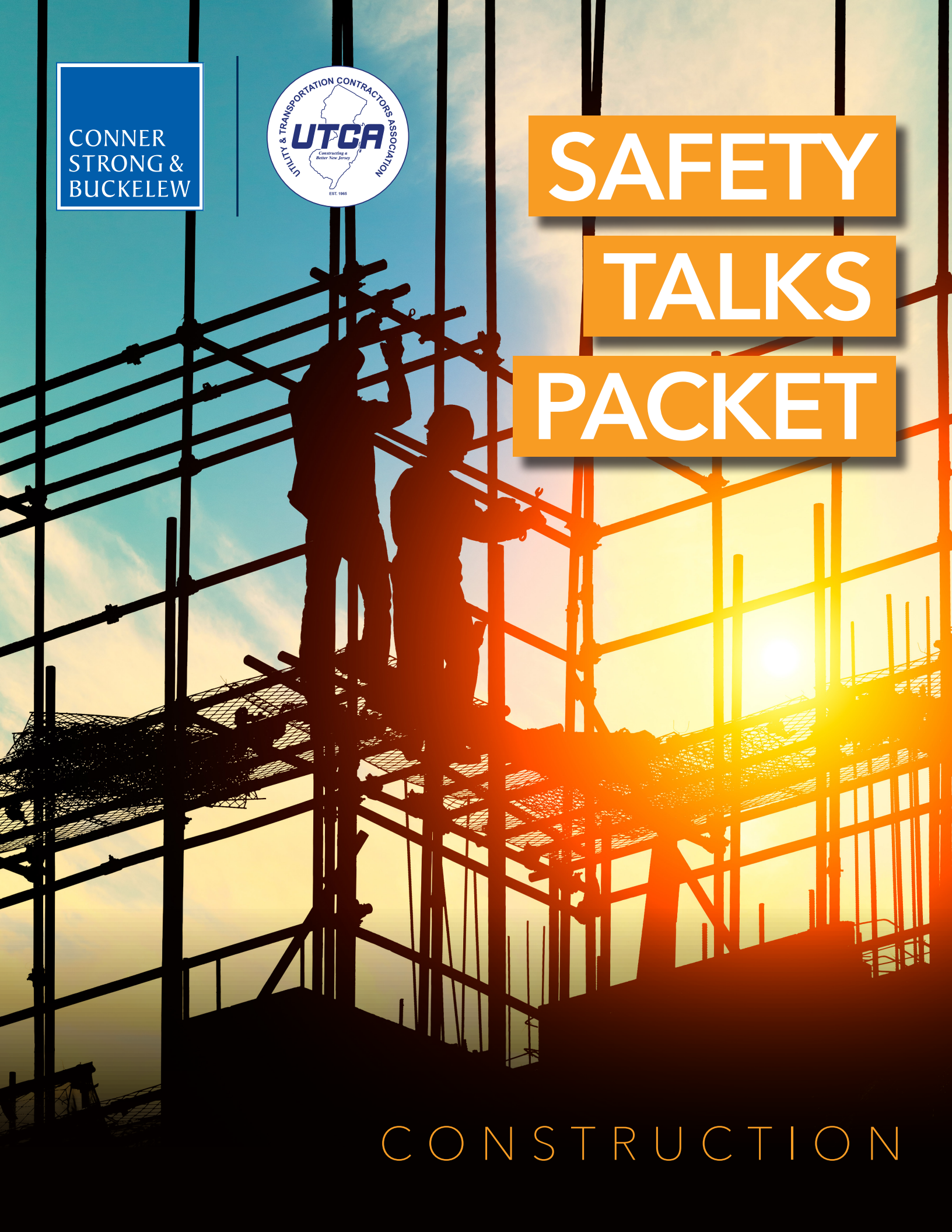

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SAFETY
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Safety Meeting Attendance Form

SAFETY MEETING INFORMATION (INSTRUCTOR USE ONLY)		
Site:	***Location:***	***Instructor:***
Date of Safety Meeting:	***Length of Safety Meeting:***	***Safety Meeting Topic:***

ATTENDANCE SHEET			
No.	**Name (Printed)**	**Signature**	**Company**

ATTENDANCE SHEET			
No.	**Name (Printed)**	**Signature**	**Company**

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ABCs of Personal Fall Arrest Systems

Falls are some of the most common types of accidents in the workplace. When working at heights, an accident can result in serious injuries. As such, it's important to take precautions and utilize fall protection systems.

Personal fall arrest systems consist of three separate elements that work together to ensure safety by catching falling workers. The three pieces of fall arrest systems include an anchorage, a body harness and connecting devices. Remember them by thinking of systems as having A, B and C.

Anchorages

In personal fall arrest systems, anchorages are true to their name in that they act as the fall arrest system's anchor point. Anchorages must be fixed to structurally strong materials, as anchors are not effective if they are attached to weak materials.

Under OSHA standards, a qualified employee is required to oversee the design, installation and utilization of anchorages. Anchorages must be strong enough to support at least double the amount of expected impact load or 5,000 pounds per attached employee. If there is any doubt that an anchorage is safe, a qualified employee should inspect and evaluate it.

Body Harnesses

Body harnesses and body belts are not the same thing. Body harnesses provide far more safety than belts. In fact, body belts are not allowed to be used in fall arrest systems and should be used only as positioning devices. One of the primary advantages of a body harness is that it decreases injury risk when an employee is caught in the midst of a fall, by dispersing the impact across a larger portion of the body as opposed to it all being concentrated around the waist.

In order for a harness to be effective, it must fit properly. Be sure to check your harness every time you put it on, and make sure of a snug fit. While standing up straight, there should be no slack. You should be able to fit an open hand, but not a closed fist, between the strap and your body. Check that the D-ring is centered between your shoulder blades, and be sure to tuck in all straps once they are properly fitted.

Connecting Devices

While connecting devices are one of three primary elements that go into a personal fall arrest system, there are many smaller pieces that make up this part of the puzzle. Snaphooks, lanyards, lifelines and deceleration devices are all connecting devices.

When assembling a personal fall arrest system, it is important that all of the connecting devices are the correct choices. When selecting the proper connecting devices, consider the following tips:

- Limit the maximum possible arresting

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force on an employee to 1,800 pounds.

- Employees should not be able to fall more than 6 feet or contact a lower level before being caught.
- Deceleration devices should not extend more than 3 ½ feet.
- Snaphooks must lock and not be able to disengage from any other connecting device of the system.

Inspections

Personal fall arrest systems are complicated, so it is imperative that all pieces are inspected before every use. Do not use a system that has any damage or defect. Some common things to look for include:

- Frayed or worn webbing
- Damaged hardware
- Missing parts
- Ripped stitching

When inspecting your equipment, pay extra attention to your harnesses and lanyards, as many of these have an impact indicator where a special stitching pattern will rip out.

Our Commitment to You

If you have any questions or concerns about personal fall arrest systems, or fall protection in general, speak with your supervisor.

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ABCs of Personal Fall Arrest Systems - Anchorages

Falls are a common type of accident in the workplace and can result in serious injuries. As such, it's important to take precautions when working at heights.

Personal fall arrest systems consist of three separate elements—anchorages, body harnesses and connecting devices—which can be remembered by thinking of A, B and C.

"A" is for Anchorages

As its name would suggest, an anchorage is an anchor point to which employees working at heights are tethered. Anchorages act as the counterweight to workers should they fall. Therefore, they must be strong and sturdy enough to reliably catch and support the body weight of the attached worker.

OSHA requires that all anchorages be designed, installed and used while under the supervision of a qualified employee. In order to ensure that the equipment can catch and hold a falling worker, anchorages must be able to support two times the expected impacted load or 5,000 pounds for each worker attached to the anchor.

Additionally, the material to which anchorages are attached must also be reliable. Certain building materials may not be strong enough to support an anchorage if a large amount of weight is suddenly applied. As a general rule of thumb, it is best to choose the strongest available material when selecting an anchorage, such as steel.

Some examples of equipment and structures that should never be used as anchorages in a personal fall arrest system include:

- Standard guardrails
- Standard railings
- Ladders/rungs
- Scaffolding
- Light fixtures
- Conduit or plumbing
- Ductwork or pipe vents
- Wiring harnesses
- Rebar
- Lanyards
- Vents
- Fans
- Roof stacks

Inspections

Anchorages are critical parts of personal fall arrest systems. If an anchorage is defective or deficient, it can result in serious accidents and injuries. An issue with an anchorage can mean the difference between life and death. If there is ever any doubt that an anchorage can provide the necessary safety, have a qualified individual inspect and evaluate it.

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personal fall arrest systems, talk to your supervisor or a qualified fall protection employee.

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ABCs of Personal Fall Arrest Systems – Body Harnesses

Personal fall arrest systems provide a layer of security for employees working at heights. These systems are made up of three separate elements that combine to keep workers safe in the event of a fall. Remember the ABCs of fall protection systems: anchorages, body harnesses and connecting devices.

"B" Is for Body Harnesses

A body harness is a key part of any personal fall arrest system in that it is the primary piece of equipment that is physically worn by an employee. The harness is then tethered to an anchorage that is capable of catching and supporting the weight of an employee should they fall.

Harnesses include shoulder straps and leg straps, a sub-pelvic assembly, adjustable buckles or fasteners, and one or more D-rings to connect to other components of the fall arrest system.

It is important to understand that body harnesses are not the same thing as body belts. Body harnesses are safer than belts in the event of a fall. In fact, body belts are not allowed to be used as part of fall arrest systems and are only adequate to be used as positioning devices. Body harnesses are less likely to cause injury while breaking an employee's fall due to the impact of being caught being dispersed across a larger portion of the body, rather than concentrated around the waist.

Like all personal protective equipment, body harnesses can only be effective if they are used correctly. Make sure that your harness fits snugly. There should be no slack when standing up straight. You should be able to fit an open hand, but not a closed fist, between the strap and your body. Be sure to check that the D-ring is centered between your shoulder blades and that all straps are tucked in.

Body harnesses may be considered one-size-fits-all, but some manufacturers will provide more than one size. A poorly fitting harness can put you in danger and lead to serious injury. When selecting a harness, be certain that it can be adjusted to fit you properly.

Inspections of Harnesses and Service Life

A defective fall arrest system can be the difference between life and death. As such, it is important that all of the parts of your equipment, including the harness, be inspected regularly. When inspecting your body harness, be on the lookout for:

- Frayed, worn or cut webbing
- Damaged or misshapen hardware
- Missing parts
- Ripped stitching

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In addition to checking for those issues, also pay attention to whether your harness has an impact indicator, which will have a special stitching pattern ripped out if the harness has previously stopped a fall or been subjected to a similar force.

There is not a specific timeline that can be followed 100% of the time regarding the lifespan of a body harness. However, it is important to pay close attention to the overall condition of the harness as well as the manufacture's recommendations for inspections and the lifespan of the harness you are using.

One key part of maximizing the durability and lifespan of a harness is storing it correctly. When not being used, harnesses should be hung up in a clean, dry and cool area. Keep them off the floor and away from other equipment. Chemicals, sunlight and welding slag can all cause damage to harnesses. The webbing of a body harness is particularly susceptible to damage.

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Your safety is our first priority at . If you have any questions or concerns about body harnesses, personal fall arrest systems or fall protection in general, speak to your supervisor.

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ABCs of Personal Fall Arrest Systems – Connecting Devices

Working at height can be an extremely dangerous part of your job. Falls are a common form of workplace accidents, so it is important that employees utilize proper protection when working at heights.

When not using rigid fall protection, such as a railing, employees can use personal fall arrest systems for safety. Fall arrest systems are complicated, but generally consist of three different elements: anchorages, body harnesses and connecting devices.

"C" is for Connecting Devices

In the ABCs of fall protection, the "C" refers to connecting devices and, when talking about connecting devices, typically we are referring to lanyards.

Lanyards are pieces of equipment used to connect the body harness being worn by a worker to the anchorage that can catch and support their weight in the event of a fall.

When selecting connecting devices, be certain that they are compatible with the other parts of the fall arrest system. Other key points to remember regarding connecting devices include:

- Limit the maximum possible force on a worker to 1,800 pounds.
- Workers should not be able to fall more than 6 feet or contact a lower level before being caught.
- If used, a deceleration device should not extend more than 3 ½ feet.
- Snaphooks must be a locking type and be designed so that they will not disengage.

Shock-absorbing Lanyards

One of the most common types of lanyards used in fall arrest systems are shock-absorbing lanyards. This type of connecting device can vary in length and live up to their name in that the lanyard is designed to stretch as it receives the worker's falling weight, allowing the fall to be broken in a controlled and gradual manner. Shock-absorbing lanyards must have one end connected to the D-ring on the body harness and the other to the anchorage; they cannot be connected to each other.

Self-retracting Lanyards

Self-retracting lanyards (SRLs) are usually much longer than traditional lanyards and are somewhat unique in how they operate. SRLs allow attached workers to move about freely by extracting more length as necessary. SRLs get their name from the security that the line is not able to become slack and will automatically retract to create consistent, slight tension. In the event that the line is extracted too rapidly, such as when a worker falls, the lanyard locks in place

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and does not allow further extension. An SRL may sometimes operate better as a fall prevention device than as a fall arrest system.

Positioning Lanyards

Positioning lanyards are fixed in length and are not meant to be used as part of a fall arrest system. They are more suited to keeping workers in place, rather than stopping a fall. Positioning lanyards are often used for tasks such as rebar assembly, pour-in-place concrete walls or while working in boom lifts. They can be made from a variety of different materials, including webbing, cables, ropes or chains.

Inspections and Selections

Being certain that your fall arrest system is in good working order is of critical importance, as even a slight defect in just one piece can result in serious injury.

Make sure that you are checking connecting devices before each and every use to find any possible problems. Damaged pieces must be removed from service. When inspecting equipment, keep an eye out for these possible issues:

- Frayed, worn or cut webbing
- Damaged or misshapen hardware
- Missing parts
- Ripped stitching

It is of vital importance that a qualified fall protection individual is involved in the selection of connecting devices and other components of fall arrest systems. Fall protection systems are only reliable if every single piece is compatible, in good condition and used properly.

Our Commitment to You

Your safety is our first priority at . If you have any questions or concerns about connecting devices, personal fall arrest systems or fall protection in general, speak to your supervisor or a qualified fall protection employee.

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Arc Blasts Can Be Instant Fire Starters

Dealing with high voltage while performing electrical work can be very dangerous and, when things go wrong, the results can be catastrophic. Of such events, arc blasts are near the top of the list when it comes to the most hazardous. Arc blasts send a luminous, high voltage current through the air which can reach temperatures well over 30,000 degrees. At such high temperatures, an arc blast can not only cause severe injury or death but can also present a serious fire hazard. That is why it is extra important to recognize such risks and prepare for them in a way that ensures the safety of yourself and those around you.

Arc Blast Hazards

There are three primary hazards associated with an arc-blast:

1. Arcing gives off thermal radiation (heat) and intense light, which can cause severe burns. Several factors affect the degree of injury, including the area of skin exposed and type of clothing worn.

2. A high-voltage arc can produce a considerable pressure wave blast. A person 2 feet away from a 25,000-amp arc feels a force of about 480 pounds on the front of the body. The pressure wave can throw the victim away from the arc-blast and can cause serious ear damage and memory loss due to concussion.

3. A high-voltage arc can cause the copper and aluminum components in electrical equipment to melt. These droplets of molten metal can be thrown great distances by the pressure wave. Although these droplets harden rapidly, they can still be hot enough to cause serious burns or cause ordinary clothing and nearby materials to catch fire, even at distances of 10 feet or more.

Protect Against Arc Blasts

By using the appropriate control methods, the risk of arc blast can be greatly reduced.

- De-energize any equipment that needs to be worked on. Never use convenience or time constraint as an excuse for not turning the power off.

- Use lockout/tagout practices to prevent accidental startup while you are performing work.

- Test voltage before starting work to ensure that equipment has been de-energized.

- Use the proper personal protective equipment, such as voltage-regulated gloves, fire resistant clothing and a face shield. Always use PPE in addition to other safety controls.

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- If you must work with live power, make sure that the immediate area is clear of any flammable materials or explosive vapors or gases that could ignite in the event of an arc.

Extinguishing Electrical Fires

If a fire does break out as a result of an arc blast or other electrical malfunction it is important to respond with the proper fire control method.

- Use only fire extinguisher with a Class C rating on electrical fires. Extinguishers meant for other materials may make electrical fires worse.
- Never use water to stop an electrical fire.
- If the fire is beyond your ability to control, call 911 immediately.

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Avoiding Slips and Falls at the Site

On any given day, the injury rate for construction workers is higher than the national average for all other industries. Following these basic slip and fall prevention tips can help prevent you from becoming a statistic.

Do Your Safety Part

There are various ways to suffer slips and falls while working. You can slip and lose your balance, trip over objects left improperly in a walkway or fall from a ladder or scaffolding. To avoid these mishaps, be on the lookout for tripping hazards such as the following:

- Water puddles
- Worksite materials
- Grease or oil
- Sawdust
- Extension cords and cables

Even small quantities are enough to make you fall.

Good Housekeeping Counts

When entering a building from the outdoors or from debris areas, clean your footwear thoroughly. Snowy and rainy weather require a doormat at each entrance to allow for complete wiping of shoes.

Beware of tripping hazards—trash, unused materials or any object left in walkways invites falls. Extension cords, tools, carts and other items should be removed or properly barricaded off. If equipment or supplies are left in walkways, report it. Let the proper personnel remove it. And keep passageways clean of debris by using trash barrels and recycling bins.

Practice Prevention

Walk in designated walking areas. Concentrate on where you are going—horseplay or short cuts through the job site invites accidents. If you're carrying a heavy load that hampers your ability to see properly, request spotting assistance from a co-worker.

The worst falls are from elevated positions such as ladders, and can result in serious injury or death. Learn and practice ladder safety and the proper use of scaffolding. For example, when climbing, use a ladder of proper length that is in good condition. Keep it placed on a firm surface. Do not climb a ladder placed on machinery, crates, stock or boxes. Keep the ladder's base one foot away from the wall for every four feet of height. Don't over-reach. Always have control of your balance when working from a ladder. Never climb a ladder with your hands full, and always transport tools in their proper carrying devices.

When using scaffolding, be sure it is properly assembled according to the manufacturer's specifications. Check carefully for defects.

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Standing and working planks should be level and clean. Use toe boards to prevent tools from falling and workers from slipping. Report any misuse of proper scaffolding safety.

Slips and falls occur every day. The extent of injuries and their recurrence can be minimized through proper safety knowledge, good housekeeping and practicing prevention.

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Bench Grinders

Bench grinders, which are sometimes referred to as offhand or pedestal grinders, are a common piece of equipment on job sites and in the shop. They are used for a variety of tasks, including sharpening, polishing, buffing and cleaning metal objects.

However, if used incorrectly, bench grinders can create a number of hazards. For instance, if the bench grinder is poorly maintained, the abrasive wheel may shatter, creating dangerous projectiles. What's more, loose clothing and jewelry can become tangled in the bench grinder during use, which can cause serious injuries.

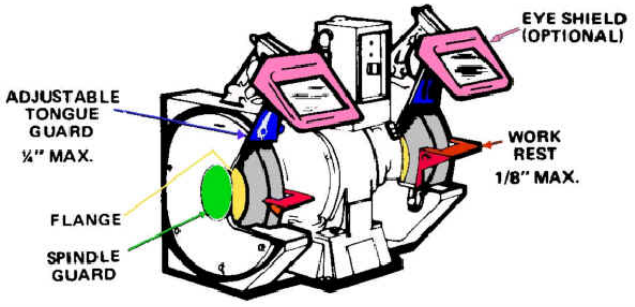
This Safety Matters discusses Occupational Safety and Health Administration (OSHA) requirements for bench grinders and ways employees can stay safe on the job when using them.

Guarding

Bench grinders are typically equipped with several types of guards, including tongue guards, work rests and side guards:

- Tongue guards—Tongue guards are metal plates located at the upper part of the wheel opening of the bench grinder. These guards prevent pieces of the grinding wheel from harming nearby workers should the wheel shatter. Per OSHA, tongue guards should be adjusted to ensure there's no more than a ¼-inch clearance between the guard itself and the grinding wheel.
- Work rests—Per OSHA, bench grinders must be equipped with a rest that can support workpieces. To prevent the workpiece from being jammed between the wheel and the rest, work rests must be adjusted in such a way that the gap between the face of the grinding wheel and work rest is no more than ⅛ of an inch.
- Side guards—Sometimes referred to as spindle guards, these guards are designed to enclose the wheel and spindle of a bench grinder. Per OSHA, side guards must cover the spindle and no less than 75% of the wheel.

For a visual representation of these guards, please review the above image.



Additional Safety Considerations

While machine guarding is critical when it comes to bench grinder safety, there are additional

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precautions to keep in mind:

- Make sure the wheel you are using is compatible with the bench grinder. If the wheel isn't rated for the grinder, it could break and create serious injury risks.
- Perform a ring test before mounting a new wheel. These tests involve tapping the wheel with a nonmetallic object. If, during the test, you hear a dull, thud-like sound, the wheel may be damaged.
- Avoid standing directly in front of a bench grinder as you turn it on. If the wheel is damaged in any way, it may shatter as it gets up to speed.
- Wear the proper personal protective equipment when operating a bench grinder. This can include the following:
    - Face shields
    - Safety glasses
    - Hearing protection
    - Leather or canvas work gloves
- Be aware of items that could get caught in the bench grinder during use, such as loose clothing, jewelry or untied hair.
- Visually inspect the grinder before use, ensuring wheels, mounting flanges, electrical cords and other components are in good condition.
- Do not exceed the maximum recommended operating speed of the bench grinder.

Keeping in mind these precautions can go a long way toward ensuring your safety whenever you use a bench grinder. For more information, speak with your supervisor.

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Bloodborne Pathogen Awareness

While bloodborne pathogens are not usually a major concern on a job site, it is still important that employees understand basic cautions and procedures in a first-aid situation. Knowing how to be safe around blood and other potentially infected material is important for your own health as well as that of your fellow employees.

Bloodborne Basics

Bloodborne pathogens are microorganisms that are present in blood and can cause diseases. Some well-known examples of bloodborne pathogens include human immunodeficiency virus (HIV), and Hepatitis B and C. Bloodborne pathogens can be life-threatening.

Assume It's Infected

The simplest way to protect yourself from bloodborne pathogens is to treat all blood as possibly infected. Even if you know a coworker very well, you should not assume that you are aware of whether they are carrying any bloodborne pathogens.

In order to prevent infection or spreading of bloodborne pathogens in the workplace, all employees should follow universal precautions, such as:

- Use appropriate personal protective equipment (PPE) such as gloves, safety glasses or masks.
- Clean up any blood present in the workplace with chemicals or cleaning products that will adequately kill the microorganisms responsible for bloodborne pathogens.
- Store needles and other sharp objects that could pierce PPE or your skin inside FDA-approved sharps containers.
- Use warning labels for containers carrying regulated waste or sharp objects.

Caution Comes First

In the event that there is blood on the job site, only employees trained in first aid or designated to perform cleaning duties should address the situation. If you are involved in a situation involving blood or another potentially infectious material, do not attempt to help until you are certain that you are properly protected. First responders have to take care of themselves as well as those in need of assistance.

If you find that you have possibly been exposed to a bloodborne pathogen, wash the blood or other material off thoroughly with soap and warm water, and notify your supervisor. If blood or a potentially infected material gets inside your mouth, eyes, nose or your own broken skin, seek medical attention immediately.

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Burn First Aid on the Construction Site

Scalds and burns are potentially life-changing injuries that can lead to severe pain, lost time at work and permanent damage to skin. Hot surfaces, flammable liquids, gas motors, welding equipment and electricity are common burn hazards on the construction site. It is important that you use extreme caution when working with or around these things, and that you know what to do should you or a co-worker get burned.

For Any Burn

If you or a co-worker experiences any type of burn, immediately take the following steps to minimize the extent of the injury:

- Put out any flames and remove any restrictive jewelry or clothing.
- Check that the victim's airway is open, that the person is breathing and that there are signs of circulation.
- Do not use ice on the burn, as it could cause even more damage.
- Do not apply butter, burn gels, creams or lotions, as they can prevent proper healing.
- Do not break blisters, as they make the victim susceptible to infection.
- If the person has slipped, tripped or fallen, consider that there may be injuries in addition to the burn. To avoid worsening these other injuries, do not move the person excessively.

Minor Burns

If you or a co-worker suffers a minor burn, which is a first- or second-degree burn that covers only a small part of the body, take the following steps:

- Remove clothing from the affected area.
- Hold the burned area under cool running water for at least five minutes or until pain subsides. Alternatively, submerge the area in cool water. Cooling the area reduces swelling.
- Loosely wrap the burn with a dry, sterile gauze bandage to protect and keep air off the burned skin. Do not tighten the bandage—you should avoid putting pressure on burned skin.
- If the victim experiences increased pain, redness or fever, which could signal an infection, contact a physician immediately.

Major Burns

If you or a co-worker experiences second- or third-degree burns over large surfaces of the body or face, hands, feet or the genital area, immediately take the following steps:

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- Call 911. If burns cover an area the size of an arm or leg, keep the victim lying down.
- Don’t immerse large, severe burns in cold water, as it could trigger shock.
- Stay with the victim and watch carefully for signs of difficulty breathing.
- Don’t allow the victim to drink anything.
- Elevate the burned area, raising it above heart level if possible.
- Cover the victim with a clean sheet or blanket for warmth.

The most important thing is to be aware of potential burn and scald hazards at all times. Wear the proper personal protective equipment (PPE) at all times and know where emergency contact information is posted.

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Confined Spaces – Identification

There are already plenty of hazards that you need to be aware of while working on a construction site, but confined spaces are particularly dangerous.

Accidents often occur in confined spaces because workers were unaware that they were in such an area to begin with. As such, the first step toward safety in and around confined spaces is to identify them.

Confined Space Characteristics

OSHA standards define confined spaces as meeting the three following criteria:

- The space is large enough for an employee to enter.
- The space has limited means of entry. This requirement is sometimes misunderstood as meaning that the space has only one entrance and exit, but it actually refers to the physical ease with which workers can get in and out. Needing a ladder or having to duck under a low doorway are examples of limited means of entry and exit.
- The space is not designed for continuous occupancy, such as due to a lack of ventilation, lighting or sufficient room to work and move around.

Common areas of a job site that may meet the requirements to be considered confined spaces include:

- Manholes
- Sewers
- Storm drains
- Water mains
- Lift stations
- Tanks
- Basements without steps
- Attics
- Vessels

Confined Spaces and Permits

While meeting all three previously mentioned requirements are necessary for an area to be considered confined, it does not necessarily mean that the space requires a permit.

Permit-required confined spaces are areas in which employers must take extra steps to protect workers. Confined spaces are considered permit-required if the area has one or more of the following four additional hazards:

- The confined space has a hazardous atmosphere, such as:
  - **Oxygen deficient**—Concentration less than 19.5%
  - **Oxygen enriched**—Concentration greater than 23.5%
  - **Flammable**—Gas, vapor or mist greater than 10% of its lower explosive limit, or airborne combustible dust at a

concentration greater than or equal to its lower explosive limit

- **Toxic gas**—Carbon monoxide or other hazards that can cause death, incapacitation or impairment

- The confined space contains material that could engulf an occupant, such as water or sand.
- The confined space is configured in a way that an occupant could be trapped or suffocated by inwardly converging walls.
- The confined space contains any other serious safety hazards, such as moving parts, venomous pests or extreme temperatures.

Evaluating Confined Spaces on Job Sites

Job site areas that may meet the qualifications to be considered a confined space must be evaluated by a qualified person. That person should also inspect the space to determine whether it requires a permit.

It is important that due diligence is conducted for all spaces on a case-by-case basis. Some areas on a job site may seem similar, but even the slightest differences can mean very different levels of danger.

Your safety is our first priority at . If you have any questions or concerns about confined spaces, speak to your supervisor or a qualified person.

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Confined Spaces–Permits

Of the potential hazards on a job site, confined spaces are some of the most dangerous. A space can be determined as permit-required, in which case extra measures must be taken in order to ensure the safety of workers.

Permit-required Confined Spaces

Confined space permits are a key part of a company's confined space entry program. They act as a method of controlling worker entry into potentially dangerous areas. Any area on a job site that may be a confined space must be properly evaluated by a qualified person. Furthermore, all confined spaces must also be inspected to determine if the space requires a permit.

A permit is required for each time that workers are going to be entering a confined space, and must be filled out with information regarding conditions and precautions. This includes information such as:

- Names of entrants, attendants and entry supervisors
- Name of the space being entered
- Time and date of entry
- Air monitoring results
- Hazards or potential hazards of the space
- Acceptable entry conditions
- Personal protective equipment (PPE) required for entry
- Special equipment and/or procedures
- Contact information for rescue services

Entry Supervision

It is the responsibility of the entry supervisor to make sure that confined space permits are completed and that the proper measures are taken before authorizing any workers to enter the area.

Completed permits should be posted at the entrance of the confined space and remain throughout the duration of the entry.

Canceling or Suspending Permits

Another responsibility for entry supervisors is to suspend or cancel a permit once work is completed or if conditions become unsuitable for entry.

If a permit is canceled, the confined space in question cannot be reentered until a new permit is completed. Suspended permits can be reinstated if an entry supervisor has conducted an inspection of the space and determined that the allowable conditions, as listed on the permit, have been reestablished.

Canceled permits should be kept for at least a year and reviewed to help evaluate the effectiveness of the company's confined space

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entry program.

If you have any questions about confined spaces or permits, speak with your supervisor or another qualified employee.

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Confined Spaces–Roles and Responsibilities

There are always hazards to be aware of on a job site. Some of these dangers can be amplified when working within areas classified as confined spaces. It is extremely important that workers understand confined spaces, and their roles and responsibilities within them, in order to keep themselves safe.

Authorized Entrants

Authorized entrants of a confined space are workers who are authorized to physically enter the area. Some responsibilities for authorized entrants in a confined space include:

- Understand the space and its hazards
- Know signs or symptoms of exposure to a hazard
- Use personal protective equipment (PPE) correctly
- Maintain communication with attendants and let them know if a hazardous condition exists
- Know to exit immediately if ordered by attendants or supervisors, signs of hazard exposure are observed, a prohibited condition exists or an alarm is activated

Attendants

Attendants are workers whose role in confined space safety is to remain outside the area and monitor it on behalf of the authorized entrants. Attendants are responsible for:

- Remaining outside the space and avoiding distractions while entrants are inside
- Preventing unauthorized entry
- Performing non-entry rescues if specified by company procedures
- Understanding existing and potential hazards
- Knowing signs or symptoms of exposure to a hazard
- Maintaining communication with entrants
- Assessing conditions and ordering evacuation if necessary, such as if a prohibited condition exists, an entrant shows signs of hazard exposure, the attendant can no longer perform their duties or a situation that would endanger workers occurs outside the space
- Calling for rescue in the event of an emergency

Entry Supervisors

Entry supervisors are responsible for overseeing

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the entrance process to confined spaces. Supervisors may also serve as the space's attendant or authorized entrant themselves. As such, supervisors must understand both roles and also have additional responsibilities. In order to ensure the safety of workers, entry supervisors must:

- Understand the space and its hazards
- Verify that conditions within a confined space are safe, including making sure that tests like air monitoring are performed, and that acceptable entry conditions are maintained
- Check that permits are properly completed
- Stop entry, and cancel or suspend permits when necessary
- Be certain that rescue services are available and that there are reliable means to contact them
- Ensure that entry to the space is consistent with its permit and that appropriate measures are taken to remove unauthorized entrants

Training

It is of the utmost importance that workers performing any role pertaining to confined spaces are trained properly and understand their responsibilities.

If you have any questions about confined spaces or these roles, speak with your supervisor or another qualified person.

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Constructing Masonry Walls

Constructing concrete and masonry walls is extremely dangerous because the loads are heavy. Workers are at risk both when slabs and walls are positioned by jacks and lifting equipment and when shoring is required until structures can support themselves. For example, if you are working near a free-standing masonry block wall and there are gusting winds, it could collapse on you or your co-workers. Follow these safety tips to ensure an injury-free workday.

Shoring and Reshoring

- Inspect all shoring equipment prior to use. Damaged equipment should never be used.
- If equipment is weakened during use, it should be immediately reinforced.
- Adjustments of single-post shores to raise formwork should not be made after concrete placement.

Reinforcing Steel

- Prevent unrolled wire mesh from recoiling by securing each end or turning the roll over.
- Reinforcing steel for walls, piers, columns and similar structures should be properly supported to prevent collapse.
- All protruding reinforcing steel must be guarded.

Framework Removal

- Do not remove forms and shores until the concrete has gained enough strength to support its weight and superimposed loads.
- Reshoring should not be removed until the concrete being supported has reached ample strength to support its weight and all loads placed upon it.

Precast Concrete

- Wall units, structural framing and tilt-up wall panels must be adequately supported to prevent overturning and collapse until permanent connections are put into place.
- Only essential employees should be underneath precast concrete being placed into position.

Lift-Slab Operations

- Do not overload jacking equipment.
- Unless you are essential to the jacking operation, do not enter the building/structure or stand beneath a slab being lifted.

General Safety Requirements

- Do not place construction loads on a

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concrete structure unless a person qualified in structural design determines that the structure is capable of supporting the load.

- Do not stand behind the jack during tensioning operations.
- Steer clear of working under concrete buckets that are in motion. Never ride a concrete bucket.
- Personal Protective Equipment (PPE) for the head and face must always be worn when applying a cement, sand and water mixture through a pneumatic hose.
- Use automatic holding devices to support forms in case a lifting mechanism falls.
- Do not enter the constructing and lifting worksite unless it is absolutely necessary.
- Above all, always work with a cautious eye!

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Drill Press Safety

A drill press is a cutting machine that uses a rotating tool to remove wood, metal and other material to create a hole. Drill presses are versatile machines and are commonly used by many trades on a job site.

While drill presses are simple to use and vital for a number of construction tasks, they also present a number of safety risks. This Safety Matters highlights common hazards associated with drill presses and ways to remain safe whenever you operate one.

Drill Press Hazards and Safety Considerations

When it comes to drill presses, three of the most common hazards relate to entanglement, struck-by injuries and material chippings:

- Entanglement—The high-speed rotation of drill bits creates a significant entanglement hazard. If loose clothing or hair becomes caught in the machine, it can lead to serious injuries.
- Struck-by injuries—Workpieces, if improperly secured, can twist violently when they come into contact with a spinning drill bit. Should this occur, the workpiece can strike and injure drill press operators.
- Material chippings—Whenever a drill bit comes into contact with a workpiece, it can throw off potentially harmful wood or metal chippings. Not only can this material cause cuts and abrasions, but it can also get into an operator's eyes if they aren't equipped with the proper protection.

While drill presses can be dangerous if used improperly, there are a number of safety precautions that can help lower the risk of injury:

- Use drill presses for their intended purposes only.
- Ensure the point of operation of the drill press is guarded, if possible.
- Clamp down your workpieces before drilling them. Apply gradual pressure when drilling into a workpiece.
- Wear the proper personal protective equipment when using a drill press, including safety footwear, glasses and hearing protection.
- Use the proper cutting fluid for the material you are working on.
- Inspect drill presses and bits before use, ensuring they are in good working condition. Never use a dull or cracked drill bit.
- Avoid wearing loose clothing and jewelry, as they can increase entanglement hazards.

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- Tie back or confine long hair.
- Know how to turn off the drill press in the event of an emergency.
- Practice good housekeeping. Do not let material chippings build up on the floor, as this can create slip, trip and fall hazards.
- Adjust lighting as needed, ensuring the work area is adequately illuminated.
- Avoid adjusting drill speeds or workpieces while the drill press is running. Ensure drill presses are supervised at all times when they are in use.

For any questions regarding drill press safety, speak with your supervisor.

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Dump Truck Safety Operations

There are many vehicles utilized at the construction site that require specific safety precautions due to their unique nature. Dump trucks are no exception. Follow these dos and don'ts when it comes to working safely.

Dump Truck Do's

- Do make sure the ground is stable before raising the truck bed. The truck becomes less stable as the bed rises, and the greater the bed's length, the greater the chances of it tipping over, especially if the ground is not level. Unload on compacted soil or gravel when possible.
- Do make sure the load's center of gravity stays between the frame rails of the bed as it rises. Even low tire pressure on one side or small ground depressions can throw off this balance.
- Do ensure that the truck bed always has a liner to guarantee the even, continuous flow of materials. This protects against an unbalanced load and is especially important when dealing with wet or frozen material that may stick to the bed.
- Do make sure the tractor and trailer are in as straight a line as possible. Jack-knifed alignments can cause unsafe situations for the truck and surrounding workers if the trailer does tip.
- Do keep up with daily maintenance of the truck. Checking tire pressure, inspecting the suspension systems/hydraulic lift cylinders and regularly lubricating pins and bushings will ensure smooth operation, as well as the safety of you and your co-workers.
- Do become trained in how to use hand signals or warning signs for two-person unloading operations.

Dump Truck Don'ts

- Do not overload the dump bed. This is an unsafe practice and can cause problems in unloading, especially if the material flows poorly out of the bed.
- Do not assume that a remote control device controlling the dump bed means it is safe to take unnecessary risks. Drivers should still follow all safety guidelines even if a remote control makes it easier to maneuver the truck bed.
- Do not allow any vehicles or people in the area when unloading the truck. Clear an area if necessary to ensure the conditions are proper for dumping the bed.
- Do not drive with the bed raised. It is

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important to understand the dangers of this activity. For example, you could run into an overhead power line, electrocuting yourself and anyone else in the vehicle.

- Do not work between the bed and the frame without blocking the dump bed. The bed can unexpectedly lower onto the person below.

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Earth Mover Safety

Because of their size and mobility, earth movers present a host of unique risks on the jobsite. Moreover, when injuries occur in or around earth-moving machinery, they tend to be serious—and sometimes even fatal. To prevent accidents and injuries on the worksite, follow these safety guidelines.

Plan Ahead to Prevent Accidents

Your commitment to safety begins before you even step into the driver's seat. Thorough preparation and planning can greatly reduce your chance of accident or injury. Earth-moving machine operators should:

- Check the work area for hazards such as boulders, tree roots or overhead power lines. If power lines are present, maintain 10 feet of clearance at all times.
- Take note of ground conditions, especially if mud, snow, ice or surface water is present.
- Inspect your equipment prior to use. Look for loose or missing bolts or pins, oil or coolant leaks, and any signs of damage to wheels, tires, hydraulic systems or other moving parts.
- Check the brake system and brake lights to ensure they are fully operational.
- To ensure safe visibility, make sure the windshield and mirrors are free of dirt and debris.

Safe Operating Procedures

Earth movers can cause serious damage if proper operating precautions are not followed:

- Stay seated with your seatbelt fastened at all times while operating the earth mover.
- Wear any and all required personal safety equipment, including safety glasses, gloves, helmet, ear protection and proper footwear.
- Do not exceed manufacturer's recommended load limits.
- Avoid sharp turns on uneven terrain, which can cause the vehicle to become unsteady and potentially flip over.

General Safety Policies

- Make sure all earth-moving vehicles are equipped with rollover protection.
- Maintain back-up alarms for equipment with limited rear visibility.
- Train workers to stay clear of backing or turning vehicles with rotating cabs.
- Verify that all machine operators have proper training and experience.

If you have any questions or concerns about earth mover safety, do not hesitate to contact your supervisor. At , your safety is the first priority.

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Electrocution Prevention—Solar Panel Technicians

Solar photovoltaic (PV) technicians and solar installer roofers have a particularly dangerous job because it combines the risks of electrical work with the dangers of working at heights.

Learn more about the hazards of your job and the importance of safety, including misconceptions you may have had, with this list of common myths and facts about PV module installation.

MYTH: The biggest sources of solar panel fires are overheating during the hottest hours of the day and spontaneous combustion of the panels due to extremely strong sun.

FACT: Most solar panel fires happen because of faulty wiring or incorrect installation. It is important to assure clients that the panels are not at risk of catching on fire under normal circumstances.

To prevent fire from faulty wiring, be sure to use the correct wire size and to ground all electrical systems properly. Also, it is important to routinely check the system's charge controller.

MYTH: Turning off the building's main breaker will shut down all power systems, therefore making it safe to install or repair solar modules.

FACT: Pulling the main breaker will shut down the utility power, but it will not stop the solar panels from producing power.

The only way to stop the flow of electricity in a solar system is to stop the source of power, which is the sun. When working on installation or repairs, cover the face of the panels with opaque material. Never touch the terminals while the modules are still exposed to light. Also, remember that it may take a while for the panels to cool off after sun exposure, so wear the proper personal protective equipment (PPE) when performing any work.

MYTH: Voltage from PV modules is not high enough to be hazardous.

FACT: This myth is partially true in that the voltage from a single PV module may not be strong enough to cause serious harm. However, when connected in a series, electrocution from PV modules may be fatal. Always use the proper insulated tools to prevent injury in this situation.

MYTH: Wiring is the only electrical risk associated with solar panel installation.

FACT: Recent injuries on PV module installation sites have largely been attributed to electrocution from nearby high-voltage power lines.

Aluminum mounting rails and ladders are part of the solar panel installation process, and workers don't often think of them as hazardous. However, inadvertent contact between either of these items and an overhead power line could

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prove fatal.

To prevent electrocution via mounting rails or ladders, stay a safe distance from power lines. Conduct a preliminary assessment of the site to identify all potential hazards before beginning work and have a co-worker stand watch if the job requires coming into proximity of power lines. If there are overhead lines in the area, a good rule of thumb is to maintain 10 feet of distance from the line for the first 50 kilovolts (KV) of power and an additional 4 inches for every 10 KV thereafter.

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Excavation Site Safety Practices

Each year, trench collapses are one of the leading causes of injury and death on construction sites. Of these incidents, most of the victims were new employees who lacked training and guidance prior to entering the job site. Sadly, most accidents were preventable.

Whether you are new or a seasoned employee, it is essential that you adhere to Occupational Safety and Health Administration (OSHA) regulations to ensure the safety of the entire work crew.

Trench Requirements

- Trenches 5 feet or more in depth require a protective system.
- Trenches that are 4 feet or more require a safe means of entrance and exit.
- Trenches that are 20 feet or more require an exit system designed by a registered professional engineer.

Protective Systems

The designated competent person should inspect the area and determine which protective system will suit the job site and soil most effectively. This is essential, as equipment movement, underground utilities and vibrations can cause a surcharge load on the sides of the trench, forcing it to cave in on the workers inside. The following are the most commonly used protective systems:

- Sloping: Protects workers by cutting back the trench wall at an angle inclined away from the excavation
- Shoring: Protects workers by installing aluminum hydraulic supports to prevent soil movement
- Shielding: Protects workers by using trench boxes to prevent cave-ins

In addition to one of these three safety measures, a low-traffic zone must be designated around the trench allowing only essential equipment to enter. This will minimize the amount of vibration to which the trench is exposed.

Avoiding Accidents

Excavation accidents can occur if the underground utilities are not located and removed prior to digging a trench. Contact your local one-call system to locate all of the utility lines. Then, label or remove them to prevent injury.

Trench accidents can also happen if safe entrance and exit routes are not present or adequate for the situation. Workers may slip back into the trench as they are trying to climb up a ladder if it is unsupported, placed on a steep slope or is poorly built.

To prevent injury while entering and exiting a

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trench, only the designated competent person should approve the structural device used. Workers should also place the ladder in a trench shield while trying to enter and exit to avoid a cave-in.

By complying with OSHA regulations and following these safety precautions, the risk of injury at your job site will be greatly reduced. wants everyone on our team to keep safety in mind!

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Explosives and Your Safety

Explosives are extremely dangerous substances that require extreme care. Safety is of the utmost importance on the job site and should be top of mind at all times. Follow these guidelines to keep yourself and those around you safe.

Magazine Safety

- Keep cigarettes, matches, open flames, spark-producing devices and firearms more than 50 feet from magazines.
- Use only electric safety flashlights or electric safety lanterns for light in the magazine.
- Never pile explosives directly against masonry walls, brick-lined or sand-filled metal walls and single-thickness metal walls.
- Lay packages flat with top side up.
- Store black powder separately from other explosives. Keep kegs on end, bungs down or on side, seams down.
- Store corresponding grades and brands together with brand and grade marks showing.
- Pile packages of explosives securely.
- Remove oldest explosives first.
- Do not store any metal tools in magazines.

Housekeeping Procedures

- Keep magazine floors clean, dry and free of grit and other garbage.
- Use brooms and cleaning utensils without metal parts.
- Dispose of sweepings immediately.
- If an explosive has become unstable or dangerous, allow an experienced person to destroy it according to the manufacturer's instructions.
- When magazines need repairs, remove explosives and clean floors. Explosives should be placed in another magazine or at a safe distance until they can be returned to the magazine.

Opening Packages

- Never pack or unpack explosives within 50 feet of a magazine or close to other explosives.
- Use tools made of nonsparking materials.
- Use a wood wedge and a fiber, rubber or wood mallet to open and close wood packages of explosives.
- Securely close open packages of explosives before returning them to a

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magazine.

Explosives and Vehicles

- Never smoke or carry matches, lighters or firearms while in or near a vehicle transporting explosives.
- Drive, load and unload vehicles carrying explosives with extreme care.
- A driver, or someone who is familiar with the vehicle and knows how to protect the public from the dangers of the explosives, must be in or around vehicles carrying Class A or Class B explosives at all times unless it is parked in certain secure areas.
- Never carry spark-producing metals, oils, matches, firearms, electric storage batteries, flammable substances, acids, oxidizing materials or corrosive compounds on board with explosives except in special circumstances.
- Avoid heavy traffic while transporting explosives.

Safety When Blasting

- Never smoke or carry matches, lighters or firearms during blasting activities.
- Never handle explosives if you are under the influence of alcohol, narcotics or other drugs.
- When blasting close to anything that could be damaged, cover the blast before firing with a mat to prevent fragments from being thrown.
- Use precautions including warning signals, flags, barricades and woven wire mats to protect those around the blasting area.
- When there is a threat of an electric storm, stop all operations and evacuate the area.
- Load only those holes that will be fired in the next round of blasting.
- Make drill holes large enough to easily fit cartridges of explosives.
- Before beginning drilling, use a wooden stick to check for unexploded charges in old holes and refire them.
- Give a loud warning signal before firing.

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Extension Ladder Safety

When using an extension ladder, it is important to remember that there are several characteristics that make them different from other ladders, and you must keep special safety precautions in mind to protect yourself.

How is it Different?

Different from a stepladder that requires level support for all four of its side rails, the extension ladder has only two level ground support points in addition to a top support. Extension ladders are non-self-supporting adjustable ladders consisting of two or more sections that travel in guides or brackets arranged to permit length adjustment. They are designed for use by only one person.

Height Restrictions

In some cases, work sites may put restrictions on ladder height. When you use longer ladders, you may find that they cannot be set up at the proper 75 ½ degree angle, even when fully retracted. To prevent the bottom of the ladder from sliding out, choose a shorter extension or single ladder.

An extension ladder must extend at least three feet above the top point of support.

Bridging the Gap

At times, using a certain ladder length can create a gap in the height of a wall that can be reached by the user. When working with a 14-foot extension ladder, working from the ladder below 10 feet is a problem, and a stepladder or shorter non-self-supporting ladder is recommended.

Using the Ladder

- When selecting an extension ladder, know that the top of it must extend at least 3 feet above the roof eave.
- Ensure that you are not setting up an extension ladder upside down with the fly section at the bottom and the base section at the top, rung locks engaged.
- When the extension ladder has been used as a single ladder, ensure that all guides or brackets are properly assembled and engaged before you use it.
- Never make an extension adjustment when someone is standing on the ladder.
- Be sure the extension rope is tracking correctly on the pulley before making an extension adjustment.
- Never step or stand higher than the step indicated on the label marking the highest standing level.
- Never attempt to mount the ladder from the side or step from one ladder to another unless the ladder is secured against sideways motion.

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Care and Maintenance

- Inspect the ladder thoroughly before you use it each time.
- Clean climbing and gripping surfaces if they have been in contact with oil, grease or other slippery materials.
- Check bolts, rivets, rail connections and anti-slip feet for wear and tear.
- Inspect ropes, cables and pulleys for wear.
- When transporting ladders on vehicle ladder racks, support them properly with wood- or rubber-covered pipe with as little overhang as possible and secure the ladder to each support point.
- If a ladder has been exposed to heat, corrosive substances such as acids or if it has bent or broken side rails, the ladder must be destroyed so that no one is able to use it.

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Face Shields

Injuries to your eyes, nose, mouth and other parts of your face can be life-altering. Personal protective equipment (PPE) is important to prevent injuries to the face. In some instances, it's important to use face shields.

When to Use a Face Shield

Working in construction means that you will be asked to complete a variety of tasks with plenty of different hazards to be aware of. Many of these will be eye hazards dangerous enough that safety glasses alone do not provide enough protection.

For example, if you are grinding materials, sparks can fly around the glasses. Similarly, when working with chemicals, spatter and splashes can get inside your glasses as well.

Each job site should be evaluated in order to determine what tasks and operations will require the protection of face shields. Some common examples might include:

- Torching
- Grinding
- Working with chemicals
- Chipping
- Sanding

Using Face Shields Properly

While face shields provide a strong and sturdy layer of outer protection, they are not impenetrable or all-encompassing when it comes to face safety. Like any PPE, face shields must be used and equipped properly in order to be effective. Keep the following tips in mind in order to make sure that you are getting the most protection out of your face shield:

- Wear safety glasses or other eye protection under face shields.
- Understand the specific instructions and limits of different face shields, as there can be a lot of variety when it comes to the thickness of the shield, or the material and tint of the window.
- Inspect the visor carefully before using it, as scratches, cuts and pitting can affect your vision.
- Store face shields in a clean, dry and cool environment away from any chemicals.
- Clean face shields with mild, soapy water.

If you have any questions or concerns about face shields, speak with your supervisor.

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Fall Protection Safety

Fall protection and safety is a major concern at construction sites. In fact, OSHA cites injuries from falls as one of its top 10 worksite injuries.

Falls and falling objects can result from unstable working surfaces, ladders that are not safely positioned and misuse of fall protection. Workers are also subject to falls or the dangers of falling objects if sides and edges, floor holes and wall openings are not protected. Any time you are working at a height of six feet or more on the construction site, you must be protected.

Unprotected Sides, Wall Openings and Floor Holes

Almost all sites have unprotected sides and edges, wall openings or floor holes at some point during construction. If these sides and openings are not protected, injuries from falls or falling objects may result. Use at least one of the following whenever you are exposed to a fall of six feet or more above a lower level:

- Guardrail systems
- Safety net systems
- Fall arrest systems

Additional Safety Precautions

- Cover or guard floor holes promptly after creating them.
- Construct floor hole covers so they will effectively support two times the weight of workers, equipment and materials that may be imposed on the cover at any one time.
- Use fall prevention systems like guardrails rather than protection systems like safety nets or fall arrest devices.

Ladders

You also increase your chances of falling if you are using portable ladders that are not safely positioned each time you use them. While you are on a ladder, it may move or slip from its supports. You may also lose your balance while getting on and off an unsteady ladder.

Take the following fall protection measures when using ladders:

- Position portable ladders so side rails extend at least three feet above the landing.
- Secure side rails at the top to a rigid support and use a grab device when a three foot extension is not possible.
- Make sure that the weight on the ladder will not cause it to slip off its support.
- Inspect ladders for cracked, broken or defective parts prior to each use. If a ladder is broken, tag it as defective and remove it from service.

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- Don’t apply more weight on a ladder than it is designed to support.
- Only use ladders that comply with OSHA standards.

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Fire Safety Around Spray Polyurethane Foam

Spray polyurethane foam (SPF) is an effective insulation and air sealant material, and its use is on the rise as a result of the "green building" movement. Despite its energy-saving benefits, there are fire hazards when performing hot work around the areas where it is installed.

OSHA defines hot work as "riveting, welding, flame cutting or other fire or spark-producing operation." When performing one of these tasks around SPF, take the following precautions to prevent a fire.

1. Provide a thermal barrier for unprotected SPF.

When exposed to a fire source, SPF may ignite in a flash fire. When SPF begins to burn, a thin layer of less-flammable surface char forms, creating black smoke. If the fire grows and the temperature of the SPF exceeds 700° F, the SPF will actually fuel the fire.

Thermal barriers help reduce the risk of a flash fire and increase the amount of time a fire would take to ignite unprotected SPF. Examples of thermal barriers include gypsum drywall, cement plaster and spray-on cellulose and cementitious materials. Fire blankets or welder's blankets may also be used in certain situations.

2. Wear the proper PPE.

Exposure to SPF can cause adverse health effects such as asthma, lung damage, other respiratory and breathing problems, and skin and eye irritation. When working around SPF, proper personal protective equipment (PPE) includes chemical-resistant gloves, safety goggles, a respirator and full body suits with an applicator hood. When SPF ignites, it can release isocyanates, hydrogen cyanide, amines and other toxic chemicals into the air.

A poorly fitted piece of protective equipment can cause headache or pain. If it does, see your supervisor immediately to have it adjusted or re-fitted. Wearing the proper PPE may take some getting used to at first, but remember that it could save your life against the harmful effects of SPF.

3. Know what to do if there's a fire.

We never anticipate a fire on the jobsite, but it's important to know the procedure if SPF ignites.

- Know where the fire extinguisher is located. If there is not one already present on the jobsite, we will provide one. If a fire cannot be immediately extinguished with a fire extinguisher, evacuate the site.
- Know the pathway to at least two alternative exits from every room or area at the jobsite.
- Know the Fire Prevention Plan. 4. Other considerations when working with SPF
- No smoking on the jobsite.

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- Be aware of any hot work warning signs posted in the area.

As always, speak with your supervisor if you have any questions about working around SPF.

Safety Matters Construction

Provided by: Conner Strong & Buckelew

Flagging Safety 101

As a very important part of the construction crew, flaggers ensure that other workers can get the job done by diverting traffic away from the job site. They are required on construction sites where barricades and signs cannot successfully divert traffic. This position can be extremely dangerous in high-speed areas or in the presence of aggressive drivers.

There are several safety tips that will ensure a safe working environment on the roadside.

Flagger Do's:

1. Attend safety training on directing traffic, understanding work zone layouts and responding to emergency vehicles.
2. Ask your supervisor how to handle situations with particularly aggressive drivers.
3. Wear a vest, shirt or jacket with highly visible colors: fluorescent orange, yellow or green.
    A. In the evening, wear reflective clothing so drivers can see you from 1,000 feet away.
    B. Wear a hard hat, long-sleeved shirt and long pants to protect against flying debris.
4. Stay alert to your surroundings at all times.
5. Stand on the shoulder visible to oncoming traffic – do not stand in the traffic lane.
6. Establish a communication system with other flaggers and the rest of the crew to use in an emergency.
7. Be courteous to motorists as you encounter them. Do not respond to angry drivers. Instead, call law enforcement if necessary.

Flagger Don'ts:

1. Avoid standing in areas where you may be crushed.
2. Avoid standing in the shade, around a curve or over the crest of a hill, as drivers may not see you.
3. Wait for a co-worker to relieve you before leaving your post.
4. Avoid distracting activities such as reading, day dreaming or talking with co-workers.
5. Do not listen to music.
6. Never turn your back to oncoming traffic.
7. Stay a safe distance away from construction equipment

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Provided by: Conner Strong & Buckelew

Footwear on the Job Site

Personal protective equipment (PPE) is crucial when it comes to preventing injuries and ensuring your health and safety on the job site. One often overlooked and important type of PPE is safety footwear, which is designed to protect your feet from common job site hazards.

Depending on the job activity and equipment you use, the following exposures could lead to serious foot injuries:

- Heavy objects, which could fall or roll onto your feet, crushing them
- Sharp objects, which could puncture your feet
- Corrosive materials
- Electrical hazards
- Hot or slippery surfaces

When these risks are present in the workplace, employees must wear protective footwear to ensure safety and reduce injury risks. While you may think that a pair of boots is all you need to avoid injury, there are a number of different hazards that a regular work boot may not protect against. This Safety Matters examines various types of safety boots common in construction.

Types of Safety Boots

There are several factors that determine what type of footwear is appropriate for you, including the potential hazards you're exposed to, the machinery you use and the requirements of your position. What's more, there are different types of safety boots, each designed to mitigate specific workplace hazards. The following are the most common kinds of protective footwear:

- Steel-toe, reinforced safety-toe or reinforced toecap boots—These types of boots are designed to protect against crushing injuries caused by falling or dropped objects. For extra protection, metatarsal guards can be used, which help to safeguard the bones between your toes and ankle.
- Puncture-resistant boots—These boots are typically reinforced with metal and are designed to prevent injury should you step on a nail, screw or other sharp object.
- Metal-free footwear—These types of boots are nonconductive and protect against electrocution risks. In general, these types of boots can provide protection for up to 600 volts of electricity in dry environments. It should be noted that moisture and wear on boots can impact the effectiveness of these kinds of safety protection around electricity, follow all applicable safe work procedures and wear metal-free

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footwear alongside other nonconductive PPE.

- Nonslip soles Slip-resistant boots are equipped with a specialized sole that can reduce slip, trip and fall risks. These boots are especially common in shop environments where cords, materials and other items increase trip hazards.
- Insulated footwear—These boots are designed to protect feet against extreme temperatures. It should be noted that there are specific boots for both hot and cold environments. Furthermore, risks related to chemical burns require specially treated boots.

Regardless of the type of safety boots you use, it's important to ensure they fit properly and are well maintained. Safety boots should be inspected before each use for signs of wear. If a boot is cracked or shows other signs of damage, replace it immediately.

For any questions regarding safety boots, speak with your supervisor.

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Hard Hats

Objects falling from above can pose a serious danger on the job site. It's important to take this risk seriously, as falling objects can lead to lacerations, traumatic brain injuries and even death. One of the best ways to protect yourself from these risks is through the use of hard hats.

While hard hats are required on the job site, it's easy to take the protection they offer for granted.

Safety Precautions

The following are some safety precautions to consider when using hard hats:

- Always wear a hard hat when required. To ensure your protection, it's crucial to wear the right hard hat for the task at hand. When it comes to hard hat safety, it's important to remember that there are different classes of hard hats:
    - Class C (conductive) hard hats do not provide any protection from contact with electrical hazards.
    - Class G (general) hard hats provide some protection from contact with low-voltage electrical hazards.
    - Class E (electrical) hard hats provide some protection from contact with high-voltage electrical hazards.
- Store hard hats in a secure location. It should be noted that sunlight and heat can weaken hard hats. As such, you should never store hard hats in areas where they are exposed to damaging direct sunlight, like in the back of a car.
- Maintain your hard hat properly. Excessive exposure to paint and cleaning agents can weaken hard hats over time, making proper cleaning and maintenance all the more important. To keep hard hats in good condition, wash them using warm water.
- Follow all manufacturer guidelines related to hard hat usage and replacement. Above all, replace hard hats if there are any signs of damage. Additionally, if the hard hat sustains an impact, you should replace it even if it looks unaffected.

If you have any questions or concerns regarding hard hat safety, talk to your supervisor.

Provided by: Conner Strong & Buckelew

Hazard Communication Program—For Your Protection

Through the course of your job duties, you may be required to work with dangerous chemicals. is dedicated to ensuring your safety, so we have a Hazard Communication Program in place. The goal of this program is to make you aware of chemicals you may be in contact with on the job and to help you understand the potential hazards of those chemicals. This education is required by the Occupational Safety & Health Act (OSHA). It is equally important to learn this information to keep customers safe in the event they are exposed to any hazardous chemicals.

Safety Data Sheets

One important key to a Hazard Communication Program is the Safety Data Sheet (SDS), which contains information broken down into 16 different categories. This sheet tells you everything you need to know about a specific chemical, including the following:

- The health hazards associated with the chemical
- How flammable the product is, and at what temperature it may ignite
- The reactivity of the chemical with water or other agents and how likely it is to explode
- What personal protective equipment (PPE) is needed to work with the chemical

Other important aspects of the Hazard Communication Program include the following:

- Accurate labeling of containers that contain chemicals, including warning labels when applicable.
- Ensuring that labels are not removed.
- Employee training in accordance with your job duties relating to chemicals.

Important Questions to Ask

Through our Hazard Communication Program, every employee should learn the following information:

- What chemicals might I handle or be exposed to on the job?
- Where are the SDSs kept for the chemicals I am exposed to?
- What kinds of hazards do I face when I use, or misuse, a particular chemical?
- Do I understand the emergency procedures to follow in the event of a spill?

Though it is our goal to teach you the information you need, it is your responsibility to learn it and ask questions if necessary. You should follow all safety procedures when

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working around chemicals, keep in mind potential hazards and always wear appropriate PPE. You are also entitled to obtain a written copy of our Hazard Communication Program – simply ask your supervisor.

Achieving Safety Together

It may seem overwhelming to learn about all the chemicals you may handle or be exposed to, but it is important knowledge that all workers should have. Always be sure to ask questions or reference the appropriate SDS if you forget or have yet to learn about a certain chemical. Failing to do so could result in an extremely hazardous situation for you, your co-workers and our customers.

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Provided by: Conner Strong & Buckelew

Hearing Protection – Noise at the Job Site

According to the National Institute for Occupational Safety and Health (NIOSH), 1 in 4 construction workers suffers from some degree of hearing loss. Power tools, heavy equipment and even hand tools like hammers can all generate significant levels of noise, which, in turn, can negatively impact hearing.

Prolonged exposure to excessive noise is particularly dangerous and can lead to tinnitus, which is characterized by ringing, buzzing and roaring in the ears. In some cases, harmful levels of noise can lead to permanent hearing loss.

To keep employees safe, the Occupational Safety and Health Administration (OSHA) has specific regulations related to workplace noise exposure. This Safety Matters provides a general overview of these regulations and ways you can stay safe on the job.

OSHA's Noise Permissible Exposure Limit (PEL)

Noise is measured in units of sound pressure levels called decibels (dB). Often, decibels are expressed as dBA, which refers to A-weighted sound levels. Essentially, this measurement is more specific than dB alone, as it accounts for relative loudness perceived by the human ear.

To protect workers and their hearing, OSHA has a specific level of how much noise an employee is allowed to be exposed to called the permissible exposure limit (PEL). Per OSHA, the PEL for noise is 90 dBA over an eight-hour workday. At this level, employees are required to wear hearing protection. In addition, for every 5 dBA above the action level, the duration of employee exposure to noise must be cut in half (e.g., 85 dBA/eight hours, 90 dBA/four hours, 95 dBA/two hours). Furthermore, exposure to noise should not exceed 140 dBA.

Beyond adhering to OSHA's PEL, employees should avoid noise levels above 85 dBA without protection. Additionally, OSHA recommends following the 2-3 foot rule. This rule states that if you have to raise your voice to talk to a co-worker that is 2-3 feet away, you should assume noise levels are 85 dBA or above.

Protecting Yourself From Harmful Noise

Tinnitus and hearing loss can be debilitating and irreversible. However, being aware of the symptoms of hearing loss can go a long way toward ensuring your health and safety at work. Common symptoms of hearing loss include the following:

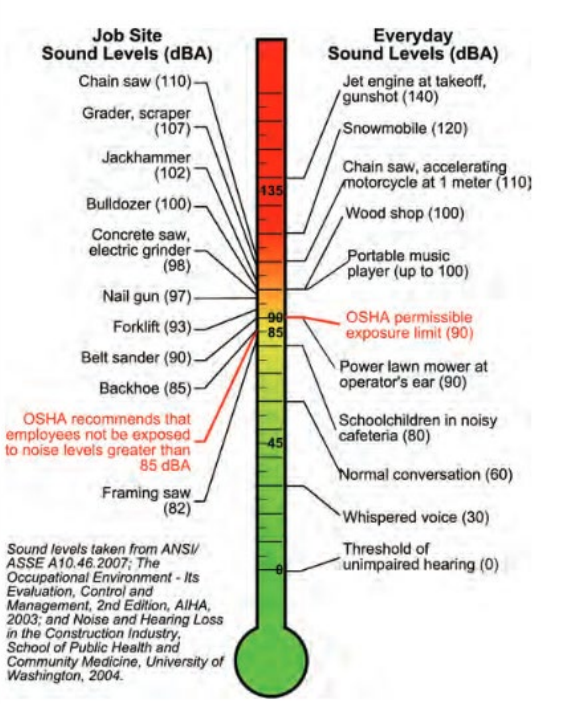
- Straining to understand conversations
- Needing to have things repeated frequently
- Increasing television or radio volumes to excessive levels
- Ringing in your ears or feeling dizzy

If you are experiencing any of these symptoms, speak with your doctor and supervisor. To further protect yourself in the workplace, it's important to be aware of adverse noise levels

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that can lead hearing loss, and follow all relevant workplace safety policies and procedures.

For questions regarding job site noise and safety, speak with your supervisor.



The above chart provides an overview of common sources of workplace noise and their accompanying dBA levels. Source: OSHA.

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Hearing Protection Devices

Your ears are very sensitive. Prolonged exposure to loud noise can lead to permanent hearing damage and even cause you to go deaf. OSHA recommends that workers use hearing protection should noise levels reach or exceed 85 decibels across an eight-hour workday. Should noise exceed 90 decibels, hearing protection is required.

Noise Reduction Rating

All hearing protection devices have a noise reduction rating (NRR) listed on their respective packaging. The NRR refers to how many decibels by which an environment's noise levels will be reduced. For example, in an environment of 90 decibels, a hearing protection device with an NRR would reduce the noise levels to 57.

But, research suggests that NRRs tend to overestimate the effectiveness of devices. It is therefore suggested that devices undergo a "derating" process. Derating refers to the assumption that devices will generally not perform perfectly to their NRR due to them not fitting everyone perfectly. One method by which a device can be derated is to subtract seven from its NRR and divide the result in half. For example, an NNR of 33 would result in a derated rating of 13. In the previous example, the device in question would actually only reduce noise levels from 90 to 77, not 57.

According to industry experts, earmuffs are generally most accurate when it comes to NRR, while earplugs might have their ratings derated by as much as 70%.

Of course, different types of hearing protection have their own advantages and disadvantages.

Earplugs

Earplugs can be made from expandable foam or pre-molded using silicone, plastic or rubber. They provide blockage inside the ear canal.

Advantages:

- Typically provide a high noise reduction rating (NRR)
- Affordable
- Compatible with other forms of personal protective equipment (PPE) such as hard hats, glasses and goggles
- Small, light and easily transported
- More comfortable in hot, humid or confined work areas

Disadvantages:

- Easily misplaced
- Require good hygiene practices
- May be inserted incorrectly, resulting in inadequate protection
- May irritate the ear canal

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When an earplug is inserted correctly, the sound of your own voice should be muffled.

Earmuffs

While earplugs are inserted inside the ear canal, earmuffs provide protection by covering the canal and sometimes the entire ear.

Advantages:

- Typically provide a high NRR
- Fast and simple to put on and take off
- One size fits most employees
- Easy for others to see that you are using them at a distance
- Not easily misplaced

Disadvantages:

- Less portable, heavier
- Sometimes incompatible with other PPE; however, there are special earmuffs that easily mount to hard hats
- Can be uncomfortable or inconvenient in hot, humid or confined work areas

Canal Caps

Canal caps are somewhat of a hybrid between earplugs and earmuffs. They look similar to earplugs, but instead of being actually inserted into the ear canal, they form a lid over the entrance to the canal and are often connected by a band that can be worn around the head, around the neck or below the chin.

Advantages:

- Fast and simple to put on and take off
- One size fits most employees
- Light and easily transported

Disadvantages:

- Typically have a lower NRR than earplugs and earmuffs
- Band may be uncomfortable or inconvenient for employees
- More expensive than ear plugs

Summary

While there are some differences between different kinds of hearing protection equipment, their overall purpose remains the same: the safety of employees.

When using hearing protection, be sure that you are using it properly in order to make sure that it is as effective as possible. At times, it may be necessary to use two types of protection, such as both plugs and muffs, simultaneously.

If you have questions or concerns about hearing protection devices, contact your supervisor.

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High-visibility Clothing

With so many moving parts, construction sites can be busy and even hectic at times. Sometimes accidents may occur simply because someone is not seen.

While it may seem obvious, making sure that others can see you is extremely important for overall safety on a job site. One way to make sure that you are as safe as possible is by wearing high-visibility, or high-vis, clothing.

Different Types of High-vis Garments

There are different kinds of high-visibility clothing that may meet the ANSI/ISEA standard. For every high-vis garment, there are two components to be mindful of: a background fabric color and reflective tape. The background fabric can come in a variety of bright colors. The reflective tape is intended to help others distinguish you as a person and not another brightly colored control device, such as a traffic cone.

High-vis clothing comes in different classes:

- Class 1—This type of high-vis garment does not meet ANSI/ISEA standards for providing ample safety during work that requires high-vis clothing. Class 1 garments are typically smaller vests that do not provide a lot of material. These garments might be appropriate for work done on sidewalks or as a parking lot attendant.
- Class 2—These garments will meet minimum standards for federal agencies. They are larger than Class 1 clothing and are made with more background material and more reflective tape. Examples of situations in which Class 2 garments are generally suitable include work during the daytime, on roads with lower speed limits and in areas where a physical barrier exists between traffic and workers.
- Class 3—This type of high-vis clothing provides the highest level of visibility for the wearer. These garments are either full-length pants or have long-sleeves to provide the most background and reflective material. Class 3 gear should be worn for duties such as when working at night, in areas without a barrier protecting workers and on high-speed roadways.
- Class E—Class E is a subclass that includes pants or shorts. Combining Class E lower-body attire with a Class 2 upper-body garment will qualify the overall ensemble as Class 3. This may be useful for workers on shifts that span different parts of the day, as a worker could be in compliance with a Class 2 garment while it is light out, and be able to simply add the Class E pants or shorts after dark in order to upgrade their outfit to Class 3.

Taking Care of High-vis Clothing

The brightness, reflectivity and overall condition of high-vis clothing can be the difference between staying safe and having a serious

accident. Accordingly, it is important that the gear being used by workers is in good condition.

There are no guarantees on how long high-vis clothing will last, but according to the American Traffic Safety Services Association (ATSSA), apparel worn on a daily basis can generally be trusted for six months. A garment that is occasionally used can have a service life of up to three years. Because of the potential for those estimates to vary, it is important that workers regularly evaluate their high-vis clothing and treat it with care.

Things to Keep in Mind

In addition to the class and condition of high-vis clothing, there are other things that must be taken into consideration in order to ensure worker safety. When using high-vis garments, consider the following:

- Make sure garments not only provide high visibility, but also fit properly, as loose-fitting or baggy clothing is a hazard in itself.
- Do not cover up your high-vis clothing with a jacket or sweatshirt.
- Keep high-vis clothing as clean as possible.
- Do not use worn, damaged or excessively dirty clothing.
- When possible, consider environmental conditions and select clothing that you will be comfortable in.

If you have any questions or concerns regarding high-visibility clothing, speak with your supervisor.

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Housekeeping Practices to Control Silica Dust

Dust created when working with crystalline silica contains harmful particles. And while respirable crystalline silica looks like dust, it's much more harmful to workers' lungs. In fact, silica dust is a carcinogen, and breathing it in causes the formation of scar tissue, reducing the lungs' ability to take in oxygen.

Together, these facts outline the importance of adhering to safe work procedures related to respirable crystalline silica. Among these procedures, the Occupational Safety and Health Administration (OSHA) has a number of requirements follows to reduce illnesses and injuries related to respirable crystalline silica.

And while it's important to reduce the occurrence of silica dust, there are specific cleaning precautions we must take when it is created. Let's examine some housekeeping practices used to reduce the dangers of silica dust:

1. Avoid dry brushing or dry sweeping whenever possible. The use of dry sweeping and dry brushing can cause respirable crystalline silica dust to go airborne, increasing inhalation risks for workers. In general, dry brushing and dry sweeping should only be used when wet sweeping and HEPA-filtered vacuuming are not feasible.

2. Avoid cleaning surfaces or clothing with compressed air. Similar to dry sweeping and brushing, the use of compressed air can cause respirable crystalline silica to plume and create inhalation risks. However, you may use compressed air alongside a ventilation system that captures the dust cloud or if no other cleaning method is feasible.

Wet sweeping or the use of high-efficiency particulate air (HEPA) filtered vacuums are preferred, as they typically don't increase silica risks for workers. HEPA vacuums are particularly useful, as they can be 99.97% efficient in removing mono-dispersed particles of 0.3 micrometers in diameter—significantly reducing inhalation risks.

There may be instances when wet sweeping and HEPA-filtered vacuums could be ineffective, cause damage or create a hazard in the workplace. In these rare situations, these cleaning methods are not required by OSHA; however, will provide you with alternative protections to keep you safe (e.g., a respirator).

For more information on the dangers of silica dust and how to protect yourself, speak with your supervisor.

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Inspecting and Caring for Your Fall Protection System

To maintain the service life and high performance of your fall protection system, the Occupational Safety and Health Administration (OSHA) suggests that you need to inspect and maintain its components regularly. How? By following the effective tips outlined below.

Inspecting Your Equipment

Webbing (body of belt, harness or lanyard)

- Inspect the entire surface of webbing for damage. Beginning at one end, bend the webbing in an inverted "U." Holding the body side of the belt toward you, grasp the belt with your hands 6 to 8 inches apart.
- Watch for frayed edges, broken fibers, pulled stitches, cuts or chemical damage. Broken webbing strands generally appear as tufts on the webbing surface.
- Replace according to manufacturer guidelines.

Buckle

- Inspect for loose, distorted or broken grommets. Do not cut or punch additional holes in the waist strap or strength members.
- If the belt does not have grommets, check for torn or elongated holes that could cause the buckle tongue to slip.
- Inspect the buckle for distortion and sharp edges. The outer and center bars must be straight. Carefully check corners and attachment points of the center bar. They should overlap the buckle frame and move freely back and forth in their sockets. The roller should turn freely on the frame.
- Check that rivets are tight and cannot be moved. The body side of the rivet base and outside rivet burr should be flat against the material. Make sure the rivets are not bent.
- Inspect for pitted or cracked rivets that show signs of chemical corrosion.

Rope Lanyard

- Rotate the rope lanyard and inspect from end to end for fuzzy, worn, broken or cut fibers. Weakened areas have noticeable changes in the original rope diameter.
- Not counting the initial break-in period, replace when the rope diameter is not uniform throughout.
- The older a rope is and the more use it gets, the more important testing and

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inspection become.

Harness Hardware (snaps or "D" rings)

- Inspect hardware for cracks or other defects. Replace the belt if the "D" ring is not at a 90° angle and does not move vertically independent of the body pad or "D" saddle.
- Inspect tool loops and belt sewing for broken or stretched loops.
- Check bag rings and knife snaps to see that they are secure and working properly. Check tool loop rivets. Check for thread separation or rotting, both inside and outside the body pad belt.
- Inspect snaps for hook and eye distortions, cracks, corrosion or pitted surfaces. The keeper (latch) should be seated into the snap nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to close the keeper firmly.

Safety Straps

- Inspect for cut fibers or damaged stitches inch by inch by flexing the strap in an inverted "U." Note cuts, frayed areas or corrosion damage.
- Check friction buckle for slippage and sharp buckle edges.
- Replace when tongue buckle holes are excessively worn or elongated.

Shock-Absorbing Packs

- Examine the outer portion of the shock-absorbing pack for burn holes and tears.
- Stitching on areas where the pack is sewn to the D-ring, belt or lanyard should be examined for loose strands, rips and deterioration.
- Remember, never use defective equipment. If there is any doubt about the safety of the equipment, do not use it. Replace any equipment involved in a fall, including ropes. Always report any questionable defects to your supervisor.

Cleaning and Maintaining Equipment

Basic care prolongs the life of your equipment and contributes to its performance.

- Wipe off all surface dirt with a sponge dampened in plain water. Rinse the sponge and squeeze it dry. Dip the sponge in a mild solution of water and commercial soap or detergent. Work up a thick lather with a vigorous back and forth motion.
- Rinse the webbing in clean water.
- Wipe the belt dry with a clean cloth. Hang freely to dry, away from direct heat, and out of long periods of sunlight.
- Store in a clean, dry area, free of fumes, sunlight or corrosive materials and in such a way that it does not warp or distort the belt.

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Keep the Worksite Safe with PPE

In 2014, the U.S. Bureau of Labor Statistics reported 874 cases of workplace fatality in the construction industry alone—that's more than two deaths every day. Within the industry, specialty trade contractors, heavy construction and civil engineering construction topped the list with the most on-the-job deaths.

One of the most important things workers can do to stay out of harm's way on the job is to use personal protective equipment (PPE) properly. While follows all government regulations regarding PPE and maintains American National Standards where required, it is also important that employees do their part.

Foot protection, which includes steel-toe boots, safety-toe boots, steel-capped boots or safety shoes, is a must for all workers in the presence of heavy machinery. It will also protect your feet from falling objects and puncture wounds from below. They may also help you keep stable footing in inclement weather. Most shoes will have symbols on the outside to illustrate the type of protection the footwear offers.

Head protection is required in areas with the danger of head impact, falling or flying objects and electrical shock or burn.

Though it is often overlooked, hearing protection is crucial in a construction environment to prevent permanent damage. Remember that plain cotton is not an acceptable form of ear protection.

When there is a chance of physical, chemical or radiation damage to the eyes or face, you must wear appropriate PPE. Everyday glasses do not qualify and are no excuse for lack of proper protection—request eye and face PPE that fits over glasses.

Respiratory protection is one of the most important pieces of PPE for a construction worker, so it is important for you to understand how to use this PPE properly and what its limitations are.

Fall protection can include guardrails, safety nets and/or personal fall arrest systems for each employee. The specific type of protection to be used should depend on the characteristics of each unique workplace.

All lifelines, safety belts and lanyards used for employee safeguarding may not be used for loading or load testing. These PPE items are crucial in protecting against falls, and equipment may be damaged by improper use. Know that you should not begin work until an adequate fall protection system has been properly installed and tested.

Often times, workers don't wear their safety equipment because it's a nuisance to put on or because it's bulky and uncomfortable. It can be tempting not to put PPE on at all unless the

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safety supervisor is looking, but ultimately, it is up to you to be a professional and recognize the life-saving benefits of PPE.

A poorly fitted piece of protective equipment can cause headache or pain, and if it does, see your supervisor immediately to have it adjusted or re-fitted. But most of the time, it's just a matter of getting used to wearing these items. This is a lot easier when you remember that, like the football player, you stand a better chance of continuing successfully with your job and your home life if you are protected from possible serious injury by protective equipment.

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Ladder Safety at the Construction Site

Falls from elevated surfaces are frequently listed as one of the most common causes of accidents in the construction industry. Most of these accidents occur due to failure to follow basic ladder safety. To help prevent ladder injuries on the jobsite, practice the following safety tips.

Setting up Safely

Make sure you select the correct ladder for the job – check the length and duty rating. Proper length is a minimum of three feet extending over the roofline or working surface.

Inspect your ladder before each use for loose or damaged parts, such as the following:

- Steps
- Rungs
- Spreaders
- Rung dogs
- Safety feet
- Other parts

Clear the area where you will be working. Never place a ladder in front of a door that isn't locked, blocked or guarded.

Because metal ladders conduct electricity, use a wooden or fiberglass ladder near power lines or electrical equipment.

Check that all locks on extension ladders are properly engaged before placing your ladder on a steady surface. The ground underneath the ladder should be level and firm. Large, flat wooden boards braced underneath a ladder can help level it on an uneven surface or soft ground. Straight, single or extension ladders should be set up at approximately a 75 degree angle.

Use the 1:4 ratio to ensure your safety when on a ladder. Place the base of the ladder one foot away from whatever it's leaning against for every four feet of height up to the point of contact for the top of the ladder.

Use Caution

Always use caution when using a ladder at your construction site, and never use a ladder for any other purpose than intended.

Other safety considerations include the following:

- Make sure the weight that your ladder is supporting does not exceed its maximum load rating (user plus materials). Only one person should be on a ladder at a time.
- Keep your body centered between the rails of the ladder at all times. Do not lean too far to the side while working. Never overreach—instead, descend from the ladder and move it to a better

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position.

- Do not step on the top step, bucket shelf or attempt to climb or stand on the rear section of a stepladder.
- Always face the ladder when climbing up or down. Never leave a raised ladder unattended.
- Slowly step down from a ladder if you feel dizzy or tired.
- Non-slip footwear should be worn at all times when on a ladder at a construction site.

Minimize ladder accidents by adhering to these safety and prevention tips.

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Provided by: Conner Strong & Buckelew

Lift Gate Safety

It is very important that you take safety procedures seriously when using lift gates on-site—they are powerful devices. Lift gates can be dangerous to both you and the materials we work with, but if you take proper precautions, you and co-workers can stay safe.

Uses of Lift Gates

Lift gates are designed to load and unload cargo. If you use a lift gate for any other purpose, you are risking injury or death. Never use a lift gate as a jack or to pull or push other objects. It is not designed to plow snow, shear or break other objects.

Safety Guidelines

- Read the lift gate operator's manual and follow all directions.
- Maintain the lift gate as is recommended in the manufacturer's instructions.
- Inspect the lift gate daily to ensure there is no damage. If you find wear and tear, notify your manager immediately.
- Never let anyone who hasn't been trained operate the lift gate.
- Identify pinch points on the lift gate and avoid them to stay safe.
- Never leave the platform of the lift gate open while the vehicle is moving.
- Secure top-heavy items with ratchet straps.
- Never put a piece of freight in motion that is beyond your ability to control once it starts moving. Recruit extra help to put more hands on risky freight.
- Use proper devices, such as a pallet jack, tripod dollies or platform dollies, to move materials on the gate.
- If unloading in a busy street, use safety cones to block the lane, wear reflective vests and create safe space in which to work.
- In rain, cover materials with a waterproof tarp and wrap it securely like you would a furniture pad or shrink wrap. This allows you to take your time when using the gate.
- Stay focused, and never rush.
- Always have an escape plan. Anticipate how items may go out of control and where they would fall. Be prepared to get out of the way to keep from getting hurt.

Keep In Touch

If you have any questions or concerns about lift gate safety on site, do not hesitate to contact your supervisor. Your safety is the first priority at .

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Provided by: Conner Strong & Buckelew

Machine Guards are for Your Protection

Machine guards are made to protect you when working with dangerous equipment on the construction site. Unfortunately, many workers also view them as an inconvenience or an obstacle to the task at hand. Regardless, guards are for your protection, and using them properly is a safety requirement here at .

Guarding Against Hazards

Specifically, machine guards are used to protect against:

- Direct contact with moving parts
- Flying debris
- Kickbacks
- Splashing of metal or harmful liquids
- Mechanical and electrical failures
- Any number of potential human errors

While guards may often appear to be a hindrance, overall they have proven to be otherwise for both security and production. Greater machine speeds are made possible through proper guarding, as work does not have to stop due to injuries and employees can often work quicker knowing they have the proper protection in place to do so safely.

Types of Guards

Two types of guards are used to protect machine operators: fixed guards and interlocking guards. Fixed guards are most commonly used and are generally preferred because they protect you from dangerous parts of machines at all times. Interlocking guards are used if a fixed guard is not practical. This type will not allow the machine to operate until dangerous parts are guarded. The interlocking guard is designed to disconnect the source of power from the machine.

Safety devices such as pullbacks, sweeps and electronic devices are used where neither a fixed nor interlocking guard can be used satisfactorily. Safety devices are operated by the machine itself. Regardless of the type of guard or safety device used, all provide the operator with the greatest possible protection while using the machine in question.

Make Safety Your Priority

Of course, no guard can do the job without the cooperation of the person operating the machine. Machine guards are a part of our workplace, and using them properly is your responsibility as an employee. Please observe the following safety requirements:

- Do not adjust or remove a guard unless permission is given by your supervisor or unless the adjustment is a normal and accepted part of your job.

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- Do not start machinery without the guards in place.
- If guards are missing or defective, report it to your supervisor immediately.
- If guards are removed for repair or adjustment, the power for the machine should be turned off and the main switch locked and tagged.
- Loose clothing, watches, rings and other jewelry should not be worn around mechanical equipment, and long hair should be tied back.

Safety is our top priority at . To accomplish this, we need the commitment of all employees to respect our safety rules and to use machine guards as intended, to keep everyone on the job site safe and productive. If you have any questions regarding guards or other safety issues, please ask your supervisor.

Safety Matters Construction

Provided by: Conner Strong & Buckelew

Maintain Three-point Contact to Prevent Falls

Mounting or dismounting a large truck or piece of equipment without hurting yourself seems simple, but many accidents involve this type of injury. The best way to prevent falling while getting into or out of a truck, tractor cab or heavy equipment is to follow the three-point contact system.

The Three-point Contact System

Three-point contact is exactly that: three of your four limbs are in contact with the vehicle at all times. That can be two hands and one foot, or two feet and one hand.

No matter what type of access system available on your vehicle or equipment, the three-point system will significantly reduce the chance of a slip or fall because it allows you to maintain maximum stability and support when entering and exiting the equipment. The three points work to form a triangle, distributing your body's weight at the center.

Remember, the only person who can prevent a fall is you. Here are some simple do's and don'ts to follow when entering or exiting a large vehicle or other construction equipment to avoid injury.

Do's

- Always exit and enter your vehicle facing the cab.
- Slow down and use extra caution in bad weather.
- Get a firm grip on rails or handles with your hands.
- Use parts designed by the manufacturer for mounting and dismounting. This includes steps, running boards, traction strips, footholds, handgrips, etc.
- Look below for obstacles on the ground before exiting.
- Wear safe non-slip shoes with good support.
- Clean your shoes off; mud, grease and oil can cause you to slip.
- Inspect hand holds and ladders/rungs to ensure they are in good condition.
- Only climb on and off when the equipment is stationary.

Don'ts

- Never carry anything with your free hand when mounting or dismounting. Put the object on the vehicle floor and reach up for it when you get down on the ground.
- Don't rush to climb out of your vehicle or machinery after a long period of sitting. Climb down slowly to avoid

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straining a muscle or losing your balance.

- Never jump out of construction equipment or vehicles. You may land off balance or on an uneven surface and fall.
- Don't use tires, wheel hubs or machine tracks as a step surface.
- Do not use door frames, door edges or door handles as a handhold.

Familiarize yourself with these do’s and don'ts, and always maintain three-point contact when entering or exiting a large truck or heavy construction equipment.

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Provided by: Conner Strong & Buckelew

Make Safety a Priority on the Job Site

Safety on the job site is something all employees should take seriously—nothing less than the future of your family is at stake. They are counting on you to provide food and shelter, and an on-the-job accident could very easily disable you, leaving security and future plans up in the air.

Together, you and your co-workers can get your own safety program off the ground by giving your supervisors or safety leaders ideas on how things can be made safer. Any idea, no matter how small it may seem to you, may prevent a serious accident.

If you are a seasoned employee, you can use your years of valuable experience to spot potential safety hazards. Or, if you are a new employee, you may be able to spot something right away that an old pro may have overlooked.

Here are some examples of rules you can follow to set an example for others and help your safety program succeed.

- Do not engage in horseplay on the worksite at any time—stay focused on the task at hand.
- Allow your coworkers to stay focused at all times by refraining from distracting actions.
- Always wear the required personal protective equipment (PPE).
- Watch your footing at all times, and never run to get where you are going.
- Remember that sanitation is key: keep yourself and your worksite clean and free from debris.
- Know your limits—never work at a height that makes you uncomfortable, especially if it will make you sick, dizzy or too nervous to safely perform.
- Never perform work that you are unauthorized to do.
- Make a conscious effort to remain visible, especially during night work or near motor vehicle traffic.
- Watch out for the safety of non-workers, too. Pedestrians or bystanders can be seriously injured or killed if construction workers do not practice caution.
- Know what to do in case of emergency, whether it's an on-the-job injury or natural disaster.

In short, safety takes teamwork. Whatever your job is or whatever your duties include, keep your eyes open for hazards and report them. Help keep our safety program on solid ground!

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Safety Matters Construction

Provided by: Conner Strong & Buckelew

Making Housekeeping a Priority On-Site

You know that at , the job site can become hectic with our many workers and multiple contractors performing distinct operations simultaneously. Imagine the chaos that would result if these groups did not clean up after themselves. The site would become a hazardous obstacle course as trash and debris piled up, and walking from one point to another would mean navigating through a mess of extension cords, hoses, materials, nails and screws. It would not only be aggravating; it would be very dangerous, considering that slips, trips and falls are the most common cause of injury on the job site. And inadequate housekeeping is a major contributing factor in most of these accidents.

What is Housekeeping?

Avoiding dangerous conditions like those described above requires a commitment to housekeeping by every individual on our team. Good housekeeping means constant vigilance. Remove any object or material that obstructs a pathway on-site and take care of any other materials that could pose a possible hazard for co-workers. This includes the following:

- Extension cords
- Hand tools
- Hoses
- Materials
- Debris
- Nails and screws
- Water or spills
- Sawdust
- Always be on the lookout for materials that could present a tripping hazard.

Do Your Part

Follow these housekeeping tips to keep yourself and your co-workers safe.

- Limit the amount of materials and chemicals on-site to the quantities that you will need.
- Store tools and materials out of the way in storage bins or lockers.
- Keep flammable or hazardous wastes in covered, segregated waste containers.
- Never throw waste, materials or tools from a building or structure – always use debris chutes.
- Place warning signs in wet or muddy areas that could pose a slipping hazard.
- Place protective guards across areas where workers could fall or face an impalement hazard.

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- Control muddy areas using gravel, boards or plywood.

Our Commitment to You

At , we put your safety first. If you have any doubts about the security of your worksite – regarding housekeeping or any other issue – do not hesitate to talk to your supervisor.

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Provided by: Conner Strong & Buckelew

Manual Material Handling

For construction workers and contractors, repetitive motions, poor lifting and unsafe handling injuries are some of the most common. Coincidently, they are also usually preventable by practicing safe lifting techniques. Use these helpful ergonomic guidelines to lift any size load without causing injury to yourself or others.

Pre-Lifting Techniques

- Determine whether or not you will need assistance to do the job.
- Consider the size or shape of the load – bulky or odd-shaped building materials could create additional challenges.
- Determine if you will have to turn or change direction while carrying the load.
- Find out if the route you will take with the load is clear of obstructions and slip, trip or fall hazards.
- Make sure your route is not dangerously close to vehicular traffic, especially if it is traveling at high speeds.
- Determine what kind of personal protective equipment (PPE) you will need to protect your hands and prevent slippage during lifting.

Lifting Techniques

- Get as close as possible to the load and keep it close to your body.
- Always bend from the knees and not the back, and lift using your legs.
- Be aware of your balance.
- Stand on a stable, even surface, and wear proper foot protection to prevent slips and other injuries.
- Bring the load down to waist level if lifting from above, and wear a hard hat to prevent head injuries from dropped materials.
- No matter what you are carrying, always avoid reaching and lifting at the same time.

Carrying Techniques

- Look ahead instead of down to make sure your path is clear.
- Watch out for terrain changes, and avoid carrying up stairs if possible.
- Have someone else open doors, gates or other closed entries for you.
- Keep shoulders, hips and feet aligned – do not twist at the waist or change direction by moving your hips.
- Set the load down on a firm surface if it becomes too heavy or unstable.
- Watch for pinch or shear points on

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carts, dollies and hoists.

- When you are finished transporting the load, set down the corner or edge of the object closest to you first, keeping your fingers out from underneath the load to avoid getting pinched or crushed.

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Provided by: Conner Strong & Buckelew

Mounting and Dismounting Equipment

Because jumping down off large equipment is a common practice for construction workers, it's no surprise that lower back, knee, ankle and neck injuries occur more frequently. Regardless of the type of equipment you work with, mounting and dismounting safely should always be top of mind.

What You Can Do

To lessen your risk of injuries, follow these simple mounting and dismounting instructions for trucks and other tall equipment or machinery.

- When using a new piece of machinery, become familiar with proper mounting and dismounting procedures.
- When a person jumps from a height of more than one foot, the force that goes through the body is about 14 times the person's body weight. In other words, a 165-pound man who jumps out of construction equipment or any other high surface is exerting 2,310 pounds of force on his body. This can cause injury to bones, tendons and cartilage. And if you're doing this multiple times every workday, the damage to the body can be extensive.
- When dismounting and mounting, maintain three-point contact. This means having contact with the construction equipment by either one foot and two hands or one hand and two feet. The smaller the triangle you form with your body, the more stable you are.
- Always face the vehicle, both when mounting and dismounting.
- Look at the surface below before stepping and make sure it is even to prevent ankle and knee injuries.
- Never mount or dismount moving equipment.
- Do not mount or dismount with anything, including tools, in your hands. Not only does it throw the body off-balance, it also reduces your chance of recovering your balance if you do slip. Use a drop rope to raise and lower supplies, tools and equipment instead.
- Handholds and footholds are on the equipment for a reason—use them.
- Wear appropriate clothing. Loose or torn clothing can get caught on equipment when you are jumping down instead of climbing down. In slippery conditions, wear proper footwear to prevent slipping hazards.

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- Proper vehicle maintenance also contributes to the safe mounting and dismounting of equipment. Make sure running boards, treads, steps, footholds and platforms are kept clear. Hazards like ice, snow and grease could cause slips, trips and falls.

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Provided by: Conner Strong & Buckelew

No Extra Riders on Equipment!

You operate heavy machinery on a regular basis, so you know many of the hazards you face. But you may not realize that letting an extra person ride on equipment intended to transport only one person is asking for an accident.

It is important that everyone on the job site is familiar with the dangers of extra riders on equipment, so that we can ensure everyone's safety and protection.

Hazards of Extra Riders

- The operator may not be able to see his or her surroundings as easily.
- Access to crucial operating levers or controls on the equipment may be obstructed.
- The operator could become distracted by the rider's presence.
- There is increased risk of the extra rider being thrown from the equipment because they lack protection from safety belts and rollover features.
- If the extra rider is outside the cab, he/she is being exposed to potentially harmful dust, noise and chemicals.
- It increases the risk of a multiple-injury accident.

Alternative Solutions

- Use a car or truck to transport co-workers to remote work areas.
    - Make sure you have safe transportation back from the remote area at the end of the day so you are not tempted to catch a ride as an extra passenger on equipment.
    - Plan your work assignments in advance so you can secure safe transportation to and from the location.
- Only use seats that were installed by the equipment manufacturer. Do not use makeshift seats on equipment. Just because the extra rider is sitting does not mean he or she is safe from harm—allowing an extra passenger is always a hazard.
- An enclosed cab does not mean the extra rider is protected. In an overturn, this will not protect the extra passenger from harm.
- Even if the equipment has a training seat, it should only be used by people who are legitimately being trained.
- Familiarize yourself with 's extra rider policy. It is strictly enforced, so set a good example for one another!

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Provided by: Conner Strong & Buckelew

No More Job Site Accidents

The construction worksite is a dangerous one, and the potential for accidents is high. However, many on-the-job accidents can be avoided by focusing on safe practices and taking necessary precautions.

Most accidents are caused by an unsafe act, an unsafe working condition or a combination of the two. For example, a worker could fall off a ladder that was not secured properly – an accident caused by the unsafe act of not securing the ladder. Or, a damaged ladder could cause a fall, and that would be the result of an unsafe condition. But, that unsafe condition was caused by the unsafe act of not inspecting the ladder prior to use. In either instance, the accident could have been prevented by following proper safety precautions before using the ladder.

Hazards You May Encounter

Because your job has such a high potential for on-the-job hazards, it's important to understand what causes accidents so that you can avoid them whenever possible. While it is impossible to list all of the hazards you may encounter while working, common ones include the following:

- Using defective equipment
- Not using proper protective equipment
- Removing guards from equipment
- Using tools improperly
- Unsafe handling of materials
- Horseplay
- Failure to secure tools or materials either on the ground or on an overhead surface

Safe Steps to Avoid Accidents

The first step to keeping yourself and co-workers safe is to stay alert on the job and don't let routine or familiarity lure you into carelessness. Always observe safety precautions before and during a task, even if those precautions make the task more inconvenient or take longer to complete. Cutting corners may not seem like a big deal, but doing so is a primary cause of accidents.

Next, know your job. The more you know about your job, the safer you'll be. Know the proper procedures and safety precautions for any task you do, and if any questions arise during your workday, be sure to talk to your supervisor.

And finally, make a personal contribution. A good way to start this is to follow all safety rules, even if you think they are unnecessary or slow you down. Certain rules on the job are made for your protection, so follow them. Also, just because an unsafe act is not specifically prohibited, it doesn't mean you should do it. Use your common sense when evaluating if an act is

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safe or not – there may be a very easy way to make it safer if you stop to think it through.

Focus on Good Habits

It's human nature to work yourself into habits, and when you break a safety rule, you've taken the first and most influential step in forming a bad habit — a habit that can lead to an injury. Good habits, such as noticing unsafe conditions, following safety procedures and wearing proper personal protective equipment, are just as easy to form.

Develop a safe attitude! This is probably one of the most difficult things to face because most of us have the mistaken notion that it's always someone else who gets hurt, never us. If we all do our share in observing safety rules and staying alert for unsafe conditions, everyone will benefit.

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Provided by: Conner Strong & Buckelew

On-site Hand Tool Safety

Imagine that when you are striking a nail with a hammer, part of the hammer's handle breaks off and hits you in the eye. You lose several weeks of pay and permanently damage your eye. Serious accidents like this one are a substantial risk when hand tools are misused or used carelessly on-site.

Keep Safety in Mind

Hand and power tools are such a common part of the job that we often take them for granted. However, their use can be extremely hazardous if the right safety procedures are not followed. To keep yourself safe, follow these basic rules:

- Keep all tools in good condition with regular maintenance.
    - If a wooden handle on a tool is loose, splintered or cracked, the head can fly off.
    - If the jaws of a wrench are sprung, the wrench can slip.
    - If impact tools such as chisels, wedges or drift pins have mushroomed heads, they can shatter on impact.
- Use the right tool for the job.
    - If a chisel is used as a screwdriver, there is a danger of the tip flying off.
    - Each job calls for a specific tool. Never deviate.
- Examine each tool for damage before using it and never use damaged tools. Alert your supervisor that these tools are in need of repair.
    - Wrenches must not be used when the jaws are sprung; they can slip and lead to injury.
    - Tools used for cutting edges must be sharp. Dull tools can be more hazardous as you must press harder when using them.
- Operate tools according to the manufacturer's instructions.
    - Iron or steel tools produce sparks that can ignite flammable substances. Check for spark-resistant tools made of alternative materials when you are around flammable gases, volatile liquids or other explosive materials.
    - When using sharp tools, direct the tools away from aisle areas and away from other employees working close to you.
- Use the right personal protective

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equipment.

  - Loose clothing, ties or jewelry should never be worn when using hand or power tools.

- Store and transport the tool properly as soon as you are done with it.

  - Put the tool away as soon as you are done with it. Leaving the tool in a pathway presents a tripping and impalement hazard.

  - Transport tools in a toolbox or cart, or carry them in a tool belt. Never carry pointed tools in your pocket.

  - Never throw tools to another employee. Always pass them with the handle toward the receiver.

  - Use a bucket or bag for lifting or lowering tools from one level to another.

  - When carrying a tool on your shoulders, pay attention to clearances and other workers.

Speak Up

If you have any doubt about the safe use of a hand or power tool—or about any safety issue on the job—talk to your supervisor. Your safety is our first priority at !

Safety Matters Construction

Provided by: Conner Strong & Buckelew

Personal Protective Equipment – Safety Glasses

Your eyes are one of the most vulnerable parts of your body, and with all of the possible hazards that exist in the construction industry, it's very important to take the necessary measures to protect them. Eye injuries can be life-changing events. Losing your sight, or even having it limited or lessened, can drastically lower your quality of life and even make you unable to work. With all of that in mind, takes safety glasses training and proper use extremely seriously.

The Safeguards of Safety Glasses

Safety glasses are a form of personal protective equipment (PPE) that are designed to protect your eyes from a variety of potential hazards. Regular glasses do not offer the same level of protection and should not be considered a suitable substitute at any time due to their lack of:

- Side shields/side protection
- Impact-resistant lenses, often made of polycarbonate
- Impact-resistant frames

Employees who require corrective vision equipment can be accommodated in one of the following ways:

- Use of prescription safety glasses that meet American National Standards Institute (ANSI) standards and also properly correct vision
- Use of safety glasses that can fit comfortably over regular glasses without disturbing alignment
- Use of safety glasses that can incorporate corrective lenses mounted behind the outer, protective lenses

In order to be considered safety glasses, the equipment in question must comply with ANSI. You can tell if your safety glasses are up to code by checking for a "Z87" marking.

Caring for Safety Glasses

Safety glasses are effective equipment, but they are also valuable and, as such, must be maintained carefully. It is important for employees to take good care of safety glasses and other PPE in order to make sure that they remain functional and adequate for providing protection. Follow these tips to keep your safety glasses in good condition:

- Clean your safety glasses daily using water or, preferably, lens cleaner.
- When cleaning or wiping your safety glasses, do not use a rough material that could scratch the glass.
- Avoid using cleaning products that are not specifically intended for lenses, as they could damage the equipment.

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- Inspect your safety glasses every day to detect any flaws or damage.
- When not being used, store safety glasses in a safe place where they will not get dirty or damaged.

When to Wear Safety Glasses

Compliance with safety standards demands that employees wear eye and face protection if any of the following hazards exist in the work environment:

- Flying objects
- Molten metal
- Liquid chemicals
- Acids or caustic liquids
- Chemical gases or vapors
- Potentially harmful light radiation

There may be other workplace factors that make safety glasses necessary as well.

In addition, some tasks may demand even more PPE in addition to safety glasses. For example, grinding may require a face shield as an added layer of protection.

is committed to the safety of our employees and the workplace as a whole. Talk to your supervisor if you have any questions or concerns about safety glasses.

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Provided by: Conner Strong & Buckelew

Portable Grinders

Portable grinders (e.g., angle grinders, handheld grinders and portable abrasive wheels) are common tools in construction that allow employees to grind, cut, polish and buff materials. These versatile tools are used by most trades.

When working with portable grinders, employees need to consider a number of risks. For instance, portable grinders can cause severe lacerations or amputations should an operator come into contact with exposed abrasive wheels. Furthermore, portable grinders can create potentially dangerous sparks, metal fragments and other projectiles as material is cut or polished.

This Safety Matters provides a number of useful tips employees need to consider in order to remain safe as they use portable grinders.

Safety Precautions

Like all power tools, portable grinders present a number of safety concerns—concerns workers can mitigate through the following practices:

- Wear the proper personal protective equipment. For portable grinders, safety glasses, face shields and heavy leather gloves are recommended. Additionally, depending on the materials you're working on, respiratory and hearing protection may be needed.
- Ensure the abrasive wheel is rated for the speed of the grinder. Failing to do so can cause the wheel to break apart and create dangerous projectiles.
- Inspect the overall condition of the grinder before use. This includes ensuring the electrical cord is in good condition.
- Examine the abrasive wheel for damage before use. In addition, when using a new disc or wheel, let the grinder get up to speed and run for one minute before grinding, looking for abnormal vibrations.
- Use portable grinders per the manufacturer's recommendations. Above all, the portable grinder and wheel you use should be appropriate for the task at hand.
- Ensure guards are in place before using portable grinders. Never make any modifications to the guard.
- Follow existing job site policies, including hot work procedures. This is particularly important, as sparks immitted from portable grinders can create fire hazards. As such, never use portable grinders near combustible materials.
- Use both hands when using a portable

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grinder.

- Ensure that the work material being grinded is properly secured.
- Follow company procedures related to reducing silica exposure if you are grinding any type of silica-containing material such as concrete, stone or mortar. Such procedures can include using tools that wet material and reduce dust or capture dust via a high-efficiency particulate air (HEPA) vacuum.

For any questions or concerns regarding portable grinders, talk to your supervisor.

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Provided by: Conner Strong & Buckelew

PPE for Spray Polyurethane Foam Contractors

Spray polyurethane foam (SPF) is an effective insulation and air sealant material; however, exposure to isocyanates and other SPF chemicals that may be found in vapors, aerosols or dust, or on surfaces during and for a period of time after installation, can cause adverse health effects such as:

- Asthma, a potentially life-threatening disease
- Sensitization, which can lead to asthma attacks if exposed again
- Lung damage
- Other respiratory and breathing problems
- Skin and eye irritation

That's why it's important to wear the proper personal protective equipment (PPE) while handling SPF to shield yourself from these effects.

Types of PPE for SPF Use

There are four types of PPE that should be used when working with SPF. They are:

- Hand protection, including chemical-resistant protective gloves made from chloroprene rubber (Neoprene), butyl or PVC and other protective gloves. Ensure the gloves are the right size for your hands before handling SPF.
- Eye and face protection, including tightly-fitting safety goggles and face shields. Contact lenses are discouraged. An emergency eyewash station will be provided.
- Respiratory protection, including all respirators. Depending on the job, you will be supplied with one of three types of respirators:
    1. Air-purifying Respirators (APRs)
    2. Powered Air-purifying Respirators (PAPRs)
    3. Supplied-air Respirators (SARs)
- Body protection, including saran-coated material, such as a full body suit with an applicator hood. Always wear tops with long sleeves.

A poorly fitted piece of protective equipment can cause headache or pain. If it does, see your supervisor immediately to have it adjusted or re-fitted. Wearing the proper PPE may take some getting used to at first, but remember that it could save your life against the harmful effects of SPF when worn.

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Our Promise to You

At , we care about the health of our employees. We vow to provide you with the proper PPE for every job you do. If you discover our PPE is broken or otherwise unusable, please see your supervisor as soon as possible to get a replacement.

Safety Matters Construction

Provided by: Conner Strong & Buckelew

Preventing Pinch Point Injuries on the Job Site

Pinch point hazards are situations where machines, hand tools, equipment and other conditions put workers' hands, feet or entire body in danger. There are many pinch point hazards on the construction site, some as small as a pair of pliers and others as large as an excavator. In fact, most equipment has the ability to cause pinch point injuries.

Pinch point hazards are particularly difficult to guard against because in many cases, they cannot be prevented by using engineering controls or personal protective equipment (PPE). Often times the best defense is using care, caution and alertness on site.

To reduce your risk of pinch point injuries at work, the most important thing you can do is identify potential hazards before your shift or when working with new equipment. Pay particular attention to any equipment with moving parts, moving objects that come into close contact with fixed objects and heavy objects stacked closely together. Even commonplace objects on the construction site like extension ladders, heavy steel doors or heavy covers for bins and hoppers can put you at risk. Use the following safety recommendations to protect yourself:

- Be extremely cautious when placing your hands, fingers or feet between two objects. If you are within a pinch point, consider alternative ways to get the task done. If there is no other way to complete the task, make sure that all moveable parts are immobilized before continuing to work.
- Keep your feet firmly planted on surfaces designed for walking, climbing or standing, and never use your feet to brace, force or chock objects.
- Wear appropriate gloves for the task at hand.
- Follow all lockout/tagout procedures.
- Secure materials so they cannot fall or roll by strapping, racking or interlocking them down.
- Be cautious when handling drums, rebars, rings and other metal objects.
- Watch out for rolling hazards.
- Refrain from wearing jewelry or loose clothing, and always tie long hair back.
- Know how to turn off equipment immediately in case of an emergency.

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Preventing Trench Collapse

It's a simple matter of physics—trench walls want to collapse. When they do, it happens quickly and the results can be fatal. It doesn't take much dirt to trap and crush a worker, which is why it is important that you take the proper precautions during excavations that require a trench deeper than 5 feet.

Keep the Surface Clean

Trench collapse occurs when the trench walls can no longer contain the large amount of pressure put on them by the surrounding soil. While this can be a problem at any depth, it is made worse when excavated materials are piled at the edge of the trench. To reduce some of the pressure put on trench walls:

- Pile all excavated materials at least 2 feet back from the edge of the trench. If there is not enough room to allow at least 2 feet, remove excavated materials from the immediate location.
- Do not work around the edge of the trench when others are below.
- Keep equipment away from the trench edge. Not only can it cause cave-ins but there is also a chance that it could fall on those working below.

Slope for Stability

Another way to reduce the pressure put on trench walls is to use a sloping or benching system.

- Sloped Walls – A 34-degree slope should be used when digging to prevent a section near the top from giving out and burying the bottom of the trench.
- Benching – When there is enough space available, benching allows a trench to be dug in a series of steps that slowly descend to the deepest point.

Reinforce Trench Walls

Once a trench has been dug, the walls should be braced in a way that will protect those working in the area if a cave-in does occur.

- Construct a support system made with posts, beams, shores or planking and hydraulic jacks.
- Never excavate more than 2 feet past the bottom of the support system.
- Make sure there is always a safe exit route within 25 feet of where you are working in the trench.

Trench Boxes

A trench box can be used as a convenient alternative to building a support system directly into a trench. However, for it to provide the proper protection it must be used properly.

- Always place the trench box before

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entering the trench.

- Enter directly into the box.
- Never move the box while workers are in the trench.
- Never perform work in the trench outside of the box.

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Protecting Those Below During Overhead Work

In construction, jobs involving elevated platforms present certain hazards that can threaten worker safety, injure people and damage property below. If this happens, the contractor working the job is responsible for the damages. That's why it is extremely important when working on an elevated platform that you use the proper precautions to keep yourself and those around you safe from unnecessary injury.

Establish a Safe Area

If possible, overhead work should never be performed over anyone.

- Section off the hazard area with signage and some form of barricade to clear the area and prevent traffic from moving underneath the work zone.
- Use proper personal protective equipment, such as a hard hat, if you need to enter the hazard area while work is being performed.
- If parking is allowed in the area, set up signage in advance. This will prevent unattended vehicles from being in your way when it comes time to work on the project.
- If a hazard area cannot be established under an overhead workspace use debris nets, catch platforms or canopies to protect people and property from possible falling objects.

Securing Tools

Anything dropped from an elevation can be a potential hazard to those below. Even personal items like cellphones can turn into harmful projectiles. Make sure these items are accounted for by:

- Connecting all tools to a safety cable to prevent accidental drops
- Using a holster or sheath and a safety line to hold your cell phone, pager and any similar devices
- Inspecting all safety cables for proper function before starting work each day
- Using toeboards to prevent stray materials from accidentally being bumped off an elevated platform

Securing Yourself

Not only can you be gravely injured in a fall but you can also injure others. Make sure you take steps to manage your own falling risks.

- Wear a body belt as part of a tethering or restraint system with a lanyard attached to the work platform.
- Never climb or sit on guardrails.

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- Never exceed the recommended weight limit of scaffolding or other lifts.

Safety Through Scheduling

The risks of a job can be reduced if the job is done when the risks are not present. One of the best ways to avoid damage to persons or property below is to find the appropriate time to schedule work. Try to avoid peak times by contacting the location to find out when foot traffic is low.

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Protecting Your Hands

Of the many tools that we have available, our hands are the most valuable. They provide us with the dexterity necessary to perform precise maneuvers that even the most advanced technology cannot replicate. Even the simplest tasks are difficult for a person that does not have full use of his or her hands.

Working in construction puts your hands at a higher risk. Hand injuries on the job are quite common, but many are preventable. There are many things you can do to keep your hands safe, and here are a few of the most common.

Make Use of Machine Guards

Never operate machinery that does not have a working guard to protect your hands. Always use a lockout device on machinery when you have to reach into it for any reason. Immediately replace guards when you remove them. When safety guards are missing from machinery, hands, fingers and arms can easily be caught, amputated or crushed.

Wear Gloves

Always protect your hands by wearing work gloves when handling rough materials or performing operations where you are using your hands to lift or move objects. An Occupational Safety and Health Administration (OSHA) study revealed that 70 percent of workers experiencing hand injuries were not wearing gloves. The remaining 30 percent were making use of damaged, inadequate or inappropriate types of gloves for the job. Choose the right gloves for the task and inspect them thoroughly before use.

Be Cautious of Sharp Objects

Utilize the correct safety procedures when handling knives, box cutters and other sharp objects. Never attempt to pick up broken glass, nails or other sharp objects not meant for handling with bare hands; always use appropriate gloves or a broom.

Remove Rings

No matter how much sentimental value they carry, rings put your hands in grave danger on the job. They can very easily catch on machinery and other objects, resulting in lacerations, amputations or broken bones. Always remove rings before beginning work.

Stay Alert for Pinch Points

When using your hands to move an object, whether it is on a hand truck or you are carrying it, be sure your path is wide enough for you to move through safely before you start the job. When you set a heavy object down, be aware of the placement of your hands. Always be alert for possible pinch points.

Speak Up

If you are unsure about the type of gloves to wear to adequately protect yourself, or if you have any other issues regarding the protection

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of your hands on the job, talk to your supervisor.
At , your safety is our first priority.

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Recognizing and Preventing On-site Violence

Although we do our best at to keep the workplace safe, violence by an outsider or between employees remains a serious safety and health issue. It can occur inside or outside the workplace, and can range from threats and verbal abuse to physical assaults and homicide. In fact, according to the U. S. Department of Labor (DOL), workplace violence is consistently a top five cause of fatal occupational injury in our country.

Tempers can flare and lead to violent behavior at any time. Construction and contracting workplaces are particularly hazardous because of the dangerous conditions that are inherently a part of the work environment, including working at height and power tools, which can ultimately be used as weapons.

Your safety is our top priority. As we emphasize in our Workplace Violence Prevention Program, we do not tolerate threats, bullying, harassment or any other form of violence. Help us keep you safe by understanding your risk and taking steps to protect yourself.

Identifying Your Risk

Workplace violence can include actions or words that endanger or harm you, or result in other workers believing that they may be in danger, including the following:

- Verbal or physical harassment
- Verbal or physical threats
- Assaults or other violence
- Any other behavior that causes you to feel unsafe (bullying or sexual harassment)

Staying Safe

Nothing can guarantee that you will not become a victim of workplace violence, but you do have the right to expect a workplace that promotes safety from violence, threats and harassment. We have taken steps to help prevent violence in the workplace. Contribute to the safety measures and other efforts that we have in place as follows:

- Become aware of and report violent or threatening behavior by co-workers or other warning signs.
- Take all threats seriously.
- Follow procedures established by our Workplace Violence Prevention Program, including those for reporting incidents.
- Learn how to recognize, avoid or diffuse potentially violent situations by attending personal safety training programs.

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- Alert supervisors to any concerns about safety or security, and report all incidents immediately in writing.
- Avoid traveling alone to unfamiliar locations or being in unusual situations whenever possible.

Stay Alert

It is of utmost importance to stay alert and aware of any potentially dangerous behavior. Make sure that you are effectively trained in conflict resolution and methods of handling a potentially dangerous situation. Adhere to all of our policies and be aware of hazards to reduce your risk of being involved in volatile situations that could escalate to dangerous physical violence.

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Reduce the Risks of Diesel Exhaust Exposure

A variety of construction equipment relies on diesel fuel for power. Unfortunately, diesel emissions contain approximately 20 times more harmful particles than regular gasoline. This means that there is an increased risk for adverse health effects while working around diesel-powered equipment at the job site. To stay safe during your daily operations, it is important to follow safe work practices that will reduce your exposure.

Health Effects of Exposure

In the long-term, occupational exposure to diesel exhaust increases the risk of lung cancer and other lung diseases by 40 percent. In the short-term, exposure can cause:

- Fatigue
- Drowsiness
- Tightness in the chest
- Wheezing
- Altered sense of smell
- Irritation of the noise, eyes and throat
- Nausea
- Heartburn

If you begin to feel any of these symptoms while working in an area where a diesel engine is running, notify your supervisor and move to an area where you can get some fresh air.

Proper Ventilation is Important

Exposure increases exponentially when dealing with diesel exhaust in an enclosed area. To improve ventilation:

- Run engines indoors only when absolutely necessary.
- Attach exhaust extraction hoses to the exhaust pipes of idling vehicles or equipment to direct exhaust outside.
- Use mechanical ventilation systems to help move contaminated air out of the work area.
- Open as many doors and windows as possible to increase circulation.
- Do not run diesel engines near the fresh air intake of a building.

Proper Maintenance Helps

Preventative maintenance practices can reduce the amount of harmful exhaust diesel engines produce.

- Service engines regularly to ensure they function properly and emit as little exhaust as possible.
- Check for leaks in the exhaust system.

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Never tamper with an engine to try and improve fuel economy. Adjustments may increase emissions.

- Use emission control devices such as collectors, particle traps or air scrubbers. Replace any filters, and clean such devices regularly.
- Check vehicles' operator compartments for any damage that may allow exhaust to seep in while in use. This could include cracks or holes in the cab's body or damage to weather stripping around doors and windows.

Personal Protective Equipment (PPE)

If other control methods cannot reduce the amount of exhaust, use proper PPE.

- Only a full-face piece, positive pressure, supplied air respirator can provide adequate protection.
- Make sure respirators are properly fitted, cleaned, stored and maintained by OSHA standards.
- Always use PPE in addition to, and never as a substitution for, other control methods.

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Respiratory Protection and Safety

It may seem like a hassle to wear respiratory protection, but particles and contaminants—no matter how small—can cause both short-term and long-term health problems.

Respirators protect employees from areas with insufficient oxygen, harmful dusts, fogs, smokes, mists, gases, vapors and sprays. These hazards may cause cancer, lung impairment, other diseases or death. Always wear respiratory protection where required at the workplace.

The Occupational Safety and Health Administration (OSHA) requires to have a written respiratory protection plan and training in place, but this requires compliance with the program across all employees, as safety is everyone's concern.

Respirator Use and Safety Tips

Respirators are an important safety and health protection tool, when used properly. If you exercise proper respirator maintenance, it will protect you from harmful, airborne contaminants and particles.

- Use respirators certified for use to protect against the contaminant you are working with. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
    - Examples of different types of respirators include single-use, half-face piece, and full-face piece, air-purifying or atmosphere-supplying respirators. A respirator from another area of the workplace may not provide adequate protection for you. For example, a respirator designed to filter dust particles will not protect you against gases, vapors or very small particles of fumes or smoke.
- Always inspect your respirator before use. Alert your supervisor and replace your respirator if you find a crack, puncture, tear, leak or any other unusual condition.
- Check the face piece seal each time you wear your respirator. Proper face piece fit is critical.
- Keep your face shaved. Facial hair, headbands, bandannas or other objects that interfere with the face piece seal must be removed prior to wearing your respirator.
- Read and follow all instructions provided by the manufacturer on use, maintenance, cleaning and care, and

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warnings regarding your respirator's limitations.

- Use the correct cartridge for your respirator, if applicable. Examples of the different kinds of cartridges include dust, mist, organic vapor or combination. Make sure cartridges are not expired.
- Keep track of your respirator so you don’t inadvertently use another employee’s respirator.
- Make sure you stay properly trained in the use and maintenance of your respirator. Contact your supervisor or other designated person if you need assistance or have any questions.

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Responding to a Chemical Leak, Spill or Explosion

Working with chemicals on a job site puts you and your co-workers at serious risk for injuries due to explosions. For this reason, the Occupational Safety and Health Administration (OSHA) requires worksites where hazardous chemicals are used to have an emergency action plan (EAP). takes this requirement seriously, as employee safety in the workplace is our top priority.

The EAP describes the procedures to follow during an emergency, such as a chemical spill, leak or explosion, including the following:

- Who to notify
- Who is in charge and who else has responsibilities in responding to the incident
- Who is responsible for each task
- How to evacuate the site

OSHA also requires all employees to be trained on EAP procedures, so that everyone is prepared. Notify your supervisor if you have not yet had training on EAP procedures or if you would like a refresher.

Prevention

The first priority when working with chemicals is to try and prevent a spill, leak or explosion. You can contribute to that goal by doing the following:

- Knowing and understanding the chemicals you're working with, including any hazards—refer to the appropriate Safety Data Sheet (SDS) or ask questions if you are unsure
- Following all safety precautions and wearing appropriate protective gear
- Helping to make sure all chemicals remain labeled in their proper container

When an Incident Occurs

To determine if a chemical spill, leak or explosion is hazardous or requires special cleanup procedures, do the following:

- Identify the chemical(s) involved.
- Refer to the SDS for any chemical involved to find out how flammable and/or reactive it is, what protective equipment is needed and spill cleanup procedures.
- For chemicals resulting in a hazardous fire or explosion, refer to the SDS also for firefighting instructions.

Emergency Procedures

In the event of a chemical spill, leak or explosion, be sure to do the following:

- Immediately notify your supervisor.

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- Notify other workers in the area.
- Activate emergency alarms.
- Call 911.
- Keep people out of the area.
- Leave the area if the spill cannot be readily contained, or if it presents an immediate danger to life or health.
- Evacuate upwind, not downwind.
- Follow the evacuation rules in the EAP.
- Leave cleanup to trained personnel, such as a Hazardous Materials team.

Do not try to do the following:

- Rescue or help injured people unless you are sure you will be safe
- Clean up a spill yourself, except where permitted or required by site rules and the EAP

OSHA requires these safety measures, and so do we. It is our hope that an accident like this never happens, but all employees should be prepared in case it does. Make sure you learn these precautions and follow them if you ever must respond to a hazardous chemical spill, leak or explosion, to help keep yourself and your co-workers safe.

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Roadside Traffic Controls

Even when you and your crew think you are safe, some drivers can make working on the roadside potentially deadly. If a motorist is confused, not paying attention or driving recklessly, you could be in grave danger while on a job site.

When a worksite involves moving traffic, it is up to the roadside workers to protect the public and themselves from dangerous accidents. Remember these safety tips while you are on the job.

Plan Ahead

Traffic controls should be implemented prior to the start of the roadwork by driving through the proposed traffic pattern.

- This dry run will allow you to make changes to the route so that it makes sense to motorists.
- If you notice any obstacles or areas that may be confusing, change them before beginning the work.

Signs

- Follow the Manual on Uniform Traffic Control Devices provided from the U.S. Department of Transportation found at http://mutcd.fhwa.dot.gov and your local and state regulations regarding proper signage and barricading.
- Place warning signs at least 1,000 feet before the start of the work zone.
- Signs should be highly visible and in good working order.

Barricades

- Place space cones, barrels and other devices used to guide traffic close together throughout the construction site.
    - Motorists should not be able to deviate from the path you feel is safest for them to travel.

Safety Gear

- Wear hard hats, Day-Glo® or orange vests during the day and light-reflective strips at night.

Flagging Duties

At least one employee should act as the traffic control person.

- Control traffic with a highly visible sign paddle during the daytime.
- Flaggers should carry two-way radios to communicate with other employees.
- Alert motorists of the presence of flaggers by placing signage at least 500 feet from the beginning of the work zone.

Vehicle Specifications

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- All vehicles must have backing alarms, two-way radios and signs indicating “Slow Moving.”
- All vehicle operators should be properly trained on how to operate the equipment.
- Place cones around vehicles parked on the side of the road to warn motorists to slow down and watch out for them.

Take Extra Precautions at Night

- Increase warning distances for signage.
- Flaggers should use orange-cone flashlights to guide traffic.
- Place flashing lights on barricades.
- Tape off excavation site access.

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Safe Standards for Temporary Wiring

Whether it's a renovation or new construction, temporary wiring is regularly used to provide power around a job site before the permanent electrical system is in place. To ensure worker safety, OSHA has created standard 1926.405, Wiring Methods, Components and Equipment for General Use, which regulates safe work practices for dealing with temporary wiring.

General Requirements

When installing temporary wiring, follow these guidelines established by the OSHA standard:

- Wiring systems cannot be installed in ducts used to transport dust, loose stock or flammable vapors. Wiring systems also cannot be installed in ducts used for vapor removal.
- All metal enclosures for conductors must be metallically joined together into a continuous electric conductor that provides effective electrical continuity.
- Flexible cords or cables (extension cords) cannot be used as a substitute for the fixed wiring of a structure. They also cannot be concealed behind walls, ceilings or floors.

Temporary Lighting

Often times, there will be a need for an alternative form of lighting before permanent fixtures are in place. If your project needs temporary lighting, remember:

- All lights used for general illumination must be protected from accidental contact or breakage.
- Light sockets must be properly grounded.
- Temporary lights cannot be suspended by their cords unless they are specifically designed to do so.
- Portable lighting used in wet and/or conductive locations must be operated at 12 volts or less, unless you are using a ground-fault circuit interrupter.

Proper Maintenance

With all the work going on around it, temporary wiring can take a beating. It is important to regularly inspect temporary installations to ensure that they are in proper working order. When inspecting temporary wiring ask yourself:

- Is wiring in good condition and firmly secured?
- Is this wiring capable of safely carrying the amount of current that is required?
- Is there a circuit breaker to prevent overload?
- Are all wires grounded properly?

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- Do all conductors have the proper insulators?
- Are temporary light fixtures guarded properly?
- Are switches clearly labeled as to what they control and what positions are on and off?

Leave No Wire Behind

All temporary wiring must be removed as soon as the project that requires it is completed. Even if wiring is concealed during the course of construction, it still needs to be removed. Move temporary wiring as you go to avoid difficulties at the end of the job.

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Safe Vehicle Fueling on the Worksite

Refueling trucks, cars, machinery or other vehicles is a familiar activity, but it can be an extremely dangerous job if done incorrectly. Not only can improper refueling cause burns, fires or explosions, but the gasoline or diesel itself is also a hazardous substance with the potential for leaks and spills.

Always refuel your equipment in a way that keeps yourself, others and your vehicle safe from damage. Here are some tips to follow when refueling on the job site:

- Always concentrate on the task at hand. Do not try to complete other tasks while refueling.
- Stand by the tank so you can act quickly if something goes wrong.
- Do not refuel while smoking, while others are smoking or near any other open flames.
- Do not overfill the fuel tank – 95 percent full is a good guideline for any type of vehicle.
- On hot days, allow room in the tank for the fuel to expand.
- Turn off the engine and chock the wheels if there is a possibility the equipment or vehicle could roll.
- Do not top off the tank.
- Use only the hold-open latch provided on the pump.

Refueling Machinery with a Portable Container:

- Place the container on the ground when refueling, never on the bed of the work vehicle.
- Keep the nozzle in contact with the fuel tank's inlet tube.
- Do not refuel in areas with heavy vehicle or foot traffic.
- Do not refuel in areas that have the potential for spills or fuel ignition.
- Use only approved fuel containers.
- After filling, wipe off the container and ensure the cap is secure and the air vent is tight.

In the Refueling Area:

- Clearly mark refueling areas to avoid the possibility of accidents, including spills or inadvertent ignition.
- Clean up all spills immediately. If you have to leave a spill unattended, mark off the area to reduce to possibility of slips.
- Make sure there is a fire extinguisher

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available in the area before you begin fueling and that you know how to use it.

- Keep the entire area unobstructed, making sure equipment can enter and exit the area smoothly and that it is free of garbage and debris.

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Safely Backing Up Vehicles

Backing up a vehicle, whether it is a heavy dump truck or a small automobile, can be a difficult task with a lot of dangers involved. In fact, many accidents occur when vehicles are backing up at only 5 mph, due to blind spots, poor planning and lack of skill.

Tips for Safety

When you can avoid backing up, do so. Otherwise, follow these safety tips:

- Back up slowly and never hurry through the process. Keep the vehicle in control at all times.
- If you have doubts about what is behind you or if space is too tight, do not back up.
- Make use of your rearview mirrors and rear window (if there is one) before and during the process; don't open your door to look behind you.
- Dump trucks and heavy equipment such as bulldozers and graders have blind spots in which the operator has no view. In these cases the back-up route should be planned ahead of time.
- Back up only as far as needed and then proceed forward to move the vehicle the rest of the way.
- Back in and then drive out going forward when parking in a lot.
- Place a cone behind your vehicle when parking if you will need to back out later. This will allow you to maintain clearance if a vehicle parks behind you.
- If you are in a blind spot, beep your horn twice or sound your backup alarm before backing.
- Watch out for overhead power lines or any other obstructions that you may come in contact with.
- Do not back around corners or exit ramps on the freeway.
- Walk around the entire vehicle looking for hazards and remove them if necessary.

Spotters

Strongly consider using a spotter when backing your vehicle. When using a spotter, follow these general rules:

- Maintain contact with your spotter at all times. If you cannot hear and see him/her, do not back up until you can.
- Agree on hand signals that the spotter will use to signal you to back up and stop.

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- Ask the spotter to walk around the vehicle and survey the backing area to check for hazards. Have him or her check your overhead clearance as well.
- Make sure the spotter is at least 8 feet away from the vehicle before you begin to back up.
- Some construction sites require flaggers. Stay aware of and work closely with these key members of your team when backing up.

Our Commitment to You

At , we put your safety first. If you have any doubts about your safety on the job—regarding driving your vehicle or any other issue—do not hesitate to talk to your supervisor.

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Safety Tips for Dealing with Lead

Lead is a toxic substance that builds up in the body, posing serious health risks to those exposed to it. When you work with lead, it accumulates on your clothing and skin in the form of dust. It can be inhaled or ingested, and can damage the lungs, kidneys, nervous system, intestines and reproductive system. There is no cure for lead poisoning.

How Might I Be Exposed?

Lead can be found in the paint and pipes of buildings built before 1978. During activities such as demolition, window replacement or opening up walls, dangerous amounts of built-up lead dust can be released, putting you at risk of exposure.

In order to do work on houses that contain lead-based paint, our firm has been certified. This means we are expected to uphold certain standards to protect you and the occupants of the building. Study the following work practices that minimize the risk of lead poisoning.

Contain the Work Area

Contain your work area to keep occupants out and to be sure that other areas of the building are not contaminated with lead dust.

- Create a sealed air lock at the entrance to the area in which you are working, and at the vents and heating ducts.
- Remove everything, including furniture, from the work area. If an item is too large to move, cover it with heavy plastic sheeting secured with tape.
- Cover floors with heavy plastic sheeting.
- Cover doors with two layers of protective sheeting: one with a vertical slit, and one overlapping layer hung from the top of the doorframe.

Protect Yourself

Without the right protective equipment, you may ingest or inhale lead or risk bringing it home to your family. Always wear the following equipment:

- Safety goggles
- Disposable protective coveralls
- Disposable shoe covers
- Gloves
- Painter's hat
- Properly fitting HEPA respirator

Thoroughly wash your hands and face whenever you stop to eat, drink, smoke or use tobacco. Carefully remove all clothing and launder it separately before returning home.

Minimize the Dust

- Use wet sanders or misters to keep down dust from sanding and drilling.

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- Use HEPA vacuum attachments when you are able.
- When a heat gun is necessary, use a low temperature setting.
- Pry and pull apart components instead of pounding and hammering.
- Never use open-flame burning or torching of lead-based paint, and never use high-speed sanders or grinders without HEPA exhaust control.

Leave the Work Area Clean

Clean the entire area using the following methods each day, throughout the day.

- Wet sweep and wet mop your work area each day, changing the mop water frequently. Strain out debris from the mop water and dispose of them.
- Vacuum the walls, tops of doors and windows and the plastic barrier to the work area daily. Use a vacuum equipped with a HEPA filter.
- Dispose of your personal protective equipment or place it in a separate laundry container or plastic bag.
- Continue to keep the work area completely separate from the rest of the building.

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Safety Tips for Forklift Drivers

Forklifts, also called powered industrial trucks, help us perform essential tasks at the job site, but they are also quite dangerous. Driving a forklift is a serious responsibility and should not be taken lightly. Forklift drivers at must be properly trained and follow all safety procedures and precautions.

Maintenance

- Each day, check that the truck is ready for the day's work and perform any necessary maintenance before operating.
- Report any malfunction or poor performance to your supervisor immediately.

Loading

- Use reverse when going down inclines and go forward up inclines.
- Do not travel with the load elevated, and keep the load stable and as close to the floor as possible.
- Avoid raising or lowering a load while the truck is moving.
- Always keep the load tilted back towards the carriage while raising and lowering.
- Make sure the load is balanced and is within the capacity of the truck.
- Never use the forks as a personnel elevator unless properly equipped.

Driving

- Always make sure your driving path is clear.
- Slow down for corners, blind spots and doorways.
- Always be aware of your surroundings and watch for the unexpected.
- Be aware of ground conditions and take the smoothest possible path.
- Never try to turn on an incline.
- Cross tracks diagonally and slow down for uneven surfaces.
- Keeps legs, arms, feet, hands and head inside the truck.
- Be aware of others around the job site, in case they do not see you.
- Always give those on foot the right of way.
- Stay out from under forks and loads.
- Never show off or use the machine for anything other than your specified job tasks.

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- Never give anyone a ride or allow anyone who is untrained to operate the forklift.

In order to ensure your safety and the safety of others, it is important that all forklift drivers operate their machinery responsibly and with safety in mind.

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Provided by: Conner Strong & Buckelew

Scissor Lift Safety Tips

Scissor lifts are regularly used inside warehouses and on construction job sites to help workers perform work at heights. There are three types of scissor lifts: hydraulic, which use hydraulic oil to lift the platform up and down; mechanical, which includes all electrical and diesel-operated lifts; and pneumatic, which use air pressure to lift the platform.

Scissor lifts are useful for work in small areas as they are easily maneuverable. They are simple to use but can be dangerous when not properly maintained and serviced, used inappropriately or used by an untrained operator. According to the Bureau of Labor Statistics' Census of Fatal Occupational Injuries, 15 U.S. workers were killed while operating a scissor lift in 2012.

Despite the danger involved in using a scissor lift, there are many things you can do to stay safe while using one.

- Always perform a pre-work inspection. Never begin work with a scissor lift without first making sure all its components are in proper working order.
- Do not use a lift if you are not properly trained. Know the manufacturer's operating guidelines—they're meant to ensure safety and save lives.
- Never operate a scissor lift in inclement weather. Wind can easily knock down a raised scissor lift. If the forecast calls for rain or gusty conditions, avoid using the scissor lift outdoors. Most scissor lifts have a wind rating of 30 miles per hour or lower.
- Do not overload the lift. Check the lift's specifications to determine how much weight can be loaded onto the platform. Never exceed this number—doing so could cause the lift to tip over.
- Always keep the lift lowered when moving. Moving on uneven land could cause the lift to tip over if raised. Always follow the manufacturer's safe operating guidelines.
- Do not stand or lean against guardrails. Move closer to your target to avoid breaking the guardrails, which are not meant to be weight-bearing.
- Select work locations that are clear of electrical power sources. The lift should be at least 10 feet away from power lines, transformers and other overhead hazards, such as branches, overhangs, etc.
- Avoid performing work on an unstable or uneven surface. These hazards include drop-offs or holes, slopes, bumps or ground obstructions, or

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debris. Always set the brakes before lifting. Brakes add an extra layer of security to prohibit the lift from moving while you're working.

- Don't be complacent. Always keep safety in mind when using any type of lift. Focus on the job at hand and you will finish it quickly and efficiently.

If you feel uncomfortable in any way, don't use the lift. Being unfamiliar with a lift can lead to improper use and injury. If you are unsure whether you can properly operate a scissor lift, tell a supervisor.

Safety Matters Construction

Provided by: Conner Strong & Buckelew

Sheet Metal Safety

We often encounter sheet metal tasks on the job site, whether it is installing a metal roof, working on an HVAC system or any number of other tasks. Working with sheet metal puts a lot of strain on your body, especially from reaching or bending in awkward positions and using heavy-duty tools to cut, bend or fasten the metal. These strenuous tasks can cause injuries. However, there are various things you can do to reduce your risk of injury and remain healthy on the job.

One of the most beneficial precautions you can take before starting your workday is to warm up your body and stretch, much like an athlete would before a race or a game. Start by walking or marching in place for five minutes. Then, do several arm circles followed by slowly stretching your legs, arms, shoulders and knees. If your muscles are warm and loose at the beginning of your day, you will be less likely to sustain an injury during your more physically demanding tasks.

Safety Tips

Once you're done stretching, it's time to get to work. Here are some easy safety alternatives that reduce the risk of injury:

- Keep your wrists straight by using an angled tool or re-position the material to avoid bending at the wrist.
- Create a workbench that allows you to stand upright as opposed to kneeling to do tasks.
- Center yourself and move as close as possible to get work done overhead. Do not try to reach and extend a hand tool far away from your body.
- Choose power tools over hand tools whenever possible to avoid excess strain.
- Change body positions frequently and alternate tasks to give muscle groups a break.
- Increase the diameter on bucket handles by adding padding to lessen your grip and the strain on your hands.
- Bring loads close to your body when attempting to pick them up.
- Use mechanical aids and ask a fellow employee for assistance in carrying heavy loads.

Lacerations

As a sheet metal worker, you also run the risk of getting dangerous cuts. In fact, these are the most common injuries suffered by those in your field, according to the Electronic Library of Construction Occupational Safety and Health (eLCOSH).

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Many workers have lost fingers and hands during everyday tasks. It is wise to wear gloves while working with sheet metal. Though gloves do reduce your dexterity and the ability to move your fingers easily, they will prevent these types of dangerous injuries.

Warning Signs of Injury

Tell a supervisor if you experience the following symptoms:

- Constant fatigue
- Cold hands
- Swelling
- Numbness or shooting pains
- Tingling
- Changes in skin color
- Loss of sensation

You may need to seek medical attention or switch to a different task until your injury subsides.

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Provided by: Conner Strong & Buckelew

Silica Exposure Precautions

Found in commonly used materials such as concrete, asphalt, coal dust and natural stone, silica particles can be inhaled when dust is created during handling.

What's a Little Dust?

Although silica looks like dust, it's much more harmful to your lungs. Silica dust is a human lung carcinogen, and breathing it in causes the formation of scar tissue on the lungs, reducing the lungs' ability to take in oxygen. Without proper protection, exposure poses a serious threat to workers. The most severe exposures to silica dust result from abrasive blasting, but those working on cement and brick construction sites are at a high risk as well.

Silica Safety Precautions

When working with silica, take the following precautions to protect yourself and others.

- Use all available work practices—water sprays, ventilation systems and blasting cabinets—to control dust exposures.
- If you're working with a new material, check the label for silica. If silica is listed, refer to the product's Safety Data Sheet (SDS) for more information.
- Always wear proper personal protective equipment. When respirator protection is required, wear only a N100 NIOSH-certified respirator, or a Type CE abrasive-blast supplied-air respirator for abrasive blasting.
- Make sure you are properly trained in the use and maintenance of your respirator. Contact your supervisor or other designated person if you need assistance or have any questions.
- Don't alter the respirator in any way.
- Always inspect your respirator before use. Alert your supervisor and replace your respirator if you find a crack, puncture, tear, leak or any other unusual condition.
- Shave facial hair when you're going to be working in environments that require a respirator. Even a tight-fitting respirator will not create a good seal between the respirator and your face if you have a beard or mustache.
- Wear disposable or washable work clothes and shower if facilities are available. Vacuum the dust from your clothes or change into clean clothing before leaving the worksite.
- Be aware of the operations and job tasks creating silica exposures in your workplace environment and know how to protect yourself. Ask your supervisor

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if you have any questions.

- Be aware of the health hazards related to crystalline silica exposure. Habits like smoking can add to lung damage caused by silica.
- Don't eat, drink, smoke or apply cosmetics in areas where silica dust is present. Wash your hands and face outside of dusty areas before performing any of these activities.

Take Extra Care

Remember, take extra care at all times when working with silica—a little dust now can cause big health problems later.

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Provided by: Conner Strong & Buckelew

Silica Safety for Hand-held Power Saws

Hand-held power saws can be useful tools on the job site due to their portability and versatility. However, when these tools are used to cut masonry, concrete, stone or other silica-containing materials, workers can be exposed to dangerous dust.

Silica dust, when inhaled, can irreversibly damage the lungs, making dust control measures all the more important. employs the wet methods outlined in Table 1 of OSHA's Respirable Crystalline Silica Standard for Construction in order to keep you safe on the job.

Wet Methods

Many hand-held power saws come equipped with an integrated water delivery system. These systems direct a continuous stream of water where the blade meets the cutting material, cooling the saw and reducing dust exposures.

Water can be supplied to the saw by either a pressurized container or by a constant water supply (e.g., a hose connected to a faucet or construction site water supply). Per OSHA standards, water flow rates must be sufficient to minimize release of visible dust.

When using a saw with a water delivery system, consider the following safety precautions:

- Operate and maintain the saw in accordance with the manufacturer's instructions.
- Check that hoses are securely connected and are not cracked or broken.
- Adjust nozzles to ensure water saturates the blade and cutting area.
- Inspect the saw blade before use to ensure it is in good condition.
- Maintain dust-control equipment based on the manufacturers' instructions.
- Clean up any slurry produced by the spray. This will ensure that, when the slurry dries, silica dust isn't created. Slurry can be cleaned up using shovels or a wet vacuum equipped with a HEPA filter.

In situations when cutting occurs indoors or in enclosed areas, extra ventilation using exhaust trunks, portable exhaust fans, air ducts and similar means is needed. When ventilation is used, avoid blocking airflow while you work.

What's more, whenever hand-held power saws are used indoors or in an enclosed area, the use of respiratory protection with a minimum Assigned Protection Factor (APF) of 10 is required.

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APF 10 respirators are also required when saws are used outdoors for more than four hours per shift. These guidelines are covered in more detail in ’s written respiratory protection program.

For more information on silica safety, contact your supervisor.

Provided by: Conner Strong & Buckelew

Silica Safety for Jackhammers and Hand-held Powered Chipping Tools

Using jackhammers and hand-held powered chipping tools to break concrete, stone, masonry or other silica-containing materials can generate respirable crystalline silica dust. Silica dust is a carcinogen, and breathing it in causes the formation of scar tissue, reducing the lungs' ability to take in oxygen.

As such, there are specific control methods needed to keep workers safe when they use jackhammers and hand-held powered chipping tools. employs the following methods—outlined in Table 1 of OSHA's Respirable Crystalline Silica Standard for Construction—in order to keep you safe on the job:

Wet Methods

The use of water can be effective in reducing silica dust and the health hazards it brings. To limit dust when using jackhammers and hand-held powered chipping tools, a continuous stream or spray of water is aimed at the point where the tip of the tool strikes the surface of concrete, stone and similar materials. There are two main systems that accomplish this:

1. Manual-spray systems—Using this control method, one worker sprays water directly at the impact point of the tool. Generally, a portable sprayer with a nozzle is used, and workers should spray the area continuously to reduce the creation of dust.

2. Water-spray systems—With this control method, the water delivery system is permanently mounted to the tool. Tools may be purchased with this functionality or retrofitted based on NIOSHA standards.

When using either of these systems, consider the following safety precautions:

- Check nozzles frequently for clogs. If you notice the nozzle is dripping or spurting, you may have to clean or change the head.
- Ensure there is an adequate supply of water. Avoid kinking hoses and other blockages where possible, to sustain a high water pressure.
- Inspect your spray angle. The spray should wet the dust before it spreads from the tip of the chipping tool.
- Clean up the slurry produced by the spray. This will ensure that, when the slurry dries, silica dust isn't created.

Vacuum Dust Collection Systems (VDCSs)

If dust collection is going to be used to meet Table 1 requirements, the dust collection system must have:

- A manufacturer-recommended hood or

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shroud

- A manufacturer-recommended vacuum with enough suction to capture dust at the cutting point
- A dust collector equipped with a filter efficiency of 99% or greater
- A filter-cleaning mechanism
- A vacuum exhaust hose capable of providing manufacturer-recommended airflow

Operate and maintain the chipping tool and VDCS in accordance with manufacturers' instructions, focusing on the following:

- Keep the vacuum hose clear and free of debris, kinks and tight bends.
- Change vacuum-collection bags as directed by the manufacturer. Do not overfill the bag.
- Avoid exposure to dust when changing vacuum bags and cleaning or replacing air filters.

Indoor and Enclosed Area Considerations

In situations when chipping occurs indoors or in enclosed areas, extra ventilation using exhaust trunks, portable exhaust fans, air ducts and similar means is needed. This applies even when using wet methods or VDCSs. When ventilation is used, avoid blocking airflow while you work.

What's more, whenever jackhammers or hand-held powered chipping tools are used indoors or in an enclosed area, the use of respiratory protection with a minimum Assigned Protection Factor (APF) of 10 is required.

APF 10 respirators are also required when jackhammers or hand-held powered chipping tools are used outdoors for more than four hours per shift. These guidelines are covered in more detail in 's written respiratory protection program.

For more information on silica safety, contact your supervisor.

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Silica Safety for Stationary Masonry Saws

Using a stationary masonry saw to cut bricks, concrete blocks, pavers or other silica-containing materials can generate respirable crystalline silica dust, which, if inhaled, can lead to irreversible lung damage and other health concerns.

employs the following methods—outlined in Table 1 of OSHA's Respirable Crystalline Silica Standard for Construction—in order to keep workers safe on the job:

Wet Cutting

Using stationary masonry saws equipped with a delivery system that continuously feeds water to the blade is an effective way to manage silica dust hazards. In order to stay safe while you work, you must operate these tools in accordance with the manufacturer's instructions, focusing on the following areas:

- Check that hoses are securely connected and are not cracked or broken.
- Ensure that water flows at the manufacturer-recommended rates.
- Adjust nozzles so that water goes to the blade and wets the cutting area.
- Rinse or replace water filters at recommended intervals.
- Replace basin water when it gets gritty or begins to silt.
- Inspect the saw blade before use, ensuring it is in good condition and does not show excessive wear.

In general, it's best to preform wet cutting outdoors, as using stationary masonry saws in enclosed areas can increase silica dust risks.

When wet cutting indoors or in enclosed areas, extra ventilation using exhaust trunks, portable exhaust fans, air ducts and similar means is needed. In these instances, avoid blocking airflow while you work.

Vacuum Dust Collection Systems (VDCSs)

Stationary masonry saws may be equipped with a VDCS. These systems capture dust created by sawing and go a long way toward controlling silica exposures.

When operating a saw equipped with a VDCS:

- Keep the vacuum hose clear and free of debris, kinks and tight bends.
- Follow the equipment manufacturer's directions on how to reduce dust buildup on the filter.
- Change vacuum-collection bags as directed by the manufacturer. Do not overfill the bags.

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- Avoid exposure to dust when changing vacuum bags and cleaning or replacing air filters.

Table 1 in the silica standard does not require use of respiratory protection when using wet methods for stationary masonry saws. However, because the use of VDCSs may not eliminate hazards in certain circumstances, respiratory protection may be required following the results of exposure monitoring.

In these instances, follow ’s written respiratory protection program in order to stay safe from silica dust when operating saws.

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Skid-steer Loader Safety

If you operate or work near skid-steer loaders, take these steps to protect yourself.

Follow safe operating procedures:

- Read and understand all safety and operating procedures outlined in the operator's manual, workshop manual, and safety decals.
- Operate the loader only when properly positioned in the operator's compartment—never from the outside.
- Stay seated when operating the loader controls.
- Operate with the seat belt snuggly fastened and the restraint bar properly positioned, if one is provided.
- Keep hands, arms, legs, and head inside the operator's compartment while operating the loader.
- Load, unload, and turn on level ground when possible.
- Travel and turn with the bucket in the lowest position possible. Carry the load low.
- Operate on stable surfaces only. Avoid slippery surfaces
- Do not travel across slopes. Travel straight up or down, with the heavy end of the machine pointed uphill.
- Keep bystanders away from the work area.
- NEVER modify or bypass safety devices.
- NEVER carry riders.
- Be aware that each machine may operate differently.

Enter and exit from the loader safely:

- Enter and exit a loader when the bucket is flat on the ground or when the lift-arm support device is in place.
- When entering a loader, face the seat and keep a three-point contact with handholds and steps.
- NEVER use foot or hand controls as steps or handholds.
- Keep all walking and working surfaces clean and clear of debris.
- Before leaving the operator's seat, remember to do the following:
    - Lower the bucket flat on the ground.
    - Set the parking brake.

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    - Turn off the engine. Maintain the machine in safe operating condition:

- Follow the manufacturer's instructions.
- Keep the foot controls free of mud, ice, snow and debris.
- Regularly inspect and maintain the following safety devices:
    - Control interlocks
    - Seat belts
    - Restraint bars
    - Side screens
    - Rollover protective structures (ROPS)
    - Falling object protective structures (FOPS)
- NEVER modify or bypass safety devices.
- NEVER exceed the manufacturer's recommended load capacity.
- If you must perform service under a raised bucket, make sure the lift-arm support device is in place.

Source: NIOSH

Safety Matters Construction

Provided by: Conner Strong & Buckelew

Stay Safe When Spray Painting

Spray painting is an efficient and effective way to cover large areas or irregular surfaces with even coats of primer, paint, sealers and other coatings. When you are using spray paint, it is important to recognize and guard against potential hazards.

Why it is Dangerous

Many paints, coatings, catalysts, sealers, hardeners and solvents contain hazardous chemicals to which you could be exposed during mixing, spraying, grinding and sanding tasks. Overexposure can cause nausea, rash, asthma, dermatitis or even lung cancer. In addition, some coatings contain flammable substances, which are released into the air when you use high-pressure equipment. As they build up, these vapors can create an explosion hazard. To protect yourself from these and other health hazards, study the following guidelines to safe spray painting practices.

Ways to Protect Yourself

Before beginning a new task, consult the Safety Data Sheet (SDS) for each product you will use. You will find information specific to that chemical, including its hazards, appropriate personal protective equipment (PPE), proper handling, transport, storage and disposal.

General Recommendations

- Use a spray booth to avoid breathing in spray paint vapors and debris. Regularly maintained and cleaned spray booths also provide maximum protection against explosion hazards.
- Wear hearing protection when working with air powered tools. Extended exposure to loud noises can result in irreversible damage to your hearing.
- To protect your eyes, wear safety glasses and a dust mask or respirator to protect against dust particles that form when using grinding and sanding equipment.
- Wear a combination type HEPA air filter and organic vapor respirator with breathing air lines to protect yourself from hazardous fumes.
- Wear lightweight, disposable coveralls, or launder reusable coveralls separately from street clothes.
- Never eat, drink, smoke or apply cosmetics while working with spray paint. Store food and other belongings in a separate area.
- Store paints and their solvents carefully in ventilated, nonsmoking areas to prevent the possibility of ignition and explosion.
- Since you may have to hold full paint pots while spraying, you must keep

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ergonomics in mind while on the job. Use balanced spray guns that fit in your hand or use a hoist and dolly to move materials instead of holding them. Take frequent, short breaks throughout the workday to stretch to avoid unnecessary strains and sprains.

Keep Safety in Mind

Keeping safety in mind when working in and around spray painting operations will help you avoid dangerous hazards and keep you injury-free on the job. If you have any doubt about your safety, regarding spray painting or any other issue, talk to your supervisor. Your safety is our top priority at .

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Provided by: Conner Strong & Buckelew

Staying Safe Around Asbestos

Even though most uses of asbestos have been banned, it can still be found in a variety of products, such as building materials and vehicle brakes. Employees can be exposed to this hazardous material during many construction tasks, such as renovations and demolitions.

The inhalation of asbestos fibers can cause serious damage to the lungs and other organs that may not appear until years after exposure. Asbestos fibers associated with these health risks are too small to be seen with the naked eye, and smokers are at a higher risk for developing asbestos-related diseases if exposed.

The Occupational Safety and Health Administration (OSHA) has standards to protect employees from exposure to asbestos in the workplace, as well as permissible exposure limits and exposure monitoring. OSHA regulations also exist for controlled zones and regulated areas that are designed to protect employees where certain work with asbestos is performed.

Avoid Asbestos Inhalation

The following tips are safety reminders for those who work near or with asbestos-containing materials:

- Never enter a controlled zone that the company has designated as a regulated area where asbestos work is being performed.
- If you are not wearing appropriate respiratory protection, do not enter an asbestos-regulated area.
- Do not eat, smoke, drink, chew gum or apply cosmetics in an asbestos-regulated area.
- Read and obey all warning signs displayed in asbestos-regulated areas.
- When working with asbestos, keep the material wet and vacuum the dust using a HEPA vacuum. Immediately collect and close all waste in bags designed to hold asbestos.

Protect Yourself

- Always wear required protective clothing such as coveralls or similar full-body clothing, head coverings, gloves and foot coverings when working with asbestos. Face shields, goggles and other protective equipment are also necessary.
- Make sure you receive proper training and medical clearance if your work requires use of a respirator for asbestos protection. Use the correct type of respirator for the level of exposure. If you disturb or remove asbestos, you must wear at least a half-face respirator with N-, R- or P-100 (HEPA) cartridges. OSHA also requires the use of a

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respirator in some cases when performing roofing and flooring work. Talk to your supervisor regarding whether you have sufficient protection.

- Follow all required hygiene and decontamination practices after working with asbestos.
- Leave your work clothes and shoes at the workplace and wash them at work if they are not disposable. Family members of workers exposed to asbestos can get sick from asbestos taken home on an employee's clothing or shoes. If required, shower at work after working with asbestos.

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Struck-by Vehicle Hazards

Picture this scenario: A contractor is operating a backhoe when an employee attempts to walk between the swinging superstructure of the backhoe and a concrete wall. As the employee approaches from the operator's blind side, the superstructure hits the employee and crushes him against the wall.

You Are at Risk

The above situation can occur if you are not constantly alert on the job site. The Occupational Safety and Health Administration (OSHA) offers some ways in which you can reduce your risk of being struck while on the job:

- Always wear a safety belt when operating equipment, except when the vehicle does not have a rollover protection structure (ROPS) or when it is designed for standup operation only.
- Check vehicles before each shift to ensure that all parts and accessories are in safe working condition.
- Do not drive vehicles in reverse when you have an obstructed view unless a co-worker signals that the path is clear.
- Make sure that you and all other personnel are out of the way before using dumping or lifting devices.
- Lower or block bulldozer and scraper blades, end-loader buckets and dump bodies when they are not in use, and leave all controls in the neutral position.
- Set the parking brake when vehicles are parked and chock the wheels if they are on an incline.
- Never exceed a vehicle's rated load or lift capacity.
- Wear reflective clothing to get motorists' attention on construction sites.
    - To avoid getting struck by inattentive motorists, use traffic signs, barricades or flaggers to divert traffic.
- Never transport your co-workers unless there is a safe place to ride.
- Cranes, power shovels, loaders and other equipment that loads haulage vehicles must be equipped with a cap shield or canopy to protect the driver from falling materials.

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Table Saws

Table saws are versatile pieces of equipment both on a job site and in a shop. They are used for making straight cuts in wood, either across or with the grain. When operating a table saw, it is important to be as safe as possible, as these pieces of equipment are capable of inflicting serious injuries when not handled properly.

Table Saw Hazards

As one might expect, the most common injuries when using a table saw are serious cuts to the hands and fingers. In severe accidents, an operator can even have a finger or their entire hand amputated by the spinning blade. When using a table saw, be careful to avoid the following hazards:

- Entanglement—Loose clothing or jewelry, and long hair can get caught by the rotating blade.
- Power transmission—Typically, table saws are powered by an electric motor and belt that can cause harm to the operator if they come into contact with the equipment.
- Kickback—Material can get caught in the saw blade and be thrown back into the operator. This is more common when cutting with the grain (ripping).
- Projectiles—Table saws can sometimes spit out flying projectiles such as splinters, chips or even broken teeth from the saw blade.

There are a number of things that you can do to avoid injury and accidents while using a table saw. When using table saws, keep the following safety tips in mind:

- Make sure that the table saw guard is properly adjusted according to the thickness of the material that you are cutting and that it remains in contact with the material.
- Be certain that the table saw blade is set at the correct height.
- Always watch your hand placement when feeding a table saw.
- When cutting smaller pieces or pushing material past the blade, use push sticks in order to keep your arms, hands and fingers as far away from the blade as possible.
- Be sure that the blade you are using is sharp to reduce the chance of material getting caught.
- Always wear appropriate personal protective equipment while operating a table saw.
- Avoid being in the path of kickback by standing to the side of the blade when ripping.
- If you are ripping, use additional safety equipment, such as anti-kickback fingers

Saw Safely

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to hold the stock down, and a spreader to keep the material from squeezing the saw and reduce the chance of kickback.

If you have any questions or concerns about the use of table saws in the workplace, please contact your supervisor.

Safety Matters Construction

Provided by: Conner Strong & Buckelew

Take Precautions to Prevent Heat Illness

Working outside, you know that the weather can have an impact on your day. Hot weather, especially when combined with strenuous physical labor, can cause your body temperature to rise to unsafe levels. Normally, your body cools itself through sweating, but in hot and humid weather, sweating is not enough and the result can be a dangerous heat illness.

Staying Cool

Follow the suggestions below to stay cool when working in hot weather:

- Wear loose, light-colored clothing when possible, along with a hard hat.
- Take short breaks to rest in the shade. If wearing outer protective gear, remove during your break.
- Gradually build up to heavier work.
- Avoid overexerting yourself during peak temperature periods (midday).
- Drink liquids frequently, even if you don't feel thirsty - at least eight ounces every 20 to 30 minutes. Choose water, fruit juice or sports drinks and stay away from liquids containing caffeine, which can dehydrate you.

Recognizing the Symptoms

There are three forms of heat illness, each with the following distinct symptoms:

- Heat Cramps – severe muscle spasms in the back, stomach, arms and legs, which are attributed to the loss of body salt and water during periods of heavy perspiration
- Heat Exhaustion – heavy sweating, cool or pale skin, nausea, headache, weakness, vomiting and fast pulse
- Heat Stroke – high body temperature, sweating stops, red and often dry skin, rapid breathing and pulse, headache, nausea, vomiting, diarrhea, seizures, confusion or unconsciousness

Providing Treatment

It is essential to treat heat illness as soon as possible. If you are feeling any of the above symptoms, inform a co-worker and ask for help. If you suspect that a fellow worker has any of these conditions, follow the first-aid suggestions below:

- Heat Cramps – Move the victim to a cooler area and allow them to drink approximately six ounces of water every 15 minutes. Follow up with a medical examination.
- Heat Exhaustion – Move the victim to a cooler area and keep him/her lying down with legs slightly elevated. Cool

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his/her body by fanning and applying cool, wet towels. If conscious, allow the victim to drink approximately six ounces of water every 15 minutes. Follow up with a medical examination.

- Heat Stroke – You or a bystander should immediately call an ambulance. Meanwhile, move the victim to a cooler area, remove any outer clothing, immerse him/her in cool water or apply cool, wet towels or cloths to the body. Do NOT give the victim liquids. If medical help is delayed, call the hospital for further instructions while waiting. Heat stroke is life-threatening, so it's important to move quickly!

Safety Reminder

The risk of heat illness increases with age, poor diet, being overweight, insufficient liquid intake, poor physical condition and/or when taking medication. Never take salt tablets without your doctor's approval.

Be aware of expected weather conditions each day so that you can be prepared with appropriate clothing and beverages. If you are on a job and start to feel any adverse symptoms due to heat, inform your supervisor and take a break.

Safety Matters Construction

Provided by: Conner Strong & Buckelew

Teaching On-site Safety by Example

Have you ever worked with someone who inspired you? A hardworking person can have a powerful influence on his or her team, especially when he or she is working with someone who is new to the job or to the company. As the co-worker of a new employee, consider yourself the most important role model during his or her first few weeks. Your attitude and your respect of policies and safety procedures could save his or her life!

Be a Safety Mentor

You know that the construction workplace is full of hazards. At , we have stressed the importance of doing your job the safe way, and we've given you a wealth of knowledge about the risks of the job and ways to stay safe. When you are working around others, especially if they are new to our workplace, it is your turn to share that knowledge to protect them and yourself.

It may take a while for new employees to adjust and feel like they fit in on the job. Those that have never held a job before or were employed by a firm with a weak safety program will need considerable safety instruction and leadership. While managers will attempt to train them in workplace safety as thoroughly as possible, employees will naturally look to you for advice and information. Their early impressions of the way you value safety will set the stage for their future work habits.

Always Demonstrate Safety

In this important transition time, your actions will speak louder than your words, as the saying goes. If you use a ladder carelessly or take dangerous shortcuts on scaffolding, for example, you demonstrate to a new employee that safety is not important at . If you try to impress others by wearing jewelry or loose clothing that can be hazardous on the job, you are ultimately putting new employees that are learning from and imitating you in danger.

On the other hand, some new employees may come to from firms that emphasize safety like we do. In that case, their personal respect for you will grow when they see that you care about workplace safety as much as they do.

You are aware that accidents are a reality in construction and contracting work. Take care to be sure that your new co-workers are aware of the danger, too. Doing so will help to keep everyone at your worksite safe.

Think again of that co-worker that has inspired you, and do your best to keep him or her in mind when you are working with new employees. Everyone will be safer when you make a good impression on a new employee, so do your part. Now is your chance to inspire!

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Provided by: Conner Strong & Buckelew

The Dangers of Job Site Cellphone Use

According to a recent study, the average person checks their cellphone 100 times a day. While there is a time and a place for cellphones, using it at the job site can be extremely dangerous.

If you're distracted for just a second while operating a power tool, working on a roof or driving a forklift, you can injure yourself or a co-worker. You can also face civil or criminal liability for damages you cause by operating a motorized vehicle while using a cellphone.

It isn't only operators of machinery who need to be mindful of the dangers of cellphone use on the job site. Simply looking down at your cellphone and not paying attention to your surroundings could put your life in danger.

Cellphone Safety Tips When On-Site

The Occupational Safety and Health Administration (OSHA) prohibits cellphone use by operators of cranes and similar equipment. Most organizations prohibit any kind of cellphone use on the job site—not just for crane operators. It is your responsibility to know how your company's rules apply to you and follow them accordingly.

If you struggle with the temptation to check your phone while working on a job site, consider the following safety tips:

- Get in the habit of sending and receiving text messages before or after your shift, or during one of your breaks.
- Remind family and friends that you may not be able to respond to their messages right away. Provide them with your workplace contact information in case of emergencies.
- Turn off push notifications so you're not distracted by any apps.
- Don't carry your cellphone on you if the temptation to check it is too much. Instead, leave it in a safe place where it won't distract you from your job.
- Follow your workplace policy for cellphone use at work and on the job site. Be aware of any cellphone-free zones.

Besides creating enormous safety risks, employees who are texting at work are not doing what they are getting paid to do. For this reason, these workers may be subject to disciplinary action.

If you have questions about 's workplace cellphone policy, or if you notice inappropriate cellphone use on the job site, don't hesitate to discuss it with your supervisor or HR.

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The Importance of Safe Lifting

Lifting is a common activity at the worksite, and it is often forgotten that there are proper techniques that need to be followed to avoid injury. In fact, lower back injuries are the most common work-related injury cited by the Occupational Safety and Health Administration (OSHA).

Safe Lifting Basics

Safe lifting plays an important role in keeping your back healthy and you safe. There are safe lifting techniques that take strain off the lower back area:

- Look over the load. Decide if you can handle it alone or if you need assistance. When in doubt, ask for help. Moving an object that is too heavy or bulky can cause severe injury.
- Clear away any potential obstacles before beginning to carry the object.
- Support and propel the object while carrying it; your grip should be firm. Carrying objects will change your balance. To keep this change of balance to a minimum, keep the load close to your body and to your normal center of gravity, between the legs and shoulders.
- Use good foot positioning. Your feet should be shoulder width apart, with one foot beside and the other foot behind the object that you are going to lift. This allows you to use the full power of your leg muscles. Leg muscles are stronger and more powerful than back muscles, so let your legs do the work.
- Bend your knees. Bending over at the waist to reach for the object you want to lift puts strain on your back, shoulder and neck muscles.
- Keep your arms and elbows as close to your body as you can while lifting. If you have to stretch your arms out completely away from your body, ask for assistance with the lift.
- Use your feet to change direction. Don't twist your body. Twisting adds to the stress of the lift and affects your balance.
- To lower the object, bend your knees as you did to pick it up. To place the load on a cart or other elevated surface, set it on the edge and slide it into position. Make sure your hands and feet are clear when lowering the load.

Safe lifting of heavy objects requires training and practice. And when equipment is available, it should be used to lift and carry heavy objects. Loaders, forklifts and hoists are designed for this purpose.

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Team Lifting

When another person is helping you lift, teamwork is very important. If you're going to be carrying the load to another location, both of you should coordinate this prior to lifting the object. Check the route and clearance. One worker needs to be in a position to observe and direct the other. Lifting and lowering should be done in unison. Don't let the load drop suddenly without warning your partner.

Your Safety is Important

Proper lifting methods protect against injury and make continued work much easier. It is important to think about what you are going to do before lifting an object—over time, these safe lifting techniques will become habit. Contact your supervisor if you have any questions or concerns regarding safe lifting techniques.

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Tips for Teens in Construction

The construction industry ranks third in the number of work-related youth fatalities, but you can help lessen or even eliminate this statistic by paying attention to all safety guidelines.

The Basics

- If you are younger than15, you cannot work on construction sites by law.
- Make sure you have clear instructions on each and every task. If you do not understand, ask someone before beginning.
- Never perform a task you have not previously been trained to do.
- Trust your instincts about dangerous situations.
- Never work alone.
- Make sure your personal protective equipment (PPE) is properly sized.
- Always work under proper supervision.
- Stay sober and drug-free.
- Try to familiarize yourself with the federal and state youth employment laws; a good resource is the Department of Labor (www.dol.gov).

Prohibited Jobs

Certain jobs are declared hazardous by the Fair Labor Standards Act (FLSA) and are therefore prohibited for youth under age 18. Specifically relevant for construction workers are:

- Driving a motor vehicle
- Operating power-driven woodworking machines (including drills and nail guns)
- Operating forklifts, cranes, hoists or elevators
- Operating power-driven circular saws, band saws and guillotine shears
- Wrecking, demolition and shipbreaking operations
- Roofing operations
- Excavation operations

Know the Hazards

There are six main hazards you need to be aware of in the construction industry:

- Machines and tools – Moving machine parts have the potential to cause severe injuries. Any machine part, function or process that may cause injury must be safeguarded. Teens under age 18 should not be using this equipment, but it is important to be aware of the dangers regardless.
- Confined spaces – There are many instances in which workers must

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squeeze in and out of narrow openings and perform tasks while cramped or contorted. Suffocation is a main concern when doing these jobs.

- Electrocution – Overhead power lines are a main concern when working in construction. They carry tens of thousands of volts of electricity. Certain equipment (such as aluminum paint rollers or metal ladders) conducts electricity and can be fatal.

- Falls – Falling is the most common cause of death for construction workers. Fall protection is vital when working at heights above six feet.

- "Struck-by" – The second most common cause of death is being struck by an object or vehicle. It is important to pay close attention to alarms and horns when on the job.

- "Caught-between" – Be sure to stay alert when working around any large objects that might move. Being crushed is a scary but very real hazard on a construction site.

Before beginning any job, make sure that you understand the proper safety procedures and policies on the job site. Your supervisor can answer any questions you may have. Safety should always be your top concern.

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Trenching and Excavating Rules by the Numbers

On average, two workers are killed every month in trench collapses. To ensure your health and safety, it's important for employees to have an understanding of various rules related to trenching safety.

Let's examine some of the trenching and excavating rules by the numbers:

1. The 18-inch rule—In situations where sloping is being used in combination with protective systems, but the protective system does not reach ground level, shoring or shielding must extend a minimum of 18 inches above the vertical side of the trench.

2. The 2-foot rule—Those working around a trench must keep soil piles and heavy equipment at least 2 feet away from the edge of trenches. This helps to prevent cave-ins and crushing injuries.

3. The 4-foot rule—For your safety, access and egress to all excavations will be provided, including ladders, steps, ramps or other safe means of exit for employees working in trench excavations 4 feet or deeper. These devices will be located within 25 feet of you at all times to ensure you can exit a trench quickly in an emergency.

4. The 5-foot rule—Trenches 5 feet deep or greater require a protective system, unless the excavation ismade entirely in stable rock. Protective systems are determined by the designated competent person and refer to sloping, shoring and shielding. If the trench is less than 5 feet deep, a competent person may determine that a protective system is not required. If you have questions regarding who the employer-designated competent person is, ask your supervisor.

5. The 20-foot rule—Trenches 20 feet deep or greater require protective systems designed by a registered professional engineer.

While it's the competent person's responsibility to do formal inspections of the trenches, employees should speak up if they notice worksite issues. For questions related to trenching safety, speak to your supervisor.

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Understanding Protective Systems in Trenching and Excavating

Excavating is one of the most hazardous construction operations, and approximately 54 workers are killed at excavation sites each year.

Excavations are any man-made cuts, cavities, trenches or depressions formed by earth removal. Of these, trenches—narrow excavations made below the surface of the ground—create the most significant workplace hazards, particularly as they relate to:

- Cave-ins
- Hazardous atmospheres (e.g., carbon monoxide, noxious gas, vapors or a lack of oxygen)
- Falls (e.g., a worker accidently falls into a trench and injures themselves)
- Floods or water accumulation
- Mobile equipment (e.g., equipment operated or stored too close to the excavation site falls into the trench)

Even with the proper protections in place, trenches naturally want to refill themselves, which can create major cave-in hazards for those unprepared. As such, it's important to have an understanding of the different protective systems uses to safeguard workers:

Shoring

Shoring involves installing aluminum, hydraulic or other types of supports to prevent soil movement and cave-ins. Shoring systems typically consist of posts, wales, struts and sheeting.

Shoring can help prevent the movement of excavated walls, soil, underground utilities, roadways and foundations, improving worker safety in trenches.

There are several kinds of these systems, with hydraulic and timber shoring systems being the most common.

Benching and Sloping

Benching and sloping refers to excavating the sides of an excavation to form one (sloping) or a series (benching) of horizontal levels or steps.

Sloping, if done correctly, removes the risk of cave-ins by sloping the soil of the trench back from the trench bottom. Slope angles will vary depending on the type of soil around the trench.

Shielding

Shielding refers to the use trench boxes or other types of supports to prevent soil cave-ins. These shields and supports are typically designed or approved by a registered professional.

Trench boxes are different from shoring because, instead of supporting the trench face, they are intended primarily to protect workers from cave-ins and similar incidents.

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Shields can be permanent structures or can be designed to be portable and moved along as work progresses.

For questions related to trenching safety, speak to your supervisor.

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Using Boom Lifts Near Power Lines

Working from a boom lift or cherry picker comes with its share of potential hazards. These risks are compounded when you add power lines to the mix. Electrocution from contacting power lines is responsible for nearly half of all boom lift-related deaths. When performing electrical work with a lift, it is extremely important that you use the proper precautions to keep yourself and those around you safe from unnecessary injury.

Basic Precautions

In any situation where a boom lift or cherry picker is used, there are some basic precautions to keep in mind:

- Test the lift controls each day prior to use to ensure that they are in the proper working order.
- Wear a body belt as part of a tethering or restraint system with a lanyard attached to the boom or basket.
- Do not exceed the boom and basket load limit set by the manufacturer.
- Never climb or sit on the sides of the basket; always keep your feet firmly planted on the floor.
- Avoid sudden, jerky movements that could cause the basket to collide with nearby objects, such as power lines.

Proper Protective Equipment

When working on or near lines, use the following personal protective equipment:

- Insulated hard hat
- Voltage-rated shoes
- Rubber gloves and sleeves
- Insulated tools

Insulated Buckets

Boom lifts designed for electrical work have additional insulation to protect against electrical currents. However, the insulation may only protect certain parts of the lift.

- A basket liner only protects the portion completely covered by the liner. Conductive materials that extend beyond the liner can conduct electricity, rendering it ineffective. Most buckets have a small section at the top (which should be noted by the manufacturer) that uses metal for support and is not insulated.
- Never try to modify or alter the insulation on a basket. It could reduce its level of protection.

When Working From the Ground

While a majority of the dangers involved with boom lifts come from working in the basket, workers on the ground are also at risk for injury.

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To stay safe when working below or near a lift, keep the following in mind:

- Watch for falling objects when the boom is directly overhead.
- Avoid making unnecessary contact with the vehicle. If the operator in the bucket makes contact with a power line, electricity could be conducted through the lift.
- Always be conscious of the boom's movements. Alert the operator if you see potential hazards.
- Do not operate the boom from the ground unless there is an emergency.
- If performing work near a roadway, make sure that traffic is properly directed away from the lift. Collision with the lift can eject the operator from the basket or force the basket into nearby power lines.
- Be ready to respond in case the operator gets into trouble.

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Watch Out for Falling and Flying Objects

Objects falling from above can pose a serious on-site danger, and you are at increased risk when you are beneath cranes or scaffolds, or when others are working above you. Not taking this risk seriously? Consider the following accident reported by the Occupational Health and Safety Administration (OSHA): An employee with no head protection was standing under a suspended scaffold hoisting another employee and three sections of ladder. The sections of the ladder became unlashed and fell 50 feet, striking the employee in the head and killing him.

Prevention Pays

To prevent hazards from falling and flying objects, the following provides some practical things you can do to prevent injuries that can really hurt.

General Precautions

- Always wear a hard hat, and carefully maintain it. Excessive exposure to paint, some cleaning agents, sunlight and heat can all weaken hard hats. Wash them using warm water and never store them in the back window of your car.
- Stack materials securely to prevent sliding, falling and collapse.

Crane and Hoist Precautions

- Do not work under moving loads.
- Barricade hazard areas and post warning signs of the dangers on the job site.
- Inspect cranes and hoists to make sure that wire rope, lifting hooks and chains are in good condition.
- Use toe boards, screens and guardrails on scaffolds to prevent objects from falling.
- Use debris nets, catch platforms or canopies to catch or deflect objects.
- Never exceed the lifting capacity of cranes and hoists.
- Secure tools and materials to prevent them from falling on others below.
- When working at a height, do not keep tools in your pocket. They could slip out when you bend over.

Power Tool and Machine Precautions

- Wear safety goggles and face shields when operating machinery or tools that cause flying particles.
- Inspect tools to ensure that the protective guards are in good condition before each use.
- Do not use power tools unless you are properly trained on how to do so safely.

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Air Compressor Precautions

- Reduce the amount of compressed air used for cleaning to 30 PSI.
- Only use this machine with the appropriate guarding and protective equipment. Objects can be blown at your body, injuring you.

Our Commitment to You

Your safety is our first priority at . If you have any doubt about safety on site – regarding falling objects or any other issue – talk to your supervisor. Keeping you and your co-workers safe requires everyone's cooperation.

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Watch Your Step on Wet Surfaces

Wet surfaces always present a workplace hazard. Water on the worksite can come from rain, cleaning and accident spills, wet winter conditions and activities that require the use of water, resulting in slippery conditions. Slipping on a wet surface can result in bruises, strains and sprains, lacerations, fractures, head trauma and even fatality. And all that stacks up to lost wages, too.

Be Aware of Hazards

Each jobsite is different, so the way you adapt your workplace to wet surfaces will be designed on a case-by-case basis. However, following these general guidelines is a good start.

- Clean up spills immediately.
- Use caution signs to clearly identify when a surface is wet or likely to become wet and remove them as soon as the surface is dry.
- Barricade affected areas where possible.
- Request to work in an alternate area while your workspace is wet.
- Check for equipment and electrical currents that may not be grounded and wires that are not insulated.
- Use floor mats at entrances and exits of covered areas to reduce tracking in of water from outside.
- Whenever possible, work under covered areas during wet weather days.
- Construct temporary shelters such as tents or tarps over worksites that do not have existing overhead coverage.
- Ensure good drainage to prevent standing water and speed drying.
- Use pumps to disperse water.
- Be sure to wear shoes and boots with slip-resistant soles, and clean them if they become muddy.
- Report any spills or wet areas that you notice to your supervisor.

Anti-slip Tips

If you are forced to walk through a wet surface, follow these tips to avoid slipping and falling.

- Slow down! Your safety is more important than your rush.
- Take small steps to keep your balance centered.
- Walk with your feet pointed slightly outward to form a stable base.
- Make wide turns at corners.
- Use handrails if present.

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- Concentrate on the surface you are walking on.
- Be prepared for slippery patches.
- Keep your hands out for balance.

Cooperate and Stay Alert

We care about your safety at . If you have any doubt about the safety of your worksite, whether it concerns a wet surface or another hazard, talk to your supervisor. It takes the cooperation of our entire team to keep our worksite safe!

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Welding and Cutting at the Work Site

Welding and cutting tasks are dangerous, especially when working on a construction site. As your surroundings are constantly changing, it is important to keep safety top of mind.

Prevention and Protection

To avoid injuries on the job, consider these safety recommendations:

- Always check for fire hazards before you start welding. Wood, paper and other flammable materials should be removed from the area. Flammable liquids should be removed as well. Never weld or cut in areas with a lot of trees or dry grasses.
- Clean away any debris on the floor or ground before welding over it. Then cover the ground or floor with metal or some other material that will not burn. It may also be a good idea to wet the floor or ground, though this can cause an added shock hazard. Guard against these hazards as necessary.
- Seal cracks so that sparks or slag cannot fall through them, and never allow these hot materials to fall into machine pits.
- If you must weld near combustible materials, a fire extinguisher, pail of water, fire hose or a pail of sand should be at hand. It may be necessary to have a worker stand by with a fire extinguisher to put out sparks as well.
- If you are welding or cutting a tank or drum containing flammable liquids or gas, do not start your operation until an approved test shows that there is no dangerous vapor present. Do not rely on another employee's word that the tank or drum was tested previously; insist on a new test before you start your work.
- If you're working in a confined space at the worksite, make sure your work area is properly ventilated. Many welding and cutting operations produce fumes that are harmful in heavy concentrations, and good ventilation is one of the best methods of protecting yourself against this hazard. Utilize special ventilating equipment, if necessary.
- Wear face and eye protection such as goggles and a helmet to protect against hazards. Workers dealing with metal, chipping and cleaning should always have their helmets lowered to prevent throw particles of metal from coming into the eyes. Eye protection, such as goggles, are worn to protect against sparks, slag and molten metal, and flash burns caused by radiation from the welding equipment.

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Safety First

Make safety a top priority as you weld and cut. Taking these precautions seriously will lower your risk of occupational injuries, which will make your job much more safe and enjoyable.

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Work Site Scaffolding Safety

The majority of scaffold accidents on the construction site are caused by falls, slipping or being struck by an object from above. All of these accidents can be prevented by taking the proper precautions. Here's how.

General Safety Tips

- To prevent slipping hazards, conduct a daily routine inspection to ensure all walking and working surfaces are free from potential hazards. If you spot a hazard, remove it.
- Never move, dismantle or alter a scaffold unless under the supervision of a qualified person while doing such activities.
- Never move a scaffold with workers still on it.
- Keep scaffold loads below maximum capacity and remove your equipment when the scaffold is not in use.
- Be alert for bad weather. High winds and driving rain and snow can be dangerous when working at high levels.

Protection for Those Below

- Always hoist up heavy tools, equipment and supplies, rather than carry them up by hand.
- There must be a 3½"-high toeboard to prevent things falling off a scaffold. If things on the scaffold are taller than 3½" (above the toeboard) other systems, like debris nets, must be used to catch falling tools or materials.
- Always wear a hard hat when working on and around a scaffold.
- Never walk under or near the scaffold if roped off when work is being performed above.

Fall Protection Basics

To help protect you against potentially deadly falls, fall protection is needed when working 6 feet or more above a lower level, and consists of either a personal fall arrest system or guardrail systems, depending on the job. If using a fall arrest system, keep the following in mind:

- Always attach your lanyard to a vertical lifeline, horizontal lifeline or scaffold structural member.
- If you are using a vertical lifeline, make sure that you are fastened to a fixed safe point of anchorage, independent of the scaffold. This includes structural members of buildings, but not standpipes, vents, electrical conduit, etc. They may give way under the force of a fall.
- Clean and test your gear regularly, and

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never tamper with your fall protection system.

When working on scaffolding, your safety is our top priority. Make it yours, too!

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Working in a New Area

A walk through other areas of the worksite is a common occurrence, but it can also be dangerous if you don't stay alert. This is particularly true for employees leaving their old, familiar job and moving into new roles in other areas.

New employees receive instructions regarding training and safety precautions. However, when transitioning roles to another area, it can operate very differently; procedures and equipment may be different and safety precautions may vary as well.

Safety in New Surroundings

Before entering another area of the worksite, familiarize yourself with any special rules or procedures necessary for your safety. This might mean wearing special personal protective equipment or meeting certain regulations concerning employee actions.

During the transition to your new area, be on the guard at corners and close to machinery, and watch for power and hand trucks on the move. Although equipment operators have their own safety regulations to follow, which include watching for pedestrians, be cautious and ready to move.

Look both ways before stepping out into an aisle or a busy construction site. In areas wide enough for truck or other equipment traffic, use extreme caution.

Don't try to beat an oncoming forklift or other machinery; you could easily misjudge its speed and fall in front of it. Don't walk while you're looking in another direction, you could bump into another employee or a machine. If you can't watch where you're walking, wait until you can.

Watch out for slip, trip and fall hazards. Misplaced tools, pieces of materials or other objects pose hazards. Keep floors, aisles and the ground clear of these dangers.

In addition, do not take shortcuts, regardless of how much time they save. Shortcuts are not approved routes and taking them can cause very serious injuries.

At times, it may be necessary to restrict your admittance to certain areas. Whether the restrictions are temporary or permanent, don't enter the area unless authorized to do so.

Safety Precautions

Stay safe when transitioning into a new work environment by remembering these basic safety precautions:

- Watch out for moving equipment.
- Look both ways before stepping into an aisle or roadway.
- Use handrails.
- Keep your eyes open for slip, trip and

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fall hazards.

- Don’t take shortcuts.
- Stay out of restricted areas.
- Ask for direction regarding unfamiliar safety guidelines.

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Working Near Water Safely

Working on a construction site that is located over or near water comes with a set of very serious dangers. Even if you are a good swimmer, working around water means you are exposed the risk of the following:

- Slipping and falling
- Drowning
- Being trapped
- Being hurt on impact when falling into the water
- Hypothermia
- Infections transferred through water

Everyday Precautions

To keep yourself safe, follow these guidelines regarding working near water:

- Make sure your working platform is secure and free of any tripping hazards, such as tools, wire, timber or bricks.
- Ensure that surfaces do not become slippery by cleaning, gritting them or applying industrial salt or sand.
- Check that access ladders, guardrails and toe boards are firmly fixed in position.
- Wear a safety helmet at all times. If something hits you on the head and you fall into the water, you are at a high risk of injury or death.
- Wear a life jacket, and ensure it is properly fastened.
- Use any safety nets or safety harnesses provided.
- Check that lifebuoys fitted with lifelines are close at hand for immediate use in the event of an emergency.
- Ensure that there is a skiff or safety boat and that it is manned while you work above water.
- If you are above tidal water or a fast-flowing river, safety boats must have a motor with a self-starting device.
- Notify your supervisor if there are not one or more ring buoys located at 150 foot intervals across the work area.
- Know how the alarm system works and how to sound it for an emergency or a rescue drill.

Life Jackets

No matter what happens, it is crucial for your safety that you wear a functional, U.S. Coast Guard-approved life jacket whenever there is danger of you falling in the water. For your safety, take the following precautions:

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- Before and after each use, inspect your life preserver for defects that might weaken it or prevent it from floating.
- Fasten all latches on your life jacket.

Looking Out for Each Other

Whenever you are working on a job near water, do not work alone. It is very important that you and your co-workers keep a constant eye on each other.

- Pick a buddy and periodically check in with each other.
- Count the number of workers on site, and check that everyone is present on a regular basis.

Barges and Work Platforms

If you are working on a floating work platform without railings (not in a cab or equipment compartment), be sure that you are wearing a life jacket.

If you have any doubt about your safety on site, ask your supervisor. Your safety comes first at .

Provided by: Conner Strong & Buckelew

Working with Acetone

Dealing with acetone in the workplace requires special care and safety precautions. Acetone is highly flammable and although not highly toxic, exposure can be irritating and painful.

To help keep you safe on the job, it's important to know how to work with acetone safely, wear the proper protective gear and know what to do in an emergency.

Wear Personal Protective Equipment

Employees engaged in routine handling of acetone should wear milled butyl rubber gloves and rubber aprons for protection against skin contact. Chemical goggles should be worn, and when complete face protection is necessary, a face shield should be worn.

Fire Hazards and Prevention

Acetone is highly flammable and poses a serious fire hazard. It is capable of igniting materials even when at room temperature. All sources of ignition, including spark-producing machinery or equipment, should be eliminated in areas where acetone is stored, handled or used. This is especially important at the construction site as the location of acetone usage and storage may constantly be changing. An acetone explosion can occur when it is mixed with any of the following chemicals:

- Hydrogen peroxide
- Nitric acid
- Sulfur dichloride

Because acetone vapors have the capability to travel considerable distances in vapor form, confine it to a controlled, non-windy environment away from the above chemicals.

If an acetone fire breaks out, specific fire extinguishers must be used. These include foam, carbon dioxide and dry chemical extinguishers. To prevent spreading the fire, water used on an acetone fire should be in the form of a spray or fog. Ask your supervisor if you do not know of the extinguisher locations at your current job site.

Control Vapor Concentrations

For most operations, vapor can be kept at safe levels by enclosing the work area, properly ventilating or a combination of both. Opening windows or doors offers adequate ventilation for most small uses. Local exhaust may be needed with larger operations in order to capture the vapors at the source and keep them out of the breathing zone. Vapor concentrations may cause drowsiness and dizziness in workers. Contact your supervisor for specific ventilation information when working with acetone.

First Aid

If an employee has inhaled small amounts of acetone vapor, he or she should be moved to an area with fresh air. If large amounts have been inhaled, the person should be moved to an area

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with fresh air, and medical personnel should be called immediately.

If acetone is splashed in the eyes, flush out immediately with large quantities of running water for at least 15 minutes by lifting the eyelids, and seek medical attention as soon as possible. Skin that comes in contact with acetone should be washed with soap and water, and any contaminated clothing should be removed.

Provided by: Conner Strong & Buckelew

Working with Flammable and Combustible Liquids

Flammable and combustible liquids are present at many worksites in the construction industry. Gasoline, diesel fuel and many common products such as solvents, thinners, cleaners and polishes may be highly flammable or combustible. If used or stored improperly, these types of liquids can cause serious injury or death.

To understand the dangers of flammable and combustible liquids, it is important to know that it is the vapor—not the liquid—that burns. If the vapor concentration is within the explosive range and a source of ignition is introduced, an explosion can easily occur.

General Safety Rules

The following work practices must be followed when handling flammable and combustible liquids at the worksite:

- Use Class I flammable liquids (any liquid that can ignite at less than 100° F) only where no open flame or other ignition source is in the path of the vapor.
- All containers must be properly labeled and marked with the complete chemical name.
- All containers must be metal, sealed with a cap or lid, and not damaged or leaking.
- Don't store flammable liquid containers next to exits, aisles, stairways or doors – even for a brief time. Flammable containers may also not be placed where they can interfere with the exit from an area in an emergency situation.
- Dispense flammable and combustible liquids with approved pump or metal self-closing faucets only.
- Do not transfer liquid unless a worker who is trained to stop the transfer in the event of a spill is present.
- When transferring flammable liquids from one container to another, the two containers must be connected by a conducting wire and one container must be grounded.
- Remember that welding, flame cutting and soldering, and other flame-, heat- or spark-producing work is not allowed within 25 feet of liquid use and storage areas.
- Never smoke in storage and handling areas of combustible and flammable liquids, or in a 25-foot radius around these areas.
- Maintain access to fire extinguishers and other emergency response equipment

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at all times. At least one fire extinguisher must be located within 10 feet of any flammable and/or combustible liquid storage area, and within 50 feet of a flammable liquid use area.

If you have any questions or concerns regarding the safe handling of these liquids, contact your supervisor.

Safety Matters Construction

Provided by: Conner Strong & Buckelew

Workplace Accidents Can be Costly

We all know that safety is essential in construction, but do you realize just how costly a job site injury can be? According to the National Safety Council, the average cost per worker of workplace injuries is $1,300. It may not seem like much money, but the extra expense to pay for injuries has a powerfully negative effect to a company's bottom line.

Why is profitability also an important issue to you? The only way that can stay in business is to operate at a profit, and that ability can be threatened by a serious workplace injury.

The Real Cost of Workplace Injuries

It may be surprising to hear that most companies do not have a high profit margin—3 percent is about average. Expenses take a large chunk of the income, and competition limits how much we can charge for the services we provide.

Each time an accident occurs, the cost of the injury must be subtracted from profits. Consider the following two examples:

- At a 5 percent profit margin, an extra $20,000 in income is needed to compensate for a $1,000 injury.
- If the profit margin is nearer to 1 percent, an additional $100,000 worth of new income is necessary to maintain that profit level for the same injury.

As you can see, that adds up to a lot of extra contracts just to compensate for a single injury. Plus, every time a worker gets hurt on the job, other employees are affected too. You may need to work extra hours to make up for the injured worker, the cost of insurance can go up, or the company may be forced to make difficult budget decisions such as cutting hours or having temporary layoffs.

Also, recovering from an injury can mean time away from work, reduced compensation, painful rehabilitation and frustrating adjustments to daily life.

Practice Prevention

Though operating at a profit is essential to our success, our top priority is to keep our employees safe and healthy. That's why we are counting on you to help practice good safety principles on the job site, including wearing personal protective gear, following all safety procedures and noticing unsafe situations. Safe work behavior will contribute directly to our bottom line as well as to everyone's job security. By observing safety precautions, we can limit on-the-job accidents.

It is always wiser to spend a bit more time doing the job safely than to risk getting a serious injury. Be sure to always follow our safety guidelines and stay alert for unsafe conditions.

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Think of practicing good safety as both pain-free and profitable—a win-win situation for everyone!