting clothing
– Clear away potential obstructions like dirt, debris, small tree limbs, and rocks from the chain's path. Look for nails, spikes, and other metal objects in the tree before cutting.
– Keep both hands on the saw's handles; maintain secure footing
– Shut off the saw or engage its chain brake when not making a cut
– Ensure the trunk or limbs will not bind against the saw
– Watch for pieces under tension that may spring out when cut
– Always be careful to avoid saw kickback
– Never saw with the tip
– If the saw is equipped with a tip guard, keep it in place

Additional Sources:

OSHA Safety Topics:

OSHA Logging eTool
Chemical Safety Tips

Chemicals are a major part of our everyday life at home, work and play. Examples include toxics, corrosives, solvents and numerous other substances. As long as we take proper precautions, these substances can be handled safely. Anyone who uses chemicals on the job is required to have Hazard Communication (HAZCOM) training. Today’s safety talk is a short reminder to refresh your memory about the importance of using chemicals safely. This does not take the place of HAZCOM training.

Chemicals that you use at home include gasoline, paints, fertilizers, lawn chemicals, bug spray, paint strippers, kerosene, bleach and other household cleaners. However, chemicals you may use at work are facility-specific solvents, laboratory chemicals, fuels, paint, office copier chemicals, correction fluid, lubricants and corrosives.

We are exposed health hazards of chemicals by:
- Inhalation — Breathing in dusts, mists and vapors Example: Working with bags of concrete at home without a respirator.

- Ingestion — Eating contaminated food. Example: Having lunch in the work area where there are airborne contaminants.

- Absorption — Skin contact with a chemical. Example: Contact dermatitis or an eye irritation.

- Injection — Forcing an agent into the body through a needle or a high-pressure device. Example: Needle stick or misuse of a high-pressure washer.

You can block these routes of entry by using good safety practices and the right Personal Protective Equipment: Safety glasses or goggles, gloves, protective clothing, or respirators.

Chemicals can also present one or more physical hazards to your health and safety.
They can be:

- Reactive: may react with air, water, or itself and burn, explode, or release vapors.
- Flammable: they catch fire easily.
- Explosive: they explode under certain conditions.
- Corrosive: they burn the skin or eyes.
- Toxic: they’re poisonous

You can protect yourself against chemical hazards by:

- Reading container labels, material safety data sheets (MSDSs) and safe-work instructions before you handle a chemical;

- Using specified personal protective equipment (PPE) that may include chemical-splash goggles, a respirator, safety gloves, apron, steel-toed shoes, safety glasses with side shields, etc. Ensure the PPE fits properly and you are trained in its use;

- Inspecting all PPE before you use them. Look for defects in the equipment such as cracks, missing parts, rips, etc. Ensure your respirator has the proper chemical cartridge for the particular chemical hazard. Change cartridges when it is necessary;

- Knowing the location of safety showers and eyewash stations and how to use them;

- Washing your hands before eating, especially after handling chemicals;

- Leaving your contaminated clothing at work. If you wear the clothes home, you can expose your family to the hazards.

Remember—you can guard against chemical hazards
COLD-INJURY PREVENTION SAFETY PRECAUTIONS

During the winter months, outdoor workers face an additional occupational hazard - exposure to the cold.

Some health problems can arise including frostbite, trench foot and hypothermia.

**Frostbite / Frostnip**

Frostbite occurs when skin tissue actually freezes and cell damage results. Fingers, toes, cheeks, nose, and ears are primarily affected. The symptoms of frostbite include an uncomfortable sensation of coldness; there may be a tingling, stinging, or aching feeling followed by numbness.

Frostbite requires emergency medical care. If you think you may have frostbite, get out of the cold as soon as possible. If you cannot get medical help immediately and there’s no risk that the area might be refrozen before you get help, warm the affected area as you would for frostnip.

Frostnip is the first stages or frostbite; numb skin that has turned white in color. Get out of the cold as soon as possible. If your clothes are wet, change into dry clothing. Immerse the affected area in warm water (100° to 105° Fahrenheit) to thaw the frozen tissue. Do not use hotter water, as this may burn your skin. If warm water is not available, warm the affected area with body heat. For instance, warm your hands by tucking them into your armpits; warm your nose, ears, or face by covering them with dry hands.

Be careful to avoid rubbing frostbitten areas because this can lead to greater tissue injury. If there is a chance for refreezing, do not rewarm the affected areas. Avoid reheating with heaters or stoves as burns and damage can occur to numb skin.

**Trench foot**

Trench foot may be caused by long and continuous exposure to a wet and cold environment over several days or immersion in water. Trench foot occurs in cold temperature, but not freezing temperature; there is no actual freezing of the skin. Symptoms include a tingling and/or itching sensation, pain, and swelling. Blisters may form and be followed by death of skin tissue and ulceration. First aid treatment for trench foot is similar to the treatment for frostbite, and includes: moving the victim to a warm area; treating the affected part with warm water (102°-110°F) or warm packs; arranging bed rest in a warm environment; and obtaining medical assistance as soon as possible.
Hypothermia

Hypothermia results from the progressive loss of body heat with prolonged exposure to cold. Hypothermia occurs when the body gets cold and loses heat faster than the body can make it. Hypothermia is more likely to occur when you are exposed to cold air, water, wind, or rain. Body heat loss is accelerated more rapidly when a person is wet because of sweat or working in a damp environment. The first symptoms are uncontrollable shivering and feeling of cold. As the body's temperature continues to drop, an individual can become confused, careless, and disoriented (check for: stumbles, mumbles, grumbles and fumbles). Individuals experiencing mild hypothermia should be moved to a warm, dry shelter. Removing wet clothing and applying warm blankets for insulation minimizes further heat loss. Warm, nonalcoholic, caffeine-free drinks may be offered. More severe cases of hypothermia require intensive medical care. Hypothermia is an emergency condition and can quickly lead to unconsciousness and death. Hypothermia can occur at temperatures of 50°F or higher in wet and windy weather, or if you are in 60°F to 70°F water.

Preventing Cold-Related Disorders

☐ Dress appropriately. Wear layers: an outer layer to break the wind and allow some ventilation (like Gortex or nylon); a middle layer of wool, down, or synthetic pile to absorb sweat and retain insulating properties when wet; and an inner layer of cotton or synthetic weave to allow ventilation and escape of perspiration. Keep a change of clothes available.

☐ Protect your feet, hands, head, and face. Keep the head covered (up to 40 percent of body heat can be lost when the head is exposed).

☐ Wear footgear that protects against cold and dampness.

☐ Avoid wearing dirty or greasy clothing because such garments have poor insulating properties.

☐ Provide a wind break / heated shelter for workers who experience prolonged exposure to the equivalent wind-chill temperature of 20°F or less and shield work areas from drafty or windy conditions.

☐ Use thermal insulating material on the handles of equipment when temps drop below 30°F.

☐ Allow individuals to set their own pace, work in pairs and take extra work breaks when needed.

☐ Avoid activities, whenever possible, that lead to heavy perspiration.
Shift as many outdoor activities as feasible to the inside; select the warmest hours of the day to work outside.

Minimize activities requiring sitting or standing in a cold environment for long periods of time.

Keep energy levels up and prevent dehydration by consuming warm, sweet, caffeine-free, nonalcoholic drinks and soup.

Seek warm shelter following these symptoms: heavy shivering, an uncomfortable sensation of coldness, severe fatigue, drowsiness, or euphoria.

**DISCUSSION QUESTIONS**

What are some steps you can take to stay warm and safe when working in cold temperatures?

What should you do if you have any symptoms of cold related illnesses?

Treatment for Frostbite and Frost Nip can be found at WebMD:

[http://firstaid.webmd.com/understanding-frostbite-treatment](http://firstaid.webmd.com/understanding-frostbite-treatment)

DRIVER SAFETY

Many motorists falsely assume that trucker drivers can see the road better because they sit twice as high as the driver of a car. While trucker drivers do enjoy a better forward view and have bigger mirrors, they still have serious blind spots.

Rear blind spots

Unlike cars, trucks have deep blind spots directly behind them. The truck driver can't see your car in this position and your own view of traffic flow is severely reduced. Following too closely greatly increases the chance of a rear-end collision with a truck.

Side blind spots

Trucks have much larger blind spots on both sides of their vehicles than passenger vehicles (cars). When you drive in these blind spots for any length of time, truck drivers can't see you. Motorists lingering in these blind spots increase the chances of a crash. An excellent rule of thumb for motorists sharing the road with a truck is, "If you can't see the truck driver in his side mirror, he can't see you."

Truck and van drivers

☐ Check to see that your mirrors are properly adjusted and clean before you leave. Get help, if necessary.

☐ Add blind spot mirrors where possible.

☐ When backing, always get out and scout the area for obstructions, pedestrians, etc. Again, get help where possible. Try not to rely solely on your mirrors.

Top ten tips for driving in a work zone

1. Slow down! Slower speeds save lives.
2. Turn on your headlights.
3. Put your cell phone down.
4. Turn your radio down.
5. Don’t eat or drink.
6. Keep both hands on the wheel.
7. Don’t drive aggressively.
8. Obey work zone directions and merge early.
9. Watch for work zone activity.
10. Pay extra attention driving through work zones after dark.

**Top ten rules of defensive driving (from Road Trip America):**

1. Pay attention
2. Don’t trust other drivers.
3. Any question- Yield. Be prepared for drivers who don’t yield the right of way.
4. Don’t speed.
5. Don’t drive impaired.
7. Use safety devices: child restraints, and air bags.
9. Don’t run Red.
10. Drive precisely. Know and follow traffic rules.

**DISCUSSION QUESTIONS**

☐ Where are blind spots on larger trucks located?

☐ What are some things to keep in mind when driving a truck or van?

☐ What are three safety tips to follow when driving in a work zone?

Road Trip America has 70 Driver Safety Tips to avoid becoming a highway statistic:


Safe Driving Tips from Progressive Auto Insurance:


Tips on sharing the road with larger vehicles:


The Federal Motor Carrier Safety Administration provides safety advice to Commercial Motor Vehicle drivers. Even the most well-trained, safety-conscious Commercial Motor Vehicle (CMV) driver is at risk of engaging in driving behaviors that could lead to a crash on today’s crowded highways. Weather conditions or road conditions change and suddenly “driving too fast for conditions” becomes a risk factor. Failing to look or looking and not seeing, impaired performance because of fatigue, inattention or daydreaming or an unexpected external distraction can all lead to a truck crash. Find more at:

**Eight Steps to Proper Lifting**

There are eight steps to follow in doing a safe lift. They may seem very simple but if you do all of them each time you lift, your chances of an injury will be greatly diminished.

When you do a lift, make sure you:

1. **Size up the load** – check to ensure the load is stable and balanced. Test the weight. Try moving it with your foot, if you cannot, you probably need to ask for help.

2. **Plan the job** - consider all possibilities:
   - Is the path clear?
   - What is the weight of the load?
   - How much stress will be placed on your back?
   - Will you be able to see over or around the load?
   - Is there traffic, a tripping hazard, a doorway to go through, or a stairway to go up or down?
   - Avoid carrying an object that requires two hands to hold, either up or especially down, a flight of stairs. Use the elevator. Plan a rest stop, if needed.

3. **Position yourself for the lift**. Establish a base of support - use a wide, balanced stance with one foot in front of the other. Make sure you have firm footing and that your feet are a shoulders-width apart. This staggered stance gives you the stability of not falling over and being able to secure the load.

4. **Bend your knees**, keep your heels off of the floor and get as close to the object as possible. Always lift with your legs and not your back.

5. **Get a good grip with your palms** and make sure you have an adequate hold on the object. Be certain you will be able to maintain a hold on the object without having to adjust your grip later. You can use gloves to help maintain an adequate grip, but don’t rely on gloves because they can de-sensitize the fingers making you unable to feel the object.

6. **Lift gradually with your legs** without using jerky motions. By using your leg strength, your chance of lower back injury is greatly reduced.

7. **Keep the load close** to prevent arching your lower back. As you begin the lift, tighten your stomach muscles and keep your head and shoulders up. The closer the load is to your spine, the less force will be placed on your back.

8. **Pivot - don’t twist**. Move your feet in the direction of the lift. This will eliminate the need to twist at the waist.
ELECTRICAL HAZARDS

Many people mistakenly think that 110 volts of electricity can't seriously injure or kill a person. However, low voltage electricity can be extremely dangerous, particularly if you use portable electric tools. One cause of electric shock when using portable electric tools is the failure of the insulation between the current-carrying part and the frame of the tool. When insulation fails, fatal electric shock, severe burns or even a fall from one level to another may result.

Electricity always tries to reach a ground potential and will always take the path of least resistance. If the outer metal shell of a defective tool becomes energized, the operator sets up a direct path through his own body between the energized tool and the ground itself. The ground can be the earth or it could be pipes or steel building structures that are in contact with the earth. Body resistance is lowered when you work in wet areas or sweat heavily; electricity can then flow easily through vital regions of the body.

When you work in a wet area, near a water pipe, grounded tank, or reinforcing rods that may be grounded, be extra careful to keep yourself as dry as possible. Stand on a wooden platform or use rubber boots. In places where tools may become wet, only use tools that are designed especially for that type of service.

Keep portable electric tools in good condition through the use of a regular inspection program. It is your responsibility to inspect your tools prior to use. Check tools and cords and turn in any that needs repair as soon as you see a defect.

Inspections

- Ensure all tools and equipment are in good condition.
- Prohibit work on energized electrical circuits.
- Prohibit the use of frayed or worn electrical cords or cables.
- Ensure that only grounded type extension cords designed for hard or extra hard service are used.
- Check portable electric tools before use to ensure that the cord and plug are in good condition.
- Ensure that broken or damaged tools and equipment are removed from service.
- Ensure that portable electrical tools and equipment are either grounded or of the double insulated type.
- Ensure that each 15 or 20 ampere, 120 volt AC receptacle, not part of the permanent wiring of the building, is protected by either ground-fault circuit interrupters or an assured equipment grounding program.
- Ensure that electrical equipment and cords used in wet or damp locations are approved for wet and damp locations.

- Ensure that listed, labeled or certified equipment is used in accordance with the instructions included in the listing, labeling or certification.

- Ensure that when a circuit breaker is removed from a circuit breaker panel, it is replaced with either a breaker or a blank.

- Ensure that unused openings in electrical boxes are effectively closed.

- Prohibit bypassing any protective system or device designed to protect employees from contact with electrical current.

- Ensure that electrical cords are protected from physical damage.

- Ensure electrical equipment is used only as approved and listed.

DISCUSSION QUESTIONS

- What path does electricity usually take?

- What should you do if you work in a wet area with power tools?

- What are three inspections that are recommended?

Additional sources:


Emergency Eyewash Use

THE FIRST 10 SECONDS ARE CRITICAL

In fact, OSHA standards require no more than 10 seconds travel distance to an eyewash station for workstations with hazardous chemical exposures.

When toxic substances come in contact with the eye, they immediately begin to damage sensitive eye tissue. The stronger the chemical and the longer it remains in contact, the greater the damage to the eye. Besides tissue damage, acids and alkali can change the pH in the eye itself. When the pH of the eye begins to get out of the narrow tolerable range, severe eye damage, including blindness, may result. Therefore, it is very important to begin flushing as quickly as possible after the eye comes in contact with a harmful substance.

When irritating or corrosive foreign substances get into the eye, the eyelids involuntarily clamp shut. Therefore, the person requiring the use of an eyewash device frequently needs assistance to find his/her way to the device.

This is best accomplished by two persons, each taking an arm of the injured person, and quickly leading him/her to the nearest eyewash device. The helpers then activate the eyewash device and position the water stream so that the injured person can flush the eye from the inside corner to the outside corner.

It is important to remember this so that the harmful substance is not flushed into the other eye. As mentioned before, since eyelids involuntarily clamp shut when irritated, the victim can use his hands to hold open the eyelids to allow emergency eye flushing. ANSI guidelines suggest a full 15 minutes of flushing before seeking further medical help.

Plumbed eyewash stations need to be checked and flushed weekly. Maintain an inspection sheet to ensure the eyewash system is inspected and flushed weekly.
PREVENTION IS THE KEY TO EYE SAFETY –

Remember that the first line of defense against toxic chemicals and eye irritants is proper eye and face protection coupled with proper handling techniques. Ensure you are wearing goggles when handling liquid chemicals that can splash in your face and eyes. Add a face shield for corrosive and acids that can also irritate and burn skin or cause blistering. Also, wear a face shield when changing batteries or propane for forklifts. The face shield alone is not adequate protection.

Additional sources: OSHA Safety Topics:

NIOSH Eye Safety Tool Box Talk
http://www.cdc.gov/niosh/topics/eye/toolbox-eye.html
EXTENSION CORD SAFETY

Because they are exposed, flexible, and unsecured, extension cords are more susceptible to damage than is fixed wiring. Hazards are created when cords, cord connectors, receptacles, and cord- and plug-connected equipment are improperly used and maintained. Nothing about an extension cord suggests danger - there are no moving parts, no flames and no noise. It is harmless looking, yet it can be extremely dangerous if misused.

Good extension cords should be used all the time - heavy duty rated cords that are approved and tested by Underwriter’s Laboratories. Cords that show wear should be repaired or thrown out.

There are some hazards in using extension cords that only you can control. First of all, no extension cord can stand rough usage. If you kink it, knot it or crush it and even bend it, you can break the insulation, which may cause a short circuit and a fire or even an electric shock.

Most cords used carry regular 110-volt electricity. Now, no doubt at some time you have received a shock from a 110-volt line without serious harm - just a great tingling sensation. But even a 10-volt current can kill. It is not harmless. The conditions, however, must be right. The right conditions may consist of making a good connection with a live wire carrying a 110 voltage with wet or sweaty hands, and standing or lying on the ground, a wet floor, a water pipe or another electrical connection.

So, protect the extension cords you use. Coil them in large loops, not in close kinked coils. Don’t bend them unnecessarily. Don't repair them yourself.

In special situations, special types of cords are needed. Some cords are water-resistant, others are not. Some are insulated for heat resistance, others are designed to stand the action of solvents and other chemicals that may be present.

- To reduce hazards, flexible cords must connect to devices and to fittings in ways that prevent tension at joints and terminal screws. Flexible cords are finely stranded for flexibility, so straining a cord can cause the strands of one conductor to loosen from under terminal screws and touch another conductor.

- A flexible cord may be damaged by door or window edges, by staples and fastenings, by abrasion from adjacent materials, or simply by aging. If the electrical conductors become exposed, there is a danger of shocks, burns, or fire.

- Extension cords must be 3-wire type so they may be grounded, and to permit grounding of any tools or equipment connected to them.
These rules should be applied for the safe use of extension cords:

- Inspect all extension cords at the beginning of each workday for any signs of wear or damage. Remove any worn or damaged cords from service immediately.

- Before each use, check the cord for the presence of a ground blade on the male end of the cord.

- Handle the cord gently, avoiding strain, kinking, crushing or cutting.

- String it where it will not be hit or trampled on.

- If moisture, heat or chemicals are present, be sure your cord is the proper type to resist the conditions that are present.

- Extension cords should not be used as ropes to raise and lower tools and materials.

DISCUSSION QUESTIONS

- Where do our tagged and unused tools and extension cords go?

- Do you know what the proper storage is for extension cords?

Additional Sources:

OSHA Safety Topics – Flexible cords:

NIOSH Electrical Safety Student Manual This student manual is part of a safety and health curriculum for secondary and post-secondary electrical trades courses. The manual is designed to engage the learner in recognizing, evaluating, and controlling hazards associated with electrical work.

NIOSH Electrical Safety Student Manual:
http://www.cdc.gov/niosh/docs/2009-113/default.html
Eye Protection

Key Points
- Over ~2000 eye injuries occur every day at work in the US.
- Construction workers have one of the highest eye injury rates
- Particles of dust, metal, wood, slag, drywall, cement etc. are the most common source of eye injury to carpenters
- Even “minor” eye injuries can cause life-long vision problems and suffering—a simple scratch from sawdust, cement, or drywall can cause corneal erosion that is recurrently painful
- Hammering on metal which gives off metal slivers and the rebounding of the ordinary nail are two of the most common causes of vision loss in construction workers.

Ask if anyone has ever had an eye injury or knows someone who did
Ask them to describe the injury event.
Ask for ideas about how it could have been avoided.

Basically, there are four types of particles that cause eye injuries on the job:

Unidentified flying objects - These microscopic objects consist of dust and particles floating around in the air, generally by wind, equipment or cleaning operations. When working in dusty conditions, wear eye protection. Even a small speck in the eye can lead to trouble.

Particles resulting from chipping, grinding, sawing, brushing, hammering or using power tools - These particles move at an amazing speed and strike with the force of a bullet. Wear eye protection any time overhead operations are performed. Some jobs may require safety goggles under a full face shield.

Invisible Hazards - You can’t see the injurious light rays generated by welding operations or laser beams and their effects are often not felt until hours later. Wear the appropriate eye protection required when using this equipment; if you happen to be working nearby, don’t look in the direction of welding arcs or where a laser beam is being used.

Liquids - Hot liquids, such as tar or asphalt, solvents, paint and solutions for cleaning masonry or metal can cause serious eye injury if splashed in your face. The use of proper eye protection, possibly a full face shield, is essential when transferring liquids between containers and when using caustic or acid cleaners.
Potential Eye Hazard Examples

- Hammering, grinding, sanding, and masonry work that may produce particles
- Handling chemicals may lead to splashes in the eye
- Wet or powdered cement in the eye can cause a chemical burn
- Welding leads to exposure to arcs and flashes (intense UV radiation) for welders, helpers, and bystanders
- Dusty or windy conditions can lead to particles in the eye
- Eye injuries can result from simply passing through an area where work is being performed
- Coworkers around or above you may generate the hazard

What is safety eye and face protection?
- Safety eye and face protection includes non-prescription and prescription safety glasses, clear or tinted goggles, faceshields, welding helmets, and some full-face type respirators that meet the ANSI Z87.1 Eye and Face Protection Standard

- The safety eyewear must have “Z87” or “Z87+” marked on the frame and in some cases the lens

When should you wear goggles?
- Goggles are stronger than safety glasses
- Goggles are used for higher impact protection, greater particle protection, chemical splashes, and welding light protection
- Goggles for splash or high dust protection should have indirect venting
- Goggles with direct venting (a mesh of small holes around the sides) tend to fog less, but should not be used with liquid or fine dust hazards
- Common tasks: sawing, chipping, grinding, masonry work, using a nail gun, pouring cement, and working with chemicals
- When goggles are used for welding make sure they are the proper shade # (the shade number is marked on the lens and shows how dark the lens is)

When should you use a faceshield?
- Faceshields are used for even higher impact protection and to protect the wearer’s face in addition to the eyes
- Faceshields should always be used over safety glasses or goggles
- Particles or chemicals can easily go around a faceshield and the curve of the faceshield can direct them into the eye
- Faceshields are frequently lifted leaving the eyes unprotected without the safety glasses or goggles
- Common tasks: spraying, chipping, grinding
What do you do to stop your safety glasses from fogging?
- Buy safety glasses that have anti-fog coatings put on during manufacturing
- Use anti-fog solutions on the lenses regularly, if needed
- Wear a sweat band on your forehead or a cool rag in your hard hat
- Keep the lenses clean and unscratched

What are the eye hazards at the job site? (review the organization’s PPE Hazard Analysis)

What are the most dangerous jobs (by task or tools used)?
Where are the most hazardous areas for eye safety (by location in the site)?

Additional Sources:

OSHA Eye and Face Protection eTool:  

NIOSH Eye Safety Tool Box Talk:  
http://www.cdc.gov/niosh/topics/eye/toolbox-eye.html
FALL PROTECTION

Falls are one of the most devastating types of injuries on a job site. When fall protection is in place and used properly, falls and fall-related injuries can be prevented. There are several types of fall protection available; guardrail systems also aid in fall prevention.

The fall protection trigger height for construction work is six feet. The fall protection trigger height for general industry is four feet. Workers at or above this height need to be protected from falls. If workers can fall into hazardous conditions, such as moving equipment, sharp projections, etc.; fall protection must be provided regardless of the fall height.

There are three basic guidelines to be used if an employee could fall 4 feet (general industry), or 6 feet (construction industry), and used in order when planning work at elevated heights. These guidelines will help in keeping you safe when you’re working at heights ... be sure you use them!

1. Fall prevention methods, such as guardrails.

2. Fall protection systems, such as a restraint system, positioning system and or fall-arrest system.

3. Distance protection, providing a safe distance from the unprotected sides and edges. (maintenance work ONLY)

4. Fall prevention plans, which are administrative controls that rely on special training and work practices.
Fall prevention practices

☐ Assess the jobsite to determine if the walking and working surfaces have the strength and structural integrity to safely support workers.

☐ Workers exposed to falling six feet or more on construction sites (four feet for General Industry operations) from an unprotected side or edge should be protected by a guardrail system, safety net system or personal fall arrest system.

A personal fall arrest system consists of an anchorage, connectors, body harness, and may include a lanyard, deceleration device, lifeline or a suitable combination.

☐ Workers in a hoist area exposed to falls of six feet or more should be protected by either a guardrail system or personal fall arrest system.

☐ Employees exposed to a floor opening more than six feet above lower levels should be protected by personal fall arrest systems, covers or guardrail systems.

☐ Employees using ramps, runways and other walkways should be protected from falling six feet or more by a guardrail system.

☐ Employees engaged in roofing activities on low-slope roofs with unprotected sides and edges six feet or more above the lower level should be protected from falling by a guardrail system, safety net, personal fall arrest system, or a combination warning line system and guardrail system, warning line system and safety net system, warning line system and personal fall arrest system, or warning line system and safety monitoring system.

☐ Employees engaged in roofing activities on steep roofs with unprotected sides and edges six feet or more above the lower level should be protected from falling by a guardrail system with toeboards, safety net or personal fall arrest system.

Guardrails

Guardrails protect you from falls that can seriously injure or even kill. The amount of protection guardrails provide depends on how they are constructed and maintained. Most guardrails are built of strong materials and are usually solid when first put up. However, guardrails often are abused, weakened, broken or removed and not replaced.

Weakened guardrails are sometimes more dangerous than no guardrails at all because they give a false sense of security.

As you go about your job

- Get into the habit of checking guardrails.
- If you discover a weakened or a missing rail or section, correct the situation if you can or report it so that the hazard can be eliminated.

- If you bump a rail with material or equipment, check to see if it is weakened.

- If you discover a broken rail, upright or toeboard, repair it if you can. Otherwise, report it so that it can be repaired.

- When repairing or replacing guardrails, use caution as you are exposed to the very danger that you are providing protection against.

**DISCUSSION QUESTIONS**

- Is there a need to utilize fall protection on our job sites?

- What type of fall protection do you think is appropriate for this job site?

- What should you do to help keep our job site safe from falls?

**OSHA Safety Topics, Fall Protection:**

http://www.osha.gov/SLTC/fallprotection/

http://www.osha.gov/SLTC/etools/electric_power/ppe_fallprotectionequpiment.html

**NIOSH:** http://www.cdc.gov/niosh/topics/falls/
FORKLIFT SAFETY

Each year, tens of thousands of injuries related to powered industrial trucks (PIT), or forklifts, occur in US workplaces. Many employees are injured when lift trucks are inadvertently driven off loading docks, lifts fall between docks and an unsecured trailer, they are struck by a lift truck, or when they fall while on elevated pallets and tines. Most incidents also involve property damage, including damage to overhead sprinklers, racking, pipes, walls, and machinery. Unfortunately, most employee injuries and property damage can be attributed to lack of safe operating procedures, lack of safety-rule enforcement, and insufficient or inadequate training.

OSHA has investigated a number of fatal Powered Industrial Truck accidents. As applicable discuss fatal accidents described below:

- **EMPLOYEE STRUCK BY FORKLIFT:** The forklift truck load (which was approximately 11 inches higher than the steering wheel) obstructed the driver's forward view. He struck and crushed an employee beneath the load.

- **FORKLIFT TIPOVER:** The forklift tipped over while the operator was making a sharp turn at excessive speed. No seat belt was installed and when employee fell from the seat he was crushed by the rollover bar.

- **FALL FROM PLATFORM ON FORKLIFT:** The employee was raised approximately 6 feet high by the forklift operator while the employee was standing on a pallet that was not secured to the frame of the forklift. The operator left the forklift unattended; employee was found pinned between mast and frame.

- **CRUSHED BY FORKLIFT:** Victim was driving a stand up forklift into a tractor trailer to start unloading when the truck driver pulled away from the dock. The forklift fell back onto the forklift driver, striking his head, and breaking his neck.

- **STRUCK BY FORKLIFT:** Traveling down an incline, the employee attempted to make a left turn into a parking lot, and the forklift began to tip over to the right. The employee attempted to jump clear of the forklift, but was struck and killed as the forklift fell.

- **STRUCK BY FORKLIFT:** The victim was assigned as the scrap dumpster forklift. He dismounted from the right side of the forklift, and tripped the dump handle of the hopper. As he dismounted, he failed to set the parking brake. As the load suddenly dropped, apparently the forklift jerked, causing the transmission, low on fluid, to slip into drive, and the right rear side of the forklift to travel toward the dumpster, pinning the victim against north wall of the dumpster.

- **STRUCK BY LOAD TOPPLING FROM FORKLIFT:** A longshoreman was crushed when he was struck by a toppling load of fiber-board. When the operator raised his forks he not only picked up his intended load, but caused the adjacent stack of crates to topple onto the nearby longshoreman.

- **FALL FROM FORKS:** Two employees were riding the load which was tied onto the forks of a forklift. The load was being lifted additionally with the aid of a crane. The men were standing on the load as it was lifted about 23 feet in the air, above packed dirt. The load shifted and slipped off the forks, propelling the two men off the load. One man was seriously injured and the other died of his injuries.

- **STRUCK BY FORKLIFT:** Operator was driving a forklift forward with a load on the forks which obstructed his view. The operator did not see the employee walking by and struck her.
- **Forklift Tipover:** An employee was driving an unloaded forklift down a ramp with a 13% slope when the forklift started to tip over. The operator attempted to jump clear and the ROP of the forklift landed on him and killed him. The employee was not wearing the supplied seatbelt.

- **Fall from Forklift Platform:** The victim fell approximately 17 feet from an improper work platform while raised on a 3-stage industrial truck (forklift). The work platform used was a wooden appliance pallet. The victim fell from the pallet head first, landing on the concrete below when the lift operator started to lower the platform.

- **Fall from Forklift Platform (Pallet):** The employee was in the process of pulling orders from the top shelf of the storage racks. He was on the raised forks of the forklift on a wooden pallet. Neither he nor the pallet were secured to the forks. The forklift operator was moving along the aisle next to the racks when he hit something with the tire next to the shelf and the forklift stopped suddenly. The employee on the pallet was standing on the front edge of the pallet facing towards the back of the lift. The sudden stop threw him and he fell to the concrete floor hitting his head. The victim died from head injuries.

**Training and Certification Requirements**

Only trained and certified forklift operators are allowed to operate the forklift. The employer may create and implement a written forklift operator training program and perform training internally (operating rules should be posted and enforced). Operator recertification is required every 3 years.

**Picking up a Load**

- "Square up" on the center of the load and approach it straight on with the forks in the travel position; stop when the tips of your forks are about a foot from the load.

- Level the forks and slowly drive forward until the load is resting against the backrest of the mast.

- Lift the load high enough to clear whatever is under it.

- Back up about one foot, then slowly and evenly tilt the mast backwards to stabilize the load.

**Putting a Load down**

- "Square up" and stop about one foot from the desired location.

- Level the forks and drive to the loading spot; slowly lower the load to the floor.

- Tilt the forks slightly forward so that you do not hook the load.

- When the path behind you is clear of obstructions, back straight out until the forks have cleared the pallet.

**Stacking one Load on top of another**

- Stop about one foot away from the loading area and lift the mast high enough to clear the top of the stack.
- Slowly move forward until the load is squarely over the top of the stack.
- Level the forks and lower the mast until the load is no longer supported by the forks.
- Look over both shoulders for obstructions and back straight out if the path is clear.

**Lifting**

- Do not exceed the lift capacity of the forklift; read the lift capacity plate on the forklift if you are unsure.
- Follow the manufacturer's guidelines concerning changes in the lift capacity before adding an attachment.
- Lift the load an inch or two to test for stability; if the rear wheels are not in firm contact with the floor, take a lighter load or use a forklift that has a higher lift capacity.
- Do not raise or lower a load while you are en route; wait until you are in the loading area and have stopped before raising or lowering the load.
- After picking up a load, adjust the forks so that the load is tilted slightly backward for added stability.
- Raise the forks an additional two inches to avoid hitting or scraping the ramp surface as you approach the ramp.

**Loading docks**

- Keep the forklift clear of the dock edge while vehicles are backing up to the dock.
- Do not begin loading or unloading until the supply truck has come to a complete stop, the engine has been turned off, the dock lock has been engaged and the wheels have been chocked.
- Do not drive the forklift into the truck until the bridge or dock plate has been attached.
- Do not drive the forklift into a truck bed or onto a trailer that has "soft" or loose decking or other unstable flooring.
- Drive straight across the bridge plates when entering or exiting the trailer and use dock lights or headlights when working in a dark trailer.

Additional Sources:


GENERAL SAFETY IS EVERYONE’S RESPONSIBILITY

An effective occupational safety and health program will include the following four elements

Management commitment and employee involvement. Management and employees are committed to ensuring a safe workplace.

Worksite analysis. Inspection and testing is conducted to determine hazards.

Hazard prevention and control. Procedures are in place for effective work performance and hazards are corrected promptly.

Safety and health training. Safety and health training requirements are identified and employees receive necessary training for safe performance.

Safety is everyone’s responsibility! As an employee, you should:

- Learn to work safely and take all rules seriously.
- Recognize hazards and avoid them.
- Report all accidents, injuries and illness to your supervisor immediately.
- Inspect tools before use to avoid injury.
- Wear all assigned personal protective equipment.

Supervisors and management have responsibilities to:

- Provide a safe and healthy workplace.
- Provide personal protective equipment.
- Train employees in safe procedures and in how to identify hazards.

Everyone must be aware of potential hazards on the job:

- Poor housekeeping results in slips, trips and falls.
- Electricity can cause shocks, burns or fire if not handled properly.
- Poor material handling may cause back problems or other injuries.
- Tools and equipment can cause injuries if guards or protective devices are disengaged.

Always use the protections that are provided on the job:

- Guards on machines and tools keep body parts from contacting moving equipment.
- Insulation on electrical equipment prevents burns, shock and fire.

- Lockout/tagout assures equipment is de-energized before it is repaired.

- Personal protective equipment shields your body from hazards you may face on the job.

**In case of emergency:**

- Understand alarms and evacuation routes.

- Know how to notify emergency response personnel.

- Implement a procedure for leaving the scene safely so emergency personnel can do their job.

- Wipe up spills promptly and correctly.

Safety benefits everyone! By incorporating safety rules, employees avoid injury as well as illness from exposure to hazardous substances. With fewer injuries, a business can be more productive and profitable.

The welfare of the community is also enhanced by providing cleaner air and water and less chance of dangerous accidents that can put lives and property at risk.

**DISCUSSION QUESTIONS**

- What are three things you can do to make our job site safer?

- What are three things management should do to make our job site safer?

- What are several potential job site hazards you should be aware of?

Additional Sources:

General Safety - Safe Work Habits

A nineteenth century author wrote, "Habit is the deepest law of human nature."

Most of us would probably agree with that. Humans are quite often influenced by habit.

Habit and job safety are closely related. If you form safe work habits, it's a big plus for safety.

A national publication recently listed eight of the most common human elements involved in job safety. All are associated with habits, to some degree.

Recognition of hazards was one of the elements mentioned. By constantly being on the lookout for hazards, you enhance your own safety. In watching for hazards you must consider not just the obvious ones, but also hazards which might suddenly appear through some action of another employee or chain of unusual circumstances.

Indifference was another of the human elements listed. An individual might know the correct procedures for doing his or her particular job, and just ignore them. Or there might be persons who don't know safety procedures and just leave it at that, rather than finding out what they are.

Risk-Taking / Daring behavior is another obvious human element that can lead to a job accident. Working without guards and taking shortcuts are examples of daredevil tactics. Horseplay is in the same category.

Setting a poor example also can lead to trouble. The actions of all of us have an influence on the safety-mindedness of other workers, particularly newcomers. If a veteran employee is involved in an unsafe act of the job, a new worker might observe it and be swayed to adopt the same practice.

Haste: Another weak link in the chain of safety is someone who is impulsive or always in a hurry. Haste is a trait that often leads to accidents.

Impatience: We are using our time foolishly if we don't take time to be safe. Temper falls into the same category, as it usually flares up on the job in the form of impatience.

Training, or lack of it, is also a safety factor. The supervisor is responsible for training an employee to do a job safely. However, as employees, we have to be responsible enough to ask questions if we don't understand instructions, or are in doubt about procedures. Also, it's very basic to safety that hazardous situations be called to the attention of the supervisor.

Work Habits: One of the eight human elements listed by the author was work habits. Of course, that is really the point of our talk.
We do our jobs from day to day, and in the process, good work habits are formed. But so are unsafe habits, unless we make an effort to break them. Some habits good or bad, are formed early in the job, while others develop naturally as time goes on.

A person might incorporate unsafe habits into the job and continue them for a long time before a mishap occurs. Other people might not be so fortunate. They could learn quickly how an unsafe act can catch up with them unexpectedly. Gambling with the law of averages is a bad bet.

First and foremost, the purpose of all safety efforts is to prevent accidents and injuries to human beings. As human beings, we all have the inclination to choose the easy method of doing something, or the fastest way to do it, without regard to safety.

By doing things the correct way, we gradually form safe work habits that carry through into our daily work, and this is one of the best safety devices available.
Glove Selection

OSHA’s PPE standard requires that the employer provide PPE based on a hazard assessment. The hazard assessment for hand protection begins with knowing what chemicals or combination of chemicals the task or job requires. The next step is to determine the chemicals’ toxic properties by reviewing the Material Safety Data Sheets (MSDSs).

Hazards may include: skin absorption of harmful substances, severe cuts, lacerations or abrasions, punctures, chemical or thermal burns, and/or harmful temperature extremes.

All protective gloves are not the same. Glove material may protect well with one type chemical, but break down rapidly with exposure to a different chemical. It is important to select the right glove for the potential chemical exposure. The actual chemical compatibility of a given glove material can vary from manufacturer to manufacturer. Selections must be based on the particular manufacturer's test data. Examples of glove materials and application follow:

<table>
<thead>
<tr>
<th>Glove Material</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butyl</td>
<td>A synthetic rubber material that offers the highest permeation resistance to gas and water vapors. Especially suited for use with esters and ketones.</td>
</tr>
<tr>
<td>Neoprene</td>
<td>A synthetic rubber material that provides excellent tensile strength and heat resistance. Neoprene is compatible with some acids and caustics. It has moderate abrasion resistance.</td>
</tr>
<tr>
<td>Nitrile</td>
<td>A synthetic rubber material that offers chemical and abrasion resistance—a very good general-duty glove. Nitrile also provides protection from oils, greases, petroleum products and some acids and caustics.</td>
</tr>
<tr>
<td>PVC (polyvinyl chloride)</td>
<td>A synthetic thermoplastic polymer that provides excellent resistance to most acids, fats and petroleum hydrocarbons. Good abrasion resistance.</td>
</tr>
<tr>
<td>PVA™ (polyvinyl)</td>
<td>A water-soluble synthetic material that is highly impermeable to gases. Excellent chemical resistance</td>
</tr>
</tbody>
</table>
alcohol) to aromatic and chlorinated solvents. This glove cannot be used in water or water-based solutions.

Viton®

A fluoroelastomer material that provides exceptional chemical resistance to chlorinated and aromatic solvents. Viton is very flexible, but has minimal resistance to cuts and abrasions.

SilverShield®/4H

A lightweight, flexible laminated material that resists permeation from a wide range of toxic and hazardous chemicals. It offers the highest level of overall chemical resistance, but has virtually no cut resistance.

Note: Add discussion of specific gloves used on the work site.

There are a variety of glove manufacturers and distributors. The examples discussed here are a few examples of many options available. This presentation does not endorse a specific brand glove, manufacturer, or distributor.
HAND HELD TOOLS

• Inspect tools before use and keep all hand tools in good condition.
• Check to be sure that guards and safety devices are in place and in proper working order.
• Lubricate your tools on a regular schedule.
• Keep cutting tools and saw blades sharp and they will help you perform your job safely.
• Each tool has a particular job to do and it's your responsibility to use the tool as the manufacturer designed it. Short cuts or using the wrong tool will often cause an accident. A perfect example of this is using a screwdriver to pry with when the right tool is a pry bar.
• When using hand tools remember to wear the proper personal protective equipment. If there is any potential for an eye injury, safety glasses are a must. Protect your hands by wearing gloves. Watch out for sharp pointed tools as well as sharp edges on saws -- both will cause a nasty cut if handled improperly. If you have any question about what to wear ask your supervisor.
• After you're done with a hand tool return it to the place it belongs. This may be your own tool box or belt, or it may be back in the tool trailer or gang box. When you return it, place it properly so that the next person can pick it up without the possibility of injury.
• Should a tool get damaged take it out of service for repairs, and if it can't be repaired, dispose of it. Defective tools are dangerous and should not be used.

Inspections
• Replace or repair hand tools, such as chisels and punches, which develop mushroomed heads.
• Repair or Replace hammers, axes and similar tools that have broken or fractured handles.
• Ensure tool handles are wedged tightly in the head of all tools.
• Ensure tool's cutting edges are kept sharp.
• Ensure appropriate safety glasses, face shields, etc. are used while using hand or powered tools or equipment that might produce flying materials or is subject to breakage.
• Hand tools make your job much easier. Care for them properly and use them wisely.

DISCUSSION QUESTIONS
☐ Have you checked your toolbox recently for damaged tools?
☐ Do you always use the right tool for the job, even if the job takes only a few seconds?

Hazard Identification - The Deadly Dozen

We all know that there must be a cause for an accident to happen. In order to avoid accidents, we must remove the cause. Every cause is a result of an unsafe act or unsafe condition. By recognizing the unsafe act or condition, we can effectively remove the exposure to them. The following “deadly dozen” are reminders to help you recognize unsafe acts or conditions.

Guide for Discussion

Unsafe Acts

1. Unauthorized use or operation of equipment.
2. Failure to secure or tie down materials to prevent unexpected movement.
3. Working or operating equipment too fast.
4. Failure to issue warnings or signals as required.
5. Using defective tools or equipment.
6. Removing guards.
7. Improperly using tools or equipment.
8. Standing in an unsafe place or assuming an improper posture (as in lifting).
9. Servicing moving equipment.
10. Riding equipment not designed for passengers.
11. Horseplay.
12. Failure to wear the proper personal protective equipment.

Unsafe Conditions

1. Lack of proper guards.
2. Lack of a proper warning system.
3. Fire and explosion hazards.
4. Poor housekeeping.
5. Unexpected movements.
6. Protruding objects such as nails, wire, or other metals.
7. Improper clearance or congestion at aisles or passageways.
8. Poor placement, storage or arrangement of materials.

9. Hazardous tools, equipment or materials.

10. Poor lighting, high noise levels.

11. Hazardous atmospheric conditions.

12. Improper personal attire.

**What do you do when you see a hazard in the workplace?**

A simple memory aid: The Three “R’s”

- **Recognize** the Hazard. Be on the lookout for unsafe acts and conditions
- **Reduce** or Remove the Hazard. Correct those problems that you can fix.
- **Report** a Hazard. Let your Supervisor know about the hazard.

Remember: Be able to recognize the conditions or acts we just discussed, you can effectively correct or avoid them and reduce your personal exposure to the general causes of accidents.

**NOTE:** Always promote a discussion on any of the topics covered in the Tool Box Talks. Should any question arise that you cannot answer, don’t hesitate to contact your Employer.
Handling Compressed Gas Cylinder Safety

Oxygen and acetylene cylinders are often used for cutting and welding operations. Often, these cylinders aren’t properly stored and handled in shops, on job sites and in storage.

To help prevent accidents

- Close valve and release gas from the regulator before a regulator is removed.
- Be sure the regulators are removed and valve protection caps are on before moving cylinders and while the cylinders are in storage.
- Keep cylinders upright and secured at all times.
- Close the valve on empty cylinders, put on the cap, and mark them "MT."
- Store oxygen cylinders at least 20 feet away from any fuel/gas cylinders or separate oxygen and fuel gas cylinders with a noncombustible barrier at least five-feet high and with a fire resistant rating of at least 30 minutes.
- Do not store propane cylinders inside any building. Store cylinders in a well ventilated area to prevent possible asphyxiation. Keep cylinder storage away from fire and potential electrical hazards.
- Do not use cylinders for rollers or supports.
- Do not tamper with the valves or safety devices
- Keep all cylinders, cylinder valves, couplings, regulators, and hoses free of oily or greasy substances.
- Never crack a fuel gas cylinder valve near sources of ignition.
- Examine compressed gas cylinders regularly for signs of defects, deep rusting or leakage.
- Only use pressure-reducing regulators for the gas and pressures for which they are intended.
- Open cylinder valves slowly and carefully.
- When a cylinder wrench is needed on the valve, keep the wrench nearby to turn off the valve quickly if necessary.
- Use red to identify the acetylene (and other fuel gas) hose, green for oxygen hose, and black for inert gas and air hose.
- Only qualified technicians should clean or repair a regulator.
- Do not tamper with the relief valve or remove it from a regulator.
- Read MSDS’s and train about fuel gases.
- Never allow oxygen to contact oil, grease or other flammable substances.
- Never use oxygen as a substitute for compressed air. Never use oxygen to dust off clothing, in pneumatic tools or for ventilation.

DISCUSSION QUESTIONS
- What is the procedure to prepare to move or store a gas cylinder?
- When gas cylinders are empty, how do we mark them and where are they stored?
- What colors identify the different hoses?

Montana OSH Compressed Gas Safety Brochure:
HEARING PROTECTION

Imagine what it would be like to live without being able to hear!

Hearing enables you to carry on a conversation, to enjoy your favorite music on your CD player at home or on your truck or car radio. On the job you can hear the back-up alarms on bi-directional earthmoving equipment, or the warning sound of a crane horn.

More than twenty million Americans suffer some measurable hearing loss and sixteen million workers are exposed to noise on the job that could damage their hearing. OSHA regulations require employers to take measures to reduce exposure to noise levels at or above 90 decibels. The intensity of a sound is measured in decibels (DB).

A whisper measures about 20 dB, our average speaking voice is 60 dB, a shop saw is 100 dB and a jet plane is 140 dB.

Many areas around the job site have high noise levels and everyone needs to take the proper steps in preventing injury to their hearing. First we can try to engineer the noise away by putting up sound barriers or enclosing certain processes. Second, the company can schedule workers so they spend less time around high noise operations. Depending on the circumstances, these two options may not be possible to implement but the third thing we can do anywhere, anytime -- wear hearing protection. Different shapes and sizes are available -- ear plugs will give you some protection, ear muffs provide you with better protection. To achieve maximum protection FOR HIGH NOISE LEVELS - you should use both.

Your employer is responsible for requiring the wearing of hearing protection in all operations where there is exposure to high noise levels. As an employee, your responsibility is to obey warning signs that tell you hearing protection is required - use common sense -- if the noise is loud, use protection.

Both loud and impulse noise can slowly destroy your hearing. Wearing protection is your best bet against hearing loss.

DISCUSSION QUESTIONS

- Are there instances on this job site where noises seem particularly loud?
- What types of hearing protection are available to you?

Additional info can be found at: NIOSH Noise and Hearing Protection Topic: http://www.cdc.gov/niosh/topics/noise/


Heat Stress / Heat Exhaustion / Sunstroke

During summer months we can be exposed to heat exhaustion. Excessive heat causes accidents in many ways. It becomes more difficult to concentrate on the job, you sweat, you get tired and nervous, and begin making errors in judgment. When the temperature exceeds 90°, everyone needs to be aware of the danger signs.

Guide for Discussion

How to prevent heat exhaustion:
- Avoid consuming alcohol and ice water while working.
- Drink plenty of cool fluids; citrus or fruit juices work best.
- Avoid heavy, fatty-type foods.
- Wear light, loose clothing.
- Avoid fatigue; get plenty of rest.
- Replace lost body salts.
- See a doctor if you are not feeling well.

How to recognize heat exhaustion:
- A person is dazed, staggers or becomes dizzy.
- There is a feeling of nausea or vomiting; the person also can feel chilly.
- Their face looks pale.
- There is a weak pulse and body temperature is below normal.
- A person is lying out unconscious.

What to do:
- Call for emergency medical assistance.
- Keep the victim lying down with their head lower than their feet.
- Loosen the victim’s clothing.
- Keep the victim warm. (Remember, one of the results is the person feels chilly.)
- Give fluids if possible. Avoid ice water and alcohol. Salt solutions are best.

Additional Discussion Notes:
Remember: Both heat exhaustion and sunstroke are serious matters. In both cases, the body is reacting to a life threatening situation. Do not take chances. Should you begin to feel ill, take a break and drink some cool (not ice) water or something else other than an alcoholic beverage. Both injuries frequently cause a lack of consciousness; in our business, that can lead to a serious injury.

NOTE: Always promote a discussion on any of the topics covered in the Tool Box Talks. Should any question arise that you cannot answer, don't hesitate to contact your Employer.

Additional Sources:

OSHA Emergency Preparedness Guides:  

WebMD Heat Stress Overview:  
http://firstaid.webmd.com/tc/heat-related-illnesses-topic-overview

Fire Extinguishers

One of the quickest ways to lose a job is allow a fire to start. Sometimes fires do start and it then becomes a matter of putting the fire out as soon as possible. The best way is to use a fire extinguisher.

Guide for Discussion

If fire extinguishers are available for employee use, it is the employer's responsibility to educate employees on the principles and practices of using a fire extinguisher and the hazards associated with fighting small or developing fires [29 CFR 1910.157(g)(1)]. This education must be provided annually and when a new employee is first hired [29 CFR 1910.157(g)(2)].

Employees who have been designated to use fire extinguishers as part of the emergency action plan, must be trained on how to use the fire extinguishers appropriately in the workplace [29 CFR 1910.157(g)(3)]. This training is a specialized form of education that focuses on developing or improving skills and it must be provided annually and when employees are first assigned these duties [29 CFR 1910.157(g)(4)].

Care and Use

Be sure the fire extinguishers are charged, strategically located and ready for use.

Everyone has a responsibility to check to see that fire extinguishers and fire hoses (as well as other dispensing components) are not blocked.

Common Types of Extinguishers

Class A Fires: Rubbish, paper, scrap, scrap lumber. Use soda acid and pressurized extinguishers or water through use of a hose or pump type water can.

Class B Fires: Flammable liquids, oil, grease. Use carbon dioxide, dry chemical or foam extinguishers. Do not use water on these types of fires.

Class C Fires: Electrical in nature. Use carbon dioxide or dry chemical extinguisher. Do not use foam or water composition extinguishers.

The following steps should be followed when responding to incipient stage fire:

Sound the fire alarm and call the fire department, if appropriate.

Identify a safe evacuation path before approaching the fire. Do not allow the fire, heat, or smoke to come between you and your evacuation path.

Select the appropriate type of fire extinguisher.
Discharge the extinguisher within its effective range using the P.A.S.S. technique (pull, aim, squeeze, sweep).

Back away from an extinguished fire in case it flames up again.

Evacuate immediately if the extinguisher is empty and the fire is not out.

Evacuate immediately if the fire progresses beyond the incipient stage.

**Most fire extinguishers operate using the following P.A.S.S. technique:**

1. **PULL...** Pull the pin. This will also break the tamper seal.
2. **AIM...** Aim low, pointing the extinguisher nozzle (or its horn or hose) at the base of the fire.
3. **SQUEEZE...** Squeeze the handle to release the extinguishing agent.
4. **Sweep...** Sweep from side to side at the base of the fire until it appears to be out. Watch the area. If the fire re-ignites, repeat steps 2 - 4.

**Note:** Do not touch the plastic discharge horn on CO2 extinguishers, it gets very cold and may damage skin.

Additional Discussion Notes:

The person responsible to insure fire extinguishers are charged, strategically located and ready for use is Employer.

Our exposure is generally to Class _____ fires. We have Class _____ fire extinguishers available.

Remember: The quickest way to put out a fire may not always be the best way.

**NOTE:** Always promote a discussion on any of the topics covered in the Tool Box Talks. Should any question arise that you cannot answer, don’t hesitate to contact your Employer.

Additional Sources: OSHA Safety Topics:

OK State PPT How to Use an Extinguisher:
[ehs.okstate.edu/MODULES/exting/Fire_Extinguisher_Training.ppt](ehs.okstate.edu/MODULES/exting/Fire_Extinguisher_Training.ppt)
Ladders

Injuries in the workplace because of ladder are commonplace. Falls from ladders can be as painful as a fall from a roof; about a third of all reported falls are falls from ladders. Many of the fall related injuries result from the improper use or the use of a defective ladder. Step/extension ladders are made to access/egress upper levels, not to be used as work platforms. There are specifically designed ladders for use as work platforms such as order pickers. These ladders are constructed with a small platform and guardrail. The following safe work rules should be observed when working with ladders.

Guide for Discussion

Inspection

Look for missing or loose cleats at the bottom.

Look for loose or missing screws, bolts or nails on job made ladders

Look for cracked, broken, split, dented or badly worn rungs, cleats or side rails.

Splinters on wood ladders.

Corrosion on metal ladders.

Ladder Use

- Always use the right ladder for the right job.

- Don't set your ladder in a walkway or door opening.

- Keep the area at the top and bottom of the ladder clear of tool cords, tools, material and garbage.

- Always set the ladder on solid footing.

- Use a twenty-five percent (25%) angle on the slope of the ladder. One foot out from base for every four foot up the wall.

- When using extension ladders, the three (3) top rungs must extend beyond the landing platform. (Or the top of an extension ladder must be 36" (3 feet) above the landing.

- Don't lean to the side when on a ladder or you may tip over. Belt Buckle Rule: Keep your belt buckle between the ladder uprights.

- Use “three points of contact” to prevent falls. Have both hands on the ladder before moving a foot. Have both feet firmly places before moving a hand. Do not carry tools or materials on a ladder. Use both hands when climbing a ladder to grab onto the side
rails. If it is necessary to move material or tools up a ladder, first climb up, then pull up the work with a hand line.

-Only one person on a ladder at a time (unless the ladder is double cleated).
-Always secure the top of the ladder to prevent it from sliding.
-Never lean a step ladder; always fully open a step ladder.
-Always face the ladder.

**Additional Discussion Notes:**

Always tie off the ladder. That way it stays where you put it.

Remember: When you are on a ladder, you can fall. If you can fall, you can get hurt. Use ladders safely.

**NOTE:** Always promote a discussion on any of the topics covered in the Tool Box Talks. Should any question arise that you cannot answer, don’t hesitate to contact your Employer.

**Additional Sources:**

OSHA eTool: Ladders:

OSHA Pub 3124 Stairways and Ladders:
LOCKOUT/TAGOUT

Lockout/Tagout (LOTO) is a way to ensure that electricity or other energy is not turned on (or released) while someone is working on machinery. Simply turning off a power switch is not enough. You must de-energize (prevent equipment from starting or moving), lock it out, release stored energy (for instance, bleed air from a pneumatic hose), and test to make sure the energy is off before working on the piece of equipment.

Lockout/Tagout Procedures

- Each piece of equipment or machinery should have its own LOTO procedures.
- Notify operators and supervisors that power is being disconnected or isolated.
- Prepare for isolation by checking for specific written procedures that state the shutdown and restart process.
- Shut down by turning off the equipment.
- Separate all energy sources using proper isolating devices—like manual circuit breakers or disconnect switches.
- Pushbuttons or selector switches cannot be the only way to de-energize. Equipment may have more than one type of energy that needs to be isolated.
- Each worker who can be exposed to hazardous energy must be part of the LOTO process.
- Control stored energy (e.g., discharge capacitors or drain hydraulic lines).
- Verify equipment has been de-energized by trying to restart and using testing equipment (such as an electric circuit tester).
- Only the worker who puts on a lockout or tagout device may remove it.
- When the work is finished, inspect to ensure all tools, mechanical restraints, and electrical devices have been removed before you turn on power. Warn affected employees that power will be restored.
- If the LOTO job is interrupted for testing or positioning equipment, the procedures must start over from the beginning.

DISCUSSION QUESTIONS

- Do you know what our lockout/tagout procedures are?
- Do you know how to complete the lockout/tagout procedure for equipment that you are individually
responsible for?

Note: 29 CFR 1910.147 requires specific training for authorized (such as maintenance personnel) and affected personnel (such as equipment operators). This topic should only be used as a refresher or reminder of the importance of following the LOTO procedures.

Additional Sources:


OSHA Safety Topics: Control of Hazardous Energy

Housekeeping

Lack of proper housekeeping on the job is one safety hazard common to all construction projects until after final cleanup. Good housekeeping is one item that can help improve not only the safety on the job, but also the morale and productivity of the job.

Guide for Discussion

The following “General Rules” should be covered in any discussion on housekeeping:

Keep scrap lumber with protruding nails separate from other debris;

Bend nails over or remove from lumber.

Keep all waste debris in neat piles and away from the immediate work area.

Remove debris from the job on a regular basis.

Keep aisles, stairways and walkways clear.

Store materials only in their designated areas.

Place trash barrels where needed to eliminate food rubbish.

Keep tools and equipment stored neatly.

Keep extension cords from being across walkways. If necessary, run them overhead; same applies to air compressor hoses.

Don’t let trash and debris build up. If it does, make an extra effort to get it cleaned up.

Good Housekeeping Can:

Prevent minor injuries like cuts, punctures, slivers;

Prevent major accidents like slips, trips, falls and fires;

Increase job productivity by speeding up the movement of workers and materials on the job;

Keep compliance inspectors from visiting the job.

Additional Discussion Notes:

When doing tear-off’s or out’s, no material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected. (See Trash Chutes for more information.)
Remember: Good housekeeping aids everyone and makes it easier for everyone to do their work safely and with more pride.

NOTE: Always promote a discussion on any of the topics covered in the Tool Box Talks. Should any question arise that you cannot answer, don’t hesitate to contact your Employer.

**HouseKeeping – General**

Housekeeping is not just cleanliness. It includes keeping work areas neat and orderly; maintaining halls and floors free of slip and trip hazards; and removing of waste materials (e.g., paper, cardboard) and other fire hazards from work areas.

Here are some housekeeping tips that will help you keep your work area safe:

- Immediately clean up anything on the floor that creates a slip hazard: water, grease, paper, dust or other debris. (Get assistance if needed or required.)
- Keep walkways clear of boxes and other obstructions.
- Close cabinets used for storage when not in use.
- Never block fire exits or fire equipment.
- Make sure stacked materials do not impede vision.
- Don’t store items in or on electrical panels or control boxes.
- Pick up and store tools in their proper location immediately after use.
- Keep ventilation systems clear of dust and debris and stored materials.
- Make sure receptacles for waste and debris are conveniently located.
- Remove combustible waste often to minimize the fire hazard.
- Set a good example for other employees by maintaining good housekeeping in your work area.
Overhead Power Lines

- Develop and implement written safety programs to help workers recognize and control the hazards of contact with overhead power lines.
- Conduct initial and daily surveys of the worksite and implement control measures and training to address hazards at the site.
- A successful defense against electrical accidents is the continuous exercising of good judgment or common sense. All employees should be thoroughly familiar with the safety procedures for their particular jobs. When work is performed on electrical equipment, for example, some basic procedures are:
  1. Have the equipment de-energized.
  2. Ensure that the equipment remains de-energized by using some type of lockout and tag procedure.
  3. Use grounding lines when they are required.
  4. Use insulating equipment.
  5. Keep a safe distance from energized parts.
- Don't operate equipment around overhead power lines unless you are authorized and trained to do so.
- If an object (scaffolds, crane, etc.) must be moved in the area of overhead power lines, appoint a competent worker whose sole responsibility is to observe the clearance between the power lines and the object. Warn others if the minimum distance is not maintained. Minimum safety distance from overhead power lines is 10 feet, but may be more for higher voltage lines.
- Never touch an overhead line if it has been brought down by machinery or has fallen. Never assume lines are dead.
- When a machine is in contact with an overhead line, DO NOT allow anyone to come near or touch the machine. Stay away from the machine and summon outside assistance.
- Also, never touch a person who is in contact with a live power line.
- Be trained in cardiopulmonary resuscitation (CPR).
- If you should be in a vehicle that is in contact with an overhead power line, DON'T LEAVE THE VEHICLE. As long as you stay inside and avoid touching metal on the vehicle, you may avoid an electrical hazard. If you need to get out
to summon help or because of fire, jump out without touching any wires or the machine, keep your feet together, and hop to safety.

- When mechanical equipment is being operated near overhead power lines, employees standing on the ground may not contact the equipment unless it is located so that the required clearance cannot be violated even at the maximum reach of the equipment.

- To maximize his or her own safety, an employee should always use tools that work properly. Tools must be inspected before use and, those found questionable, removed from service and properly tagged. Tools and other equipment should be regularly maintained. Inadequate maintenance can cause equipment to deteriorate, resulting in an unsafe condition.

- Tools that are used by employees to handle energized conductors must be designed and constructed to withstand the voltages and stresses to which they are exposed.

- Use the personal protective equipment appropriate for the job that is performed. This equipment may consist of rubber insulating gloves, hoods, sleeves, matting, blankets, etc. These items must be inspected prior to each use and tested annually.

- When working near overhead power lines, the use of non-conductive wooden or fiberglass ladders is recommended. Aluminum ladders and metal scaffolds or frames are efficient conductors of electricity.

- Avoid storing materials under or near overhead power lines.

Additional Sources:

OSHA Overhead Power Line Safety Tips:  

NIOSH Electrical Safety:  
[http://www.cdc.gov/niosh/topics/electrical/](http://www.cdc.gov/niosh/topics/electrical/)
PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING (PPE)

Personal protective equipment, or PPE, is designed to protect workers from serious workplace injuries or illnesses resulting from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. Besides face shields, safety glasses, hard hats, and safety shoes, protective equipment includes a variety of devices and garments such as goggles, coveralls, gloves, vests, earplugs, and respirators.

Employer Responsibilities

OSHA’s primary personal protective equipment standards are in Title 29 of the Code of Federal Regulations (CFR), Part 1910 Subpart I. In addition, 29 CFR 1926.95-106 covers the construction industry. OSHA’s general personal protective equipment requirements mandate that employers conduct a hazard assessment of their workplaces to determine what hazards are present that require the use of protective equipment, provide workers with appropriate protective equipment, and require them to use and maintain it in sanitary and reliable condition.

Using personal protective equipment is often essential, but it is generally the last line of defense after engineering controls, work practices, and administrative controls. Engineering controls involve physically changing a machine or work environment. Administrative controls involve changing how or when workers do their jobs, such as scheduling work and rotating workers to reduce exposures. Work practices involve training workers how to perform tasks in ways that reduce their exposure to workplace hazards.

As an employer, you must assess your workplace to determine if hazards are present that require the use of personal protective equipment. If such hazards are present, you must select protective equipment and require workers to use it, communicate your protective equipment selection decisions to your workers, and select personal protective equipment that properly fits your workers.

You must also train workers who are required to wear personal protective equipment on how to do the following:

• Use protective equipment properly,

• Be aware of when personal protective equipment is necessary,

• Know what kind of protective equipment is necessary,

• Understand the limitations of personal protective equipment in protecting workers from injury,

• Put on, adjust, wear, and take off personal protective equipment, and

• Maintain protective equipment properly.
Protection from Head Injuries

Hard hats can protect your workers from head impact, penetration injuries, and electrical injuries such as those caused by falling or flying objects, fixed objects, or contact with electrical conductors. Also, OSHA regulations require employers to ensure that workers cover and protect long hair to prevent it from getting caught in machine parts such as belts and chains.

Protection from Foot and Leg Injuries

In addition to foot guards and safety shoes, leggings (e.g., leather, aluminized rayon, or other appropriate material) can help prevent injuries by protecting workers from hazards such as falling or rolling objects, sharp objects, wet and slippery surfaces, molten metals, hot surfaces, and electrical hazards.

Protection from Eye and Face Injuries

Besides spectacles and goggles, personal protective equipment such as special helmets or shields, spectacles with side shields, and faceshields can protect workers from the hazards of flying fragments, large chips, hot sparks, optical radiation, splashes from molten metals, as well as objects, particles, sand, dirt, mists, dusts, and glare.

Protection from Hearing Loss

Wearing earplugs or earmuffs can help prevent damage to hearing. Exposure to high noise levels can cause irreversible hearing loss or impairment as well as physical and psychological stress. Earplugs made from foam, waxed cotton, or fiberglass wool are self-forming and usually fit well. A professional should fit your workers individually for molded or preformed earplugs. Clean earplugs regularly, and replace those you cannot clean.

Protection from Hand Injuries

Workers exposed to harmful substances through skin absorption, severe cuts or lacerations, severe abrasions, chemical burns, thermal burns, and harmful temperature extremes will benefit from hand protection.

Protection from Body Injury

In some cases workers must shield most or all of their bodies against hazards in the workplace, such as exposure to heat and radiation as well as hot metals, scalding liquids, body fluids, hazardous materials or waste, and other hazards.

In addition to fire-retardant wool and fire retardant cotton, materials used in whole-body personal protective equipment include rubber, leather, synthetics, and plastic.

When to Wear Respiratory Protection
When engineering controls are not feasible, workers must use appropriate respirators to protect against adverse health effects caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. Respirators generally cover the nose and mouth or the entire face or head and help prevent illness and injury. A proper fit is essential, however, for respirators to be effective.

Required respirators must be NIOSH-approved and medical evaluation and training must be provided before use.

**Question regarding the PPE Programs**

- □ Has the employer determined whether hazards that require the use of PPE (e.g., head, eye, face, hand, or foot protection) are present or are likely to be present?

- □ If hazards or the likelihood of hazards are found, are employers selecting appropriate and properly fitted PPE suitable for protection from these hazards and ensuring that affected employees use it?

- □ Have both the employer and the employees been trained on PPE procedures, i.e., what PPE is necessary for job tasks, when workers need it, and how to properly wear and adjust it?

- □ Are protective goggles or face shields provided and worn where there is any danger of flying particles or corrosive materials?

- □ Are approved safety glasses required to be worn at all times in areas where there is a risk of eye injuries such as punctures, abrasions, contusions, or burns?

- □ Are employees who wear corrective lenses (glasses or contacts) in workplaces with harmful exposures required to wear only approved safety glasses, protective goggles, or use other medically approved precautionary procedures?

- □ Are protective gloves, aprons, shields, or other means provided and required where employees could be cut or where there is reasonably anticipated exposure to corrosive liquids, chemicals, blood, or other potentially infectious materials? See the OSHA Bloodborne Pathogens standard, 29 CFR 1910.1030(b), for the definition of "other potentially infectious materials."

- □ Are hard hats required, provided and worn where danger of falling objects exists?

- □ Are hard hats periodically inspected for damage to the shell and suspension system?
☐ Is appropriate foot protection required where there is the risk of foot injuries from hot, corrosive, or poisonous substances, falling objects, crushing, or penetrating actions?

☐ Are approved respirators provided when needed? (See 29 CFR 1910.134 for detailed information on respirators or check OSHA's website).

☐ Is all PPE maintained in a sanitary condition and ready for use?

☐ Are food or beverages consumed only in areas where there is no exposure to toxic material, blood, or other potentially infectious materials?

☐ Is protection against the effects of occupational noise provided when sound levels exceed those of the OSHA Noise standard?

☐ Are adequate work procedures, PPE and other equipment provided and used when cleaning up spilled hazardous materials?

☐ Are appropriate procedures in place to dispose of or decontaminate PPE contaminated with, or reasonably anticipated to be contaminated with, blood or other potentially infectious materials?

Additional Sources:

OSHA Safety Topics: http://www.osha.gov/SLTC/personalprotectiveequipment/

Portable Electric Tools

The use of portable electric power tools is one of the most common occurrences on a construction project today. Workers are exposed to the use of these tools constantly.

It is important to remember that electricity always seeks a path of least resistance and often that is through a defective cord into the worker’s body. This is especially true if the worker is exposed to wet weather or has been sweating.

Guide for Discussion

The following safety rules should be reviewed when discussing the safe use of portable electric tools:

Use only equipment that is in good condition.

Be sure the tool is properly grounded.

Always report the following:

- Defective or broken cords;
- Bad connections to power terminals;
- Defective or broken plugs;
- Defective or loose switches;
- Brushes causing sparks.

Never overstrain the tool thus overloading the motor.

Never use an un-insulated tool without a grounding plug.

Avoid working in wet areas unless a ground fault interrupter circuit is used.

Never use a tool in the presence of flammable vapors or gases unless it is designed for such use.

Additional Discussion Notes: Address Organization Specific Policy.

Provide organization specific guidance / procedures:

What is the company policy on tagging defective tools and removing them from service?

Who is the person responsible to have company owned portable electric tools repaired?

The company’s policy on defective employee owned portable electric tool's is?

Additional Source: OSHA Safety Topic:  
http://www.osha.gov/SLTC/handpowertools/standards.html
Preventing Back Injuries

Each day in some form or fashion you do lifting in this facility and at home. Lifting safely is one the most important things you can do to protect your back throughout your lifetime.

Lifting Is a Major Cause of Job-Related Back Injury

Lifting too much, or lifting improperly, puts too much strain on the back.

Avoid Lifting Manually When Possible

Test the weight and stability of the object you want to move by lifting one corner slightly. If it's too heavy for safe manual lifting:

Use material handling aids like dollies, hand trucks, or forklifts. Get another person to help you lift.

Plan and Prepare Before You Lift

Stretch and bend gently to loosen muscles. Choose the straightest, flattest, clearest route to your destination. Remove anything from the route that could trip or block you. Wear sturdy shoes with nonskid soles, gloves to provide grip, and clothing you won't trip over.

Lift Properly, So Your Legs Do the Work—Not Your Back

- Stand close to the load, with feet shoulder width apart and firmly on the floor.
- Bend at the hips and knees and squat close to the load; keep your back straight.
- Grip the load firmly with both hands, not just your fingers.
- Bring the load close to your body, keeping your weight centered over your feet.
- Stand slowly with your back straight and let your legs push you up.

Avoid Back Strain While Carrying

- Carry the load waist high.
- Be sure you have a good grip and can see where you're going.
- Walk slowly, taking small steps.
• Stop along the way to rest if you need it.
• Move your feet to turn direction.
• Don't twist! That's a major cause of injury

**Use Two-Person Lifts for Large or Awkward Loads**

For a safe, correct, two-person lift:

• Work with a person about your height.
• Decide in advance which person will direct the move.
• Keeping knees bent and back straight, lift and raise the load together.
• Move smoothly together as you carry, keeping the load at the same level.
• Unload at the same time, keeping knees bent.

**Grip Properly to Lift Objects With Awkward Shapes**

• Squat next to the object, with your feet spread shoulder width apart.
• Grip the object at the top outside corner and the bottom inside corner.
• Lift properly and slowly, with knees bent and back straight.

**Get in Position to Lift from a Hard-to-Get-At Location**

• Stand as close as possible to the object.
• Bend forward slightly at the hips, and push your buttocks out behind you.
• Bend your knees, keeping your back straight and stomach muscles tight.
• Grip the object firmly.
• Lift so your leg, stomach, and buttock muscles do the work—not your back.
RESPIRATORY PROTECTION

Different atmospheric contaminants require different respirators. Choose the correct, NIOSH-approved respirator for the contaminants in your work area.

Respirators must be fit-tested for the individual wearer. A beard or other facial hair may interfere with achieving a good respirator fit.

Medical evaluations and training must also be provided. The medical evaluation is to determine if the wearer is physically capable of wearing a respirator and determine if any medical conditions may prohibit the worker from wearing a respirator.

For cartridge respirators, use the appropriate cartridge for your respirator. Change cartridges periodically.

**Single-Strap Dust Masks**
- Not usually NIOSH approved – NOT for hazardous atmospheres
- May be used to protect against pollen and other allergens

**Approved Filtering Face Pieces**
- Good for protection against dust, mists, welding fumes, etc.
- Do NOT use to protect against gases, vapors, asbestos, or lead

**Half-Face Respirators**
- Used for most vapors, acid gases, dust, or welding fumes. Filter cartridge is selected based on the type of chemical exposure.

**Full-Face Respirators**
- Superior to half-face respirators, also protect the face and eyes from irritants and contaminants
- Protects against most vapors, acid gases, dust, or welding fumes

**Loose-Fitting Powered-Air-Purifying Respirators (PAPR)**
- A battery-powered fan pulls air through filters and circulates air throughout the helmet or hood for greater breathing comfort
- Fits most workers, even those with beards

**Self-Contained Breathing Apparatus (SCBA)**
- Used for entry and escape from atmospheres that are immediately dangerous to life and health (IDHL) or oxygen deficient; the SCBA uses its own air tank
SCAFFOLDING

Over 40% of the serious injuries to workers in the building trades are caused by falls from one level to another.

These falls usually occur because the worker did not have a safe place to stand while working. A good rule of thumb: don't work from anything that was not designed for that purpose. Manufactured scaffolds should be utilized whenever possible.

Safe Practices

- Construct scaffolds according to the manufacturer's instructions.

- Scaffold systems must be inspected daily by a Competent Person. If the Scaffold is red tagged, do not use.

- Use screw jacks, base plates and mudsills to ensure adequate support.

- Install a guardrail system or fall arrest system for scaffolds more than 10 feet above a lower level.

- Install guardrails on all open sides and the ends of platforms.

- Provide safe access to scaffold platform.

- Prohibit employees from climbing the cross bracing to access the platform.

- Prohibit the use of unstable objects to support scaffolds.

- Do not use front-end loaders, forklifts and similar equipment for support unless designed for use.

- Ensure that platforms do not deflect more than 1/60 of span when loaded.

- Prohibit moving a scaffold while employees are on the scaffold.

- Prohibit working from scaffold during storms or high winds unless the competent person approves work and wind screens or fall arrest systems are used. A windscreen may only be used when the scaffold is secured against anticipated wind forces.

- Inspect scaffolding before each shift. Inspection should be completed by a competent person who is capable of identifying scaffold hazards and has the authority to correct the hazards.

- Employees working on scaffolds should be trained by a person qualified to recognize hazards associated with the type of scaffold and understand the procedures to control or minimize hazards.
- Employees erecting, dismantling, moving or inspecting the scaffolds must be trained by a competent person to recognize any hazards.

- Require employees to be retrained when employees demonstrate a lack of skill or understanding in the scaffolding requirements.

**Additionally for rolling scaffolds**

- Do not ride rolling scaffolds.

- Remove all material and equipment from platform before moving scaffold.

- Apply caster brakes at all times when scaffolds are not being moved.

- Do not attempt to move a rolling scaffold without sufficient help. Watch out for holes in the floor and overhead obstructions.

- The working platform height of a rolling scaffold must not exceed four times the smallest base dimension unless guyed or otherwise stabilized.

**DISCUSSION QUESTIONS**

- Is the time used in setting up a safe scaffold saved by providing a place where a worker can work without worrying about every move he makes?

- What is the maximum number of sets of our scaffolding which can be used without going above a safe height?
SILICA PRECAUTIONS

What is crystalline silica?

Crystalline silica is a basic component of soil, sand, granite and many other minerals. Quartz is the most common form of crystalline silica. The dust may become respirable particles when workers chip, cut, drill or grind objects that contain crystalline silica.

Hazards

Crystalline silica has been classified as a human lung carcinogen. Breathing crystalline silica dust can cause silicosis, which can cause severe shortness of breath, weakness, weight loss, fatigue, chest pain, and in severe cases can be disabling or even fatal. Smoking adds to the damage caused by silica dust.

Who is at risk?

Working in any dusty environment where crystalline silica is present can potentially increase a person's chances of getting silicosis. Workers who remove paint and rust from buildings, bridges, tanks, and other surfaces; clean foundry castings; work with stone or clay; etch or frost glass; and work in construction are at risk of overexposure to crystalline silica.

Controls

- Use engineering controls, such as local exhaust ventilation and blasting cabinets.
- Use protective equipment or other protective measures to reduce exposures.
- Use work practices controls, such as water sprays, when cutting bricks and blocks.
- Wear only N95 NIOSH certified respirators, if respiratory protection is required and do not alter the respirator.
- Respirators cannot be worn by workers with facial hair, such as beards. It prevents a good seal between the respirator and the face.
- Wear only a Type CE abrasive-blast supplied-air respirator for abrasive blasting.
- Shower if facilities are available and vacuum the dust from your clothes or change into clean clothing before leaving the worksite.
- Participate in training, exposure monitoring, and health screening and surveillance programs to monitor any adverse health effects caused by crystalline silica exposures.
- Do not eat, drink, apply cosmetics or smoke in areas where crystalline silica dust is present.
DISCUSSION QUESTIONS

- Do you know of instances or can you think of examples where we work in areas containing silica?
- Do you know how to properly use respirators for this type of work?

ADDITIONAL SOURCES

- OSHA: Safety and Health Topics: Silica:
  

- OSHA Fact Sheet: Crystalline Silica:
  


- OSHA Silica Exposure Monitoring Checklist:
  
STAIRWAYS AND FLOOR AND WALL OPENINGS

Injuries in the workplace because of holes in walking and working surfaces are commonplace. Providing good protection of wall and floor openings is one way to prevent falls. Make sure that all wall and floor openings are properly guarded and if you have to remove guardrails to work, put the protection back when you are done. Guardrails are required to be placed at 42" and mid-rails at 21". Make sure that you understand the applicable rules regarding when wall and floor openings must be guarded. When you create a safety hazard, you need to protect others against the hazard. The easiest method is to fix the problem when you create the problem.

Safe Practices

- The trigger height for fall protection for general industry operations is 4 feet. Protect workers from fall at 4’ or higher above the level below. The trigger height for fall protection for construction operations is 6 feet. Workers must be protected from fall when working at 6’ or higher.
- Stairways or ladders should be provided at worker points of access where there is a break in elevation of 19 inches.
- Ensure stair rails (not less than 36 inches in height) are installed on all stairways with four or more risers, or rising more than 30 inches.
- Guardrails should be installed on all stairs prior to use.
- Ensure that stairways are not used to store materials.
- Except during construction of the actual stairway, skeleton metal frame structures and steps must not be used, unless the stairs are filled and secured with temporary treads and landings.
- Guardrail systems must be able to withstand a 200 pound load applied horizontally and vertically.
- Floor holes must be covered or protected to prevent falls. A 2" by 2" hole is large enough to cause a fall. Floor covers must be able to support at least twice the intended load and installed to prevent accidental shifting. Floor coverings should be so marked “HOLE” in a bright colored paint to communicate the danger.
- Temporary handrails should have a minimum clearance of three inches between the handrail and the walls, stair rail system and other objects.
- The open sides and edges of stairway landings should be protected by a standard guardrail system.
- Stairways should be installed at least 30 degrees, and no more than 50 degrees, from the horizontal.
- A platform must be provided at all locations where doors or gates open directly into a stairway.
- The swing of gates and doors should not reduce the effective width of the platform to less than 20 inches.
DISCUSSION QUESTIONS

For Industrial Facilities:

- Are stairway treads and guardrails / stair rails well maintained?
- Are work platforms 4’ high or higher protected by guardrail systems?

For Construction Sites:

- Has the jobsite been inspected (by the competent person) as to the fall hazards present and appropriate measures taken, before work begins?
- Is the jobsite inspected at the beginning of each workday, and as the day proceeds, for new fall hazards?
- Do you know of any locations on this job where wall/floor opening protection is either lacking or defective?
TRENCHING SAFETY

Trenching operations are common to many types of construction and maintenance projects and are inherently dangerous. Due to the great exposure, numerous accidents in connection with trenching occur every year. A few simple precautions, if observed, can serve to take most of the risk out of trench construction.

Safe Practices

- Ensure that the competent person received specific training in, and is knowledgeable about, soil analysis, use of protective systems, and the requirements of 29 CFR 1926 Subpart P: Excavations and Trenches.

- Ensure that the competent person has classified the soil using one manual and one visual test.

- In soils other than solid rock, shale or cemented sand and gravel, the trench should be shored and/or braced, or terraced if over five feet in depth.

- The trench should be shored and braced, regardless of length of time it will be open.

- Ensure that excavations, adjacent areas and protective systems are inspected by a competent person before the start of work, as needed throughout the shift, and after rainstorms or other occurrences that could increase the hazard.

- Place spoils, materials and equipment a minimum of two feet from the edge of the excavation.

- Prohibit employees from walking or working under suspended loads.

- Ensure that utilities companies are contacted and underground utilities are located as required by local, state and federal law.

- Ensure that workers inside an excavation are within 25 feet of a means of access/egress.

- Workers working in trenches should be separated to avoid being struck by fellow workers’ tools: 12-foot spacing is recommended.

- Ensure that ladders used in excavations are secured and extend at least three feet above the edge of the excavation.
• Ensure that employees are protected from cave-ins when entering or exiting from an excavation.

• Ensure that precautions are taken to protect employees from water accumulation.

• Ensure that the atmosphere inside the excavation is tested when there is reasonable possibility of an oxygen-deficient, oxygen-enriched, combustible or toxic atmosphere or any other harmful contaminants.

• Ensure employees are trained to use personal protective equipment and other rescue equipment.

• Require workers to wear hard hats in trenches.

• Ensure that materials and equipment used for protective systems are inspected and in good condition.

DISCUSSION QUESTIONS

• What are some basic safety measures when working in a trench or excavation area?

• Who should be trained about soil analysis and inspect the excavation area?

ADDITIONAL SOURCES
WELDING / ARC WELDING SAFETY

Arc welding hazards include: electrical shock, burns, hazardous fumes, fires and explosions and eye hazards including hazardous UV light.

Arc welders use a powerful electric arc to make and repair plain, coated, or treated metal items.

Avoid electrical hazards. Install electric-powered arc welders to code. Ground equipment and place it on an independent circuit with the correct-sized fuse or circuit breaker. Overloading circuits or improper installation can lead to fire, a ground fault, or equipment failure. Mount a safety disconnect switch near the user work area.

Operate diesel/gas powered arc welders in well-ventilated areas to control combustion fumes. Do not add fuel to the engine while it is running or near open flame. Stop the engine and lockout the ignition before performing maintenance or repairs.

Prevent arc welding burns. To protect your body from burns due to arc welding heat, ultraviolet light (UV), molten metal, and sparks, wear dark colored coveralls with long sleeves and pant legs. The coveralls should be fire retardant, cuffless, and pocketless with no holes, tears, or worn spots. A skull cap protects your head and hair. Leather gauntlet gloves and safety boots protect your hands and feet. Wear hearing protection in noisy environments and to keep sparks out of your ears.

Use eye protection. Goggles or safety glasses and welding helmets/shields protect your eyes from flying sparks, chipped slag, and UV light. Welding helmets and shields should be non-reflective and free of cracks, gaps, and openings. Use the correct filter setting for the power output of the arc welder. Weld inside a screened area to protect coworkers. Portable screens, shields, and anti-flash goggles can also be used to protect visitors and coworkers.

Prevent fires. Arc welders can reach temperatures greater than 10,000 degrees F, posing a fire and explosion hazard. Don’t arc weld near flammables or combustibles. Avoid welding, cutting, or hot work on used drums, barrels, or tanks, where residual fumes can ignite and explode. Weld on a firebrick surface on concrete or other fire-resistant flooring surrounded by spark curtains. Fill cracks in the flooring to prevent sparks and hot metal from entering and smoldering. Keep an ABC fire extinguisher, fire blanket, and first aid kit available at all times. It may be necessary to set a “fire watch” to ensure that a fire does not start.

Prevent electrical shock. To avoid electric shock from arc welding, use an insulating mat when you weld steel or other conductive materials. If you are welding in a wet or damp area or perspiring heavily, wear rubber gloves underneath your leather gloves. Keep welding cables clean and intact and position them so they do not get sparks or hot metal on them.

Prevent exposure to hazardous welding fumes. Use arc welders in well-ventilated areas. Welding metals may be hazardous or lead to an oxygen deficient atmosphere.
and are best handled in a ventilation hood exhausted to the outside. If you weld or cut metals with hazardous coatings or treatments use a supplied-air respirator or a respirator with a specialty cartridge to filter specific metal fumes. Use respiratory protection for galvanized items and metals, coatings, and fluxes that contain fluorine compounds, zinc, lead, beryllium, cadmium, and mercury. Some cleaning and degreasing compounds may also be hazardous.