



# SAFETY TALKS:

## A TAILGATE/TOOLBOX RESOURCE



February 2023

# Foreword

Enclosed you will find a complimentary selection of safety meeting resources made available through our Excess Workers' Compensation (EWC) Program reinsurer, Safety National. These topics may be used to plan your tailgate/toolbox safety meetings, but should not be substituted for training specific to your workplace.

Also enclosed is a sample safety meeting form that can be used to document the meeting, the names of who was in attendance (print and signature), the date, and what was discussed.

Remember to refer back to your agencies' Injury and Illness Prevention Program (IIPP) to ensure that what you are doing matches what your program says you will do. Safety briefings are not meant to replace required training, but to serve as a quick refresher for trained personnel.

As always, the PRISM Risk Control Department is here to help, please call us at (916) 850-7300 or [email](#) us with your questions.

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# SETTING UP A TAILGATE/TOOLBOX SAFETY MEETING

January 2020

Job site tailgate and toolbox safety meetings are brief meetings, proven to prevent accidents, illnesses, and on-the-job injuries by improving the safety culture at your job site. Refer to the referenced Title 8, California Code of Regulations (T8CCR) sections for details on the requirements for these safety meetings.

## Why Have Tailgate/Toolbox Safety Meetings?

They are required for the construction (T8CCR Section 1509) and tunneling (T8CCR Section 8406) industries.

In addition, all California employers must have an Injury and Illness Prevention Program that includes employee training in safe work practices (T8CCR Section 3203). Tailgate/Toolbox meetings can help reinforce that training.

## What to Talk About?

Work practices, machinery, tools, equipment, materials, attitudes, and anything else that may cause or contribute to a work-related accident or illness. Keep the topic relevant to the job or tasks that workers perform. Address existing job site problems by drawing on workers' real-life experiences. Review and discuss:

- OSHA Log 300 records.
- Findings from safety inspections and accident and near miss investigations, including corrective actions taken.

Supervisors or foremen should remind all employees – especially newer ones – of the dangers of working with particular kinds of machinery, tools, equipment, and materials.

You should also carefully observe your workplace and employees' work activities for potential safety hazards. For example, if you notice that spills are not being cleaned up promptly, discuss housekeeping policies. If an accident or near-accident occurred at your job site, share the details and corrective actions. Try to answer the following questions at the meeting:

- What happened?
- Where did it happen?
- How can it be prevented from happening again?

Encourage employees' input. They often know where the hazards are and can suggest corrective actions.

The Cal/OSHA Pocket Guide for the Construction Industry is an excellent source for construction-related topics. You can choose individual sections or topics from this guide and tailor the information to the specific needs of your job sites. You can also use the Tailgate Safety Meeting Topics worksheet for selecting, tracking, and recording the tailgate meeting topics.

## How to Run an Effective Meeting

1. Hold the meeting at the job site, preferably where everyone can sit and relax.
2. Hold meetings at the start of a shift or after a break.
3. Before the meeting, research the topic using materials such as the manufacturer's operations manual for machinery or safety data sheets (SDS) for toxic substances. Your insurance carrier and Cal/OSHA Tailgate/Toolbox Topics are other valuable sources of information.
4. Choose topics that directly relate to employees' projects and job tasks, and be prepared:
  - Explain why the topic is timely and important.
  - Familiarize yourself with the topic before discussing it.
  - Know your company procedures/Code of Safe Practices.
  - Make a short list of key points to cover.
  - Include relevant Cal/OSHA regulations and best practices.
  - Have enough copies if written material will be distributed.
5. Keep the topic specific.
6. Make it practical. Demonstrate:
  - Safe work practices.
  - Proper use of tools and equipment.
7. Ask questions about work practices to encourage discussion and input.
8. Talk about personal experiences or have a worker tell a story about a near miss or injury.
9. Keep the meeting short – usually 10 to 15 minutes.

*(Continued on next page)*



10. After the meeting, consider the following:
  - Did the topic fit the job site?
  - Did the crew participate?
  - Did someone demonstrate safety equipment or safety practices?
11. Afterwards, evaluate the impact of the tailgate meeting. Are employees now able to recognize and correct hazards? Ask questions, walk the job site, and observe.
12. Document/record the meeting topic, date, attendees, and any actions taken.

## How Often Should You Have Toolbox/Tailgate Meetings?

Section 1509 (construction) requires them at least every 10 working days, and Section 8406 (tunneling) at least weekly. However, depending on the work conditions and safety culture of the job site, they should be held more frequently – even daily if necessary.

### Additional Tailgate Meetings Resources

[Title 8 California Code of Regulations \(T8CCR\)](http://www.dir.ca.gov/samples/search/query.htm) ([www.dir.ca.gov/samples/search/query.htm](http://www.dir.ca.gov/samples/search/query.htm))

- [1509](#) - IIPP Construction Safety Orders
- [3203](#) - IIPP General Industry Safety Orders
- [8406](#) - IIPP Tunnel Safety Orders

[California FACE Program](http://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/FACE/Pages/Tailgate.aspx) - Fall Prevention Tailgate Training Materials ([www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/FACE/Pages/Tailgate.aspx](http://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/FACE/Pages/Tailgate.aspx))

[Electronic Library of Construction Occupational Safety and Health \(eLCOSH\)](http://www.elcosh.org/index.php) ([www.elcosh.org/index.php](http://www.elcosh.org/index.php))

[Cal/OSHA Publications](http://www.dir.ca.gov/dosh/puborder.asp) ([www.dir.ca.gov/dosh/puborder.asp](http://www.dir.ca.gov/dosh/puborder.asp))

- [CAL/OSHA Pocket Guide for the Construction Industry](#)
- Tailgate Safety Meeting Topics

[Cal/OSHA Consultation Branch](http://www.dir.ca.gov/dosh/consultation.html) ([www.dir.ca.gov/dosh/consultation.html](http://www.dir.ca.gov/dosh/consultation.html))

- [InfoCons@dir.ca.gov](mailto:InfoCons@dir.ca.gov)
- Toll-free Number: 1-800-963-9424

# Toolbox/Tailgate Safety Meeting Form

<b>Department/Division</b>			
<b>Name/Title of Employee Conducting Meeting</b>			
<b>Date:</b>		<b>Topic(s):</b>	

**Discussion/Comments:** \_\_\_\_\_

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**Employees in Attendance:**

**Print Name**

**Signature**

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# ACCIDENTS

## AVOID SHORTCUTS



This talk discusses the importance of following safe work practices and avoiding shortcuts to prevent injuries.

### Items for attendees to consider during talk:

- Have you ever taken shortcuts to complete a task?
- Do you know of someone who was seriously injured taking shortcuts?

## TALK

We all like to get our work done without unnecessary effort, getting the most out of the time and energy we spend on each task. And, sometimes, this attitude helps us find a better way of getting things done.

But at other times, perhaps because we are in a hurry, it leads us to take shortcuts and can put us on a direct route to getting ourselves or someone else hurt. All of us, at some time or another, have exposed ourselves to possible harm by shortcutting rather than taking the few extra steps required by the safe way. As kids, we hopped the fence instead of using the gate; now we cross the street between the intersections.

A successful shortcut—meaning one that results in no damage—nevertheless has a downside. It gives us the feeling that we can always substitute the quick way for the tried-and-true safe way and get

out of it in one piece. Unfortunately, that feeling can be misleading.

Take the case of the worker on a ladder who is almost finished with the job except for just a little bit that can be done by reaching farther than the safety guidelines call for. It's decision time: Get down, move the ladder, and climb up again; or take a chance.

What are the possible outcomes? The worker may luck out and finish the job by reaching with no trouble. Or leaning too far to the side may cause the ladder to topple and the worker to fall, resulting in a concussion, a broken leg, or even death.

*[Use cases related to your workplace.]*

What kind of choice was that? With the safe way, the odds are in your favor—so the decision to take a chance was not a wise one. Risking your neck to save a few minutes of time is a bad gamble.

Of course, when you come right down to it, most of the shortcuts people take aren't really aimed at saving time. People take shortcuts because doing things the safe way is "too much of a hassle." To avoid all this annoyance, they will:

- Use the wrong tool instead of going to fetch the right one.
- Climb the rebar instead of going over to the ladder.

*Continued on page 2*

**Talk Date:** \_\_\_\_\_

**Attendees:** \_\_\_\_\_

**Location:** \_\_\_\_\_

\_\_\_\_\_

**Supervisor/** \_\_\_\_\_

**Comments:** \_\_\_\_\_

**Presenter:** \_\_\_\_\_

\_\_\_\_\_

# ACCIDENTS

- Lift too heavy a load instead of getting extra help.
- Use a sander or chipper without putting on safety goggles.

*[Use examples from your specific workplace.]*

In every one of these cases, workers will have avoided the bother they had in mind all right, but they may run into some bother they didn't expect. Like, for

example, a particle in the eye that requires first aid or more extensive treatment, or a back muscle strain that results in several days' lost time. Or worse.

The safe work practices that have been established here are designed to protect you. If they sometimes involve taking some extra time, that should be regarded as a small price to pay for safety, because working safely is worth the hassle!

# ACCIDENTS

## LEARN FROM NEAR MISSES



This talk discusses the importance of reporting and correcting near misses.

### Material to have on hand:

- Near-miss report form (if available)

### Items for attendees to consider during talk:

- Have you sidestepped trash or other obstacles on the floor?
- Do you practice proper housekeeping in your work area?
- Can you think of any close calls—or actual ones that should have been avoided—that have happened here?

## TALK

When you notice a red light glowing on the dashboard of your car, you recognize it as a warning to let you know that your engine is overheating or that there's another problem.

A near accident or near miss is a warning, too. For example, when you're driving down the highway at a good clip and another car pulls out in front of you, it's necessary to hit the brakes or make a quick lane change to avoid an accident. Chances are that you'll be pretty hot under the collar at the other driver's action, but if you're smart, you won't let anger overpower your safe driving habits. You'll also make

a mental note to be more alert and watch for cars approaching the highway from side roads. This could save your life next time.

A near miss in the workplace is a warning or a sign that something is wrong. Perhaps a machine isn't operating correctly, or materials aren't stacked properly, or someone has acted in an unsafe way. Close calls or near accidents on the job should also be safety precautions.

Let's consider some typical accidents that could have been avoided if the close-call warning had been noted:

- A shop worker tripped over a two-by-four and fractured an ankle.
- A secretary slipped on some trash and grabbed a metal file cabinet in an attempt to break the fall, pulling the cabinet on top of her.
- A machine operator was injured when a motorized hand truck struck the machine that he was operating.

*[Use real examples from your workplace.]*

It's fairly certain that the proper handling of earlier near misses could have prevented the real thing from happening in these cases. The two-by-four and trash on the floor had probably caused other employees to step aside to avoid tripping or may even have caused stumbles that didn't result in injury.

*Continued on page 2*

**Talk Date:** \_\_\_\_\_

**Attendees:** \_\_\_\_\_

**Location:** \_\_\_\_\_

\_\_\_\_\_

**Supervisor/  
Presenter:** \_\_\_\_\_

**Comments:** \_\_\_\_\_



# ACCIDENTS

Chances are there were several, yet in all of these cases and doubtless in many others, no one heeded the warnings. Nothing was done to correct the situations, and accidents resulted.

An actual accident isn't hard to remember. You may still have the pains or scars to remind you. Someone burned as a child doesn't need a slap on the wrist to encourage caution after that burn. But as we've noted, a near miss is often forgotten, with no benefits resulting from the experience.

How can we turn a close call or near miss into a contribution to safety?

- First, recognize it as a warning.
- Next, correct the situation or remove the hazard that caused the near accident. If it can be handled

routinely, do so, but in any case, report it to your supervisor. This lets him or her plan how to keep the same situation or hazard from arising at some other time or place.

Constant safety awareness on everyone's part is the most important factor in accident prevention. It's what makes us recognize a close call as a warning. So what do you do when a stack of boxes tips over, the handle on a tool snaps, or a ladder slips and, fortunately, no one is hurt?

Obviously, every close call is a call for action. Sometimes it's something you can fix right away yourself; other times, it requires specialized attention. In either case, the close call should never be ignored and should always be reported. That way, the next "real" accident may not happen after all.

# AERIAL LIFT SAFETY

## PREVENTING FALLS



This talk discusses the fall hazards associated with working from the platform of an aerial lift and provides an overview of the safe work practices and fall protection equipment necessary to avoid injury.

### Materials to have on hand:

- Aerial lift in use at the worksite
- Examples of personal fall arrest systems and travel restraint systems

### Items for attendees to consider during the talk:

- What is the difference between a personal fall arrest system and a travel restraint system?
- When is it safe to use a body belt while working from an aerial lift platform?
- What should you attach your fall protection to while working in an aerial lift platform?

## TALK

Aerial lifts consist of a platform supported by a boom and mounted to a vehicle. They are used to elevate you so that you can access work areas high above the ground. You might also hear aerial lifts referred to as cherry pickers or bucket trucks. Scissor lifts are not aerial lifts; they are considered scaffolds and have different safety requirements.

One of the most common causes of injuries and fatalities when working from an aerial lift is falling

from the platform or bucket. But by using the proper equipment and following safe work practices, you can prevent falls and stay safe when working in an aerial lift.

When you are working in the platform of an aerial lift, you must use fall protection. There are two types of fall protection you can use: travel restraint systems and personal fall arrest systems.

**Travel restraint systems** prevent you from reaching the edge of the platform. A travel restraint system uses a body belt or harness with a lanyard or other means of connection that is attached to an anchorage point. Lanyards and other connections on travel restraint systems must be short enough so that you cannot reach the edge of the platform.

**Personal fall arrest systems** stop your fall once it happens. These consist of a full-body harness attached to an anchorage point with a connector such as a lanyard. If you fall while wearing a personal fall arrest system, the system will stop your fall within a safe distance and protect you from injury.

It is very important to understand the difference between a body belt and a full-body harness. While a harness is an important part of a personal fall arrest system, a body belt must NEVER be used for fall arrest. Harnesses distribute the force of a fall across the strongest areas of your body, but body belts do not. If you fall while wearing a body belt, your internal organs are vulnerable to injury. Therefore, body

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# AERIAL LIFT SAFETY

belts are safe only if they are used as part of a travel restraint system.

Whether you are using a personal fall arrest system or a travel restraint system, it must be properly attached to the boom or bucket of the aerial lift. Never tie off to nearby poles or structures outside the lift. This is a common cause of injuries. For example, if you tie off to a nearby object like a telephone pole and the platform is lowered while you are still tied off, you could come out of the bucket, leaving you suspended from the pole.

Regardless of which kind of fall protection you use, inspect all parts of it before each work shift, including your harness or body belt, lanyard or connector, and anchorage point. Make sure it is in good condition and free from excessive wear and tear, mildew, tears, cracks, and other issues. If you find a defect, don't use the equipment; tell your supervisor so that he or she can remove it from service.

Always follow these do's and don'ts to avoid falls from aerial lifts:

- **DO** make sure that gates or openings are closed before the platform is raised.
- **DO** stand firmly on the floor of the bucket or platform.
- **DO** inspect the platform before you enter it to make sure that guardrails, anchor points, and other safety features that protect you from falls are in good working condition.
- **DON'T** sit on, climb on, or lean over guardrails or handrails.
- **DON'T** work from a ladder, plank, or other device inside an aerial lift to gain extra height.
- **DON'T** work from an aerial lift platform unless you have been properly trained to do so.
- **DON'T** engage in horseplay.

# AERIAL LIFT SAFETY

## PREVENTING TIPOVERS AND COLLAPSES



This talk discusses the hazards of aerial lift tipovers and collapses and explains safe work practices for operating aerial lifts to prevent these incidents.

### Materials to have on hand:

- Aerial lifts in use at the worksite
- Aerial lift inspection checklist, if used

### Items for attendees to consider during talk:

- What are some common causes of aerial lift tipovers?
- Where will you find the rated workload and maximum platform height of an aerial lift?

## TALK

Aerial lifts can tip over or collapse for a number of reasons. Common causes of tipovers include high wind and other severe weather conditions, operating on unstable or uneven surfaces, extending the boom too far, loading the basket with too much weight, and damaged or defective equipment.

Before using any aerial lift, review the manufacturer instructions and other safety information posted on the equipment, and read the operating and maintenance manual.

The rated workload and maximum platform height will be posted on the equipment. Never exceed these

limits. Some equipment might have different rated workloads that depend on the angle of the boom and on whether outrigger devices or stabilizers are used.

Many aerial lifts are designed with interlock devices that help prevent an operator from accidentally exceeding the stability requirements of the equipment and tipping over. Some types of interlocks you may encounter include driving interlocks, outrigger interlocks, and tilt interlocks. Familiarize yourself with the type of interlock on the aerial lifts you use.

Before you use an aerial lift, check the equipment and the surrounding area for the following hazards:

- **Obvious defects**, such as cracked welds in the basket or the boom equipment.
- **Hydraulic oil leaks.**
- **Signs of wear or damage on control cables.**
- **Lose wire connections.**
- **Poor tire condition.** An improperly inflated or damaged tire can impact the stability and possibly result in a tipover.
- **Improperly functioning operating controls.**
- **Unstable or soft ground.** If a tire or stabilizer is placed on the soft earth, the equipment may tip over when the boom is lifted or extended.
- **Ditches, drop-offs, or holes.** The operator might accidentally drive into one of these and tip

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# AERIAL LIFT SAFETY

over. Even placing the equipment near a ditch or hole could result in injury if the side of the hole or ditch were to give way under the weight of the tire or stabilizer.

- **Bumps and other floor obstructions.** Be careful not to drive over these obstructions because they can affect your stability.
- **Debris.** Materials such as garbage, dust, grease, oil, water, or other items could result in your equipment losing stability.

Before elevating anyone in an aerial lift basket, properly set up the vehicle by following these steps:

- Set the brakes so the vehicle will not move while a worker is in the air.

- Place wheel chocks under the tires if the vehicle is on an incline.
- If necessary, position the outriggers or stabilizers on a solid surface.

Before moving the vehicle, make sure the boom is properly cradled and outriggers or stabilizers are returned and stowed in position. Although some equipment is designed to be moved while a worker is in the basket (or even operated by that worker), never move the equipment unless the basket has been lowered and the boom has been retracted.

Make sure the path of travel is firm, level, and free of obstructions. While driving, maintain a safe distance from obstacles, debris, holes, depressions, ramps, and other hazards, and drive at a safe speed for the conditions.



# ALCOHOL TESTING RULES FOR COMMERCIAL DRIVERS



This talk explains the requirements of the Department of Transportation’s alcohol testing rules for commercial drivers and the consequences for engaging in prohibited alcohol-related conduct.

## Materials to have on hand:

- Company alcohol use and testing policy

## Items for attendees to consider during talk:

- What is the alcohol concentration at which you are not allowed to drive a commercial motor vehicle (CMV)?
- When can you be tested for alcohol under the Federal Motor Carrier Safety Administration, or FMCSA rules?
- What are the consequences for violating the federal alcohol use and testing rules?

## TALK

As a commercial driver, you have to follow strict rules regarding alcohol use. These rules are important for your safety and the safety of the traveling public. Both you and your employer can be fined if you violate these rules.

The Federal Motor Carrier Safety Administration, or FMCSA, requires commercial motor vehicle, or CMV, operators to stop driving CMVs or performing other safety-sensitive functions while under the influence

of alcohol. Safety-sensitive functions include waiting to be dispatched, inspecting equipment, loading and unloading a vehicle, repairing or waiting for assistance for a disabled vehicle, and all other time spent in a CMV except resting in a sleeper berth.

As part of the FMCSA regulations, you have to periodically take breath alcohol tests. An alcohol concentration below 0.02 is a negative test result. If your alcohol concentration is at least 0.02 but less than 0.04, you will be removed from safety-sensitive duties for at least 24 hours. If you are tested to have an alcohol concentration of 0.04 or greater, your employer must immediately remove you from safety-sensitive duties, and you will not be allowed to return to these duties until you have completed substance abuse education and treatment and passed a return-to-duty alcohol test.

There are several types of required tests:

- **Random testing.** You may be selected for a random alcohol test any time while you are performing safety-sensitive functions, just before you perform safety-sensitive functions, or just after you have performed safety-sensitive functions.
- **Reasonable suspicion testing.** Reasonable suspicion testing is performed when a supervisor or another company official suspects that you have violated one of the rules about prohibited alcohol use. The supervisor’s suspicion must be based on specific observations about your appearance, behavior, speech, or body odor.

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# ALCOHOL TESTING RULES FOR COMMERCIAL DRIVERS

- **Postaccident testing.** You must undergo an alcohol test as soon as it is practical after certain CMV accidents in which you were performing safety-sensitive functions with respect to the vehicle. Generally, an alcohol test will be required if an accident involved a fatality, or if you were cited for a moving violation and the accident caused serious bodily injury or disabling damage to a vehicle. The test must be administered within 8 hours after the accident and preferably within 2 hours. If you are involved in an accident that requires an alcohol test, remember that you cannot consume alcohol until you have been tested, or for 8 hours after the accident, whichever comes first.
- **Return-to-duty and follow-up testing.** These tests will be required if you test positive for alcohol and return to performing safety-sensitive duties after completing substance abuse education and treatment. You must pass a return-to-duty alcohol test before you will be allowed to resume performing safety-sensitive duties, and you will be subject to at least six unannounced follow-up tests during the first 12 months after you resume these duties.

Your employer is also allowed to conduct preemployment alcohol testing, but this is not required by the FMCSA.

Always remember and follow these rules regarding alcohol use:

- **DON'T** drive a CMV or perform other safety-sensitive functions if you have an alcohol concentration of 0.04 or greater.
- **DON'T** drive a CMV or perform other safety-sensitive functions within 4 hours after consuming alcohol.
- **DON'T** consume alcohol while driving a CMV or performing other safety-sensitive functions.
- **DON'T** consume alcohol for 8 hours after an accident, or until you undergo a postaccident alcohol test, whichever comes first.
- **DON'T** refuse to take an alcohol test required by FMCSA regulations. Refusal to take a test is considered a positive test result.

# ALLERGIES: FROM SMALL SNIFFLES TO SERIOUS REACTIONS



This talk discusses some strategies for workers to manage their allergies at work. Allergies can range from mild to severe, and it's important to have a plan in place to manage them.

## Materials to have on hand:

- Fact sheets for different allergies
- Prop EpiPens, inhalers, and other emergency devices

## Items for attendees to consider during the talk:

- What are my allergic triggers?
- How can my medications affect my work?
- What do others need to know about my allergies?

## TALK

Allergies and allergic reactions have the same thing in common: an overactive immune response. Most of us have experienced some form of allergy, be it sneezing, coughing, watery eyes, or itching. These symptoms can be distracting, especially at work. Other allergies are more extreme and can include breathing problems, extreme swelling, and other life-threatening symptoms. Allergies can be brought on by pollen, ragweed, certain foods, insect bites and stings, dust, latex, and many other triggers.

## Seasonal Allergies

Most seasonal allergies usually consist of congestion; sneezing; coughing; and itchy, watery eyes. Seasonal allergies can be distracting, taking focus away from work tasks. They are most often controlled through basic over-the-counter medication. It's important to know the side effects of these medications, especially if they cause drowsiness. This can be especially dangerous for heavy equipment operators and drivers.

## Allergic Reactions

For more extreme allergies, you will probably have prescription medication on hand. It's extremely important for you to know how to take your medication correctly and to replace your medication when it's expired. You should also tell others where you keep your medication if it is not in your immediate vicinity. Let others know the signs and symptoms of a reaction, as you may not be able to speak if an attack happens. Extreme allergy attacks can be a frightening experience, but with proper planning and management, you can greatly reduce your chances of permanent injury.

***[If your company offers a first-aid course, encourage trainees to attend. These courses go into great detail on allergies and allergic reactions and how to respond to them.]***

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# ARC FLASH SAFETY

## AN ELECTRICALLY SAFE WORK CONDITION



This talk discusses arc flash hazards that unqualified workers face working around exposed, energized electrical equipment or parts, and how to create an “electrically safe work condition” to prevent arc flash and shock incidents.

### Materials to have on hand:

- Work area with examples of exposed, energized electrical equipment or parts.
- Personal protective equipment (PPE) appropriate to the arc flash hazards at the workplace.

***[Keep all workers at a safe distance from flash and shock protection boundaries of the area with exposed, energized electrical equipment during the talk.]***

### Items for attendees to consider during talk:

- Can you describe an “electrically safe work condition” in an area that has exposed, live electrical equipment?
- What type of clothing and other items should you never wear around exposed, live electrical equipment?

## TALK

Over 2,000 people are burned every year from arc flash incidents. You may already know that an arc flash happens when electricity travels through the

air from one conducting surface to another or to ground. This can happen when circuit breakers and disconnects are opened and closed, when exposed electrical equipment is touched with a tool, or when equipment fails. Many of the burn incidents were the result of human error, not faulty equipment or poorly engineered electrical installations.

An “unqualified person” is an employee who works around exposed, energized electrical equipment but does not have any specialized knowledge or training in the construction or operation of the equipment. Such a worker never works directly on or close to the live equipment or parts. If you are in this category of worker, there are several things to know in order to work safely around such equipment.

No one has ever been burned or electrocuted from electrical equipment that was de-energized and locked out during service and repair work. But think about a common situation that has caused many arc flash and shock incidents: While running a test of exposed, electrified equipment, a worker finds a loose connection that needs to be tightened and decides that shutting off the power and locking out the power source would take up too much time. Fixing the problem will take just a few seconds ... and the resulting arc flash takes a few milliseconds to do its damage.

The single most effective way to prevent an arc flash from energized electrical equipment is to create what is known as an “electrically safe work condition.”

That means de-energize or disconnect and lock out the power source before starting any maintenance or

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# ARC FLASH SAFETY

repair work. Though the equipment may have to be energized to perform tests on it, in most cases, the follow-up or repair work does not require it.

You need to know and observe the following step-by-step procedures that a qualified person will perform to create an electrically safe work condition:

1. Determine all the possible sources of energy supply to the equipment.
2. After shutting off or isolating the load current, open the disconnecting device(s) for each energy source.
3. Verify all elements of the disconnecting device are open or that circuit breakers are in the fully disconnected position, if possible.
4. Apply lockout/tagout devices according to established procedures.
5. Test the voltage using only testing equipment that is in perfect working condition and that is rated for the equipment being tested.
6. Apply appropriate grounding devices as necessary in case stored electrical energy exists.

Even when these procedures aren't followed, and an arc flash does happen, you can survive it unhurt by following safe work practices and wearing appropriate personal protective equipment, or PPE.

- Don't enter the flash or shock approach boundaries set by the qualified person unless you are authorized by that person, and you are wearing all of the required PPE. Unqualified persons must never go inside the limited approach boundary. ***[Define the flash and shock approach boundaries and where they are located in the work area.]***
- Wear all arc-rated PPE, such as nonconductive head protection, safety glasses, and arc-rated face shield.
- Never wear synthetic materials made of nylon, acetate, or rayon as outer clothing—it will burn or melt when exposed to an arc flash.
- Don't wear metal objects on clothing—no metal buttons and zippers.
- Make sure your protective clothing is rated flame-resistant.
- Follow the instructions on warning labels and signs in the work area.

You can prevent arc flash incidents from ever happening by creating an electrically safe work condition. When there is risk of arc flash because that condition isn't possible, you can stay safe by following safe work practices and wearing the right protective clothing around live electrical equipment.

# ASBESTOS

## ENTERING/EXITING LARGE CLASS I REGULATED AREAS



This talk discusses some of the requirements for entering and exiting regulated areas for large Class I asbestos projects by properly trained and authorized workers. This talk applies only to indoor asbestos projects and when all components of the decontamination area are connected and located adjacent to the regulated work area.

*[A large Class I asbestos project involves the removal of over 25 linear or 10 square feet of thermal system insulation or surfacing material that is ACM, meaning asbestos-containing material or is presumed ACM.]*

### Materials to have on hand:

- Description or map of the location(s) of current Class I asbestos-regulated areas within the facility
- GHS-compliant asbestos label
- Names/Identity of “Competent person(s)”

### Item for attendees to consider during talk:

- When can I take off my respirator?

## TALK

There is no “safe” level of asbestos exposure, so carefully following the procedures for entering and exiting the regulated area will reduce the potential for exposure for you and your coworkers.

All large Class I asbestos projects will have a decontamination area next to and connected to the

regulated area where the asbestos work is being done. The decontamination area consists of an equipment room, a shower area, and a clean room connected in series. All workers have to enter and exit the regulated area through the decontamination area.

### Entering the regulated area

To enter the regulated area, you start by entering the clean room. In the clean room, you will find a locker or storage compartment to use. You will put your street clothes in the locker or storage compartment and put on your protective clothing and respiratory protection before leaving the clean room.

When ready, you will go from the clean room through the equipment room to the regulated area and begin asbestos removal work.

### Exiting the regulated area

When you are ready to leave the regulated area, make sure all debris has been removed from your protective clothing. Then go to the equipment room.

Once you are in the equipment room, remove your protective clothing but do not remove your respirators. The equipment room is supplied with labeled bags and/or containers. The labels will read:

DANGER  
CONTAINS ASBESTOS FIBERS  
MAY CAUSE CANCER

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# ASBESTOS

CAUSES DAMAGE TO LUNGS  
DO NOT BREATHE DUST  
AVOID CREATING DUST

All protective clothing must be put in one of the labeled bags or containers.

After removing your protective clothing, go to the shower room, where you may remove your respirator. Soap and clean towels are provided in the shower room.

After showering, go to the clean room and change back into your street clothes. Then you may exit the clean room.

## Inspections and assistance

\_\_\_\_\_ *[Name of competent person(s)]* is responsible for inspecting the decontamination area at least once per shift or if you request an inspection. Any questions or concerns related to the decontamination area or the procedures for entering or exiting the decontamination area should be directed to him or her.

Reduce the risk of asbestos exposure by following the procedures for entering and exiting the work area. They are in place to protect you and your coworkers.



# ASBESTOS

## Personal protective clothing



This talk discusses personal protective clothing for trained asbestos workers when working in regulated areas during the construction, renovation, repair, or maintenance of structures that contain asbestos. This talk does not cover respirator requirements.

### Materials to have on hand:

- Description or map of the location(s) of current asbestos-regulated areas within the facility
- Examples of appropriate personal protective clothing
- GHS-compliant asbestos label
- Names/identity of “Competent person(s)”

### Item for attendees to consider during talk:

- What do you do with protective clothing when you are done working?

## Talk

Asbestos is a microscopic fiber that can stay in the air for hours and even days. Once you inhale the fibers, they can damage your lungs and even cause various forms of cancer.

There is no “safe” level of asbestos exposure, so it is important to avoid being exposed to it.

Therefore, when you are involved with the removal of asbestos-containing material or presumed asbestos-containing material or with any repair or maintenance activity that is likely to disturb such materials, be sure you are wearing the appropriate personal protective clothing. Typically, this clothing is disposable and includes:

- Coveralls or similar whole-body clothing that seals tightly at the wrists and ankles;
- Head coverings;
- Gloves; *and*
- Foot coverings.

Proper personal protective clothing will be provided to you, and you have to wear it in any regulated areas where:

- Asbestos exposure exceeds the permissible exposure limit or the short-term exposure limit.
- A negative exposure assessment has not been established.
- A large Class I project is taking place. *[Note to speaker: This is a project that involves the removal of over 25 linear or 10 square feet of thermal system insulation or surfacing material that is ACM, meaning asbestos-containing material or is presumed-ACM.]*

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# ASBESTOS

*[Note to speaker: Speaker may opt to identify specific regulated areas at the facility that meet the aforementioned criteria and require protective clothing.]*

These areas are marked with signs that include the phrase:

“WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA”

Put on protective clothing before you enter the regulated area. For large Class I projects, this needs to be done before leaving the clean room.

\_\_\_\_\_ *[insert name(s) of competent person(s)]* is responsible for inspecting protective clothing for rips and tears at least once per shift. Routinely check your coworkers’ and your own protective clothing for rips and tears, and if you find a rip or tear, either mend it or leave the work area and replace the protective clothing immediately.

Before leaving the regulated area, remove debris from your protective clothing and clean it with a HEPA-equipped vacuum.

Remove protective clothing in the designated equipment room or area, and put it into sealed, impermeable bags or containers that have labels that read: *[show GHS-compliant asbestos label]:*

DANGER  
CONTAINS ASBESTOS FIBERS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS  
DO NOT BREATHE DUST  
AVOID CREATING DUST

Having the proper protective clothing and following the procedures for using and removing it will reduce the risk of asbestos exposure and keep you and your coworkers safe.

# ASBESTOS

## WHAT YOU NEED TO KNOW ABOUT REGULATED AREAS



This talk discusses some of the requirements for establishing and working in and around regulated areas during the construction, renovation, repair, or maintenance of structures that contain asbestos.

### Materials to have on hand:

- Description or map of the location(s) of current asbestos-regulated areas within the facility
- Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-compliant asbestos sign
- Names/Identity of “competent person(s)”

### Item for attendees to consider during talk:

- Who do I contact with questions or concerns about asbestos projects on-site?

## TALK

Asbestos is a microscopic fiber that can stay in the air for hours and even days. Once you inhale the fibers, they can damage your lungs and even cause various forms of cancer.

There is no “safe” level of asbestos exposure, so it is important to avoid being exposed to it.

That is why any activity that involves removing asbestos-containing material or presumed asbestos-containing material or any repair or maintenance activity that is likely to disturb such materials must

be done in what is referred to as a “regulated area.” Within the regulated area there is a reasonable possibility that you will be exposed to asbestos fibers, which is why access to the area is restricted to properly trained and authorized individuals only.

\_\_\_\_\_ [insert name(s) of competent person(s)] is/are responsible for supervising all the work that occurs within a regulated area and will be responsible for its setup. He/she/they has/have received special training on setting up regulated areas in a way that will protect people outside the regulated area from asbestos exposure.

For areas where asbestos is being removed, the regulated area will be enclosed in plastic. Regulated areas where repair or maintenance is occurring may not be entirely enclosed in plastic. However, all regulated areas will be clearly marked with signs that read [show GHS-compliant asbestos sign]:

DANGER  
ASBESTOS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS  
AUTHORIZED PERSONNEL ONLY

If the asbestos activity inside the regulated area requires respirators and protective clothing, the sign will also include:

WEAR RESPIRATORY PROTECTION AND  
PROTECTIVE CLOTHING IN THIS AREA

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# ASBESTOS

The signs will be posted at the regulated area and at all approaches to the regulated area. If you are not properly trained and authorized to enter the regulated area, do not pass these signs.

For those of you who are trained and authorized to work within the regulated area, make sure you have all necessary protective clothing and, if required, properly fitted and functioning respirators before passing the signs and entering the regulated area. Once inside the regulated area, you may not eat, drink, smoke, chew tobacco, chew gum, or apply cosmetics. When leaving the regulated area, make sure you properly clean and remove of all protective clothing and equipment.

If you notice anything that you think is not right in or around a regulated area, contact \_\_\_\_\_ *[insert name(s) of competent person(s)]* and ask him/her/them to come take a look. For example, say something if you notice:

- Missing signs;
- Rips in plastic enclosures or in a person's protective clothing;
- Actions that may cause asbestos fibers to become airborne, such as dry sweeping; *or*
- People leaving the regulated area without removing their protective clothing.

If you request that \_\_\_\_\_ *[insert name(s) of competent person(s)]* come look at something, he/she/they is/are required to make an inspection.

So, to reduce the risk of asbestos exposure, know where asbestos work is going on and how it is being contained, and speak up if you see anything unusual in those areas.

# AUTOMOBILE BATTERY SAFETY



This talk will help auto repair shop workers recognize and minimize the potential hazards of working with or near automobile batteries.

## Materials to have on hand:

- The facility's personal protective equipment (PPE) policy
- The facility's automobile battery handling procedures

## Items for attendees to consider during talk:

- Do you know what hazards you can face when working with or near batteries?
- Is eye protection required to change or charge a battery?

## TALK

The ordinary automobile battery looks harmless enough. But that may be its biggest fault because so many people working with or near batteries seem unaware of their potential hazards.

The result is an increasing number of job injuries related to misuse or abuse of batteries.

Many of these injuries can be prevented by first recognizing the battery's main hazards:

- The electrolytic agent in battery cells is diluted sulfuric acid that can burn exposed skin and eyes.

- When a battery is on charge, hydrogen gas can build up in the air space near the cap of each cell, and unless the gas is allowed to escape, a spark can ignite the trapped gas and explode the battery.

Controlling these hazards of the battery is simple enough. An important rule when working under the hood of a vehicle's engine compartment or on the ground under the engine is to keep metal tools away from the battery. The spark of metal against metal or from accidental grounding by a tool can ignite the battery's hydrogen gas. For the same reason, never light a match near a battery, and never smoke when working near one.

When refilling a battery with electrolyte, do not overfill the battery cells. If you do spill any, wipe it up immediately, taking care to protect exposed skin and eyes and to discard the wipe-up rag or paper where others will not be exposed to it. Use distilled or demineralized water when topping off battery cells with low levels caused by normal electrolysis.

Never install a battery in a vehicle until the battery has been thoroughly inspected for weakened posts, split sides, or cell leaks. The vehicle's battery hold-down or frame must not be too rigid, or the battery walls can be weakened or sprung, allowing acid to leak.

Never work around a battery that has a buildup of dried or dust-like corrosive acid until you have safely removed the buildup. The dust is as potentially harmful as the electrolyte and can dislodge and blow

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# AUTOMOBILE BATTERY SAFETY

into your face or fall onto anyone working under the vehicle. Goggles or other types of eye shields can protect against dust or electrolyte when you must be near these harmful agents.

There are special carrying straps for batteries that allow gentle movement and lifting and help avoid bumping or dropping. Abuse of a battery can mean acid leaks and hydrogen gas leaks later on that shorten its life and can be hazardous to anyone working around the defective battery.

Charging a battery builds up hydrogen gas that is ignitable. So, all charging must be done with battery caps removed and in the open air or in a well-ventilated area. Connect the alligator clips of the charger on the battery first, and plug the charger into the wall outlet last.

You can avoid a potential injury by respecting the battery's potential hazards.

# BACK SAFETY FOR CONSTRUCTION WORKERS



## TAKE CARE OF YOUR BACK

This talk discusses proper lifting and posture for workers at construction worksites.

### Materials to have on hand:

- Examples of real-life situations that resulted in injuries
- A box of manageable size and weight for lifting practice
- A demonstrator to show correct lifting methods
- A chair to demonstrate correct sitting posture

### Items for attendees to consider during talk:

- Do you know safe lifting techniques?
- Do you practice proper health habits?
- If you have not been physically active, do you need to stretch before preparing to lift?

## TALK

According to the U.S. Bureau of Labor Statistics, back injuries are the leading source of lost-time occupational injuries. In construction, we are often moving and lifting items that are heavy, which can lead to a strain, spasm, or sprain to the ligaments or muscles of the back. All it takes is one wrong move to injure yourself. For this reason, it is important to remember the key elements to proper lifting.

### Preparing to lift—plan ahead

- Determine the load capacity.
- Determine your ability to handle the load.
- Get help if needed. Ask a coworker or use lift equipment.
- Wear gloves to protect your hands if the surface is rough.
- Check your route and make sure you have a clear walkway.

### Making the lift

- Center the load between your legs or shoulders.
- Always bend your knees.
- Keep your back straight.
- Lift with your legs—feel your leg muscles doing the work.
- Keep the load close to your body. Hug the object you are lifting.

### Moving the load

- Keep your back as vertical as possible.
- Keep the load close to you.
- Don't twist your body—move your feet.

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# BACK SAFETY FOR CONSTRUCTION WORKERS

- When lowering your load, bend with your knees and keep your back straight.
- Stand back up using your legs—let the muscles of your legs straighten your knees.

Always follow these lifting rules and you'll avoid hurting your back.

Remember, the only thing you'll prove by lifting more than you should is that your back is a poor substitute for a forklift. Think before you lift—every time!

# BLOODBORNE PATHOGENS

## EXPOSURE INCIDENTS IN CALIFORNIA



This talk explains to employees with occupational exposure to bloodborne pathogens in California the procedures to follow if an exposure incident occurs.

### Materials to have on hand:

- The facility’s Sharps Injury Log

### Items for attendees to consider during the talk:

- If you are involved in a bloodborne pathogens exposure incident, what should you do?
- To whom should you report an exposure incident?

## TALK

Because we could encounter blood or other potentially infectious materials, also known as OPIM, during our work activities, we use universal precautions and other strategies to prevent exposure to bloodborne pathogens. But do you know what to do if you are involved in an exposure incident despite your best efforts to avoid one?

An exposure incident occurs when blood or OPIM comes into contact with your eyes, mouth, nasal passages, or broken skin; or when you are stuck, cut, or scraped by a contaminated sharp or human bite while you are performing your job duties. If this happens to you, don’t panic! Report the incident to your supervisor or **[name of person designated to receive reports of exposure incidents]** as soon as possible and no later than the end of your work shift.

When you report the incident, provide the names of all employees involved and a description of the incident, including the date and time and your determination of whether an exposure incident occurred.

### Medical evaluation

Once you report an exposure incident, a confidential medical evaluation and follow-up will be made immediately available to you. The healthcare professional evaluating you will be provided with a description of your duties as they relate to the exposure incident; documentation of how you were exposed; results of the source individual’s blood testing, if available; and any medical records relevant to your treatment, including your vaccination status.

After the evaluation, the healthcare professional will provide the employer with a written opinion that states that you have been informed of the results of the evaluation and that you have been told about any medical conditions resulting from the exposure incident that will require further evaluation or treatment. All other findings or diagnoses will remain confidential.

Follow-up after an exposure incident may include treatment to prevent certain diseases, counseling, or evaluation of reported illnesses, if appropriate.

**[Include the following paragraph if it applies to your organization.]**

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# BLOODBORNE PATHOGENS

Because the employer also acts as the evaluating healthcare professional following exposure incidents, you may refuse to consent to treatment from the employer. If you refuse consent, the employer will make the medical evaluation and follow-up immediately available to you from a different healthcare professional.

## Sharps Injury Log

If the exposure incident involves a sharp, you will also be asked to assist with the completion of the Sharps Injury Log, which is a record of each exposure incident involving a sharp that helps us prevent future sharps injuries. We need to record the exposure incident in the log within 14 working days of the

date you report the incident. Your confidentiality will be protected.

To help complete the Sharps Injury Log, you will need to provide information, to the best of your ability, about the exposure incident to the employer, including the date and time of the exposure incident; the department or work area where the exposure incident occurred; how the incident occurred; and your opinion on whether any engineering, administrative, or work practice control could have prevented your injury.

By keeping these steps in mind, you can help yourself stay calm and react appropriately and safely following a bloodborne pathogens exposure incident.

# BLOODBORNE PATHOGENS

## MINIMIZING EXPOSURE RISK FOR HEALTHCARE WORKERS



This talk discusses bloodborne pathogens (BBPs) for healthcare workers potentially exposed to blood and bodily fluids, as well as universal precautions and prevention procedures.

### Materials to have on hand:

- Company BBP program
- Company exposure control plan
- Biohazard container

### Items for attendees to consider during talk:

- What are BBPs?
- Do you know how BBPs are transmitted?
- Do you know what universal precautions are?
- Have you seen our exposure control plan?

## TALK

BBPs are microorganisms in blood and bodily fluids that can cause serious health risks. The three BBPs that have received the most attention and pose a serious health threat if contracted are the hepatitis B virus (HBV); the hepatitis C virus (HCV), which causes a severe form of hepatitis in some or acts as a carrier in others; and the human immunodeficiency virus (HIV), which causes acquired immune deficiency syndrome (AIDS). Other diseases that can be caused

by BBPs include malaria, syphilis, and even the Zika virus disease.

BBPs are usually transmitted or passed on when microorganisms enter the body through mucus membranes or through breaks in the skin. They may also enter the body through open cuts, nicks, skin abrasions, and cracked skin caused by various types of dermatitis.

As health professionals, we are at risk of exposure—particularly if we are not wearing the proper personal protective equipment (PPE) or practicing universal precautions. Universal precautions are a method of infection control in which blood and bodily fluids are treated as if known to be infected with BBPs.

There are definite steps you can take to minimize your risk of exposure. Here are some procedures you should follow at all times:

- **Use extreme caution** in everything you do at work.
- **Be vaccinated against hepatitis B.** We provide this service for you at no cost if you are likely to be exposed to the virus.
- **Ask to see our exposure control plan.** Our exposure control plan is a written document that describes which jobs involve potential exposure to BBPs and what steps we have in place to limit or eliminate that exposure. It is important

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# BLOODBORNE PATHOGENS

for you to understand exactly what procedures should be followed.

- **Always use the PPE** provided for you when handling blood or bodily fluids since any opening on your body or skin—eyes, mouth, skin rash, or cut—is a route of entry for pathogens.

PPE may include disposable, single-use gloves; masks, face shields, goggles, or protective eyewear with side shields; and lab coats, gowns, and similar protective clothing, including caps, hoods, and protective shoe covers or boots.

Check disposable gloves for tears or punctures before use. Bandage cuts or broken skin before putting on gloves.

- **Don't keep food or drink in work areas, and don't eat, drink, smoke, apply cosmetics, or handle contact lenses in areas with exposure potential.**
- **Avoid bending, breaking, or recapping used needles.** If recapping is necessary, use a one-handed technique. Immediately dispose of used needles and other sharps in designated, puncture-resistant containers labeled with the bright orange or orange/red biohazard symbol.
- **Wipe up blood or bodily fluid spills immediately.** Use the disinfectant provided for this specific use.

- **Use a brush and dustpan, tongs, or forceps to pick up potentially contaminated glass or other debris.** Don't use your hands!
- **Double-bag infectious waste if the outside of the first bag has been contaminated by blood or bodily fluids.**
- **Remove protective clothing immediately after you leave the work area.** Place it in the proper receptacles for laundering or decontamination.
- **Discard disposable gloves and masks in designated containers,** which should be labeled "biohazard."
- **Wash your hands after removing gloves.** Use a disposable towel for turning on the faucets to avoid cross-contamination.
- **Don't suction or pipette potentially infectious materials with your mouth.**
- **If you need to perform CPR, use a one-way-valve mask.** Use disposable airway equipment and resuscitation masks.

Why take unnecessary risks with your life? Always being careful and following universal precautions are the best ways to minimize that risk.

# BURN HAZARDS IN FOOD SERVICE



This talk will help food service workers recognize hazards and prevent burns while working in the restaurant and food service industry.

## Materials to have on hand:

- First-aid kit
- Any applicable standard operating procedures

## Items for attendees to consider during talk:

- Do you know the burn hazards you could face every day?
- Do you know what causes the majority of burn injuries in food service?

## TALK

Food preparation and service involves many safety and health hazards. Today we'll discuss hazards that could result in burn injuries and the many things you can do to minimize these injuries.

Direct flames are responsible for only a small percentage of burn injuries; the majority of burns sustained in the restaurant industry are caused by deep fat fryers, followed by hot water and steam burns. Handling pots and pans can also create burn hazards.

Use these work practices to avoid burning yourself.

When working with deep fat fryers:

- Dry food before placing in hot oil.
- Never leave hot oil unattended.
- Place food in the basket, then slowly lower into hot oil—do not drop food into hot oil.
- Gently raise the basket.
- Fill fryers no more than half full.
- Keep liquids away from fryers.
- Cool oil and grease before handling it.

When using stoves and ovens:

- Turn off the electric elements and gas flames of stove when they are not in use.
- Adjust burner flames to cover only the bottom of the pan.
- Wear oven mitts to handle hot objects, and use long gloves for deep ovens.
- Release the pressure safely before you open cookers and steam ovens.
- Report any problems to your supervisor.

When using pots and pans:

- Organize your work area to prevent contact with hot objects and flames.
- Let others know when you are carrying something hot.

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# BURN HAZARDS IN FOOD SERVICE

- Stand to the side when you work with pots containing boiling liquids.
- Use lids and covers.
- Make sure that metal spoons are not left in pots and pans while cooking.
- Keep pot and pan handles away from hot burners, and make sure they don't stick out from the counter or cooking stove.
- Use oven mitts or a dry cloth to lift lids—wet cloths conduct heat and can burn you.
- Open lids away from you.
- Do not use aprons as potholders, especially if you're working near open flames.
- Assume that all pots, pans, and metal handles are hot—touch them only when you are sure they are safe or when you're wearing proper gloves.

If you're steam-cleaning equipment, wear the correct personal protective equipment. You should wear a face shield, rubber gloves, and boots, plus an apron long enough to cover the tops of the boots. Additionally, you should wear your boots inside your pant legs, so that hot water cannot flow into your boots.

Following these simple work practices will help you avoid burn injuries and keep you safe.



# CADMIUM:

## HEALTH EFFECTS AND EXPOSURE CONTROLS



This talk informs employees about the dangers of being exposed to cadmium and cadmium compounds in the workplace and safety practices to follow when working with or around this chemical.

### Materials to have on hand:

- A list or map of where in your workplace cadmium is produced or used
- Examples of personal protective equipment (PPE) needed when handling or exposed to cadmium
- A copy of Appendix A to 29 Code of Federal Regulations (CFR) 1910.1027—Substance Safety Data Sheet for Cadmium

### Items for attendees to consider during the talk:

- Are you aware of the dangers of this chemical?
- Are you familiar with what to do to avoid dangerous contact with cadmium?

## TALK

Cadmium is a metal that’s found in the earth’s crust. Most cadmium used in the United States is extracted as a byproduct during the production of other metals such as zinc, lead, or copper or recovered from used batteries.

**[As applicable, include a reference to the industrial process that applies to your workplace, such as:**

- **Manufacturing batteries, pigments, coatings and platings, or stabilizers for plastics;**
- **Refining metals;**
- **Landfill operation, recycling batteries, or waste or compost collection;**
- **Electroplating, metal machining, or welding; and**
- **Painting.]**

### Symptoms of exposure

If you’re exposed to high levels of cadmium, you will start to develop symptoms within 4 to 10 hours that may include:

- Chills
- Fever
- Weakness
- Vomiting
- Diarrhea
- Abdominal pain
- Shortness of breath

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# CADMIUM: HEALTH EFFECTS AND EXPOSURE CONTROLS

## Exposure limits

Due to cadmium's toxicity, the Occupational Safety and Health Administration, or OSHA, sets limits for a worker's daily exposure. If cadmium in your workplace meets what is called the "action level," a program that includes air monitoring, medical surveillance, and voluntary respirator use is required. If the level is even higher, then more controls and work practices will be necessary to prevent exposure above the permissible exposure limit, or PEL.

## Controlling exposure to cadmium

To make sure that it doesn't exceed the PEL, your employer will monitor the levels of cadmium in the air in your workplace and must implement engineering controls and/or work practices to limit exposure.

***[List any specific engineering controls in your workplace, such as ventilation, source isolation, torch-cutting extensions, etc.]***

In addition to engineering controls, you may be required to wear personal protective equipment, or PPE, to protect yourself from cadmium exposure.

***[List any required PPE for working with cadmium in your workplace, such as coveralls, gloves, head coverings, boots, face shields, goggles, or respiratory protection.]***

For any PPE you wear, be sure to remove it at the end of a shift in a changing area designated for this purpose, taking care not to shake or blow any cadmium residue from the clothing or equipment. It may also be a good idea to change out of work clothes and shower at the end of the day in order to wash cadmium from your skin and hair.

## Safe work practices

In areas where cadmium is used, do not:

- Smoke.
- Eat or drink.
- Chew gum or tobacco.
- Apply cosmetics.
- Carry any of these items with you.

These products can easily become contaminated with cadmium from the workplace and can therefore create another source of unnecessary cadmium exposure.

Take the time to understand the dangers of cadmium and cadmium compounds in your workplace, and be sure to wear the appropriate PPE and maintain safe work practices to keep yourself and your coworkers safe.

# CHAIN SAW SAFETY



This talk discusses the hazards associated with using chain saws and explains safe work practices for preventing chain saw injuries.

## Materials to have on hand:

- Chain saws in use at the facility or jobsite
- Personal protective equipment (PPE) for using chain saws

## Items for attendees to consider during talk:

- Do you know what chain saw kickback is and how to avoid it?
- What PPE should you wear when using a chain saw?

## TALK

Chain saws are a common tool at many outdoor worksites. However, they can be very hazardous and can cause serious injuries. If you work with chain saws, you need to be aware of these hazards so that you can take steps to protect yourself.

Before you use a chain saw, inspect it to make sure it's in good condition. Check the controls, chain tension, and all bolts and handles to make sure they're working properly and are adjusted according to the manufacturer's recommendations. Also, verify that the muffler, brakes, and shielding devices are in place and functioning as they should. Make sure that the

chain is sharp and the lubrication reservoir is full. If any part of the chain saw is damaged, do not use it.

Wear the following personal protective equipment, or PPE, whenever you use the saw, and check that your PPE is in good condition:

- Safety glasses to protect your eyes from flying debris
- Foot protection and hand protection
- Leg protection that covers the leg from the top of your thigh to the top of your boot
- A hard hat to protect yourself from falling and flying objects
- Hearing protection to prevent hearing loss from the loud noise of the saw

One hazard you need to be aware of when using a chain saw is the risk of kickback. Kickback can happen when the nose or tip of the saw strikes an object, and the chain is pinched or snagged. This can cause the blade tip to unexpectedly move upward and back toward you, which can cause serious injury. Kickback is one of the most common causes of chain saw accidents.

To avoid kickback, never use the tip of the saw to cut. Always hold the saw securely with both hands, and plan your cuts before you begin. Always be aware of where the nose of the bar is so you can prevent it from contacting surfaces. Don't stand directly

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# CHAIN SAW SAFETY

behind the saw but off to the side so that you are out of the primary danger zone.

Follow these do's and don'ts when using the chain saw:

- **DO** start the saw on the ground or another firm support, not in the air or on your knee.
- **DO** start the saw at least 10 feet from the fueling area.
- **DO** shut off the saw or set the chain brake when carrying it on rough or uneven surfaces, or when carrying it for more than 50 feet.
- **DO** keep your hands on the handles, and make sure your footing is secure while operating the chain saw.
- **DO** clear the area of obstacles where you are working before you begin.
- **DON'T** cut with a chain saw above shoulder height.

- **DON'T** wear loose clothing; jewelry; or loose, long hair when using a chain saw.

Refueling a chain saw presents its own set of hazards. Follow these safe practices:

- Only use approved containers to store and carry fuel for the chain saw. Containers must be metal or plastic and must not have a capacity greater than 5 gallons.
- Fuel at least 10 feet away from any sources of ignition.
- Never smoke while fueling.
- Always turn off the saw and let it cool completely before fueling.

Remember, chain saws can be very dangerous, but if you follow these safe practices, you can avoid injury.

# CHEMICAL SAFETY FOR MAINTENANCE WORKERS



This talk discusses safe work practices for janitorial, maintenance, and housekeeping workers exposed to hazardous chemicals.

## Materials to have on hand:

- A sample of cleaning products used at your facility
- The company hazard communication program
- A sample chemical container label and safety data sheet (SDS)

## Items for attendees to consider during talk:

- Is a window cleaner a hazardous chemical?
- How do you find the hazards associated with a cleaning product?

## TALK

*[Adjust job title and cleaning products as needed for your worksite.]*

As maintenance workers, we are exposed to a wide variety of hazardous chemicals. Many traditional cleaning products—such as glass cleaner, floor finish, metal polish, toilet bowl cleaner, and disinfectants—contain solvents that can be harmful to the body. Those solvents are hazardous and can cause injuries from mild health effects, such as skin and

eye irritation, to long-term diseases, such as heart and kidney failure, sterility, or cancer. Many chemicals can cause injuries or illnesses, including rashes, burns, asthma, and other breathing problems.

All cleaning products we use have a safety data sheet, or SDS. SDSs need to be available where the chemicals are being used and stored, including the storage closet and vehicles if needed.

Also, all containers must have a label. Each label needs to have the name of the product, required hazard warnings, and the name, address, and phone number of the manufacturer. If the labels are worn or unreadable, they should be replaced. If a container doesn't have a label, tell your supervisor. Do not use it.

Regardless of whether the chemical container does or doesn't have a label, don't sniff it to see if you can identify what's inside—a small sniff of a hazardous chemical can be dangerous and deadly.

Here are some additional tips to help you stay safe and healthy when working with these products.

- Use mild cleaners for regular cleaning. Save stronger chemicals for stubborn stains.
- Dilute chemicals (such as disinfectant) with as much water as possible while still getting the job done. Follow the manufacturer's directions.

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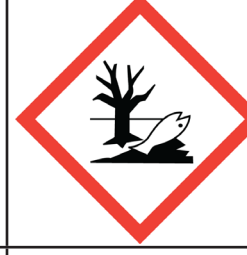
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# CHEMICAL SAFETY FOR MAINTENANCE WORKERS

- Open windows and doors, if possible, when using chemicals.
- Never mix chemicals unless instructed to by the manufacturer, especially ammonia and bleach—this is a lethal combination.
- Close all containers, especially spray bottles, when not in use.
- Pour chemicals (such as toilet bowl cleaner) from a low height to avoid splashing.
- Never smoke around cleaning chemicals.
- Always wear personal protective equipment, or PPE, like gloves, safety glasses, and respirators, when pouring or diluting chemicals.
- Chemicals require proper storage—never store chemicals near electrical equipment or in heat or direct sunlight. Find a well-ventilated area for storage.

Today, check around your work area, and ensure all your chemical bottles are marked and that you know the hazards associated with each. If you have questions or concerns, see the label, the SDS, or your supervisor.

				
Corrosive	Harmful/irritant	Toxic	Respiratory sensitizer/ carcinogenic/ mutagenic, etc.	Flammable
				
Oxidizing	Explosive	Gas under pressure	Hazardous to the environment	

# COMBUSTIBLE DUST

## Preventing dust explosions



This talk discusses the dangers associated with combustible dust and basic best practices to prevent dust explosions.

### Items for attendees to consider during talk:

- Do you know what combustible dusts are present at our facility?
- Have you seen accumulations of dust?
- How would you go about cleaning it up?
- What is necessary for dust to catch fire?

### Talk

*[Adapt this talk to hazards associated with your facility]*

Combustible dust is any fine material that has the ability to catch fire and explode when mixed with air.

Combustible dusts can be:

- Most solid organic materials (such as sugar, flour, grain, wood, etc.);
- Many metals; *and*
- Some nonmetallic inorganic materials.

Some of these materials are not “normally” combustible, but they can burn or explode if the particles are the right size and in the right concentration.

That’s why combustible dust is dangerous and a silent killer. It lurks in unseen places such as rafters, the tops of hoods, and ductwork, just waiting to become airborne and ignite into an explosive cloud.

I’m sure you’ve all read or heard accounts concerning dust explosions and know that many dusts are combustible if conditions are “right.”

Elements needed for a fire (the familiar “fire triangle”) include:

1. Combustible dust (fuel);
2. Ignition source (heat); *and*
3. Oxygen in the air (oxidizer).

All it takes is a handful of fine dust, a contained area, and an ignition source to create a potentially deadly environment.

Dust will not explode when it is heaped up in a pile on the ground or in a layer on top of things. But, chances are, if you kick a cloud of it up into the air, you could create a combustible condition. This condition plus a flame or spark—or the ignition source—could likely result in an explosion.

Dust has to be fine enough to catch fire easily in order to explode. Wood dust, for example, doesn’t need to be as fine as coal dust. The dust particles have to be close enough together so that the flame

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# COMBUSTIBLE DUST

will spread but far enough apart to get enough oxygen to burn.

The dusts of many metals can be combustible, too. These dusts are combustible in the same way that wood or coal or grain dusts are. Magnesium, aluminum, and bronze powders are very combustible.

Regular monitoring and removal of dust needs to be done not only in primary areas where dust accumulates, such as on production floors, but also in secondary areas that include cable trays, ductwork, and false ceilings, as well as behind equipment and in other hidden areas.

Dust explosions are preventable. Where combustible dust has accumulated, it needs to be cleaned up. The dust can be cleaned up with first a HEPA vacuum,

then a soft-fiber broom—never use a household-type broom—and finally, water can be used to wash the dust away if the building allows it.

These three basic principles should be applied to prevent dust explosions:

1. Keep dust out of the air as much as possible.
2. Keep the dust cleaned up.
3. Keep sources of ignition away.

Remember, all fine dust is potentially explosive if the right conditions are present. You are our first line of defense in preventing and mitigating fires and explosions. So, if you see a hazardous condition, report it immediately to your supervisor.

# COMMERCIAL DRIVER SAFETY

## HOURS OF SERVICE FOR PASSENGER-CARRYING DRIVERS



This talk provides a refresher on the requirements of the hours-of-service (HOS) rules for passenger-carrying commercial drivers. The requirements for property-carrying drivers are addressed in a separate talk.

### Items to have on hand: N/A

### Points to consider:

- How many hours are you allowed to drive a commercial motor vehicle (CMV) in an on-duty period?
- How long are you allowed to drive without a 30-minute rest break?
- What are some exceptions to the HOS rules?

## TALK

As a commercial driver, there are regulations you must follow regarding how long you are allowed to be on duty and operate a CMV. These laws are intended to prevent fatigue and drowsy driving, so it is very important that you know and follow them, both for your own safety and for the safety of others on the road.

These regulations are known as HOS rules. Here are the main points:

- **Start of work shift.** Before you begin a work shift, make sure you have been off duty for at

least 8 hours. For example, if you go off duty at 10 p.m. one evening, you cannot begin another driving shift until 6 a.m. the following morning.

- **10-hour driving-time limit.** You may not drive a CMV more than 10 hours in any on-duty period.
- **15-hour limit.** You may not drive a CMV after the 15th hour after coming on duty, following 8 hours off duty. For example, if you come on duty at 6 a.m. after going off duty at 10 p.m. the night before, you cannot drive a CMV past 9 p.m. on that day, even if you do not exceed the 10-hour driving time limit.
- **60/70 hour limit.** If the motor carrier you work for does not operate CMVs every day of the week, you cannot drive a CMV after being on duty for 60 hours in any period of 7 days in a row. If the motor carrier you work for operates every day of the week, you cannot drive a CMV after being on duty for 70 hours in any period of 8 days in a row.
- **Sleeper berths.** If you use a sleeper berth for your off-duty time before a work shift, you need to take at least 8 hours in the sleeper berth. You can split the time into two periods that add up to 8 hours, as long as neither period is less than 2 hours. For example, you could combine a 5-hour sleeper berth period with a 3-hour sleeper berth period or two 4-hour periods, but a 7-hour period combined with a 1-hour period is not allowed.

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# COMMERCIAL DRIVER SAFETY

**There are a few exceptions to these rules.** The following two are the most common:

- In dangerous driving conditions, such as bad weather, you are allowed an extra 2 hours of driving time in order to complete the run or to reach a safe place. Note that this exception does not allow you to be on duty beyond the 15-hour limit;
- In case of an emergency that interferes with your run, you may complete your run if it could ordinarily have been completed in the time allowed under the HOS rules if you hadn't encountered the emergency.

you are only allowed extra driving time beyond the normal 10-hour limit.

# COMMERCIAL DRIVER SAFETY

## HOURS OF SERVICE FOR PROPERTY-CARRYING DRIVERS



This talk provides a refresher on the requirements of the hours of service (HOS) rules for property-carrying commercial drivers. The requirements for passenger-carrying drivers are addressed in a separate talk.

### Points to consider:

- How many hours are you allowed to drive a CMV in an on-duty period?
- How long are you allowed to drive without a 30-minute rest break?
- What are some exceptions to the hours of service rules?

## TALK

As a commercial driver, there are regulations you must follow regarding how long you are allowed to be on duty and operate a commercial motor vehicle (CMV). These laws are intended to prevent fatigue and drowsy driving, so it is very important that you know and follow them, for your own safety and for the safety of others on the road.

These regulations are known as the hours of service or HOS rules. Here are the main points:

- **Start of work shift.** Before you begin a work shift, make sure you have been off duty for at least 10 hours. For example, if you go off duty at 9:00 p.m. one evening, you cannot begin another driving shift until 7:00 a.m. the following morning.

- **11-hour driving time limit.** You may not drive a CMV more than 11 hours in any on-duty period.
- **14-hour limit.** You may not drive a CMV past the 14th hour after coming on duty following 10 hours off duty. For example, if you come on duty at 6:00 a.m. after going off duty at 8:00 p.m. the night before, you cannot drive a CMV after 10:00 p.m. on that day, even if you do not exceed the 11-hour driving time limit.
- **60/70 hour limit.** If the motor carrier you work for does not operate CMVs every day of the week, you cannot drive a CMV after being on duty for 60 hours in any period of 7 days in a row. If the motor carrier you work for operates every day of the week, you cannot drive a CMV after being on duty for 70 hours in any period of 8 days in a row.
- **34-hour restart.** You can start a new 7- or 8-day period for the purposes of the 60/70 hour limit after taking at least 34 consecutive hours off duty.
- **Rest breaks.** You may not drive if more than 8 hours have passed since the end of your last off-duty or sleeper berth period of at least 30 minutes. For example, if you come on duty at 8:00 a.m., you cannot drive past 4:00 p.m. without taking a rest break of at least 30 minutes.

There are a few exceptions to these rules. The following two are the most common:

- In dangerous driving conditions, such as bad weather, you are allowed an extra 2 hours of

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# COMMERCIAL DRIVER SAFETY

driving time in order to complete the run or to reach a safe place. Note that this exception does not allow you to be on duty beyond the 14-hour limit; you are only allowed extra driving time beyond the normal 11-hour limit.

- In case of an emergency that interferes with your run, you may complete your run if it could ordinarily have been completed in the time allowed under the HOS rules if you hadn't encountered the emergency.

# COMMERCIAL DRIVER SAFETY

## SAFE BACKING TECHNIQUES



This talk discusses safe practices for backing up a commercial motor vehicle to avoid collisions and accidents.

**Materials to have on hand:** N/A

### Points to consider:

- How large is the blind spot on a typical midsize truck?
- When should you use a spotter?
- What safety features of your truck can reduce the risk associated with backing up?

### TALK

Maneuvering a large commercial motor vehicle is enough of a challenge on its own, but any time you need to back the vehicle up, the risk of a collision is higher. According to the National Safety Council, one in four motor vehicle accidents involves improper backing. Backing accidents can injure people working nearby, other drivers, pedestrians, and bicyclists and can cause damage to property or other vehicles.

The easiest way to prevent a backing accident is to avoid backing up in the first place. Whenever you can, try to plan your trips so that you can drive forward rather than in reverse. This might mean choosing different parking spaces that you can pull straight out of or avoiding narrow spaces where you don't have enough space to turn around.

Sometimes, though, backing up is your only option. In these cases, follow these do's and don'ts to reduce the risk:

- **Do** walk around your vehicle before backing up to check for obstacles, then quickly return to the vehicle and back up before conditions change.
- **Do** familiarize yourself with your truck's blind spots. For example, these can extend up to 16 feet in front and 160 feet behind a midsize truck. How large are the blind spots on the truck you drive?
- **Do** roll down the driver's side window so you can hear honking horns and any other warning sounds that come from outside the vehicle.
- **Do** practice backing up in safe surroundings until you become familiar with the way each truck you drive handles while backing up.
- **Do** use a spotter, particularly if your view of the area behind your truck is obstructed. When you use a spotter, make sure to agree on hand signals before backing up, and always maintain visual contact with your spotter while backing up.
- **Do** make sure your spotter is wearing high-visibility clothing, especially when visibility is poor, and that he or she is completely focused on helping you back up and is not distracted.

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- **Do** make sure the truck's backup alarm is working properly, turn on flashers, and use the horn as necessary to warn anyone behind you.
- **Do** proceed very slowly while backing up, and be prepared to stop at the first sign of trouble.
- **Do** make use of any safety devices on your truck, such as rearview cameras and obstacle detection systems. These can help improve your ability to see your path and avoid collisions.

However, these devices aren't a substitute for your walkaround inspection, so don't start taking shortcuts with your safety practices.

- **Don't** rely too much on your mirrors. While mirrors are a useful tool, they're not a complete view of the entire area behind your vehicle.
- **Don't** allow yourself to be distracted behind the wheel. Turn off the radio, don't use your cell phone, and focus on the task at hand.



# COMMERCIAL DRIVER SAFETY

## VEHICLE INSPECTIONS



This talk provides commercial drivers with a refresher on the pre- and postoperation inspection requirements for commercial motor vehicles (CMVs).

### Materials to have on hand:

- A sample driver vehicle inspection report
- Sample preoperation and/or postoperation inspection checklists

### Items for attendees to consider during talk:

- What must you do before you drive a CMV?
- What must you do after you drive a CMV?
- When do you need to complete a driver vehicle inspection report?

## TALK

As a commercial driver, safety on the job consists of more than just following traffic laws and driving in a safe manner. It's also very important, both for your safety and for the safety of other drivers, that the CMV you drive is in safe working condition.

Your motor carrier is responsible for conducting periodic, comprehensive safety inspections to make sure all of its vehicles are in good repair, but you also have a part to play by inspecting your vehicle for obvious safety issues both before and after you drive.

1. Before you drive a CMV, conduct a basic visual inspection. Do you see any obvious safety issues? Some things to check include lights, windshields, mirrors, tires, brakes, and signals. Also, make sure that any cargo you are carrying is properly stacked and tied down securely. *[If your company has a specific preoperation inspection checklist, discuss it here.]*
2. Next, review the driver vehicle inspection report that was completed by the previous driver of that vehicle. If the report identifies any safety issues, you must sign the report to acknowledge that you have reviewed it and that any necessary repairs to correct these safety issues have been completed. If there is no certification that necessary repairs have been made, do not drive the vehicle.
3. After you complete a shift, inspect your vehicle again. Inspect at least the following parts:
  - Service brakes, including trailer brake connections
  - Parking brake
  - Steering wheel and horn
  - Lights and reflectors
  - Windshield wipers
  - Rearview mirrors
  - Tires, wheels, and rims

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# COMMERCIAL DRIVER SAFETY

- Coupling devices
- Emergency equipment

If you find any problems that could affect the safety of the vehicle or cause it to break down, describe them in a driver vehicle inspection report. If you drive a passenger-carrying motor vehicle, you need to prepare a driver vehicle inspection report describing your inspection findings even if you do not find any problems. For property-carrying motor vehicles, you

need to prepare and submit the report only if you discover a problem. If you complete a report, sign it and submit it to your motor carrier.

*[If your company has additional requirements for postoperation inspections, discuss them here.]*

These simple steps, followed every time you drive, will help to make sure that the CMVs you operate are in safe working condition and that you do not endanger yourself or others on the roadway.

# COMMERCIAL GROUNDSKEEPING SAFETY



This talk discusses some of the hazards of being a commercial groundskeeper, as well as control methods to reduce the risk of injuries.

## Materials to have on hand:

- Groundskeeping equipment, such as mowers, trimmers, and hand tools
- Personal protective equipment (PPE)

## Items for attendees to consider during the talk:

- What are the unique hazards of groundskeeping?
- What are some ways I can reduce my risk of injuries?

## TALK

Commercial groundskeepers play an important role in the maintenance and upkeep of outdoor spaces. You will be responsible for maintaining a safe and presentable area for others to enjoy. Even though you will be using equipment that many of us have at home and performing tasks that may not seem hazardous on the surface, the risk of injury can be high. Some tasks that you may perform include:

- Using landscaping tools such as shovels, rakes, spreaders, and leaf blowers

- Operating equipment such as lawn mowers, riding mowers, or skid steer loaders
- Spreading chemical fertilizers and pesticides

Some hazards of these tasks include:

- Collisions and rollovers of mobile equipment
- Slips and trips on uneven terrain
- Snake/insect bites
- Fires from refueling equipment
- Cuts and amputations from trimmers or mowers
- Hearing loss from high noise exposure
- Chemical exposure from lawn care products
- Eye injury from flying objects
- Neck and back injuries from lifting, twisting, and carrying heavy loads

These injuries can be life-changing. Fortunately, there are several measures you can take to reduce or eliminate that risk.

## Training

Always make sure that you are trained and competent to perform your tasks and operate your equipment. If you are not comfortable performing

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# COMMERCIAL GROUNDSKEEPING SAFETY

a task or have not been trained, notify a supervisor. Many workers feel like they need to be ready to operate any piece of equipment or perform any task at any time. In reality, operating equipment or performing tasks that you have not been trained for is extremely dangerous.

## Safe Work Practices

***[Demonstrate practices as you talk about them.]***

Here are some general safe work practices to keep in mind.

- Always refuel equipment in a well-ventilated area away from sparks, flames, or other ignition sources.
- Never operate equipment beyond its manufacturer-recommended limits. Examples include mowing on extreme slopes and overloading skid steers or loaders.
- Never reach into the blade of a mower to free a jam. Shut off the equipment, and use a tool to free the jam.
- Lift safely. Any object over 50 pounds should be a team lift. Carry objects as close to your body as possible. Lift objects between your legs, with your back straight, and avoid sudden bending or twisting.

- On hot days, stay hydrated. Drink small to moderate amounts of water often instead of large amounts all at once. Take breaks if you feel overheated or dizzy.
- Read and understand the chemical labels and safety data sheets, or SDSs, for chemicals.

## PPE

***[Show how to use PPE while describing it.]***

- At minimum, wear long pants, steel-toe boots with good treads, and shirts with sleeves. Too much exposed skin could get irritated from chemical use or debris.
- Wear safety glasses or goggles for tasks that could produce flying objects or chemical splashes.
- Use earplugs, earmuffs, or canal caps when performing loud tasks. A good way to know if hearing protection is needed is if you can't hear a normal conversation over the noise.
- Use recommended gloves and respiratory protection when handling chemicals. This information can be found on the label and the SDS for the chemical.

# COMPRESSED AIR AND ITS DANGERS



This talk discusses safe uses and work practices of compressed air.

## Material to have on hand:

- Compressed air tools used in your workplace

## Items for attendees to consider during talk:

- Should compressed air be used to clean chips or dust off of you or a coworker?
- Do you know safe practices when using compressed air?

## TALK

Compressed air can be very helpful for powering pneumatic tools and for transferring nonflammable liquids. You can even use it for cleaning equipment if you follow strict safety procedures. But compressed air is also dangerous.

How could plain old air be hazardous? Consider this:

- Compressed air can pop your eyeball from its socket.
- If directed at the ear, it can puncture an eardrum and cause deafness.
- Bubbles of air can enter the bloodstream and cause a fatal aneurysm.

It's not the air itself that is dangerous, but the pressure that makes it particularly hazardous. That's why you

are only allowed to use compressed air for cleaning machines and equipment under these conditions:

- For removing dust or particles from jugs, fixtures, or deep holes in parts, use low pressure and the right nozzle, wear cup-type goggles, use gloves, and set up shields to protect others in the area.
- The nozzle needs to have a 30-pounds-per-square-inch restriction valve and be dead-ended. This will keep the air pressure low and allow air to escape if the nozzle contacts your skin. Never use a compressed air hose for cleaning without the restriction valve.
- The lower the pressure, the less dangerous the usage—even 10 or 15 pounds per square inch may be sufficient.
- For transferring liquids from properly rated pressure vessels, check air pressure, attach the hose connection tightly, and remain at the control valve to shut it off in an emergency. Never use compressed air to transfer flammable liquids.
- The compressed air nozzle should never be pointed at someone else or yourself to clean off chips or dust. The chips or dust can be driven into your skin with possible fatal results. Use a brush or vacuum instead.

One word of caution for would-be pranksters—air guns and hoses should never be applied, even jokingly, to any part of the human body. Fooling around with air hoses has been known to cause serious injuries and deaths.

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# COMPRESSED GASES

## HANDLING COMPRESSED GAS CYLINDERS



This talk discusses the safe handling of compressed gas cylinders.

### Materials to have on hand:

- Company’s compressed gas safety plan (if applicable)
- Compressed gas cylinders used at the facility



### Items for attendees to consider during talk:

- Are you aware of the hazards associated with compressed gas cylinders?
- Do you know when cylinders need to be secured?
- Are compressed gas cylinders allowed to go into a confined space?

## TALK

Compressed gas, under control, can be extremely helpful in performing many tasks. Out of control, it can cause serious injury—even death. So, before you use compressed gas cylinders, be sure you know the facts. That way, you’ll be in control, and you’ll be doing your share in keeping yourself and your coworkers from harm.

Compressed gases can be corrosive, flammable, explosive, toxic, or all of these combined. So that everyone will know what type of gas is in a compressed gas cylinder, the cylinders need to be legibly

marked for identification purposes. Somewhere on the bottle, usually just below the cap, is the identification code and label stating the bottle’s contents. The label has to have a Cylinder pictogram and pictograms of other hazards of the compressed gas.

You should also be familiar with the hazards associated with whatever gas you’re going to be working with. Knowing whether a gas is flammable or can suffocate you can save your life.

If you don’t know the contents of a particular cylinder, don’t use it. Notify your supervisor who, in turn, will tag the cylinder and notify the storeroom or the supplier.

Always secure cylinders when in use, in storage, and in transport. If you notice that a cylinder is not secured, secure it yourself or let someone know. And when a cylinder is not in use, it should have its protective cap on. If the cylinder valve is knocked off, the cylinder will take off like a missile.

Keep the cylinder away from all forms of fire- and spark-producing operations and electric lines. A compressed gas cylinder should never be exposed to such excessive heat that its outside surface exceeds 125 degrees Fahrenheit.

Don’t drop or bang cylinders together violently. Move them only with approved hand trucks. When transporting cylinders by crane, use approved material skiffs; never use magnets or slings. Never use cylinders as rollers to move material.

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# COMPRESSED GASES

When storing compressed gas cylinders, keep a few facts in mind:

1. Never mix cylinders. For example, don't store propane cylinders and oxygen cylinders together.
2. Compressed gas cylinders must be stored a minimum of 20 feet from combustible material such as grease, oil, and paint.
3. Mark cylinders when they are empty, and avoid storing them with full ones.

When using compressed gas cylinders, always use the correct regulator for each particular cylinder.

Open the cylinder valve slowly, and don't use tools to force it open. If it is difficult to open, return the cylinder for a new one. Cylinders that are damaged or difficult to open should be tagged and returned to the storeroom or supplier.

Never take a compressed gas cylinder into a confined space. Always set the cylinder outside of the space, and run the hose or tubing into the space.

Remember these rules while working with compressed gas cylinders to reduce the hazards associated with them.



# CONFINED SPACE

## Escape and rescue



This talk discusses the sequence of procedures to follow when entrants have to evacuate a confined space in an emergency, either on their own or with rescue assistance.

### Materials to have on hand:

- A copy of the facility’s confined space rescue procedures
- Examples of escape and rescue equipment

### Items for attendees to consider during talk:

- Who is responsible for conducting a rescue if the entrant cannot evacuate a confined space alone?
- What are examples of items that entrants should take with them into a confined space to help them escape in an emergency?

## Talk

Confined spaces that require a permit to enter can be dangerous even when all safety precautions are taken. We want to make sure you are prepared to respond in case of an emergency, whether you are an entrant or providing emergency assistance or rescue. When something goes wrong and confined space entrants get in trouble, they have to get out fast and anyone helping or rescuing them must not endanger themselves. One-half of all workplace deaths related to confined spaces are would-be rescuers.

Before anyone enters a permit-required confined space, emergency evacuation and rescue procedures in the form of a written rescue plan have to be in place and everyone involved in the confined space operation has to be aware of the procedures. It’s the entrant supervisor’s responsibility to verify that emergency plans are in place, that emergency equipment is available, and that rescue services are available and the means to contact them are operating. Those emergency procedures will detail a “hierarchy” of actions to take in an emergency, which we’ll discuss in this talk.

There are three basic actions to take in an emergency that require evacuation of the space.

**Entrant self-rescue.** The primary emergency response is for the entrant to evacuate or “self-rescue” if possible. This simply means the entrant leaves the space on his or her own accord. In order to do this, the entrant needs to have an approved emergency alert system of a portable radio, cell phone, or other means of communicating with the attendant.

The entrant has to evacuate the confined space immediately whenever:

- The attendant or entry supervisor gives the order to evacuate.
- Any sign or symptom of a physical or health exposure to a hazard develops.

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# CONFINED SPACE

- A dangerous or unexpected condition, inside or outside the space, is detected.
- An evacuation alarm is activated.

**Nonentry rescue by the attendant.** If the entrant cannot self-rescue, the next action in the hierarchy of emergency action is a nonentry rescue where attendants pull or retrieve the entrant while the attendant remains outside the space.

As part of normal entry procedures, the entrant has to wear a full-body harness connected with a life-line that leads out of the space and is accessible to the attendant. The end of the retrieval line should be attached to a mechanical device or a fixed point outside the space so that rescue can begin immediately. A mechanical device has to be used to retrieve people from a vertical permit required space that is more than 5 feet deep. Attendants should not attempt to retrieve an entrant unless there is visual or voice confirm that the person can be moved safely. If the person cannot be seen or communicated with, start entry rescue procedures.

**Entry rescue** is the last resort because the rescuers will be exposed to the same hazards that caused the entrant to become trapped or unconscious. Rescuers have to be thoroughly trained in rescue procedures, including the hazards of confined spaces, the use of PPE, and the use of rescue equipment. They also have to be notified by the entry supervisor that a confined space is being entered so that they are aware of the potential need for their services. If necessary, the attendant will call for their services using methods described by the permit. Authorized rescuers have to practice an entry rescue at least once per year in one of the confined spaces at our workplace.

So remember—never enter a confined space unless you've been authorized to do so, even if someone inside the space is in immediate danger. Your life, and the life of the entrant, may depend on your response—call rescue services before you are the one in need of rescue!

# CONFINED SPACE ATTENDANT

## UNDERSTANDING YOUR RESPONSIBILITIES



This talk discusses the responsibilities of the permit-required confined space attendant and the permit entry procedures to follow. It can be used to review the permit procedures with attendants or to inform other team members such as the entrant, entry supervisor, designated rescuers, and others who work near confined spaces about the attendant's job.

### Materials to have on hand:

- Copy of a confined space entry permit
- Copy of the confined space entry plan and procedures

### Items for attendees to consider during talk:

- What is the primary purpose and responsibility of the confined space attendant?
- What additional responsibilities can the attendant have? Should the attendant enter the space to rescue a stranded entrant since he or she is right there to help with escape?

## TALK

A 21-year-old worker died inside a 4-foot by 8-foot wastewater holding tank while attempting to clean and repair a drain line. He used sulfuric acid to unclog a floor drain leading into the holding tank. The worker collapsed after he was overcome by methane gas mixed with sulfuric acid vapors and fell face down into 6 inches of water in the bottom of

the tank. The attendant attempted a rescue and died after he was also overcome by the toxic vapors.

Some people assume that the attendant doesn't have much to do except stand at the entrance to the space while work is going on inside. The attendant actually has quite a few responsibilities but only one primary purpose: Protect the safety and health of the entrant(s).

Your responsibilities as the attendant at a permit-required confined space are:

- Have a copy of the permit to know who is authorized to enter the space.
- Remain outside the permit space during entry operations unless relieved by another authorized attendant.
- Only perform a rescue while remaining outside the space and only as specified by the nonentry rescue procedure as outlined in the permit. If you can't safely perform the nonentry rescue, contact rescue services.
- Know the existing and potential hazards in the space, including information on the mode of exposure, signs of danger or symptoms of exposure, consequences, and physiological effects. Air monitoring may be part of the attendant's job.
- Always maintain communication with entrants, and keep an accurate account of workers entering the permit space when multiple entrants are allowed.

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# CONFINED SPACE ATTENDANT

- Call for rescue and other services during an emergency. Make sure your cell phone or other communication device is working properly and that you have all the emergency contact information. Never leave your post to make a call.
- Make sure unauthorized people stay away from permit-required spaces.
- If an unauthorized person somehow gets into the permit space, tell the authorized entrants and the entry supervisor.
- Perform no other duties that interfere with the attendant's primary duties.

The attendant has additional responsibilities in an emergency. Order an evacuation of the permit space when:

- An unanticipated hazardous condition exists. For example, exhaust fumes from nearby equipment entering the space could require those inside to evacuate.
- A worker shows signs of physiological effects of hazard exposure.
- There is an emergency outside the confined space. For example, outside the space, there

could be a fire or chemical spill that requires those inside the space to evacuate.

- The attendant can't effectively and safely perform required duties.

What were some possible errors and omissions by the attendant in the case of the two workers who died in the wastewater holding tank we talked about?

***[Recap the story at the beginning of the talk if needed.]***

The attendant errors possibly include:

- Was not aware of the atmospheric hazard in the tank before entry;
- Failed to monitor the atmosphere while the entrant was inside;
- Failed to follow approved rescue entry procedures such as call for rescue services; *and*
- Did not preplan, or participate in preplanning, the rescue and retrieval protocols.

When you look closely at these duties, you see that this is a lot more than just some "body" standing outside the space.

# CONFINED SPACE ENTRANT

## UNDERSTANDING YOUR RESPONSIBILITIES



This talk discusses the responsibilities of the permit-required confined space entrant in general industry and the permit entry procedures to follow. It can be used to review duties with authorized entrants or to inform other team members, such as the attendant, entry supervisor, designated rescuers, and others who work near confined spaces about the entrant's job.

### Materials to have on hand:

- Copy of a confined space entry permit
- Copy of the confined space entry plan and procedures

### Items for attendees to consider during the talk:

- What are the duties of the confined space entrant?

## TALK

A few years ago, a 22-year-old worker died inside a chemical storage tank classified as a permit-required confined space while attempting to clean it. The worker entered the tank through the top opening using a rope for descent. Although a self-contained breathing apparatus, or SCBA, was available, the worker was not wearing it when he entered the tank. Sadly, the worker was overcome by fumes and collapsed onto the floor of the tank.

This incident is all the more tragic because it was entirely preventable. If you keep your duties as an

authorized entrant in mind before you perform any work in a permit-required confined space, you can ensure your safety and the safety of your coworkers and avoid a similar fate.

As an authorized entrant, which is an employee approved to enter a permit-required confined space by an employer, you need to:

- Be aware of site-specific information about the hazards you may face during entry, including how exposure can occur in the space, the signs or symptoms of exposure, and the consequences of the exposure.
- Follow all safe work practices as outlined by the entry permit.
- Properly use important equipment, including:
  - Ventilating equipment needed to create acceptable entry conditions;
  - Communications equipment necessary for contacting the attendant;
  - Personal protective equipment, such as respiratory protection and personal fall protection systems;
  - Lighting equipment to allow you to see well enough to work safely and to exit the space quickly in an emergency;
  - Barriers and shields to protect from external hazards; *and*

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# CONFINED SPACE ENTRANT

- Equipment needed for safe entry and exit from the space, such as ladders.
- Communicate with the attendant once you enter the permit space to allow the attendant to monitor your status and to alert you if you need to evacuate the space.
- Notify the attendant whenever you recognize a warning sign or symptom of exposure to a dangerous situation or you notice any condition that is not allowed by the permit during entry.
- Exit the permit space as quickly as possible whenever an order to evacuate is given by the attendant or entry supervisor; if you recognize any warning sign or symptom of exposure; if you notice any condition that is not allowed by the permit during entry; or if an evacuation alarm is activated.

If you follow these work practices before and during each entry into a permit-required confined space, you will eliminate unnecessary risks and increase your chances of completing the job safely.

# CONFINED SPACE HAZARDOUS ATMOSPHERES

## Tips to recognize them and work safely

This talk discusses the types of hazardous atmospheres that entrants are most likely to encounter, how to identify them, and how to minimize the risk of exposure.

### Materials to have on hand:

- Air testing and monitoring equipment
- Respirators and emergency response equipment used in hazardous atmospheres

### Items for attendees to consider during talk:

- What makes the air inside a confined space classified as “hazardous?”
- What is the first thing you should do if you believe you are breathing air that is hazardous in a confined space?

## Talk

We'll briefly talk about the most common types of hazardous air found in a confined space, how to recognize it, and what to do if you find yourself unprotected in a hazardous atmosphere or discover that an entrant is exposed.

**There are three types of atmospheric hazards** that cause the most deaths and injuries in confined spaces:

- Oxygen deficient or oxygen displaced



- Flammable or combustible gas
- Toxic gas or vapor

“**Oxygen deficient**” means any atmosphere that contains less than 19.5 percent oxygen. Another common name is “asphyxiating atmosphere.” Below that, your body won’t get the oxygen necessary to function properly, and a very low oxygen deficiency will cause asphyxiation and death. Normal air is 21 percent oxygen.

**Flammable or combustible gases** in high concentrations cause explosions. An atmosphere is considered hazardous when the flammable gas or vapor concentration is above 10 percent of its lower flammable limit (LFL). The confined space permit should have the LFL information on it, as well as the safety data sheet for the gas. Natural gas and methane are examples; some gases like methane can be both an explosion hazard and an oxygen-deficiency hazard, depending on their concentrations.

“**Toxic atmospheres**” refer to those containing gases, vapors, or fumes that have poisonous effects in or on the body. The most common toxic gases found in confined spaces are carbon monoxide and hydrogen sulfide, which can be inhaled.

At some point, you may enter a confined space and discover that you are exposed to a hazardous atmosphere. Knowing the three types of hazards we just described and the examples of common chemicals

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# CONFINED SPACE HAZARDOUS ATMOSPHERES

or gases that you might encounter are important warning signs, or “red flags,” that you could be exposed to a hazard.

If you believe you are or might be exposed to a hazardous atmosphere that you are not fully equipped for or trained to handle, leave the space immediately. If you or the attendant notice any signs or symptoms that an entrant is exposed to a hazardous atmosphere, immediately order the entrant to evacuate. Start nonentry rescue if the entrant does not respond, and call rescue services if the nonentry rescue fails.

**Read the confined-space permit, and make sure it is the most up-to-date version.** Never enter a confined space with a known or suspected hazardous atmosphere without an approved and up-to-date entry permit and all of the protective equipment and procedures described in the permit. The permit will describe the hazards of the space, including atmospheric hazards, entrapment potential, engulfment potential, required hot work permits if welding is to be done, and other planned work activities that can create hazards in the space.

The permit will also show the results of air-monitoring tests that were conducted, so authorized entrants

can be assured that the space is safe. For example, if monitoring shows a lack of oxygen or a high concentration of flammable vapors or toxic chemicals, the permit will show what is being done to improve the atmosphere of the space, such as ventilation. That’s why the most up-to-date version of the entry permit is so important—a permit a day or two old may not reflect monitoring results of the current atmospheric conditions in the space.

In some cases, the attendant may be required to monitor the concentrations of oxygen and hazardous chemicals, or it may be someone else; the permit will designate the appropriate person. The permit will tell you what type of respiratory equipment and personal protective equipment is needed and the type and frequency of monitoring that’s required. The permit will also describe the rescue procedures as well as how to contact the trained confined space rescue team.

Never attempt to rescue a coworker unless you’re part of a trained rescue team. One-half of all workplace deaths related to confined spaces are would-be rescuers, and many of those deaths involved exposure to a hazardous atmosphere. Remember that the rescuer will be exposed to the same hazardous conditions that caused the entrant to need rescue.



# CONFINED SPACE SUPERVISOR

## KNOW YOUR RESPONSIBILITIES



This talk summarizes the six core responsibilities that a supervisor has to perform while overseeing a permit-required confined space entry operation in general industry and construction worksites.

### Materials to have on hand:

- Copy of an entry permit
- Example of a written agreement with rescue services
- Examples of communication devices used to contact rescue services

### Items for attendees to consider during talk:

- Who is responsible for both signing approval of and canceling the confined space entry permit?
- What is the first thing you should do if hazards or conditions inside an occupied confined space change?

## TALK

We will briefly summarize the six core responsibilities that you as the supervisor have to address before any entrant is allowed into a permit-required confined space. There are many additional details that go with each responsibility, as outlined in the entry permit and written permit space program.

### 1. Identify the space hazards, including information on how entrants can be exposed to the

**hazards, the signs or symptoms of injury or exposure, and the consequences of exposure.** Brief all entrants and attendants with information about the actual and potential hazards in the space and review the emergency procedures with them. Make sure they acknowledge to you that they understand the hazards, that they have all the equipment, including personal protective equipment, or PPE, needed to protect themselves from hazards, and are prepared to respond in an emergency. Show authorized entrants a copy of the entry permit to confirm with them that preentry preparations have been completed.

**2. Verify emergency plans and entry conditions, such as permits, tests, procedures, and required equipment, before allowing entry.** Make sure the entry permit is current, that all the appropriate entries have been made on the permit, and that all the permit conditions have been met. Make sure that all tests specified by the permit have been conducted and that all procedures and equipment are in place before signing the permit and allowing entry to begin. Remember that you, as the entry supervisor, have to sign the permit to authorize entry.

**3. Terminate entry and cancel permits when entry operations are completed or if a new condition exists in or near the space that is not allowed by the permit.** New conditions must be noted on the canceled permit and used in revising the permit space program. Keep all canceled entry permits for at least 1 year.

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# CONFINED SPACE SUPERVISOR

**4. Ensure that entry operations remain consistent with the entry permit and that acceptable entry conditions are maintained.** Don't deviate from your established procedures. Make sure there is adequate and continuous monitoring of all conditions in the space. If conditions in the space cannot be maintained as prescribed in the entry permit and confined space program, evacuate the space until entry conditions can be returned to a safe and verifiable state.

**5. Verify that trained rescue services are available at the time entrants go into a confined space and for the duration of the entry.** Evaluate your designated rescue and emergency service to make sure that it can respond to a rescue summons quickly, perform rescue tasks proficiently, is properly equipped, and can reach victims within a time frame appropriate for the permit space hazards. Also verify

that the communication system for contacting the rescue team is working.

If you are relying on local emergency services for rescue, arrange for the services to give you advance notice if they won't be able to respond for a period of time for any reason. If they are not available, don't allow entry; and if workers have entered the space, remove them until the rescue services are available again.

**6. Take appropriate measures to remove unauthorized entrants.** There are instances when unauthorized people will try to enter a confined space, especially during an emergency when someone unauthorized and untrained attempts a rescue. Make sure your entry permit and permit space program have written procedures for removing unauthorized people from the space and that you are prepared to do so quickly.

# CONFINED SPACES IN CONSTRUCTION

## POTENTIAL HAZARDS FOR THE ENTRANT



This talk discusses the most common hazards that entrants are likely to encounter in confined spaces at construction sites. This talk also applies to confined space entrants in general industry workplaces that perform operations such as space alteration or repair, including painting or coating.

### Materials to have on hand:

- Items carried into a space by entrants, such as hazardous chemical containers and power tools

### Items for attendees to consider during talk:

- What are some items brought into a confined space that are hazardous or could create a hazard?
- What worksite activities near a confined space could create a hazard for someone inside the space?

## TALK

Recently, a crew foreman in California died after several days of applying an epoxy coating to the walls of a 72-inch underground water line. He died of liver failure after breathing vapors of nitropropane and coal tar pitch coming from the epoxy coating.

As an entrant, there are several common hazards in confined spaces you should always look for,

including those already existing in the space and those you might bring in with you:

- **Chemicals** already in a space or running through it in pipes can cause serious injury or death. Chemicals can also be brought in by the entrant for cleaning, repair, construction, or maintenance work, like the coatings brought into the water pipe in California.
- **Atmospheric hazards** include oxygen levels too low for breathing or so high that they can cause an explosion. Other air hazards are toxic vapors, gases, fumes, or dust.
- **Structural hazards** like inwardly converging walls found in grain bins, tanks, and industrial dust collection systems are a perfect example of spaces that can trap the entrant.
- **Mechanically created hazards** from handheld equipment like grinders or chipping tools can create dangerous levels of dust and flying debris.
- **Electrical equipment** in the space can spark a fire or explosion in an atmosphere too high in oxygen or with flammable vapors.
- There are **engulfment hazards**, which are materials that can smother or drown a person like grain, sand, or water in a silo, pit, or sewer system.
- **Noise** from running equipment and construction work is often greatly amplified in a confined space and can cause hearing loss.

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# CONFINED SPACES IN CONSTRUCTION

**Consider hazards outside of the space.** Additional hazards at a construction site to consider are activities or equipment operating near or adjacent to the space that could endanger entrants in the space. For example, a nearby generator or other fuel-supplied equipment can generate exhaust fumes that enter a space.

**Take protective measures.** Keep these points in mind whenever you enter a confined space:

- Don't drop your guard; stay alert.
- Be ready to leave immediately if you sense conditions are dangerous or if the attendant tells you to leave.
- Leave immediately if you become tired, dizzy, or nauseated.
- Stay in constant contact with the attendant to communicate any problems encountered.
- Don't hesitate to call for assistance—especially if you need help to exit.

# CONSTRUCTION: PORTABLE FUEL CANS



This talk covers safe practices that employees working at construction sites should follow when refueling small-scale equipment with portable fuel cans.

## Material to have on hand:

- Occupational Safety and Health Administration (OSHA)-approved refueling container

## Items for attendees to consider during the talk:

- Does your employer provide OSHA-approved fuel-dispensing containers to use at construction sites?
- Do you know how to safely refuel the equipment you use?

## TALK

Refueling equipment is a necessary but potentially hazardous part of any construction project. Mistakes made when fueling equipment can result in fires, spills, and slips and falls. If you follow the proper safety precautions, however, you can help ensure your and others' safety on construction sites.

Gasoline and fuel oils like diesel are highly flammable liquids that are used to power a wide variety of equipment, such as chain saws. Unfortunately, the same characteristics that make these fuels so effective also make them very dangerous. These

fuels are meant to ignite easily in order to power equipment. The ignitable vapors produced by gasoline, for instance, can catch fire upon exposure to even just a spark. You should only use OSHA-approved portable fuel containers, sometimes called "safety cans," to transport and dispense flammable liquids for refueling at jobsites. Safety cans:

- Are closed.
- Hold 5 gallons or less.
- Have spouts with covers, flame-arrestor screens, and spring-closing lids.
- Are designed so that internal pressure is relieved and the container will not explode when exposed to heat or flame.

Portable fuel containers that lack these safety features can leak, rupture, and cause a fire or spill.

***[Take out a portable fuel container that will be used at jobsites. Explain and demonstrate how its safety features work.]***

Additional safe practices to follow when refueling equipment include:

- Designate a refueling station in a well-ventilated area at each jobsite. This area should be clearly marked and kept clean at all times.

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# CONSTRUCTION: PORTABLE FUEL CANS

- Always shut off the engine before refueling equipment.
- Before refueling, make sure you are not near any open flames or any operating equipment that can generate sparks.
- NEVER smoke during refueling operations or near a refueling station.
- If you are refueling portable equipment such as a chain saw, allow the engine to cool down before adding fuel to the tank.
- Stay focused on the task being performed. It is easy to make a mistake and spill fuel on the ground if you become distracted.
- Be careful not to overfill a fuel tank.

Utilizing only OSHA-approved portable fuel containers will reduce the risks associated with refueling operations at construction sites. Other supplies that should be brought to jobsites and kept in designated refueling areas for emergencies include portable fire extinguishers and spill kits. These supplies may be necessary in the event a fire or spill does occur.

***[Review employer policy for using fire extinguishers at jobsites and when they are appropriate.]***

***[You may choose to present the “Fire Extinguisher—Fight or Flight?” toolbox talk and review the conditions under which employees are expected to use fire extinguishers on duty.]***

Improper fueling techniques can have dire consequences. Take the time to learn about the fuels you work with and how to safely handle them, as well as the equipment that can help protect you from refueling hazards. Practice safe procedures when it comes to storing, handling, and dispensing the fuels you use.

# CONSTRUCTION ERGONOMICS

## CARPENTRY BEST PRACTICES



This talk informs employees performing carpentry tasks about the hazards they may face on the job related to poor ergonomics and the safe practices that can help prevent injuries.

### Materials to have on hand:

- A copy of the company’s ergonomic program or Injury and Illness Prevention Program (if available)
- Examples of tool extenders (such as a nail gun extension pole)
- Knee pads

### Items for attendees to consider during the talk:

- What are some tasks on the job that may lead to fatigue, discomfort, or an injury from poor ergonomics?
- What are some strategies to avoid bending, squatting, or reaching while performing carpentry work?
- How can the chance of injury be reduced from using vibrating hand tools?

## TALK

Carpentry tasks that you regularly perform can lead to fatigue, discomfort, pain, and even injury. Awkward postures; repetitive motions; pressure on your body from contact with hard surfaces; the use of vibrating equipment; and lifting and carrying loads can all lead

to injuries to your body, including your back, hands or fingers, and knees.

Today, we’ll discuss some of these hazards and how safe work practices and proper ergonomics can help prevent these injuries.

**Awkward postures.** Your posture, or the position of your body, can contribute to fatigue or injury to your back, neck, and shoulders. While performing carpentry tasks, you may frequently bend your back or squat down. If you are working near the ground, consider sitting or kneeling instead of bending or squatting. Or, if possible, work from a standing position by using a tool handle extension if it is available for the specific tool you’re working with. Also, if possible, raise the work off the ground by using a sawhorse to cut plywood, for example.

Another awkward posture is reaching. Reaching for long periods of time while working overhead may lead to discomfort or injury to your arms, shoulders, neck, and back. To avoid reaching, position yourself closer to the work by using a lift, scaffold, or ladder.

And it is important to remember—if you are performing a task that requires you to bend, squat, or reach—to change positions often.

**Repetitive motions.** Repeating the same motion, like when hammering, can cause fatigue. To avoid fatigue, take small breaks. Regular breaks that last even only a few seconds are helpful. Also, when possible, use lightweight tools.

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# CONSTRUCTION ERGONOMICS

**Contact pressure.** If you kneel for extended periods of time, like when installing a deck, your knees can become irritated or inflamed. This can lead to pain or a limited range of motion in your legs. Wearing knee pads can make this type of work more comfortable for you and also protect you from getting cut by sharp edges. Remember, always use the proper tool for the job—don't use your knee or hand as a hammer.

**Vibrating equipment.** Hand tools such as drills, grinders, and sanders can cause hand-arm vibration. This vibration could result in a tingling sensation or numbness in your fingers, or you may see a change in color of your hands or fingers. When using hand tools, grasp them as lightly as possible while still maintaining control of the tools. The tighter you hold the tools or the more force you apply when using the tools, the more vibration is transmitted to your body. If possible, alternate the use of vibrating hand tools with other tasks.

Also, always be cautious when working in cold weather—a lower body temperature decreases blood flow to your hands and fingers, making you more susceptible to a hand-arm vibration injury. Be sure to wear proper clothing, like tight-fitting gloves, to keep your hands warm and dry.

**Lifting.** Carpentry tasks frequently include handling material, including lumber and tools. Improper lifting can lead to back sprains, strains, and herniated disks. When lifting, use mechanical equipment, like carts or hand trucks, when possible to reduce the stress on your back from manual lifting. However, some equipment, like cranes and forklifts, must only be used if you are trained and certified to use it.

If an object is heavy, long, or awkwardly shaped, perform a team lift. Never lift anything that is too heavy or awkward for you to lift by yourself just to get something done quickly.



# CORROSIVES

## DANGERS OF EXPOSURE



This talk informs employees about how to identify corrosives and the dangers associated with their use.

### Materials to have on hand:

- A list of the corrosives used at your facility
- A safety data sheet (SDS) for each corrosive you use
- Examples of personal protective equipment (PPE) needed when handling corrosives

### Items for attendees to consider during the talk:

- Do you know how improperly handled corrosives can affect your health?
- Are you aware of how to determine the hazards of the corrosives used at the facility?
- Are you familiar with how to protect yourself from coming into dangerous contact with corrosives?

## TALK

*[You may want to present the toolbox talk “Corrosives: Safety Practices and Emergency Response” in addition to this toolbox talk.]*

At different locations in this facility, we use corrosive chemicals for specific purposes. But corrosives can burn and destroy exposed parts of the body, such as eyes and skin, as well as lungs and other internal organs, on contact. So, today, we’re going to talk

about the dangers of corrosives and the ways you can become exposed to them.

***[Tell your attendees what corrosives are used at the facility and for what purposes.]***

### Health hazards of corrosive materials

Corrosive materials are highly reactive, unstable substances that can seriously injure us if not handled in the right way. Most are either acids or bases (which include caustics or alkalis).

- Acids are often used for cleaning solutions and in manufacturing. They can destroy body tissue.
- Bases are also widely used in cleaning agents and various other products. They can cause severe burns, lung damage, and scarring.
- In addition, some oxidizers, such as fluorine and chlorine, have corrosive properties.

### Ways you can be exposed to corrosives

You can be exposed to corrosives:

- **By breathing.** Even small amounts of corrosive vapors or particles can irritate and burn your nose, mouth, throat, and windpipe; larger amounts can cause severe lung damage.
- **By swallowing.** Swallowing corrosives accidentally can severely damage your mouth, throat, or

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# CORROSIVES

stomach and, in some cases, can result in an inability to swallow or even cause death.

- **By splashes to your eyes.** A mist or even a splash of a corrosive can damage eyes. It may only cause irritation, but scarring and blindness can also happen. Bases are especially dangerous to your eyes.
- **By contact with your skin.** Corrosives that touch your skin can produce irritation such as burns or blisters. Corrosives can sometimes even eat through the skin itself.

## Other dangers

Corrosives are also highly reactive chemicals that can cause fire or explosion or react violently if they come in contact with other chemicals, combustible materials, or even water.

Acids react with many metals to release hydrogen, a highly flammable gas that can ignite in air.

Bases are not flammable, but intense heat develops when a solid base is dissolved in water, sometimes causing boiling and spattering over a wide area.

## Review the chemical's label and SDS

So, protect yourself and your coworkers. Review the corrosive substance's safety data sheet, or SDS, as well as the label on the chemical's container, before you work with a particular chemical. These valuable sources of information will tell you:

- The hazards of the chemical you are using, including the risk of fire or explosion;
- The particular type of personal protective equipment, or PPE, that you need for the corrosive substance you're working with;
- The first-aid instructions in case you or a coworker is exposed to the corrosive; *and*
- What you should do if there's a spill or other emergency.

Take the time to understand the dangers of the corrosive chemicals you are working with. It will help keep you and your coworkers safe.

# CORROSIVES

## SAFETY PRACTICES AND EMERGENCY RESPONSE



This talk informs employees about safety practices to follow when working with corrosives and how to respond to an emergency situation that involves either a spill of corrosives or exposure to corrosives in their workplace.

### Materials to have on hand:

- A list of the corrosives used at your facility
- A safety data sheet (SDS) for each corrosive you use
- Examples of personal protective equipment (PPE) needed when handling corrosives

### Items for attendees to consider during the talk:

- Are you aware of how to determine the hazards of the corrosives used at the facility?
- Do you know how to reduce the chance of a spill of or exposure to corrosives in your work space?
- Are you familiar with what to do if you come into dangerous contact with corrosives?

## TALK

*[You may want to present the toolbox talk “Corrosives: Dangers of Exposure” in addition to this toolbox talk.]*

At different locations at this facility, we use corrosive chemicals for specific purposes. But they are

dangerous substances that can burn and destroy exposed parts of the body, such as eyes and skin, as well as lungs and other internal organs, on contact. Today, we’re going to talk about the safety practices to follow when you handle corrosives and how you should respond to an emergency that involves a spill of corrosives or exposure to them.

***[Tell your attendees what corrosives are used at the facility and for what purposes.]***

### Take proper precautions

Corrosive materials are highly reactive, unstable substances that pose a serious and immediate risk to our health. When working with these substances, keep these tips in mind:

### First of all, know what you’re dealing with:

- Read the chemical label that includes a signal word, a pictogram, a hazard statement, and precautionary statements; *and*
- Always check the safety data sheet, or SDS, not just the label on the corrosive, so that you can recognize the hazards of the particular chemical you’re using.

### You can ensure the safety of your work space if you:

- Store acids and bases in separate areas;

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# CORROSIVES

- Make sure to use corrosives that are clearly labeled, and store them properly, usually in rooms with trapped floor drains to stop any spill from going outside;
- Check to see that there is adequate ventilation;
- Tell your supervisor if the mechanical exhaust systems aren't working; *and*
- Check that the tools and equipment you select are made for use with corrosive materials.

## When dealing with containers of corrosives, remember to:

- Keep containers closed when not in use;
- Check containers frequently to be sure there are no leaks;
- Be cautious when you move or open containers;
- Be especially careful when you remove corrosives from containers;
- Follow good housekeeping practices by keeping cigarettes, food, and drinks out of the work area; *and*
- Wash thoroughly after using corrosives.

## Use the correct personal protective equipment, or PPE

Proper protective clothing is essential when working with corrosives. Here's what you need to do:

- Always read the SDS to identify the particular type of protection you need for whatever corrosive substance you are working with;
- Eyes are especially vulnerable, so use chemical-resistant safety goggles and full face shields;
- Protect your body from spills or leakage with rubber gloves, aprons, and safety shoes. You may also need a full bodysuit;
- In many cases, you may need a supplied-air respirator or self-contained breathing apparatus, or SCBA, for protection; *and*

- Inspect all personal protective equipment, or PPE, before you use it, and remember to clean or dispose of it properly when you finish using it.

## Know how to respond to a spill

If you haven't had special training, don't try to clean up a spill yourself. Doing the wrong thing could cause a fire or explosion. If a chemical is spilled, it's best to call in the workers who have been trained and warn your coworkers in the area about the spill.

## Know how to respond to contact with a corrosive

- Follow the first-aid instructions on the SDS, but also get professional medical attention.
- If your skin comes into contact with a corrosive, remove your contaminated clothing and wash thoroughly. Immediately follow that with a long shower under low pressure.
- If you get a corrosive chemical in your eyes, flush your eyes with water at the eyewash station for at least 15 minutes, or longer, as indicated on the SDS.
- If you've inhaled corrosive vapors, get to fresh air immediately.
- Don't induce vomiting if you've ingested a corrosive, as that can cause additional damage to your esophagus, throat, and mouth. Get immediate professional help.
- Don't decide that first aid is good enough—follow up with prompt medical attention so that you're not permanently injured from these dangerous substances.

If you follow these safety practices and emergency response actions, you'll help keep yourself safe when you use corrosive chemicals.

# COVID-19: FACE MASKS



This talk discusses the Occupational Safety and Health Administration’s (OSHA) and the Centers for Disease Control and Prevention’s (CDC) recommendations for wearing face masks in public, including the workplace. Consult your state or local health agencies for further guidance.

**Note:** This talk is designed to help train workers who are unvaccinated or otherwise at-risk, as well as workers who are vaccinated but located in areas of substantial or high community transmission. Follow federal, state, local, tribal, or territorial laws, rules, and regulations.

## Material to have on hand:

- Example of a face mask

## Items for attendees to consider during the talk:

- Who do face masks protect?
- How should you care for your face mask?

## TALK

If you are unvaccinated or otherwise at risk, you are required to wear a face covering while working indoors. And, regardless of your vaccination status, you are required to wear a face covering if you are

working indoors in an area of substantial or high community transmission of COVID-19; while using indoor portions of public transportation and at public transportation hubs; or if you’ve had close contact with someone who has COVID-19 and have not had a negative COVID test. Or, you simply may choose to continue wearing a mask.

No matter the circumstances, the Centers for Disease Control and Prevention, or CDC, has issued some general guidance for wearing masks.

Face masks are simple barriers worn over the face, nose, and chin. They work to help prevent your respiratory droplets or large particles from reaching others. If they are of a high enough quality, they provide a measure of protection for you, as well.

## Wearing your mask

When wearing a face mask, make sure that:

- Your mouth and nose are fully covered.
- It fits snugly against the sides of your face so there are no gaps.
- It is secured with ties or ear loops and does not slip.
- There are two or more layers of washable, breathable fabric.

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# COVID-19: FACE MASKS

- It is not made of fabric that makes it hard to breathe, like vinyl.
- It does not have an exhalation valve or a vent that allows virus particles to escape.
- You do not have any difficulty breathing while wearing the mask.
- You avoid touching your face as much as possible.

The CDC also recommends that masks have a nose wire to prevent air from leaking out of the top of the masks. If you wear a gaiter, make sure that it has two layers or can be folded to make two layers.

***[Include the following paragraph if relevant to any of your trainees.]***

If you have a beard, mask fitting can be difficult. To have a better fit, you can shave or trim your beard, use a mask fitter or brace, or wear one disposable mask underneath a cloth mask that has multiple layers of fabric. The second mask will push the edges of the inner mask against your face and beard.

## Caring for your mask

Clean your hands with soap and water or an alcohol-based hand sanitizer immediately before putting on, after touching or adjusting, and after removing your mask. When removing your mask, handle it only by the ear loops or ties, and be careful not to touch your eyes, nose, or mouth because your hands and the outside of the covering could be contaminated.

If your mask is reusable, it must be able to be laundered and machine-dried without damage or change to its shape. In general, reusable masks should be washed regularly using the warmest-appropriate water setting for the cloth used to make the mask and a regular laundry detergent, dried completely in a dryer on the highest heat setting, and stored in a clean container or bag.

In addition to these recommendations, make sure you follow the advice of your state or local health agencies when you wear a mask. If you keep these tips in mind, you can help prevent the spread of COVID-19 in our workplace.

# COVID-19: MANAGING THE STRESS OF RETURNING TO THE WORKPLACE



This talk is for employees who are returning to the workplace following the reopening of companies that temporarily closed or implemented a mandatory work-from-home policy due to the COVID-19 pandemic. This talk provides information on how employees can manage stress they may have about transitioning back to work, as well as information on how employees can feel safe in their work environment.

**Note:** Follow any applicable COVID-19 federal, state, local, tribal, or territorial laws, rules, and regulations. While this guidance is primarily focused on protecting unvaccinated or otherwise at-risk workers in their workplaces, the Occupational Safety and Health Administration (OSHA) and Centers for Disease Control and Prevention (CDC) recommend that fully vaccinated individuals wear a mask in public indoor settings if they are in an area of substantial or high transmission and encourage them to wear a mask regardless of the level of transmission.

## Materials to have on hand:

- Face masks or face coverings (if applicable)
- Hand sanitizer (if applicable)
- CDC hand-washing poster (if applicable)

- CDC coughing and sneezing etiquette poster (if applicable)
- Social distancing poster (if applicable)

## Items for attendees to consider during the talk:

- What concerns do you have about returning to the workplace?
- Do you know the ways you can manage stress?

## TALK

Are you nervous about returning to the workplace after the COVID-19 pandemic? Are you anxious about your safety while being around people other than your immediate family members for an extended period of time?

You may have mixed emotions about returning to work: You may be concerned about your own health yet feel relieved that things are slowly going back to normal. If you were infected, you may be frustrated that coworkers have unfounded fears of catching the disease from you, even though you aren't contagious anymore. You may have gone or be going through mental health challenges due to the loss of a loved one and are worried about your job performance.

To help ease your worries about possibly contracting the virus as we reenter the facility, we have put

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# MANAGING THE STRESS OF RETURNING TO THE WORKPLACE

certain protocols in place to keep people safe in the work environment, particularly for those who are unvaccinated or otherwise at risk. Specifically, we are:

***[Select the protocols in place at your facility, and elaborate as necessary.]***

- Following Centers for Disease Control and Prevention, or CDC, procedures;
- Enforcing frequent hand-washing;
- Enforcing social distancing for those who are not fully vaccinated and for those who are fully vaccinated in public indoor settings in areas of substantial or high transmission;
- Using face masks or cloth face coverings if not fully vaccinated and for those who are fully vaccinated in public indoor settings in areas of substantial or high transmission;
- Disinfecting high-traffic areas frequently;
- Providing cleaning supplies and hand sanitizer for personal workspaces;
- Allowing flexible work hours; *and*
- Limiting the number of unvaccinated or otherwise at-risk employees in the facility.

***[Go over the CDC hand-washing poster, CDC coughing and sneezing etiquette poster, and/or social distancing poster if applicable.]***

***[Pass out face masks, cloth face coverings, and/or hand sanitizer if applicable.]***

## Stress management

We understand that transitioning back to the facility can be stressful, and you may feel depressed, irritable, or withdrawn. Other signs and symptoms of stress to look out for are fatigue, muscle tension or pain, mood swings, trouble concentrating, and forgetfulness.

We are offering support for those who are stressed about returning to work, including:

***[Select the offerings in place at your facility.]***

- Daily check-ins with your manager
- Alternative work responsibilities and schedules

- Contact with an employee assistance program
- Contact with an occupational health service
- Yoga classes
- Meditation sessions
- Weekly presentation on managing stress

Additionally, here are some ways you can reduce and manage your overall stress levels:

- **Reach out.** Just sharing your stress with others can be helpful. Turn to coworkers for support, confide in friends and family, and build new meaningful friendships.
- **Practice self-care.** Exercise is a great way to let off some steam and get your endorphins going! It's also important to nourish your body by eating healthy foods, staying hydrated with lots of water, and getting enough quality sleep each night (aim for 8 hours).
- **Organize.** You can manage stress by setting priorities, developing routines, and maintaining an accurate calendar of commitments.
- **Break bad habits.** Although it is understandable to have negative thoughts and behavior right now, they can make your job more stressful. You can make stress easier to handle by setting realistic goals, thinking positively about your work, and focusing on things you can control.
- **Be mindful.** Mindfulness, or maintaining a moment-by-moment awareness of your thoughts, can be an effective tool for reducing stress. When you practice mindfulness, you're trying to be fully present, aware of where you are and what you're doing, and not overly reactive or overwhelmed by what's going on around you.
- **Explore therapy options.** Consider meeting with a counselor or psychotherapist to discuss your feelings. Professionals can provide you with useful advice and tools to help you manage your stress levels.

# COVID-19: PREVENTING THE SPREAD IN THE WORKPLACE



This talk discusses practices to prevent the spread of COVID-19 in the workplace, including how the disease is transmitted, symptoms of COVID-19, and ways to stay safe and healthy.

Note that unless otherwise required by federal, state, local, tribal, or territorial laws, rules, and regulations, many employers no longer feel they need to take steps to protect their fully vaccinated workers who are not otherwise at risk from COVID-19 exposure. However, this toolbox talk reflects the latest guidance from the Occupational Safety and Health Administration (OSHA), which recommends employers follow a multilayered approach to keeping both vaccinated and unvaccinated workers safe. Although OSHA recommends that controls be tailored to the specific workplace, it also recommends that employers require, rather than encourage, employees to receive the vaccine, which the agency considers the most important tool in protecting workers from COVID-19. This guidance focuses on the hygiene practices in the workplace that can protect those workers who are unvaccinated or otherwise at risk (e.g., because of a prior transplant or another medical condition), as well as those vaccinated employees who may be susceptible to new variants of COVID-19 in areas of substantial or high community transmission and are therefore capable of contracting and spreading the disease.

## Materials to have on hand:

- Hand sanitizer
- Disinfectants and cleaning products in use at the facility
- The facility’s emergency preparedness or pandemic plan, if applicable
- The facility’s policy on requiring employees to be vaccinated or receive regular COVID-19 testing, if applicable

## Items for attendees to consider during the talk:

- How is COVID-19 spread?
- How can you protect yourself from exposure to COVID-19?

## TALK

COVID-19 is a respiratory illness caused by a virus in the group of viruses known as coronaviruses. Other coronaviruses include Middle East respiratory syndrome, or MERS, and severe acute respiratory syndrome, or SARS. Most cases of COVID-19 are mild, but the disease can become serious, and even fatal, in some people who contract it. Therefore, it’s important to take steps to prevent the spread of infection in the workplace.

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# COVID-19: PREVENTING THE SPREAD IN THE WORKPLACE

Symptoms of COVID-19 include fever, cough, and shortness of breath or difficulty breathing. Some people may also experience chills, repeated shaking with chills, muscle or body aches, headache, sore throat, congestion or runny nose, nausea or vomiting, diarrhea, or new loss of taste or smell. In severe cases, patients can develop pneumonia and multiorgan failure. In general, older people and those with preexisting medical conditions are more likely to experience severe or fatal cases of COVID-19, but people without these risk factors can also become severely ill.

COVID-19 mainly spreads between unvaccinated or at-risk people who are in close contact with one another and through respiratory droplets that are produced when an infected person exhales, talks, coughs, or sneezes. It is also possible, though less common, that exposure could occur from contact with a surface or an object on which a virus-containing respiratory droplet has landed and then touching your mouth, nose, or eyes. It is possible to spread the virus before developing symptoms, and some people become carriers without ever developing outward symptoms of the illness.

The best way to prevent illness is to be vaccinated. The second most effective way for unvaccinated or at-risk individuals is to avoid being exposed to COVID-19. To prevent the spread of COVID-19 and other infectious diseases, remember the acronym **WASH**, which stands for **Wash, Avoid, Sanitize, and Hold**:

- **Wash** your hands with soap and water for at least 20 seconds, especially after a cough or sneeze, after using the restroom, before eating, and after touching a surface like a door handle or coffeepot that has been touched by many people. If soap and water aren't available, use an alcohol-based hand sanitizer with at least 60 percent alcohol. Apply hand sanitizer to the palm of one hand, rub your hands together, and rub the gel all over the surfaces of your hands and fingers until your hands are dry. This should take about 20 seconds.
- **Avoid** close contact with people who are sick. Try to stay generally at least 6 feet from people outside your household, especially in enclosed or poorly ventilated spaces, and minimize unnecessary physical contact in general, such as shaking hands. If there's an outbreak of the virus in your community, avoid crowds and large gatherings, and limit your trips outside your home as much as possible. Take extra precautions if you or someone you are in close contact with is in one of the groups at higher risk of severe illness from COVID-19.

- **Sanitize**, in accordance with your employer's procedures, surfaces that people frequently touch, such as microwave and door handles, bathroom fixtures, countertops, phones, copiers and printers, elevator buttons, shared hand tools, and machinery controls.
- **Hold** the inside of your elbow to your mouth to cover coughs and sneezes to stop the spread of the virus through hand contact. Try to cover your nose and mouth with a tissue when coughing or sneezing, and properly dispose of the tissue immediately after use.

If you develop symptoms of COVID-19, call your healthcare provider. He or she will determine whether you need to be tested for COVID-19. If you have the virus, stay home except to get necessary medical care, and stay away from other unvaccinated or at-risk people in your home as much as possible.

Note that, although uncommon, it is possible for a fully vaccinated person to contract COVID-19. Therefore, fully vaccinated people should be mindful also of the COVID-19 symptoms.

***[If applicable, discuss telecommuting procedures and travel or sick leave policies applicable to COVID-19.]***

Because people can spread COVID-19 without showing symptoms, during an outbreak in your community, it is a good idea to wear a mask in public places. Follow the current guidance of your state or local health agency to determine when this step is necessary. Healthcare professionals and others who have direct contact with COVID-19 patients will be following the latest standards and guidance from the Occupational Safety and Health Administration, or OSHA, and the Centers for Disease Control and Prevention, or CDC.

Finally, it is important to remember that COVID-19 is not associated with any particular nationality or racial group. Although people who live in or travel to affected areas have a higher risk of catching and spreading the virus, anyone who is exposed to the virus and is not fully vaccinated may become infected. It is important to avoid stereotyping, making negative remarks, and behaving unkindly to people based on assumptions. The most important thing you can do to protect yourself, your family, and your community from COVID-19 is to follow the good hygiene practices we discussed.

# CRYSTALLINE SILICA

## CONTROLLING SILICA DUST IN CONSTRUCTION



This talk discusses the potential health risks associated with exposure to crystalline silica dust. The talk also discusses construction activities that generate silica dust and methods to control and minimize dust emissions.

### Items to have on hand:

- Equipment fitted for wet cutting and drilling
- Vacuum dust collection system used at the worksite

### Things for attendees to consider:

- Do you know activities that release silica dust through the air?
- Do you know the possible health hazards related to exposure to silica dust?
- What is the most effective method of controlling silica dust?

## TALK

Today we'll discuss the wet cutting and vacuum collection methods of controlling silica dust.

Many common construction work tasks generate harmful levels of crystalline silica dust if proper controls are not followed. When silica dust builds up in your lungs, you are at risk of developing serious lung diseases, including silicosis, lung cancer, and chronic obstructive pulmonary disease. All of these health

issues are preventable. The more you know about silica dust, the better prepared you will be to adequately protect yourself and others near your work area.

If you are involved in any of the following activities, you are at risk of breathing silica dust:

- Chipping, sawing, grinding, hammering, and drilling of rock, concrete, or masonry;
- Crushing, loading, hauling, and dumping of rock;
- Sawing, hammering, drilling, grinding, and chipping of concrete;
- Demolition of concrete or masonry structures;
- Power cutting stone;
- Façade renovation, including tuckpoint work;
- Abrasive blasting of concrete;
- Clean up activities, such as dry sweeping or pressurized air blowing of concrete or sand dust; *and*
- Tunneling, excavation, and earth moving of soils with high silica content.

The key to preventing health problems is to stop the dust from traveling through the air, where workers can breathe it in. Sometimes the solution is simple, such as wetting down dust at the point of generation or using water during drilling and sawing. There are also a variety of collection systems for dust-generating tasks and ventilation filtering systems to keep dust from being released into the workplace air.

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# CRYSTALLINE SILICA

Wet cutting is the most effective method for controlling silica dust generated during sawing and drilling because it controls the exposure at its source. Dust that is wet is less able to become or remain airborne.

To minimize dust emissions from equipment fitted for wet cutting, keep pumps, hoses, and nozzles in excellent operating condition. Regular equipment maintenance reduces silica exposures and ensures ideal operation of the equipment.

Also, freezing temperatures can complicate the use of water. You should make sure your local work area is heated to prevent ice from forming in the water feed system, and you should drain the system when not in use. There are large portable heating units available for this purpose.

If wet methods cannot be used, operate vacuum dust collection systems. These are utilized with stationary masonry saws.

Here are some tips for operating a vacuum dust collection system:

- Make sure that all hoses are clean and free of cracks.
- Ensure that appropriate filters and dust bags are in good condition and changed or emptied as needed. This may be necessary several times per shift.
- Check the entire system daily for signs of poor dust capture or dust leaks.
- Use high-efficiency particulate air (HEPA) filters for maximum dust control.
- Erect baffles on either side of the saw to improve dust capture by rear-mounted dust collection devices (or the exterior hoods).
- Review manufacturers' operating specifications and recommendations for your equipment.

While dust control using vacuum dust collection may be an attractive option in some circumstances, it is not as effective as wet cutting for controlling respirable dust. As such, respiratory protection may still be needed to reduce your exposure to silica respirable dust, and we will provide the needed respiratory protection to you before you begin your work.

Knowing when exposure to silica is possible and following procedures and protective measures will help you prevent related health problems.

# CRYSTALLINE SILICA

## PRACTICES FOR CONTROLLING SILICA DUST IN GENERAL INDUSTRY



This talk discusses workplace activities that generate silica dust and the best practices and controls to minimize dust emissions.

### Materials to have on hand:

- Equipment fitted with engineering controls
- Vacuum dust collection systems used at the facility
- A copy of the written exposure control plan

### Items for attendees to consider during the talk:

- Do you know what activities release silica dust into the air?
- Do you understand the effective methods for controlling silica dust?
- Have you reviewed the written exposure plan as made accessible by our company?

## TALK

Today we're going to talk about the dangers of exposure to silica dust, the work activities that generate silica dust, and what we can do to control and limit exposure to silica dust.

### What silica is and how it occurs

Silica is a very common mineral found in many types of rocks and sand and is a basic part of products

and items made of stone, concrete, ceramic, and brick. It's in pottery, glass, paint, artificial stone, and even ceramic crowns for teeth. It is created when silica-containing items are cut, drilled, polished, sanded, blasted, or changed in any way that generates dust.

***[Describe the products that you manufacture and/or the activities at your facility that produce silica dust.]***

### Engineering controls to limit exposure to silica

***[Describe the engineering controls used at your facility, and add any others that you use.]***

There are four main types of engineering controls for silica dust. One is wet methods. Wet methods apply water or foam at the point of dust generation to keep the dust from getting into the air. One example of a wet method is a powered saw with an attached hose assembly that delivers water at the point of contact.

A second type of engineering control is local exhaust ventilation. Local exhaust ventilation removes dust by capturing it at or near the point where it is created. An example is an exhaust hood that captures the dust at the point where it is created.

A third type is isolation. This control separates employees from the dust source by containing or enclosing employees performing tasks that generate dust. An example of this is a properly ventilated task booth.

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# CRYSTALLINE SILICA

The fourth type is a high-efficiency particulate air, or HEPA, vacuum attached to the work tool or equipment that collects the dust so it is not released in the air.

Be sure that you're familiar with these controls, and alert your supervisor if the controls don't seem to be working properly.

## Work practices to control exposure

*[Describe the practices used at your facility, and add any others that you use.]*

Work practice controls are performing a task in a way that reduces the likelihood or levels of exposure. They're often used with engineering controls and include:

- Inspect and maintain controls to prevent or fix malfunctions that would result in increased exposures.
- Ensure that tools with wet controls spray water at the point of dust generation.
- Position local exhaust hoods directly over the exposure source, and don't open windows near the local exhaust source.
- Wet down silica dust before sweeping it up.
- Schedule work so that tasks that involve high exposures are performed when no other employees are in the area.

Be sure that you're familiar with these work practices, and alert your supervisor if you notice that these practices aren't being followed.

## Housekeeping measures to control exposure to silica

Good worksite housekeeping practices can control or eliminate silica dust:

- **Do** use wet sweeping, unless it's not feasible.
- **Do** use the central vacuum system for cleaning.
- **Do** use a HEPA-filtered vacuum to clean up dust on floors or surfaces, unless it's not feasible.
- **Don't** use compressed air to clean surfaces or clothing, unless the compressed air is used together with a ventilation system that effectively captures the dust cloud or no other method is feasible.
- **Don't** clean by dry brushing or sweeping, unless wet sweeping or HEPA-filtered vacuuming is not feasible.

Please review the company's written exposure control plan. It describes the dust control measures used on the job. The plan is available for you to look at or copy.

# CRYSTALLINE SILICA

## SYMPTOMS OF SILICA DUST-RELATED DISEASE



This talk informs workers exposed to silica dust about the symptoms of silica dust-related diseases.

### Materials to have on hand:

- “What is crystalline silica?” Occupational Safety and Health Administration (OSHA) fact sheet
- A copy of the employer’s written exposure control plan
- A copy of the medical surveillance program if applicable

### Items for attendees to consider during the talk:

- Do you know what activities release silica dust into the air?
- Do you know the symptoms of silica dust-related diseases?
- Have you reviewed the written silica exposure control plan?

## TALK

Today we’ll talk about the dangers of exposure to silica dust, work activities that generate it, and the symptoms of respiratory diseases caused by silica dust exposure.

### What silica is and how it occurs

Silica is a very common mineral found in many types of rocks and sand and is a basic part of products and items made of stone, concrete, ceramic, and brick. It’s in pottery, glass, paint, artificial stone, and even ceramic crowns for teeth. It is created when silica-containing items are cut, drilled, polished, sanded, blasted, or changed in any way that generates dust. These activities create what is called “respirable crystalline silica,” or very small particles in the air 100 times smaller than ordinary sand particles found on beaches. If these particles are inhaled over time and in large enough concentration, they get embedded in the lungs and can cause respiratory diseases.

**[Read off just the products that you manufacture and/or the activities at your facility that produce silica dust.]**

### Respiratory diseases caused by inhalation of silica dust

We’ll talk about a few of the serious health effects related to silica dust exposure.

**Silicosis.** Silicosis is an irreversible, often disabling, and sometimes fatal fibrotic lung disease. Progression of silicosis can occur even after a person is no longer exposed to silica dust. Chronic silicosis is the most common type of silicosis and usually shows symptoms after at least 10 years of exposure to silica dust. The symptoms are shortness of breath

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# CRYSTALLINE SILICA

and cough, although many people don't notice these symptoms early in the disease. Other symptoms, such as fever, loss of appetite, and fatigue, may indicate other diseases associated with silica exposure, such as tuberculosis, or TB, infection or lung cancer.

**Chronic obstructive pulmonary disease, or COPD.** COPD includes emphysema and chronic bronchitis. The main symptom of COPD is shortness of breath due to difficulty breathing air into the lungs. COPD is not usually reversible and may worsen over time.

**TB and other infections can result from silica exposure.** Silica-exposed people with "latent" TB, or TB that is not infectious and shows no symptoms of infection, are more likely to develop an active TB infection.

**Lung cancer.** Although tobacco smoke is the greatest risk for lung cancer, breathing silica dust increases the risk of developing this disease. Symptoms include coughing, especially if it's persistent or intense; pain in the chest, shoulder, or back unrelated to pain

from coughing; shortness of breath; and changes in the voice.

**Kidney disease and the immune system.** Silica dust exposure has been associated with several types of kidney disease, including those requiring dialysis. It has also been associated with other autoimmune conditions, including sclerosis, lupus, and rheumatoid arthritis. Symptoms include pneumonia, sinus infections, meningitis, skin infections, blood disorders, and painful or swollen joints.

If you experience the symptoms we've described and have been exposed to silica dust, get a medical evaluation.

## Medical examinations

If you are exposed to silica dust at work above the "permissible exposure limit" allowed by law for 30 days or more, you are entitled to a free medical examination. Information about the exposure limit and medical exams will be provided to you.



# DANGERS OF CARBON MONOXIDE



This talk discusses the possible sources and dangers of exposure to carbon monoxide (CO).

## Materials to have on hand:

- Equipment at your facility that could emit CO
- A CO detector

## Items for attendees to consider during the talk:

- Do you know the symptoms of CO exposure?
- Do you know how it is produced?
- Why is CO so dangerous?

## TALK

Carbon monoxide, or CO, is an odorless, colorless, and poisonous gas. Exposure can be deadly. Because CO can overcome you quickly and its symptoms can easily be mistaken for less fatal ailments, it's important to be aware of how CO is produced, what happens if you're exposed, and what to do if you have or observe exposure symptoms.

Consider the following statements. Which are true and which are false?

1. If there's not enough CO to kill you instantly, you don't have to worry about it.
2. CO is not as dangerous in homes as it is in workplaces.

3. CO poisoning can't cause permanent damage if exposure is not fatal.

If you answered false to all of these questions, you already have an idea of how dangerous CO can be. Danger from CO increases with the amount and length of exposure, but in reality, any exposure is a health hazard. CO can be a potential problem anywhere that fuel is burned, whether it's at home or at the workplace. And, CO can cause permanent damage to parts of the body that require a lot of oxygen, like the heart and brain. Such injury may not be noticeable for years.

CO is a common hazardous substance. It's produced when organic fuels are burned in an area with a limited supply of oxygen. The most common occurrence is incomplete burning in an airtight building. Often, a motor vehicle or furnace is the culprit. CO is produced by the incomplete burning of any material that contains carbon, including gasoline, oil, propane, natural gas, coal (both furnace-grade and charcoal), and wood.

CO is produced in workplaces and homes during the operation of equipment such as furnaces, space heaters, water heaters, gas clothes dryers, gas ranges, fireplaces, and motor vehicles, including forklift trucks. CO becomes dangerous when levels build up because of equipment that is not working properly and/or a lack of venting or air supply.

Factors that increase health risks to those who inhale CO include heart conditions, asthma, and bronchitis.

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# DANGERS OF CARBON MONOXIDE

Drinking alcohol, high altitudes (which have less oxygen), smoking (which raises the CO content in the bloodstream), and hot conditions all increase the health risks for those who have inhaled CO.

Be alert for CO poisoning symptoms—and act quickly! Symptoms may resemble those of the flu, such as dizziness and vertigo, nausea, flushed face, headache, weakness, irritability, sleepiness, confusion, and chest pains for people who have heart conditions. In the event you or someone else is exposed to CO, get to fresh air immediately! And, always remember to get medical attention if you think you have inhaled CO.

Keep all fuel-burning equipment and appliances maintained and operating properly. Heating equipment leaks are a common cause of CO poisoning, so be sure furnaces have routine servicing. Also, vent all fuel-burning equipment and appliances outside. Inspect vents to be sure they're not blocked. Check

that exhaust fans blow out and away from air intake vents so they don't bring combustion products back into the building. And, be especially careful in energy-efficient buildings, which may have minimal ventilation.

It may seem unnecessary to mention this, but don't let vehicles run in an enclosed area. Accidental deaths result every winter from simply warming cars in closed garages. Maintain vehicles properly. Inspect them for exhaust and pipe leaks and body rot, which could allow CO into the vehicle. Use special detectors to alert you to dangerous CO levels, since CO can't be seen or smelled. These detectors will sound an alarm if CO levels are hazardous.

Be on the lookout for CO sources wherever you live and work. CO is impossible to see, but its sources can be identified and repaired or modified to keep you, your coworkers, and your family safe from deadly CO hazards.

# DESIGNATED AREAS FOR WORKERS ON ROOFS



This talk discusses protecting workers from fall hazards who are working on low-slope roofs 15 feet or more from the roof edge using designated areas.

## Materials to have on hand:

- Warning lines used at your worksite
- High-visibility material used

## Items for attendees to consider during the talk:

- Do you know how to set up a designated area?
- What is the purpose of a warning line?

## TALK

When you are doing maintenance or repair work at least 15 feet from the edge on a low-slope roof, we'll be using a designated area as a way of protecting you from falling off the roof. A designated area is a portion of the working area that is marked off by a warning line where you can work without additional fall protection.

Let's focus on when a warning line is allowed and how it should be properly set up to eliminate fall exposure. Warning lines are most often associated with work done on roofs. That is because, for the most part, that's where their use is allowed: specifically, on low-slope roofs. This includes "flat" roofs that have a slight slope.

## Warning line criteria

Your warning line, itself, must also meet certain criteria. You cannot just spray-paint a line on the ground, for instance. A warning line must consist of ropes, wires, or chains and be supported in such a way that pulling on one section of the line will not cause another section to slack.

The line needs to be located between 34 inches and 39 inches from the working surface and has to have a minimum breaking strength of 200 pounds. You have to flag the line with high-visibility material so that it is clearly visible from a distance of 25 feet and anywhere within the designated area. It needs to be set up as close to the work area as possible, but not less than 15 feet from the roof edge.

***[If you are involved in work that is both temporary and infrequent, the warning line can be 6 feet from the roof edge.]***

## Working in designated areas

Any equipment, tools, or materials you are using need to be inside the designated area. When mechanical equipment is being used in the area, the warning lines need to be set no less than 10 feet from the edge in the direction the machine operator is traveling and 6 feet on other unprotected sides.

Don't forget that you are not allowed to cross the warning line to perform any work on the roof. You

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# DESIGNATED AREAS FOR WORKERS ON ROOFS

can only access and leave the designated area without additional fall protection, not perform any type of work.

In some cases, warning lines create a false sense of security, but they do not stop a fall! So follow the safety rules!

# DRILL PRESS SAFETY



This talk discusses the hazards of drill presses and safe practices to prevent injuries while using a drill press.

## Materials to have on hand:

- Drill presses and drill bits in use at the facility
- Personal protective equipment (PPE) intended to be worn when operating a drill press

## Items for attendees to consider during the talk:

- What kind of PPE should you wear when you use a drill press?
- Should you wear gloves when operating a drill press?

## TALK

Drill presses are versatile machines that use a drill bit secured in a rotating chuck to bore and drill holes. However, like any piece of machinery, drill presses can cause injuries and even death if they are not used safely.

In one recent incident, a drill press operator began to clean the drill while the equipment was still running. As she reached into the point of operation, her shirt sleeve and long hair became entangled in the drill bit, pulling her toward the machine. The drill press

continued to spin, completely pulling her into the operating area. She later died of her injuries.

You can avoid incidents like this if you follow these safe practices for using a drill press.

## Appropriate attire and personal protective equipment, or PPE

- Do not wear gloves or anything that could become wrapped around the drill bit, such as loose-fitting clothing and jewelry. Securely tie back long hair, and keep it away from the point of operation.
- Wear safety glasses with side shields and hearing protection.

## Machine preparation and setup

- Select the proper drill bit for the job, and make sure it is not dull. The size of the bit must be equal to or less than the capacity of the drill press.
- Insert the drill bit into the chuck, and tighten it securely using the chuck key. Before starting the drill press, remove the chuck key to prevent it from being thrown from the machine.
- Make any necessary adjustments to the equipment with the power shut off.

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# DRILL PRESS SAFETY

- Place a backer board underneath the stock you are drilling, and use a clamp or vise to secure the stock to the drill press table.

## Working safely

- When drilling long stock, place the excess to your left so that if the stock rotates with the machine, it will hit the machine rather than hitting you.
- Keep hands and fingers clear of rotating drill bits.
- Never remove or try to bypass any machine guards or protective features of the machine.
- Do not exceed the recommended speeds for the type and size of the drill bit.
- Raise the bit out of the hole often as you work, particularly when drilling deep holes, to clear chips from the hole and allow the drill bit to cool down.

- When you begin to break through the underside of the stock, ease up on the feed pressure to avoid tearing the material.
- Never reach around or under a rotating drill bit or try to stop the rotation of the drill press by hand.

## Shutdown and cleanup

- Turn off the drill press, and wait for it to come to a complete stop before removing your work.
- Avoid touching the drill bit and shavings immediately after the drill press stops; they will be hot.
- Use a bench brush to clear shavings and debris from the worktable when you are finished.

# DRUG TESTING RULES FOR COMMERCIAL DRIVERS



This talk explains the requirements of the Department of Transportation’s drug testing rules for commercial drivers and the consequences for engaging in prohibited drug-related conduct.

## Materials to have on hand:

- Company drug use and testing policy

## Items for attendees to consider during talk:

- Which drugs will you be tested for as a commercial driver?
- When can you be tested for drugs under the Federal Motor Carrier Safety Administration (FMCSA) rules?
- Can you ever refuse to take a drug test?

## TALK

As a commercial driver, you must follow strict rules regarding the use of controlled substances, both on and off the job. These rules are important for your safety and the safety of the traveling public. Both you and your employer can be fined if you violate these rules.

The Federal Motor Carrier Safety Administration, or FMCSA, requires individuals who operate commercial motor vehicles, or CMVs, and perform other safety-sensitive functions to refrain from the use of certain controlled substances.

As part of the FMCSA regulations, you must periodically undergo urine tests for these controlled substances. You will be tested for:

- Marijuana
- Opioids, including heroin, codeine, oxycodone, hydrocodone, and others
- Cocaine
- Amphetamines and methamphetamines
- Phencyclidine, or PCP

Your employer may choose to test you for additional substances, but these tests must be kept separate from the tests required by the FMCSA.

It is important to remember that the FMCSA regulations prohibit you from using these substances at all times, not only when you are on the job. If you test positive for any of these substances, your employer is required to immediately remove you from safety-sensitive functions and refer you for substance abuse education and treatment.

Some of the controlled substances you will be tested for are legal with a valid prescription. If you test positive for a controlled substance for which you have a prescription, you must provide a medical review officer, or MRO, with proof that you have a valid medical reason for the presence of the drug in your system. The MRO is responsible for evaluating whether you

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# DRUG TESTING RULES FOR COMMERCIAL DRIVERS

can safely perform your job duties while using the substance as prescribed.

Although some states have legalized marijuana for medical and/or recreational use, it remains illegal at the federal level. As a commercial driver, you are not allowed to use marijuana for any reason, regardless of your particular state laws. MROs cannot accept a prescription for medical marijuana as a legitimate explanation for a positive marijuana test.

There are several types of required tests:

- **Preemployment.** Before your employer can permit you to operate a CMV on a public road, you must be drug tested with a negative result.
- **Random testing.** You may be selected for a random controlled substance test at any time, even when you are at home and off duty. If you are told to report for random testing, you must proceed to the testing location immediately.
- **Reasonable suspicion testing.** Reasonable suspicion testing is performed when a supervisor or another company official suspects that you have used a controlled substance. The supervisor's

suspicion must be based on specific observations about your appearance, behavior, speech, or body odor.

- **Postaccident testing.** You must be drug tested if you are involved in a fatal accident or receive a traffic citation resulting from an injury or a vehicle-disabling accident. Drug testing must occur within 32 hours of the accident.
- **Return-to-duty and follow-up testing.** These tests will be required if you test positive for a controlled substance and return to performing safety-sensitive duties after completing substance abuse education and treatment. You must pass a return-to-duty drug test before you will be allowed to resume performing safety-sensitive duties, and you will be subject to at least six unannounced follow-up tests during the first 12 months after you resume these duties.

You are not allowed to refuse a drug test. If you refuse to take a drug test, fail to report promptly to the testing site when instructed to, or leave the testing site before the process is complete, the consequences are the same as the consequences for a positive test result.

# DRY ICE HANDLING, STORAGE, AND DISPOSAL



This talk discusses the hazards associated with dry ice and provides safe handling and storage information and recommendations for employees working with or around dry ice.

## Materials to have on hand:

- A safety data sheet (SDS) for dry ice
- Appropriate equipment and personal protective equipment (PPE) for handling dry ice

## Items for attendees to consider during the talk:

- Do you know where to find an SDS?
- Where is the dry ice stored in this facility?

## TALK

Carbon dioxide in its solid form is commonly referred to as “dry ice.” Unlike regular ice, dry ice does not melt into a liquid under normal conditions. It sublimates, meaning it goes directly from a solid to a gas, at a temperature of -78.5 degrees Celsius/-109.3 degrees Fahrenheit or higher. So dry ice is effective when you need to achieve and maintain very low temperatures.

*[Speaker may opt to describe how dry ice is being used in the facility/operations.]*

If you are handling dry ice or are in the vicinity of dry ice, you must be aware of the potential hazards. Due to its extremely cold temperature, dry ice may cause burns and potentially severe frostbite. But the extreme cold is not the only hazard. The sublimation process releases carbon dioxide gas, which can displace the oxygen in the air, causing dizziness, headaches, difficulty breathing, loss of consciousness, and potentially death by suffocation. The release of carbon dioxide gas, if in an enclosed container, can also cause a buildup of pressure that can result in an explosion. There are some very significant hazards associated with dry ice, so we need to take care in how we handle and store it.

First, read the safety data sheet, or SDS. Always read the SDS before working with dry ice or any hazardous chemical. Much of what I am going to say about being safe around dry ice is in the SDS.

Next, make sure you have all of the appropriate personal protective equipment, or PPE, and are properly trained on how to use it. PPE will include protective gloves that are loose-fitting and thermally insulated, usually leather or cloth. Make sure you inspect the gloves before using them, and never used damaged gloves. You must wear appropriate footwear, such as safety shoes but never open-toed shoes. You must also wear safety glasses with side shields to protect your eyes. In addition, a

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# DRY ICE HANDLING, STORAGE, AND DISPOSAL

self-contained breathing apparatus, or SCBA, must be used if the dry ice creates an oxygen-deficient atmosphere. In the event you encounter dry ice in an enclosed space, do not enter. Restrict access to the area and immediately contact your supervisor. No one should enter the space without first measuring the oxygen content of the atmosphere.

When handling dry ice, avoid inhalation, eye contact, and skin contact. Never handle dry ice or objects in contact with dry ice with your bare hands; use appropriate gloves or dry ice tongs. Only use as much dry ice as is necessary, and never leave it unattended in an open area. Dry ice should never be placed on a tile or a laminant surface. It may destroy the surface and adhesive backing.

Dry ice should be stored in insulated containers that open from the top. The lids should fit loosely so the carbon dioxide gas can escape to the atmosphere as the dry ice sublimates. Styrofoam containers are good because they insulate but are not airtight. Do not use metal, plastic, or glass containers, and never use a sealed or screw-top container, as it can be an explosion risk. When possible, dry ice should be stored in its original container.

Dry ice containers must be stored in well-ventilated areas but never in an enclosed space, such as a cellar or basement, a walk-in freezer, a refrigerator, or an automobile. Carbon dioxide is heavier than air and will accumulate in low-lying areas, so ventilation must be at floor level.

***[Speaker may modify the examples of enclosed spaces in the preceding paragraph to reflect areas that are part of his or her operation.]***

When you are ready to dispose of dry ice, put it in a well-ventilated area—a fume hood, for example—and allow it to sublime. Never put it in a trash can. And never put it in a sink or toilet, as it will damage the pipes.

In the event someone is overexposed to dry ice, immediately refer to Section 4 of the SDS for appropriate first aid.

Take care in how you handle and store dry ice, and keep yourself and your coworkers safe.

# ELECTRICAL PROTECTIVE DEVICES



This talk discusses common electrical protective devices that protect workers from electrocution, shock, and other related injuries when working on or near live electrical systems or equipment.

## Materials to have on hand:

- Examples of electrical protective devices
- The log of dates that the devices were last tested.

## Items for attendees to consider during the talk:

- What are examples of electrical insulating devices used at the facility?
- How often should you inspect electrical protective devices?

## TALK

Electrical shocks, burns, electrocutions, and other injuries happen because of unsafe electrical equipment or installation. Many of these incidents can be prevented with insulation and other electrical protective devices.

Electrical protective devices include insulating blankets, matting, covers, line hose, gloves, and sleeves made of rubber and other insulators. They protect you from electrical shocks and potential electrocution. As with all forms of protective equipment, these items keep a critical barrier between workplace hazards and

you. Some are personal protective equipment worn by you, and others directly cover or coat the live electrical parts.

## Insulators

Insulators stop or reduce electric current flow. Rubber, glass, or plastic insulators are used to coat metals and other conductors and help confine the flow of electrical current along wires or through equipment. This helps prevent shock, fires, and short circuits when someone or something touches the insulated wire. The type and quality of insulation has to be right for the voltage used and able to withstand temperature and other environmental factors like moisture and corrosive fumes.

Insulation on conductors is usually color-coded. Insulated grounding conductors usually are either solid green or green with yellow stripes. Insulation covering grounded conductors is generally white or gray. Ungrounded conductors, or “hot wires,” often are black or red, although they may be any color other than green, white, or gray.

## Markings On Protective Devices

All electrically protective blankets, matting, covers, line hose, gloves, and sleeves are clearly marked with the electrical class and type of equipment. The markings will help you determine the maximum use voltage that the devices can safely withstand. Safety

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# ELECTRICAL PROTECTIVE DEVICES

markings on gloves are always on the cuff, and they include the manufacturer's identification and the size.

All electrical protective devices have to be tested, and the date of the test is marked directly on the device and often logs are kept with the dates. See your supervisor for the logs if the test date isn't legible on the device.

## Inspection

Inspect electrical protective devices before each day's use and after any incident that damaged or could have damaged the electrical equipment. Every device has to be completely free of any physical defects or damage that could interfere with its insulating properties. Report any defects or damage that you find to your supervisor so it can be tested. Any device that fails tests or inspections has to be immediately removed from service.

## Maintenance and Storage

Make sure the protective devices are kept clean and in good condition. If you are qualified to do so, take any damaged or worn devices out of service. If you are not trained or qualified to repair or replace the devices, mark it and notify a supervisor or other qualified person to do so. If any repair work is done on a device, it has to be retested and test-certified before anyone is allowed to use it again.

Store any inventory of insulating devices to protect them from light, extreme temperatures, excessive humidity, ozone, and other substances that could damage it and compromise its effectiveness.

Keep electrical protective devices intact and in good condition, and they will protect you.

# ELECTRICAL SAFETY

## THE CASE OF THE OPEN ELECTRICAL PANEL



This talk discusses the hazards of operating machines or equipment near open and live electrical panels or consoles and safety measures to prevent electrical injuries from the panels.

### Materials to have on hand:

- Machines with electrical power sources in a control panel, or a separate control panel or console
- Copies of the facility’s written electrical safety and lockout/tagout procedures

### Items for attendees to consider during the talk:

- Who in your facility is qualified and trained to service energized machines or equipment?
- How are electrically connected machines powered off so that repair or maintenance work can be done on them safely?

## TALK

We’re going to talk about a real case where a machine operator was electrocuted trying to replace a cotter pin inside an electrical control panel. Keeping electrical panels and consoles closed will protect you against electric shocks and burns, but when opened in untrained hands they can be a real hazard.

The worker in this case was operating the controls on a tilt-pot iron-melting furnace. The controls for the furnace were mounted on a pedestal with an

enclosed electrical console. The tilt-pot control lever had stopped working because of a broken cotter pin inside the console, a problem that had happened quite often in the past.

*[Show workers the image of a tilt-pot furnace on the second page of this talk.]*

He opened the side of the console, as he had done many times before, even though he wasn’t trained to handle electrical parts inside the console. He didn’t want to shut down the furnace just to replace a pin he could fix in less than a minute. The operator didn’t know the power to the control console could be shut down separately from the furnace.

He reached up into the control console to replace the cotter pin. As he reached up, his foot slipped, and he fell against a 120-volt terminal board. He got an electric shock and burns to the shoulder. He was taken to the hospital, where he was treated and then released.

Think about some of the factors that created the shock and burn hazards. We’ll go over some measures the operator could have taken to prevent the injuries.

**The broken cotter pin was a factor that led to this incident.** It had broken several times before, so something should be done to prevent the pin from breaking or to make it safe to replace the pin outside the console. The lever might be redesigned so it no longer needs a cotter pin or it has a stronger cotter pin.

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# ELECTRICAL SAFETY

**The employee was overconfident and under-trained.** He had done this job a number of times and didn't get hurt. Over time, reaching into the electrical panel seemed a perfectly acceptable and safe operating practice. Never open a "live" electrical panel. Keep all doors and access panels closed. If you discover an open panel, report it to your supervisor.

**The electrical panel console was too easy to open.** Since the employee had done this quite a few times, the side of the console was probably not securely fastened to make it easy to open when the cotter pin broke again. Electrical panels should be difficult to open easily by someone unqualified to work inside the panels when they are electrified.

**The worker didn't know that the console could be shut down separately from the furnace.** The worker was either unaware of the company's lockout/tagout procedures or chose to ignore them in the interest of saving time in production. Make sure you know the shutdown and lockout procedures for your equipment and who is authorized and qualified to perform them. If you are trained and authorized to perform lockout/tagout on your machine as well as maintenance work, make sure all sources of electrical energy are deactivated before doing any type of maintenance work.

Do you open electrical control panels to "reset" equipment or make other adjustments during production to try and save time? If so, reconsider those actions so that you can work safely around electricity.





# ELECTRICAL SAFETY

## WATCH OUT FOR ELECTRIC SHOCK



This talk discusses several common ways that workers get electrocuted or get an electric shock at work even if they don't work directly on exposed, live, energized equipment, and how to avoid such incidents.

### Materials to have on hand:

- Examples of exposed electrical equipment or parts, with the power source de-energized and locked out
- Personal protective equipment (PPE) appropriate for working in areas with potential exposure to live electrical parts

### Items for attendees to consider during talk:

- Describe a situation where you could be exposed to live electrical equipment or parts?
- What is a good safe work practice or precaution you can take to avoid exposure to live electrical parts?

## TALK

Electrocutions and electric shock kill and severely injure hundreds of workers every year, oftentimes because they weren't aware of the danger until it was too late. We'll review some safe practices to keep in mind when you're working near electrical equipment and wiring.

Here's a quick story about a plumber working under a house who didn't see an electric shock hazard before it was too late. He was trying to get to a pipe in a damp and poorly lit crawl space. He was apparently focused on his work with the pipe when he brushed against exposed wires in an open electrical box he probably didn't notice was there. The general contractor found him unconscious and called for an ambulance. He had suffered a heart attack as a result of electric shock.

Electricity always takes the path of least resistance, and your body can become part of the path because it is a relatively good conductor of electricity. For example, if you touch a live wire with your hand, electricity can travel through your body, including your heart, and exit through your foot. This kind of electric shock is, unfortunately, very common and likely caused the plumber's heart attack.

The severity of an electrical shock depends on three primary factors:

First, the greater the amount of electrical current there is, the greater the danger of a severe shock or electrocution. Current is measured in amperage. For example, a 100-watt lightbulb has 833 milliamps, or just under 1 ampere of electricity flowing through it, which could be enough to kill you.

Second, the duration, or length of time, the current passes through the body—the longer the duration of contact with a current, the more dangerous it is.

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# ELECTRICAL SAFETY

Third, the specific path the current takes through the body—it is most dangerous when it travels through the heart, lungs, or brain.

The severity of a shock is also strongly influenced by resistance; greater resistance means a less severe shock. The dry outer skin of your body resists electrical flow. But the resistance goes to almost zero when the skin is wet. Sweat will dramatically lower resistance to electric current. One way to keep the body's resistance level as high as possible is to keep it dry, especially the hands and feet.

There is no way to know the path the electrical current might take through your body once it enters, but it may enter at one location and exit at another.

You can reduce the risk of electrical shock when you:

- Keep electrical equipment, parts, and tools away from water and dampness, and don't work in

damp environments when near any exposed electrical parts.

- Never use water to put out an electrical fire; water can cause a fatal shock. Use a Class C-rated fire extinguisher for electrical fires; shut off the source of power.
- Before starting work, inspect the area you're working in for electrical hazards.
- Keep your work environment well lit.
- Wear personal protective equipment appropriate for areas that have or may have exposed electrical parts.

Remember, electricity can be an ally or an enemy. Treat it with respect, and it will provide the service you expect.

# EMERGENCY EVACUATION



This talk informs employees as to how to respond to an alarm and evacuate the building calmly and quickly in the event of an emergency.

## Materials to have on hand:

- A floor plan indicating where the emergency exits and emergency alarms are located
- A copy of the company’s emergency action plan

## Items for attendees to consider during the talk:

- How would you evacuate the building in an emergency?
- Do you know where the exit routes are located at our facility?
- Do you know where you should go after you leave the building?

## TALK

In the event of an emergency that requires the evacuation of the building, it’s important to know the location of the emergency exits and to exit the building quickly and safely. So, let’s review the steps that all of us can take to ensure we successfully evacuate the building, should we need to.

## Types of emergencies

There are many emergency situations that would require us to evacuate the building. These include:

- Fires
- Explosions
- Chemical spills
- Natural disasters
- Accidental release of toxic gases
- Workplace violence
- Bomb threats

## When the alarm goes off

As soon as you hear the alarm, you must immediately respond by evacuating the building. Evacuate even if you believe it’s just a drill. Encourage your coworkers to leave as well. Be sure to:

- Know the locations of the emergency exits that are closest to wherever you’re working, which you should already know by having reviewed the exit routes map.
- If you can do so quickly, turn off any equipment you’re using.

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# EMERGENCY EVACUATION

- Assist workers with disabilities or others who need extra help exiting the building.
- Use the stairs. Never use an elevator during an evacuation. You could become trapped in the elevator if the power is shut off.

## Employees with special tasks

However, if you've been assigned to stay behind to take care of essential plan operations, you must perform those duties before evacuating. You should handle only those emergency tasks to which you've been assigned and trained. These special emergency assignments will be clearly outlined in your company's emergency action plan, and you should be aware of your tasks. Such operations might include:

- Shutting down critical plant operations,
- Serving as an evacuation warden to help ensure that everyone gets out safely and is accounted for,
- Performing duties as a member of a fire brigade team who helps fight the fire, *and*
- Being part of an emergency spill cleanup team.

## Evacuation

To leave the building, follow your primary evacuation route—that's usually the fastest and nearest one to you. If you can't follow that route because of fire, smoke, or blockage, use an alternate route. Remember to stay calm and move quickly but don't push. Don't run unless it's really necessary. And never put yourself in harm's way to help someone else—it's better to get to safety first and then call for help.

## After evacuation

When you leave the facility, be sure to move away from the exit doors of the building and avoid congregating close to the building so that you aren't in the way of emergency vehicles and teams. Once outside the building, move quickly to the designated outside assembly point and wait for instructions from the evacuation wardens. Remember that you need to be accounted for after the evacuation—someone will be looking for you, so make sure you stay in the designated meeting spot. Don't leave the designated assembly area until you've been checked in and been told by authorized personnel that it's safe to leave. And never reenter the building unless you've been given the OK from authorized personnel.

# EMERGENCY EXIT ROUTES



This talk discusses the steps that employees should take so that they can quickly and safely evacuate the building in the event of an emergency.

## Materials to have on hand:

- A floor plan indicating where the emergency exits are located
- A list of the evacuation wardens

## Items for attendees to consider during the talk:

- How would you escape from the building in an emergency?
- Do you know where the exit routes are located at our facility?
- Do you know who the evacuation wardens are?

## TALK

If there's an emergency that requires the evacuation of the building, it's important to know the location of the emergency exits and also be able to exit the building easily and safely. So, let's review the steps that all of us can take to ensure that we all successfully exit the building, should we need to.

### Exit route

**Exit location.** The floor plan indicates the location of the emergency exits. Find the one that's closest to

your workstation, but also note the location of others should the one closest to you be inaccessible due to fire or smoke. Copies of this floor plan that show the exits and the designated outside assembly points are posted throughout the facility, so be sure to become familiar with it.

**Exit access.** We can all help make sure that the routes to the exit doors are free of:

- Obstructions such as materials or equipment, *and*
- Any highly flammable furnishings.

If you see anything that would project into the exit route and make quick access a problem, let your supervisor know.

### Exit doors

Let's talk about the exit doors. First of all, they should be unlocked at all times. If you have any indication that they are locked, such as if you see that a padlock is attached, advise your supervisor. Exit doors at the top and bottom of stairs have to be kept closed, and all exit doors must be free of decorations or signs that prevent you from recognizing them as exit route doors.

### Evacuation wardens

So that you can identify who the building's fire/evacuation wardens are, we'll review their names

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# EMERGENCY EXIT ROUTES

now. Follow their instructions in the event of an emergency.

***[Read off the list of wardens, and describe where in the building they are usually located.]***

## Exiting the building

When you leave the facility, be sure to move away from exit doors of the building, and don't congregate

close to the building so that you aren't in the way of emergency operations. Once outside the building, quickly go to the designated outside assembly point and wait for instructions from the evacuation wardens.

# EMERGENCY PREPAREDNESS

## EMERGENCY CHAIN OF COMMAND



This talk discusses the company chain of command in the event of a workplace emergency so employees know what to do and who they should listen to for instructions.

**Material to have on hand:** Company emergency preparedness and response policy/plan/procedures

### Items for attendees to consider during talk:

- Do you know our chain of command in an emergency at work?
- Do you know how to respond if you are faced with an unforeseen emergency in the workplace?
- Would you be interested in being an emergency scene assistant?

## TALK

If we are faced with an unforeseen emergency at work, such as a fire or explosion, or even a weather event, we don't want you to waste precious moments trying to figure out what to do and who to listen to. That's why our in-house workplace emergency procedures have a chain of command that links one person with overall responsibility for managing an emergency to others responsible for carrying out specific tasks to protect our workers.

At the top of the chain is the emergency scene coordinator, [name], who is trained to issue orders

to others during the emergency. [Name] is responsible for:

- Assessing the incident to determine if it requires an emergency response
- Determining if an evacuation is necessary and managing an evacuation
- Supervising emergency scene assistants (these are volunteer employees who are trained in various emergency tasks)
- Communicating with professional responders, such as ambulance, police, and fire departments
- Directing shutdown of critical workplace equipment or operations

*[Customize duties to your specific jobsite.]*

Emergency scene assistants will be assigned responsibility for a specific number of employees within a particular work area or department. They will know how to respond to the emergencies that may occur, the evacuation procedures, and how to use emergency communication equipment. They will also be trained in CPR, first aid, and how to respond to threats of violence. Some of their responsibilities include:

- Knowing who may need assistance during an evacuation and how to assist them
- Coordinating the emergency activities of the employees

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# EMERGENCY PREPAREDNESS

- Knowing the workplace layout, appropriate escape routes, and areas that employees must not enter during an evacuation
- Verifying that employees are in designated safe areas after an evacuation

It is your responsibility to follow the instructions provided by the emergency scene assistants.

# EMERGENCY PREPAREDNESS

## FIRE DRILL!



This talk discusses fire drill and evacuation procedures for employees.

### Materials to have on hand:

- Emergency preparedness plan/procedures
- Building/office area floor plan

### Items for attendees to consider during talk:

- Do you know the location of at least two exits?
- Why are fire drills important?
- Do you know where our designated meeting place is?

## TALK

Fires can happen anywhere. Fire drills are a big part of being safe at work. They prepare you for what you need to do in case of a fire. Knowing what to do is the key to surviving a fire emergency. Having regular fire drills will give you the confidence you need to escape a fire safely.

Fire drills may not seem necessary precautions for adults in a professional workplace. However, in the face of an emergency situation, many employees do not respond quickly to fire alarms. Even managers may not know the best action in an emergency. Therefore, training you on fire drill procedures is the best way to make sure you remain safe in dangerous situations.

**We start with planning:** *[Add specifics to your workplace.]*

- We have a designated meeting place outside the building where we will all meet. Our designated meeting place is \_\_\_\_\_. You need to go the meeting place so that your supervisor can count heads to make sure everyone is there.
- Next, you need to know the location of at least two exits. Review our building’s floor plan to see where the closest exits are.
- \_\_\_\_\_ will be in charge of making sure all people in their area are accounted for during the drill. *[Add the name of the designated employee.]*

### At the time of the drill:

- When the fire alarm sounds, you are to immediately evacuate the building in an orderly manner to prevent confusion and minimize panic or injury.
- If the alarm stops, continue to evacuate.
- If it is safe to do so, assist anyone who needs assistance with evacuating.
- Always use the stairs during a fire drill. Do not use the elevator. *[If applicable to your facility]*
- Do not push your way out an exit.

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# EMERGENCY PREPAREDNESS

- \_\_\_\_\_ will make sure everyone has evacuated. *[Add the name of designated employee.]*
- Go directly to the meeting place so that you can be counted.
- When the drill is completed, the emergency coordinator will give the “all clear” call and signal

for workers to return to the building and resume operations.

We practice scheduled fire drills to help you have the knowledge to safely escape a fire without injuring yourself or others.

# EMERGENCY PREPAREDNESS

## PORTABLE GENERATOR SAFETY



This talk discusses the hazards and safe work practices for using and working around portable generators.

### Materials to have on hand:

- Generator(s) in use at the facility, if applicable
- Extension cords approved for use with the portable generator

### Items for attendees to consider during talk:

- What should you always do before refueling a generator?
- Where is a safe location to run a generator?

## TALK

During a power outage, portable generators are a convenient way to keep essential functions of our facility running. However, generators can be very dangerous if you don't know how to use and work around them safely.

Keep these hazards and safe work practices in mind when using a generator:

### Carbon monoxide

Never use a generator inside, and never use it in an enclosed space such as a garage or basement. This is important because of the risk of carbon monoxide poisoning. Make sure the generator has at least 3 to 4 feet of clear space on all sides, and don't place it

next to a door, window, or vent where carbon monoxide could find its way inside a building.

Symptoms of carbon monoxide poisoning include dizziness, headaches, nausea, and tiredness. You can't see or smell carbon monoxide, so it's important to pay attention to these symptoms. If you or a coworker experience these symptoms while using a generator, turn off the generator, get fresh air, and seek medical attention.

### Electrical hazards

Never connect a generator directly to the electrical system of a building unless a qualified electrician has installed a transfer switch. Attaching the generator to the building's electrical system can feed power back into the grid, which creates an electrocution risk for utility workers. Instead, use extension cords to plug appliances into the generator directly.

Make sure the cords you use with a generator are 3-pronged (grounded) and are rated for the equipment they will be powering. They should also be rated for outdoor use. Inspect extension cords before using them to make sure they aren't damaged.

***[Show examples of extension cords that are safe to use with the generator.]***

Never overload a generator—in other words, don't try to use it to power more than it is rated for.

Always use ground-fault circuit interrupters, or GFCIs, with a portable generator. GFCIs shut off current when

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# EMERGENCY PREPAREDNESS

they detect an electrical fault. Some extension cords have built-in GFCI protection, and you can also use a separate GFCI if your cord does not have the protection built in.

Never use a generator in the rain or in wet conditions, and do not use electrical equipment that has been submerged in water.

## Fire hazards

To prevent fires, when you refuel the generator, always shut it down and allow it to cool before adding fuel.

Store generator fuels in approved containers, and keep containers away from fire hazards and hot devices such as the generator itself, cigarettes, water heaters, and lighters. Store generator fuels away from areas where people routinely work.

## Noise

To minimize the risk of hazardous noise and hearing loss, keep generators as far away as possible from areas where people work and congregate. If you must work close to a generator, wear hearing protection.

# EMERGENCY PREPAREDNESS

## SAFE STORM CLEANUP



This talk discusses some of the common hazards associated with storm cleanup and offers safety suggestions for workers engaged in these activities.

### Items for attendees to consider during talk:

- What are some of the dangers of storm cleanup work?
- True or false: It's OK to walk through floodwaters if they aren't very deep.
- What should you do if you see a downed power line?

## TALK

After a storm, whether it's a relatively minor thunderstorm or a large hurricane that caused severe flooding, we'll need to clean up the damage before we can go back to work. It's easy to get careless in our hurry to get everything back to normal, but storm cleanup can expose you to some very serious hazards, so it's important to understand the risks and take precautions.

When you enter a structure for the first time after a storm, particularly one that is severe, be very careful. Parts of the building may be unstable, objects may shift and fall on you, and there may be sharp objects or slip and trip hazards in your path. If a building is structurally unsound, meaning that it is likely to collapse, do not attempt to enter it until it has been repaired to a safe condition by a professional.

The following are some other hazards and precautions to take during storm cleanup, whether you're at work or at home:

### Debris cleanup

Watch out for broken glass, nails, and other sharp objects. Wear boots and gloves when walking on or near debris and during cleanup activities.

Tree limbs and other objects may be heavier than you expect. If you cannot lift an object safely, get help. If you use a chain saw or other power tools to cut branches into more manageable pieces, make sure to use eye protection and follow all manufacturer safety instructions.

### Flooding

Avoid walking or driving through floodwaters, even if they don't look very deep. They may be contaminated with chemicals, electrically charged, or may be hiding sharp objects that could injure you.

After floodwaters have receded, buildings can develop mold, which can cause respiratory problems and other allergic reactions. Look for areas where moisture lingers, and try to dry them out as soon as possible. Ventilation is important. When working around mold, use hand, eye, and respiratory protection.

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# EMERGENCY PREPAREDNESS

## Electrical hazards

If you see a downed power line, don't touch or approach it; always assume it is live until you know otherwise. Contact the power company to come and repair it, and tell a supervisor and any coworkers who are in the area to stay clear.

Also be on the lookout for power lines that may be tangled in downed branches, hidden under floodwaters, or buried under debris. Remember that a live electrical line can energize other objects it's in contact with, as well as the area around it, so stay far away from power lines or anywhere you think a power line could be hidden.

## Hazardous substances

Be on the lookout for chemical spills. If you see one, do not attempt to clean it up unless you have the proper training; notify a supervisor.

If you are working in an area where you could be exposed to chemical hazards, make sure you wear any necessary personal protective equipment, or PPE, to

keep yourself safe. This could include gloves, respiratory protection, safety goggles, and other items as necessary. Remember that after a storm, there may be chemicals present where you wouldn't otherwise expect them. It is better to take extra precautions than to be exposed to something hazardous.

## Fire hazards

If you have flammable materials at your facility, ensure that they have not been contaminated with gasoline or other substances that could make them more likely to catch fire. Keep in mind that the storm may have damaged your fire protection systems, such as sprinklers and alarms, so take extra precautions to avoid fire, including avoiding smoking.

## Health hazards

Depending on the time of year, storm cleanup can expose you to the risk of heat stress or cold stress. Wear appropriate clothing for the conditions, take breaks as you need to, and tell a supervisor if you experience symptoms of heat stress or cold stress.



# ERGONOMICS

## SAFE USE OF MOBILE DEVICES



This talk discusses some of the ergonomic injuries that can result from use of mobile devices and offers ways to use mobile devices safely.

**Materials to have on hand:** Smartphone, tablet, tablet stand, detachable keyboard

### Items for attendees to consider during talk:

- What kinds of injuries can result from the use of mobile devices?
- What steps can you take to prevent injuries from mobile device usage?

## TALK

Mobile devices, such as smartphones and tablets, are an increasingly important tool in many jobs. But although these devices are extremely convenient, they have some drawbacks. Today we'll talk about the injuries that can result from using mobile devices and discuss some ways to use these devices safely.

Thumb and wrist tendonitis, carpal tunnel syndrome, back and neck problems, headaches, and eye strain are just a few of the conditions that can result from prolonged or frequent use of smartphones and tablets. Here are some tips for preventing these ailments:

### Posture

Try to maintain an upright, neutral posture when using a mobile device. Many people hunch forward or twist

to the side, which can lead to neck, shoulder, or upper back pain. Hold your device as close to eye level as possible. Raise your arms and hands to bring your phone into your line of sight rather than bending your neck to see your phone. If your phone is below eye level, look down with your eyes rather than with your neck.

You can also try using your device in alternate postures. For example, you can lie on your back and hold the device above you, or you can prop the device on a pillow while seated to bring the screen closer to eye level for prolonged reading.

If you must use a mobile device for an extended period of time—for example, if you're traveling and have only a tablet with you—try to set it up like a desktop computer. Use a detachable keyboard, and elevate the screen on a stand to place it as close to eye level as possible.

### Typing and texting

- Switch the hand you use to hold your device periodically, and alternate between using your thumbs and other fingers to type.
- When typing with your thumbs, use the pads rather than the tips in order to avoid an awkward, bent position for your thumb.
- Keep your wrists relaxed and as straight as possible, and hold the device in a vertical or portrait orientation while typing to decrease the distance your thumbs need to travel to reach the letters.

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# ERGONOMICS

- Keep messages brief, and as much as possible, use shortcuts, autocomplete options, and voice recognition features to reduce the amount of time you spend scrolling and typing.

The bottom line is that mobile devices like smartphones and tablets will never offer the same range

of ergonomic options as a traditional desktop computer setup, so you should try to limit your use and take frequent breaks. However, if you take some basic steps while using them, you can work more comfortably and prevent injuries.

# ERGONOMICS: USING A COMPUTER MONITOR



This talk discusses how to properly position, use, and maintain a computer monitor to avoid awkward postures that lead to neck and back pain and eyestrain.

### Materials to have on hand:

- A computer workstation with a computer monitor

### Items for attendees to consider during the talk:

- How can you best position a computer monitor?
- Where should your gaze fall on a computer monitor screen?
- How can you give your eyes a rest when using a monitor?

## TALK

Placing a computer monitor correctly is key to avoiding awkward body postures that lead to neck and back pain, as well as eyestrain.

**Position the monitor.** Place the computer monitor so that you can easily read text displayed. Your head and torso should be upright, and your back should be supported by your chair. Position the monitor directly in front of you. If you are working with printed materials, do not place the materials flat on a table. Instead, place the materials on a document holder that attaches to the top left or right corner of the monitor. Your documents should be close to your monitor and the same distance from your gaze. This

will prevent awkward postures such as turning your head to see your screen or printed materials properly.

**Adjust for eye level.** Place the top one-third of the computer monitor's screen at or directly below your natural gaze. Place the monitor between 18 and 24 inches from your eyes (or about one arm's length away.) If you reach out, your fingertips should be able to touch, or almost touch, the screen of your monitor. Placing the monitor too far from you or too close to you can cause eyestrain and back and neck pain. Adjust the height of your chair, or remove or add risers under the monitor to adjust your viewing angle.

If you are a bifocal user, lower the monitor or raise the chair height so you can maintain the appropriate neck posture. Tilt the monitor up toward you if needed. Watch out for glare when adjusting the tilt of your monitor.

**Time spent using the monitor.** Do not stare at the computer monitor for long periods of time. This causes eye fatigue and dryness. Often, users will blink less when viewing a monitor. Every now and then, focus on objects that are far away. Give your eye muscles a chance to relax. Look away from the screen, and blink at regular intervals to moisten your eyes. Alternate your tasks with other work duties that do not involve using the computer.

**Lighting.** Make sure you have proper lighting at your workstation. The light should be enough for you to clearly see the monitor screen and your printed

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# ERGONOMICS

materials but not so bright that there is a glare on the monitor screen. If available, use the monitor's

function keys to adjust your brightness and contrast settings to reduce eyestrain.

# ERGONOMICS FOR ELECTRICAL WORKERS



This talk informs electrical workers at construction or renovation jobsites about the hazards they may face while performing work that involves repetitive motions and awkward postures and explains the ergonomic work practices that can help prevent musculoskeletal injuries.

## Materials to have on hand:

- Examples of hand tools with padded, rounded handles
- Different types of shovels, including ones with a round blade, a square blade, and a rolled step

## Items for attendees to consider during talk:

- What are some tasks I do on the job that may lead to fatigue, discomfort, or an injury from poor ergonomics?
- When pulling and feeding wire, how can I avoid exerting a lot of force?
- How can I use hand tools in a way that reduces the chances of getting injured?

## TALK

It's well known that some of the most dangerous hazards electrical workers are exposed to are electrical currents that can shock or even electrocute you. However, it is important to remember that you can also be injured or develop musculoskeletal disorders (like low

back injuries and carpal tunnel syndrome) over time just by performing routine tasks.

Today, we'll discuss some of the hazards associated with electrical work tasks you may perform that could lead to an injury, and we'll discuss some ergonomic best practices for each.

## Body posture

Electrical installation and repair work are often performed at ceiling height, close to the ground, or in tight spaces. Where the work is performed can lead you to assume an awkward posture, such as crouching, kneeling, reaching, or twisting. You should prefabricate parts and do all other work possible at a comfortable working height, like on a table-top. However, during installation or repair work, if you find yourself maintaining an awkward posture, change positions frequently. Briefly standing from a crouched position or lowering your arms if they are outstretched can be beneficial.

## Pulling and feeding wire

Pulling and feeding wire and cables through chases, conduits, or knockouts can require you to exert significant force. If possible, use a mechanical wire puller, portable pulleys, or spool rollers. If you are pulling wire manually, pull from the power zone: This is the area between your midthigh and midchest, close to your body. When pulling and feeding, take regular breaks and wear well-fitting gloves that improve your

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# ERGONOMICS FOR ELECTRICAL WORKERS

grip. This will also protect your hands from contact stress and cuts. If possible, apply a wire lubricant that will decrease the friction on the wire as it's being pulled so less force will be exerted.

When pulling and feeding wires overhead, use a platform, scaffold, or lift to raise yourself to the level of the work so that you don't have to reach. Don't use a ladder for this type of work: When you stand on a ladder, it's difficult and sometimes unsafe to reposition yourself to face the wire as it is pulled, which could cause you to twist your torso.

## Using hand tools

Many assembly tasks require the use of hand tools, such as pliers, crimpers, wire strippers, or wire cutters. Connecting and fastening tasks like splicing wires, connecting wires to switches, and connecting mounts often require the use of screwdrivers. When using small hand tools for a long time, you can become fatigued or, worse, develop an injury from the force of the tool against your hand.

Always select the right tool for the job. Use hand tools with padded and rounded handles, and grip tools so that the tool handle extends across your whole palm. Always maintain a neutral wrist position. If you're working with bent wrists, select a tool that has a handle type, such as in-line, pistol grip, or adjustable, that allows you to keep your wrist straight during use.

If possible, use spring-loaded tools or powered tools to reduce the amount of force you must exert. Keep all tools sharp and well lubricated.

Assembly tasks can be long and require you to perform repetitive motions. To avoid fatigue, take small breaks. Regular breaks that last even for only a few seconds can reduce the likelihood of injury.

## Digging

When digging trenches or holes to bury electrical lines, you can easily injure your back from too much strain. Use mechanical equipment to dig, such as a backhoe, if you are certified to use it. But, if you must dig manually, never try to lift too much. Also, select the right shovel for the job. Use a shovel with a round blade for digging in sand and dry dirt, a shovel with a square blade for digging in gravel or rocky soil, or a shovel with a rolled step for digging in hard dirt. The step will allow you to dig using your body weight when you step on it. To reduce bending, use long-handled tools that are appropriate for your height.

When manually digging, it is important to maintain a good body posture. To turn, move your feet instead of twisting your torso. You should also alternate shoveling motions between the left and right sides of your body, and take short breaks or alternate with tasks that don't require manual digging.

# EXERCISE FOR HEALTH AND SAFETY



This talk emphasizes the importance of regular exercise, both for long-term health and for safety on the job and provides tips for starting a new exercise routine.

## Materials to have on hand:

Centers for Disease Control Physical Guidelines for Americans document

## Items for attendees to consider during the talk:

- Do you know the recommended amount of exercise for healthy adults?
- What are the health and safety benefits of an active lifestyle?
- What are some simple ways to work exercise into your daily routine?

## TALK

It's probably not news to you that regular exercise is an important part of a healthy lifestyle. But between work obligations, family commitments, and everything else on your plate, sometimes it can seem like there aren't enough hours in the day to accomplish the bare minimum, let alone fit in an exercise routine. If you start small and gradually work more movement into your day, though, you can develop a more active lifestyle that will pay off in many ways.

Consider some of these health benefits of regular exercise:

- Better sleep at night and concentration during the day
- Lower risk for heart disease, stroke, high blood pressure, type 2 diabetes, and many other ailments
- Better mental health and a lower risk for anxiety and depression
- Prevention of unhealthy weight gain

And, if you're still not convinced, consider the many ways in which an active lifestyle can improve your everyday life. Routine tasks like climbing stairs and carrying groceries will become easier. You'll improve your balance and coordination, which lowers your risk of slipping or falling and injuring yourself. If your job involves lifting or other physically demanding tasks, regular exercise can improve your strength and endurance so that you'll be less likely to hurt yourself on the job.

You might be surprised by how small of a time commitment you need to get started. The Centers for Disease Control and Prevention, or the CDC, recommends that healthy adults between the ages of 18 and 64 get at least 2½ hours of moderate-intensity aerobic activity weekly or 1 hour and 15 minutes of vigorous-intensity aerobic activity weekly. For moderate exercise, that's just 30 minutes a day, 5 days a week, and for vigorous exercise, that's just

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# EXERCISE FOR HEALTH AND SAFETY

15 minutes a day, 5 days a week. Of course, more exercise is better, but you'll gain substantial health benefits even at the minimum.

Some examples of ways to get moderate-intensity exercise include:

- Brisk walking,
- Some forms of yoga,
- Recreational swimming,
- Bicycling slower than 10 miles per hour on flat terrain,
- General yardwork and gardening, and
- Exercise classes like water aerobics.

Vigorous-intensity aerobic activities include things like:

- Running,
- Swimming laps,
- Bicycling faster than 10 miles per hour,
- Jumping rope,
- Heavy yardwork,
- Hiking uphill,
- High-intensity interval training, and
- Exercise classes like indoor cycling or kickboxing.

One thing to note about these activities is that many of them can fit into your day without much adjustment to your schedule. Your exercise doesn't need to be in long, uninterrupted blocks. All activity that is at the right intensity counts, whether it's an hour-long hike or several shorter walks over the course of a day or week.

Of course, you may experience a particular activity as more or less intense depending on how active you are currently. One way to gauge whether you are exercising at the right intensity is to use the talk test. The goal for moderate exercise is to be able to talk, but not sing, during the activity. For vigorous exercise, you generally are not able to say more than a few words at a time without pausing to catch your breath.

In addition to aerobic exercise, it's also important to incorporate muscle-strengthening activities such as lifting weights, doing body-weight exercises like push-ups and planks, or heavy gardening. The CDC recommends muscle-strengthening activities for all the major muscle groups of the body at least 2 days a week.

If you're just beginning a new exercise routine, remember to start small and increase gradually. That way, you'll be less likely to injure yourself and more likely to develop a sustainable, long-term habit.

# EXTENSION CORDS

## CHOOSE THE RIGHT ONE FOR THE JOB



This talk discusses how to choose the right extension cord for the job on any worksite to prevent shocks, burns, and damage to equipment.

### Materials to have on hand:

- Commonly used extension cords with various power ratings and diameters, and at least one with three-pronged plugs and one with two-pronged polarized plugs
- Power tools, appliances, and other electrical devices with various power ratings

### Items for attendees to consider during the talk:

- Where on an extension cord will you find the power rating, and why is that information important?
- Is it safe to plug a power tool or device with a two-pronged plug into an extension cord with a three-pronged plug?
- What's a major difference between a cord designed for outdoor use and a cord designed for indoor use?

## TALK

Extension cords are designed to be convenient and safe to use. Knowing what kind of cord to use for a particular task will help prevent common hazards like fire, shocks, and burns and will also protect equipment from damage.

All high-quality cords will be marked with a safety listing, such as UL-approved (that is, Underwriter's Laboratories), and other markings for power capacity and conditions for use. The listing is often stamped right into the cord's plug and on the cord jacket, the outer covering that insulates and protects the wires. If there is no listing, replace the cord with a listed one.

**Match the type of cord to the equipment and site conditions.** There are cords designed for outdoor use and there are cords to be used only indoors. Cords approved for outdoor use are typically identified by the word "Outdoor" or by the letter "W" on the cord jacket. Don't use the flat, two-wire cords meant for light duty that have only a single layer of insulation with any power tools.

Use the thicker, double-insulated cords for all power tools and when working outside. At construction sites, use the three-wire cords designed for hard or extra-hard usage, which are marked on the jacket with letters such as S, SE, SO, or ST. There might be additional letters that indicate the type of the insulation or outer covering.

Other cord types are designed to resist moisture, heat, or chemicals. For example, cords with plastic jackets are recommended for use around solvents or oils. Oil-resistant cords will have the letter "O" stamped onto the jacket.

Cords typically have the polarized, two-pronged (that is, one prong is wider than the other) plug type or the grounded, three-pronged plug type. Tools or devices

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# EXTENSION CORDS

with two prongs can be used safely with either the two- or three-pronged cords. Tools and devices with three-pronged plugs should be used only with three-pronged extension cords. The third prong provides a grounding wire that greatly reduces the risk of fire or shock.

**Make sure the cord's power rating is at least as high as the power tool or device's power rating.**

Make sure the extension cord's power rating is at least as high as the power rating of the tool it will power. The cord's power rating is a number listed on the cord jacket as either "amps" or the wire gauge

(a number followed by AWG). The wire gauge is the thickness of each wire in the cord. Lower wire gauge numbers on cords translate to higher power capacity. For example, use a 16-gauge cord with a leaf blower rated 12 amps or less. Use a 12-gauge cord when using a circular saw rated up to 15 amps.

Also, don't use a cord that is considerably longer than is needed for the job. The longer the cord, the less power it can deliver to the tool or device. For example, a 20-foot (ft) extension cord can power higher-wattage power tools than a 50-ft cord with the same power rating.

# EXTENSION CORDS

## USE THEM SAFELY



This talk discusses safe work practices and precautions to take to prevent fire, shock, and burns when using extension cords in any workplace.

### Materials to have on hand:

- Commonly used extension cords with various ratings and diameters, with three-pronged plugs and two-pronged polarized plugs
- Ground fault circuit interrupter (GFCI) outlet if available

### Items for attendees to consider during talk:

- What are common electrical hazards associated with extension cords?
- How often should a cord be inspected for defects?
- Is it safe to connect several cords together to make a longer cord?

## TALK

Extension cords are very safe when in good condition and used correctly. But when used incorrectly or when they have damaged wiring and loose connections, they can cause fires, shocks, and burns and can damage equipment.

Here are some best practices and precautions to take when using extension cords:

- They are designed for temporary use—don't use them as a replacement for permanent wiring.
  - Inspect cords *before each use* to be sure they're in good condition and are not frayed, cracked, or punctured.
  - When in use, check if it's hot to the touch; if so, it's overloaded and should be disconnected.
  - If a cord is cut or cracked, has exposed wires, or defective plugs, don't use it. Have it repaired by a professional or throw it away.
  - Power tools and other devices with three-pronged plugs should be used only with three-pronged extension cords. The third prong provides a grounding wire that greatly reduces the risk of fire or shock. Only the three-pronged extension cords are allowed to be used on construction sites.
- [For more on choosing the right type of cord, see the Talk *Extension Cords: Choose the Right One.*]
- If you have a power tool or device with the two-pronged polarized plug (that is, one blade is slightly wider than the other) and your two-pronged extension cord does not have the polarized plug, don't try to force the device's plug into the cord. Replace the nonpolarized cord with a polarized one.
  - Never bend a plug's prong to force a three-pronged plug into a two-pronged outlet.

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# EXTENSION CORDS

- Use one long cord instead of several shorter cords connected together. Connecting extension cords in a series significantly weakens the power capacity of the entire length of the setup, increasing the risk of overload. A longer cord should have a larger diameter than a shorter cord. Thicker cord usually translates to a higher power capacity.
- If using a cord outdoors, plug it into a GFCI to eliminate shock hazards.
- Never splice or tape a defective or damaged extension cord.
- Keep cords untangled when in use and stored loosely coiled in a dry place.
- Never disconnect a plug by pulling on the wire. Instead, grip the plug itself to pull it out of the socket.

# EYE AND FACE PROTECTION

## EYE AND FACE PROTECTION FROM CHEMICAL SPLASHES



This talk discusses the selection of eye and face protection specific to chemical hazards to which workers are exposed. It also discusses two worst-case scenario Do's and Don'ts.

### Materials to have on hand:

Eye and face protector devices used at this worksite

### Items for attendees to consider during talk:

- Do you always wear eye and face protection?
- Do you know what to do if a hazardous chemical splashes into your eyes?

## TALK

Because we handle hazardous chemicals in our department, it is very important that we use the right eye protection to prevent injuries from splashes or irritating mists. Few things can be more frightening than the prospect of permanent blindness. Yet, workers take risks every day. In fact, most eye and face injuries happen because workers are not wearing protection.

We have the following protection devices to be used while working with hazardous chemicals:

- Goggles with indirect ventilation (both the eye-cup and the cover type);
- A face shield to be worn over spectacles or goggles; *or*
- A full-face piece respirator.

*[Customize to protection specific to your facility.]*

Your supervisor will provide the protector appropriate for the particular job you will be doing. Also, you need to understand that the atmospheric conditions of your work area and the restricted ventilation of the protector may cause the lenses to fog. And you may splash the protector, so it could require frequent cleaning.

When you receive your protective device, check it to make certain it has a "D3" marking along with the manufacturer mark on it. It may also have a "+" sign to indicate it is impact-rated, which protects you in the event of an accidental chemical explosion.

Despite our best preventive efforts, occasional accidents can occur. You could encounter other eye hazards in our workplace. And our response in an accident can determine whether the injury will be permanent. Let's discuss two worst-case scenario Do's and Don'ts:

- A hazardous chemical splashes into your eyes. **Do** flush them with water immediately while forcing the eyelids open. Continue flushing for at least 15 minutes. If you are wearing contact lenses, you can gently take them out while you are flushing. **Don't** delay the flushing to take out your lenses but make sure that you take them out because they could trap the chemical in your eyes. Seek emergency medical help quickly.
- A chemical mixture is heated for a desired reaction, but it results in an explosion that sends glass flying into your left eye. **Do** wash your

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# EYE AND FACE PROTECTION

hands. **Do not rub the eye!** Carefully try to flush out with a gentle stream of clean, warm water. Use an eyecup or a small, clean drinking glass positioned with its rim resting on the bone at the base of your eye socket. If you're wearing contact lenses, it's best to remove the lens before or while you're flushing

the surface of the eye with water. Sometimes a foreign body can be embedded on the under-surface of the lens.

These scenarios remind us of the importance not only of wearing eye and face protection but also of wearing the **right** protection!



# EYE PROTECTION

## IMPACT HAZARDS



This talk discusses common impact hazards that can cause eye injuries and the proper selection and care of eye protection for workers in general industry.

### Materials to have on hand:

- Examples of eye protection used at your workplace
- Samples of materials that could pose impact hazards to employees' eyes

### Item for attendees to consider during the talk:

- What job tasks do you perform that create impact hazards?

## TALK

In a recent incident, an employee was working on a wheel fabrication line when he tried to force a flare disk onto a flaring machine spindle by striking the disk with a metal hammer. The impact of the hammer onto the flare disk sent a metal fragment into the employee's eye, resulting in his hospitalization and requiring surgery. Though the employee was wearing safety glasses, he should have been wearing safety goggles to protect his eyes from impact injuries like the one he received—a fact supported by a warning label on the hammer.

But this worker was lucky. Thousands of people are blinded every year from work-related eye injuries that could have been prevented with the proper selection and use of eye protection. While you might be aware of the importance of wearing eye protection when performing certain job tasks, do you know the best type to use to protect against impact hazards and how to properly care for and maintain it?

### Impact hazards

The majority of impact injuries are caused by flying or falling objects, such as large chips, fragments, particles, sand, or dirt, or by sparks striking the eye. Most of these objects are smaller than the head of a pin and can cause serious injuries such as punctures, scratches, and bruises.

Impact hazards can result from many types of work operations, including chipping, grinding, masonry, riveting, woodworking, sawing, drilling, chiseling, and sanding.

To protect against impact injuries to your eyes in hazardous work areas, always wear safety glasses with side shields or goggles, even when wearing a face shield. A face shield alone will not protect you from impact hazards!

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# EYE PROTECTION

## Safety glasses

Safety glasses are designed to shield the eyes from a variety of impact hazards and provide frontal protection to the wearer's eyes. Side shields provide angular protection. Non-side shield glasses are not acceptable eye protection for impact hazards.

Frames can be fitted with either corrective or Plano impact-resistant lenses. Plano lenses should be used by workers who do not require vision correction, and prescription corrective lenses should be used by workers who do.

## Safety goggles

Safety goggles are designed to shield the eyes against flying fragments, objects, large chips, and particles. Goggles fit the face and form a protective seal around the eyes. This prevents objects from entering under or around the goggles. The frame must fit properly to your face to form the correct seal.

Safety goggle lenses are designed and tested to resist moderate impact and may be removable or may incorporate prescription lenses mounted behind protective lenses if you need vision correction. Goggles are also available with different levels of ventilation.

Though your employer will provide you with suitable personal protective equipment, or PPE, that complies with industry standards, different types may be

available for different tasks. Before you begin a job that exposes you to impact hazards, take the time to consider which type of eye protection will provide your eyes with the best defense.

## Care and maintenance

To make sure that the form of eye protection you choose remains effective, clean and disinfect it regularly. To do this, disassemble the goggles or glasses, and thoroughly clean all parts with soap and warm water. Rinse all traces of soap, and replace any defective parts with new ones. Swab the PPE thoroughly, and immerse all parts for 10 minutes in a disinfectant solution. Remove the parts from the solution, and let them air dry in a clean place at room temperature or with heated air. Do not rinse after removing the parts from the solution because this will remove the germicidal residue that remains effective after drying.

Replace the lenses if they become pitted or scratched. Replace any headband if it becomes slack, worn out, soaked with sweat, or twisted to the point where the elasticity is reduced.

To store eye protection properly, keep it in a clean, dust-proof container, such as a box, bag, plastic envelope, or storage case.

If you follow these guidelines for choosing and caring for your eye protection, you can save your sight from the dangers of workplace impact hazards.

# FALL PROTECTION

## CONSTRUCTION: RAMPS AND RUNWAYS



This talk discusses the safe use of ramps and runways to protect construction workers from falls.

### Materials to have on hand:

- Example of a ramp or runway used at the jobsite

### Items for attendees to consider during the talk:

- Where are ramps and runways used at your jobsite?
- What are the fall hazards associated with those ramps and runways?

## TALK

Ramps and runways are common and important features of almost every jobsite. Ramps are inclined surfaces that connect different elevations and are used for workers, vehicles, or both. Runways are passageways for workers that are elevated above the surrounding floor or ground level, such as catwalks, footwalks along shafting, or walkways between buildings.

Ramps and runways can frequently become fall hazards, especially when they aren't properly constructed. Though a guardrail system will typically be installed on each unprotected side of a ramp or runway, there are a number of best practices you should

keep in mind to protect yourself while working on one of these areas.

### Do:

- Keep an eye out for ramps and runways that are too narrow, improperly supported, too steep, or uneven.
- Keep ramps and runways free from debris and other slip, trip, and fall hazards.
- Make sure the surfaces have suitable traction.
- Install cleats on walkways that are used in place of stairs.
- Give plenty of clearance when workers are carrying or pushing materials.
- Make sure ramp and runway areas have enough lighting.
- Securely fasten fixed ramps to prevent shifting, and brace them to prevent bouncing.
- Use toeboards to prevent materials from falling from the ramp or runway.

### Don't:

- Overload ramps or runways with people or materials.
- Stop on a ramp or runway with a load.

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# FALL PROTECTION

- Work under a ramp or runway.
- Install a ramp or runway longer than 12 feet without bracing.

If you have any questions or concerns about the use of ramps or runways at this jobsite, don't hesitate to speak with your supervisor.

# FALL PROTECTION— CONSTRUCTION

## FALL ARREST: DO'S AND DON'TS



This talk discusses the safe use of a fall restraint or personal fall arrest system for construction workers.

### Materials to have on hand:

- Examples of real-life injuries/fatalities from falls in construction work activities
- A full-body harness, lanyard, and/or lifeline and an independent anchorage point

### Items for attendees to consider during talk:

- What are the two types of fall protection?
- When are you required to have appropriate fall protection?
- How often should your fall protection system be inspected?

### Talk

Falls continue to be the number one killer in construction. These are tragic because they are preventable.

The Occupational Safety and Health Administration's (OSHA) fall protection standard requires that you have appropriate fall protection whenever you are 6 feet (ft) or more from the ground and there is an unprotected side or edge.

There are two types of fall protection: fall restraint and fall arrest.

**Fall restraint** includes such items as a guardrail or parapet wall. It can also consist of a personal fall restraint system that keeps you from reaching an unprotected "fall" point.

**Fall arrest** stops you from falling. The entire personal fall arrest system (PFAS) must be capable of withstanding the tremendous impact forces involved in a fall. A person without protection will free-fall 4 ft in 1/2 second and 16 ft in 1 second! A PFAS includes a full-body harness, a shock-absorbing lanyard or rope grab, vertical lifeline, and a sound anchorage able to support a load of up to 5,000 pounds (lb).

Today we are discussing the do's and don'ts of using a fall arrest system.

### Do

- ✓ Pick an anchorage point that will support 5,000 lb (strong enough to support a pickup truck).
- ✓ Rig the fall arrest system so you can't free-fall more than 6 ft (or make contact with any lower level).
- ✓ Tie off above your head. A 6-ft person who ties off at the feet could free-fall as far as 12 ft.
- ✓ Place your anchorage directly above/behind your work area to avoid potential swing fall hazards.
- ✓ Use the shortest lanyard possible. The shorter the tie-off, the shorter the fall.
- ✓ Have your anchorage points selected by a competent person.

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# FALL PROTECTION—CONSTRUCTION

## Don't

- ☒ Do not tie off to vent pipes or unstructured, un-designated areas.
- ☒ Do not tie a knot in the lanyard. This will reduce its strength.
- ☒ Do not use water pipes, electrical conduits, light fixtures, or guardrails as anchor points.
- ☒ Do not use any lanyards without self-locking snap hooks.
- ☒ Do not join multiple lanyards together to reach an anchorage.
- ☒ Do not tie off to the same anchorage as another worker, unless it is designated and approved by an engineer.

- ☒ Do not unhook from your fall protection while exposed to a fall greater than 6 ft.
- ☒ Do not allow someone else to rig your equipment, unless you verify that it has been done correctly.
- ☒ Do not use an anchorage that is dependent on any anchorage used to support or suspend platforms.

And finally:

- You must inspect your equipment daily before each use for wear damage, deterioration, fraying ropes, cracks, or other defects in the hardware.
- Tag and remove any defective equipment from service.
- Make sure you are attached to a sound anchorage.

Remember, if you have any questions or concerns, please speak up. Think safety first!

# FALL PROTECTION

## PREVENTING FALLS IN GENERAL INDUSTRY



This talk discusses tripping and slipping hazards and falls at the same level. It provides tips for avoiding falls for workers in office, warehouse, and manufacturing environments.

### Materials to have on hand:

- Images of real-life slip, trip, and fall accidents in the workplace
- Company housekeeping policy

### Things for attendees to consider:

- What are some common tripping hazards in our workplace?
- What are some slipping hazards in our workplace?
- What kinds of injuries can a fall cause?

## TALK

Once upon a time, not too long ago, a new janitorial helper at an industrial plant started scrubbing some stairs and the nearby floor with water and a cleaning agent. An observant passing worker realized that, soon, dozens of workers would hurry down those steps on their way to their coffee break. This worker's alertness and quick action in placing a caution sign where the janitor was working averted a potential disaster.

There were two things wrong with this picture:

1. The stair and floor cleaning should have been done after work hours; *and*
2. If cleaning was needed during work hours, pedestrian traffic should have been detoured while the janitorial helper was cleaning the floors.

Rarely does anything happen as quickly as a fall. During a fall, our reflexes come into play and try to protect us. Often, this quick muscular reaction can cause strains or sprains and, in some cases, body tension, which may result in a more serious injury than if the body were relaxed during the fall.

Since we have no control over our reflex actions, it is wise to be aware of objects and conditions that cause falls.

To avoid slips and resulting falls, be on the lookout for foreign substances on the floor. Watch for deposits of water, food, grease, oil, sawdust, soap, or debris. Even small quantities of these substances, sometimes almost too small to see, can be dangerous.

When you come into work from outdoors in rainy or snowy weather, wipe your shoes thoroughly on the doormat—not just to keep the floor clean but to prevent the wetness of your shoes from making you slip and, perhaps, fall. And another point about walking safely is to not turn too sharply when changing your direction.

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# FALL PROTECTION

Now let's give our attention to tripping hazards. Some that are all too common are trash or unused materials left in aisles or other areas intended for pedestrian traffic, extension cords across paths of travel, tools not put away, and holes or unevenness in the floor.

It will help keep passageways clean if you make sure trash or waste goes in the trash barrel. There are enough waste receptacles here that taking this safety step shouldn't take more than a few steps.

Also, walk where you're supposed to walk. Don't take shortcuts; especially, don't take shortcuts through machinery areas. Hold onto the handrails when

walking on stairs or traveling on steeper-than-ordinary ramps. Contrary to the belief of some people, the use of handrails is not a sign of infirmity. It's just good sense. If material or equipment is stored on stairways or ramps, move it or report it promptly.

Horseplay—just plain goofing off—can be very dangerous. It can cause a trip, stumble, or fall by distracting a worker's attention from moving safely.

Falls are one of the major causes of occupational injuries—including fatal ones. We do our best to prevent situations that can lead to falls. But you must do your part, too, by being aware and careful.

# FALL PROTECTION— CONSTRUCTION

## USING GUARDRAILS



This talk discusses the safe use of guardrails to protect construction workers from falls.

### Materials to have on hand:

- Examples of real-life injuries/fatalities from falls in construction work activities
- Guardrail system

### Items for attendees to consider during talk:

- When do you need to guard wall openings?
- At what height should the guardrails be placed?
- When should the guardrails be inspected?

## TALK

Falls continue to be the number one killer in construction. These are tragic because they are preventable.

The Occupational Safety and Health Administration (OSHA) requires that we protect you from falling from exposed sides or edges and from objects falling from work areas 6 feet (ft) above lower levels. This protection can be in the form of guardrails, personal fall arrest systems, or safety nets.

Almost all construction sites have unprotected wall openings and exposed sides and edges at some point during construction. For these openings, guardrails are the preferred method because they protect workers below from falling objects and workers on

the elevated work area from falling off. For wall openings, guardrails must be used when the openings are larger than 18 inches (in.) wide and 30 in. tall.

If you are building the guardrails, they must have a top rail at least 39 to 45 in. above a working surface. The top rail must be able to withstand a force of 200 pounds (lb) in any direction. Midrails must be placed midway between the top rail and the working surface and be able to withstand a minimum force of 150 lb.



Also, screens, mesh, or toeboards must be used if there is the possibility of items falling over the edge.

Most guardrails are built of strong materials and are usually solid when first put up. But as time goes by, guardrails often are abused, weakened, broken, or moved and not replaced. This can lead to accidents and injuries if the guardrail cannot hold you or if a

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# FALL PROTECTION—CONSTRUCTION

tool drops on a worker below. To help avoid guardrail accidents, we need to follow a few simple steps:

- Check the guardrails as you work—make it part of your job.
- Do not lean against the guardrails or hang tools or anything on them.
- If you find a weakened or missing section, correct the situation, if you can. If not, report it immediately to eliminate the hazard.

- If you bump into a guardrail with material or equipment, check it immediately to see if you have damaged or weakened it.

Different types of construction require different types of guardrails. But these simple steps to avoid guardrail accidents we discussed apply to all guardrails.

Remember, if you have any questions or concerns, please speak up. Think safety first!

# FALL PROTECTION IN CA

## MULTIPLE-UNIT ROOF COVERINGS



This talk addresses fall protection requirements and best practices for roofers working on multiple-unit roof coverings on residential and commercial construction in California. This talk does not apply to roofing work on new production-type residential construction.

### Material to have on hand:

- Example of warning lines or other fall protection used at your jobsite

### Items for attendees to consider during talk:

- What are the slopes of the roofs you are working on?
- What fall protection is required for this job, and how will you help put it in place?
- What can you do to make your work safer?

## TALK

As we all know, roofing is a dangerous profession, and of all the accidents associated with the job, falls are the most common and the most likely to cause serious injuries and fatalities. About one in three injuries suffered by roofers is caused by slips or falls. So, what can we do to protect ourselves?

The most important thing we can do is to make sure we use appropriate fall protection. If you are working on a roof over 20 feet high, you need to

have some form of fall protection. The type of fall protection will depend on the material and the slope of the roof you are working on. Let's go over the specific requirements for working with multiple-unit roof coverings.

### Fall protection requirements

Multiple-unit roof coverings include asphalt shingles, cement, clay and slate tile, standing-seam metal panels, shingle metal roofing, and wood shingles. When you are working with multiple-unit roof coverings on roofs that are more than 20 feet high and have slopes 0 to 12 through 5 to 12, make sure there is a roof jack system or 2-foot-high parapets. When you are working with multiple-unit roof coverings on roofs that are more than 20 feet high and have slopes greater than 5 to 12, you must be protected by parapets that are at least 2 feet high, personal fall protection, catch platforms, scaffold platforms, eave barriers, or roof jack systems. If your worksite uses roof jack systems on roofs that are steeper than 7 to 12, you must also use safety lines.

### Safe work practices

Besides making sure that you are using the appropriate fall protection for your roofing job, you can lower your risk of slipping and falling by keeping your worksite clear of tripping hazards. Remove trash and equipment from your work area, and store materials neatly and away from roof edges. Check for

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## FALL PROTECTION IN CA

any skylights or other roof openings, and make sure they are barricaded with covers, screens, nets, or guardrails or wear personal fall protection.

If you follow these fall protection rules and best practices, you will help protect yourself and others from devastating injuries.

# FALL PROTECTION IN CA

## SINGLE-UNIT ROOF COVERINGS



This talk addresses fall protection requirements and best practices for roofers working on single-unit roof coverings on residential and commercial construction in California. This talk does not apply to roofing work on new production-type residential construction.

### Material to have on hand:

- Example of warning lines or other fall protection used at your jobsite

### Items for attendees to consider during talk:

- What are the slopes of the roofs you are working on?
- What fall protection is required for this job, and how will you help put it in place?
- What can you do to make your work safer?

## TALK

As we all know, roofing is a dangerous profession, and of all the accidents associated with the job, falls are the most common and the most likely to cause serious injuries and fatalities. About one in three injuries suffered by roofers is caused by slips or falls. So, what can we do to protect ourselves?

The most important thing we can do is to make sure we use appropriate fall protection. If you are working on a roof over 20 feet high, you need to have some

form of fall protection. The type of fall protection will depend on the material and the slope of the roof you are working on. Let's go over the specific requirements for working with single-unit roof coverings.

### Slopes 0 to 12 through 4 to 12

Single-unit roof coverings include built-up roofing, flat-seam metal roofing, and vinyl roofing. If you are working on single-unit roofing that has a slope from 0 to 12 through 4 to 12 and is more than 20 feet high or you are using backward-pulling machinery, such as a felt layer, make sure that flagged warning lines are installed above the roof surface to warn you when you are approaching the edge of the roof. Warning lines will be made of rope, wire, or similar material and must have high-visibility flags. Headers made of roofing materials will be placed parallel to the roof edge where possible. Warning lines and headers must never be closer than 5 feet from the roof edge.

When you are using backward-pulling machinery, make sure that headers are no closer than 10 feet and warning lines are no closer than 5 feet from the roof edges that are perpendicular to the direction you are moving. If your worksite conditions prevent the use of headers, make sure warning lines are no closer than 10 feet from the perpendicular roof edges. Never get closer than 3 feet from the roof edge that is parallel to the direction you are moving, and never use or store motorized equipment between the warning line and the roof edge.

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# FALL PROTECTION IN CA

As your work progresses around the roof, make sure a qualified person moves the warning lines and headers so that they always provide a warning to others in the work area when they approach the roof edge. Warning lines and headers can also be installed around the entire perimeter of the roof. Material-handling and storage areas must be connected to the work area with a clear access path using two warning lines. When you aren't using the access path, place a rope, wire, or chain to block the path. Never go outside the warning lines and headers unless you are performing work at the roof edge under the supervision of a qualified person.

Keep in mind that your jobsite may not use warning lines if your employer provides you with personal fall protection, catch platforms, scaffold platforms, eave barriers, guardrails and toeboards, or parapets. Check with your supervisor if you are unsure about the type of fall protection you are required to use.

## Slopes greater than 4 to 12

If you are working with a single-unit roof covering on a roof that is more than 20 feet high and has a slope

greater than 4 to 12, you must be protected from falls by parapets that are at least 2 feet high, personal fall protection, catch platforms, scaffold platforms, eave barriers, or guardrails and toeboards. If you ride on motorized backward-pulling equipment that is designed for use on roofs with slopes greater than 4 to 12, you must be protected by parapets that are at least 3 feet high. Never operate equipment that you must pull while walking backward on roofs that have slopes greater than 4 to 12.

## Safe work practices

Besides making sure that you are using the appropriate fall protection for your roofing job, you can lower your risk of slipping and falling by keeping your worksite clear of tripping hazards. Remove trash and equipment from your work area, and store materials neatly and away from roof edges. Check for any skylights or other roof openings, and make sure they are barricaded with covers, screens, nets, or guardrails or wear personal fall protection.

If you follow these fall protection rules and best practices, you will help protect yourself and others from devastating injuries.



# FIRE EXTINGUISHER

## FIGHT OR FLIGHT?



This talk helps workers who are trained to use fire extinguishers understand how to make the decision of whether to fight a fire or evacuate the building immediately. It also discusses the steps to follow when responding to a small or beginning-stage fire.

### Materials to have on hand:

- Fire prevention policy
- Fire extinguishers used at your facility
- Facility map with escape routes
- Facility map with location of fire alarms and fire extinguishers

### Items for attendees to consider during talk:

- Do you know what to do in the event of a fire at the worksite?
- Do you know the different types of fires and the extinguisher to use to fight each?
- Do you know what the acronym PASS stands for?

## TALK

In the event of a fire, we are all confronted with the decision of whether to fight the flames with an extinguisher or evacuate the building immediately. This is probably the most important decision you will face when a fire breaks out.

When you are not trained in portable extinguisher use, the answer is easy: You should evacuate. If you are trained with extinguishers, however, there are many things to consider when deciding whether to fight or take flight. But before you decide to fight a fire or flee a building, pull the fire alarm to notify others in the building of the emergency.

Small fires can often be put out quickly by a well-trained employee with a portable fire extinguisher.

### Fight

If you decide to attempt to extinguish the fire, take the following actions:

- Position yourself between the fire and your escape route.
- Get the fire extinguisher.
- Back away from an extinguished fire in case it flames up again.
- Evacuate immediately if the extinguisher is empty and the fire is not out.
- Evacuate immediately if the fire becomes bigger.
- Remember the acronym PASS:
  1. **P**—*Pull* the pin that unlocks the operating handle.
  2. **A**—*Aim* the extinguisher low at the base of the fire.

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# FIRE EXTINGUISHERS

3. **S**—*Squeeze* the lever on the extinguisher to discharge the agent.
4. **S**—*Sweep* the nozzle or hose from side to side, and continue to sweep the extinguisher back and forth at the base of the flames until the fire is out or the extinguisher is empty.

## Know your fires and extinguishers

Different types of fire extinguishers are designed to fight different types of fire. There are five basic classifications of fires and extinguishers. The extinguishers are labeled with either letter-shaped or pictorial symbols that indicate what types of fires they are intended for.

***[Select the type of extinguisher used at your facility from those listed below.]***

**Class A** fires involve ordinary combustible materials, such as cloth, wood, paper, rubber, and many plastics, and these require a water extinguisher labeled A.

**Class B** fires involve flammable liquids, such as gasoline, alcohol, oil-based paints, and lacquers. These require an extinguisher labeled B.

Do not attempt to extinguish a fire involving flammable gas unless you're sure the source of gas can be shut

off. In fact, if the only fuel burning is the leaking gas, the best method for extinguishing the fire is to shut off the fuel supply. Fighting such a fire without shutting off the fuel will allow unburned gas to escape into the air, which could lead to a dangerous buildup, and an explosion could occur.

**Class C** fires involve energized electrical equipment and require an extinguisher labeled C.

**Class D** fires involve combustible metals, such as magnesium, titanium, and sodium. These fires require a special extinguisher labeled D.

**Class K** fires involve vegetable oils, animal oils, or fats in and around cooking appliances, and these require an extinguisher labeled K.

**Multipurpose extinguishers** with an ABC label are suitable for use with fires involving ordinary combustibles, flammable liquids, and energized electrical equipment. These extinguishers should include a symbol for each hazard type.

**If you have the slightest doubt about your ability to fight a fire,**

**EVACUATE IMMEDIATELY!**

# FIRE PREVENTION: SPACE HEATERS



This talk covers safe practices that employees should follow when using space heaters in the workplace.

## Materials to have on hand:

- A small electric space heater to demonstrate what to look for during inspection and how to safely use it
- Manufacturer's instructions for the space heater
- A copy of your employer's policy or guidelines for using space heaters
- A copy of the facility fire prevention plan, if applicable

## Items for attendees to consider during the talk:

- What is your employer's policy on using space heaters in the workplace?
- Have you read all the manufacturer's instructions and warnings for your space heater before using it?
- Are you using your space heater safely?

## TALK

Portable electric space heaters provide an inexpensive and effective way to keep your office or work space warm during the colder months. If

used improperly, however, space heaters can pose a significant risk of fire. Each year, thousands of fires result from the unsafe use of space heaters.

Fortunately, there are things you can do to prevent space heater fires. First and foremost, always read and follow the manufacturer's instructions for the heater you are using. They may include safety precautions specific to that model. In general, stick to the following guidelines when using a portable space heater to make sure you stay warm—and safe.

- Make sure your space heater has a label showing it has been certified by a nationally recognized testing laboratory.
- Before each use, inspect the heater for any signs of damage, such as a frayed cord or broken plug. If you see any signs of damage, do not use the heater.
- Plug the heater directly into a wall outlet, not into a power strip or an extension cord, which can overheat and cause a fire.
- Place the heater on a flat, level surface. Never place heaters on top of tables, filing cabinets, or other furniture.
- Place the heater in a spot with low foot traffic, where it will not pose a tripping hazard.

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# FIRE PREVENTION: SPACE HEATERS

- Make sure the heater is placed at least 3 feet away from anything that can burn, such as rugs and office paper.
- Never leave your space heater unattended when it is on. Turn it off before you leave the room.
- Before leaving work each day, unplug and safely store the heater.

***[Address the employer policy on space heaters, and discuss any additional rules employees must follow.]***

***[Take out the manufacturer's instructions for your space heater, and discuss any specific safety precautions. Also, look at and discuss any safety warning labels on the space heater itself.]***

When used in a safe manner, portable electric space heaters are a great source of supplemental heat for your office or work space. Always follow these critical safety guidelines to reduce the risk of fire and keep yourself and your coworkers safe.

# FIRE PREVENTION

## TRASH TALK



This talk discusses best practices for managing trash to minimize the risk of fires.

### Materials to have on hand:

- A copy of the facility’s fire prevention plan, if applicable

### Items for attendees to consider during the talk:

- Are the trash receptacles in your workplace located in safe areas?
- Do you throw materials away appropriately?

## TALK

No one likes to think about garbage; but if not handled properly, it can contribute to a fire that can burn down your whole operation. In fact, trash and debris are some of the most easily ignited materials. In one case, a fire broke out in a metal Dumpster® on a loading dock. Flames spread into the building, causing over half of a million dollars’ worth of damage.

To eliminate a fire hazard, you don’t have to eliminate trash altogether. There are many easy ways to protect against the hazards that trash may cause. Follow these tips provided by fire safety experts:

- Keep spaces and storage areas uncluttered, and empty trash cans as they fill up. Remove all garbage at the end of every working day, and transfer it to outdoor containers.

- Cover outdoor trash containers, such as Dumpsters, and make sure they are located away from buildings.
- Throw away oily rags by placing them in a listed oily waste container or an airtight, noncombustible metal container filled with a solution of water and an oil breakdown detergent. Take the container to your local hazardous waste disposal center or arrange a special pickup by your garbage collection service. You can also throw away oily rags by letting them dry on a noncombustible surface in an outdoor area that is out of the sun and well-ventilated. The rags must be weighed down in a single layer and not in a pile. Let the rags dry fully for at least 2 days, and dispose of the dried rags as directed by your garbage collection service or local hazardous waste disposal center. Check with your city or municipality and the oil manufacturer for further disposal instructions.
- Avoid throwing out materials that could produce toxic or corrosive fumes when they burn, such as rubber, foam plastic, aerosol containers, and PVC wiring insulation.
- Don’t allow paper and other trash to gather outside of garbage or recycling receptacles, and never store this material near hot equipment, electrical outlets, or smoking areas.
- Don’t place outdoor trash containers against a wall unless it is fire-resistant.

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# FIRE PREVENTION

- Don't place combustible materials such as paint thinners, acetone, propane tanks, gasoline containers, used motor oil, automotive batteries, or appliances in Dumpsters.
- Don't smoke near trash receptacles. Put out smoking materials properly, and throw them away in designated areas.

If a fire does occur, be sure you are familiar with our facility's emergency action plan. Immediately evacuate

the building if the fire alarm sounds unless you have been trained and authorized to put out small fires with a fire extinguisher or if you are designated to perform certain facility operations before evacuating. You may need to help first responders by providing site or building access and by giving information about the location of the fire, the status of the fire systems, and the status of building evacuation.

# FIRE PREVENTION FOR WAREHOUSE WORKERS



This talk provides an overview of the fire prevention methods to be used by warehouse workers.

## Materials to have on hand:

- A copy of the facility’s fire prevention plan, if applicable
- A copy of the facility’s emergency action plan

## Item for attendees to consider during the talk:

- Does your facility have a fire sprinkler system?

## TALK

Warehouses present unique challenges when it comes to fire prevention and protection. Their contents and layouts allow fires to spread easily and make it more difficult to put fires out once they start, leading to millions of dollars in property damage; injuries; and, in some cases, death. As a warehouse worker, you are the first line of defense when it comes to protecting your coworkers and this facility from fire hazards.

You can effectively prevent fires if you follow these do’s and don’ts:

- **DO** keep spaces and storage areas uncluttered, and empty trash cans as they fill up. Remove all waste materials at the end of every working day and transfer them to outdoor containers. Trash

and debris are some of the most quickly ignited materials in a warehouse setting.

- **DO** keep aisles and fire exits clear, and properly store all hazardous materials, such as flammable liquids, in a designated storage cabinet. Storing items in aisles can slow employee evacuation and emergency response and can allow fire to spread from rack to rack across an aisle.
- **DO** store unused pallets, crates, and other materials in designated areas. As a general rule, stack unused pallets no more than 6 feet high.
- **DO** maintain at least 3 inches of space on either side of racked pallets, and maintain at least 6 inches of space between rows of racked pallets.

***[The distance must be measured between the loads, not the distance between the racks. Specific code requirements may vary depending on your municipality and storage characteristics.]***

- **DO** inspect the warehouse daily and document the results. Check that accumulated waste materials have been removed, that fire prevention and security systems are working, and that any hazardous material or equipment has been stored properly.
- **DO** store any liquid propane fuel cylinders used to power liquid petroleum forklifts at least 20 feet away from fire exits.

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# FIRE PREVENTION FOR WAREHOUSE WORKERS

- **DO** pay attention to suspicious comments from disgruntled coworkers or the presence of intruders, as arson is a common cause of warehouse fires. Report concerning activities to your supervisor.
- **DON'T** smoke inside the warehouse, and smoke only in designated areas outside the building.
- **DON'T** use portable space heaters. They carry a greater fire risk than fixed heating systems.
- **DON'T** use temporary electrical cords whenever possible, but if you must use them, regularly inspect the cords for damaged insulation or plugs. Report any electrical hazards you discover to your supervisor.
- **DON'T** let waste materials accumulate outside the building. External trash fires can spread to the building.
- **DON'T** store anything higher than 18 inches below the sprinkler heads on the fire suppression system. Anything higher than this will block the flow of water and prevent the fire sprinkler from doing its job. In facilities without a sprinkler system, don't store anything higher than 24 inches below the ceiling.

If a fire does occur, however, be sure you are familiar with our facility's emergency action plan. Immediately evacuate the building if the fire alarm sounds, unless you have been trained and authorized to put out small fires with a fire extinguisher or if you are designated to perform certain facility operations before evacuating. You may need to assist first responders by providing site or building access and by giving information about the location of the fire, the status of the fire systems, and the status of building evacuation.

# FIRST AID

## ALWAYS TREAT CUTS OR SCRAPES



This talk discusses the importance of attending to minor cuts and scrapes that could lead to infection.

### Material to have on hand:

- First-aid kit

### Items for attendees to consider during talk:

- Do you know where the first-aid kit is located?
- Do you think minor cuts and scrapes should receive first-aid treatment?
- Do you know anybody whose minor cut or abrasion resulted in a significant infection?

## TALK

Small cuts and abrasions can be the start of something big, so they shouldn't be ignored. They require immediate attention.

The shelves of drugstores and supermarkets are loaded with a variety of bandages and other first-aid items, so it's surprising how many people still get infections from untreated wounds.

Most of us know of cases in which someone has had blood poisoning or some type of serious infection that resulted from only a scratch. Despite this knowledge, the tendency is still to let small cuts go without treatment.

But when infection takes over and keeps you off the job, the act of not treating the cut seems pretty careless. For instance:

- An employee of a concrete company skinned a knuckle and then missed 2 weeks of work because of blood poisoning.
- Another worker cut a finger on a grinding machine and had to miss several weeks of work because of an abscess from a bacterial infection.
- A car wash attendant lost 5 weeks of work after failing to treat the knuckles skinned on a bumper.

It's hard to imagine the number of germs, some of them deadly, that are often on our skin and on the things we work with. These germs are just waiting to find an opening in the skin to enter the body and start trouble.

Tetanus and blood poisoning are two of the most common killers that enter the body through small, harmless-looking cuts. Other serious infections may result in the amputation of a finger or hand.

To prevent small cuts, wear work gloves to protect your hands from hazards when handling materials and nonmachine jobs.

Maintaining a clean and clutter-free work area is another way to avoid injuries. But when cuts still occur, treat them right away. Don't wait until break time or until you get home. Time is really an important factor.

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# FIRST AID

Here are a few tips from the American Medical Association on the care of minor cuts and abrasions:

- Never put your mouth over a wound. The mouth harbors germs that could infect the wound.
- Do not breathe on the wound.
- Do not allow fingers, used handkerchiefs, or other soiled materials to touch the cut.
- Immediately cleanse the wound and surrounding skin with soap and warm water, wiping away from the wound.

- Hold a sterile pad firmly over the wound until the bleeding stops.
- Replace the sterile pads and bandages as necessary to keep the wound clean and dry.

Maybe there were some surprises for you in this advice—such as not putting your mouth on the cut or breathing on it. In any case, the emphasis is on immediate cleansing of the cut or abrasion. Use of antiseptics should generally be left to the advice of a doctor or other health professional.

# FIRST AID: ELECTRICAL SHOCK



This talk discusses the importance of responding to electrical shock in the workplace and covers best practices employees should follow when a fellow worker is the victim of an electrical shock.

## Material to have on hand:

- First-aid kit

## Items for attendees to consider during the talk:

- Do you know where the first-aid kit is located?
- What are some electrical hazards in the workplace?

## TALK

Electrical shock injures and kills hundreds of workers each year. The underlying cause of electrical shock is a combination of unsafe equipment and installations, an unsafe workplace environment, and unsafe work practices. Although electrical injuries can happen in any industry, the construction industry experiences most injuries and fatalities. Common electrical hazards include:

- Faulty equipment
- Working on energized equipment
- Improper grounding

- Damaged insulation
- Energized overhead powerlines
- Lightning

An electric shock happens when a person comes into contact with an electrical energy source. Electrical energy flows through a portion of the body, causing a shock. Exposure to electrical energy may result in no injury at all or may result in serious damage or death. Burns are the most common injury from electric shock.

The main factors that affect the severity of the shock a person receives when he or she suffers an electric shock are:

1. The type of current flowing through the body,
2. The amount of current flowing through the body, *and*
3. The path of the current through the body.

There are also other factors that can affect the severity of the shock, including the presence of moisture and the state of health—specifically the heart—of the person.

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# FIRST AID: ELECTRICAL SHOCK

## Response and treatment

When someone at your workplace suffers an electrical shock, turn off the source of electricity, if possible. If you can't turn off the power, use a piece of wood, such as a broom handle, dry rope, or dry clothing, to separate the victim from the power source. Do not touch the injured person if he or she is still in contact with the electrical current, and do not move the injured person unless he or she is in immediate danger.

Call 911 or your local emergency number if the source of electricity is a high-voltage wire or lightning. Don't get near high-voltage wires—stay at least 20 feet away—until the power is turned off. You should also call 911 or your local emergency number if the injured person experiences:

- Severe burns
  - Confusion
  - Difficulty breathing
  - Heart rhythm problems, such as arrhythmias
- Cardiac arrest
  - Muscle pain and contractions
  - Seizures
  - Loss of consciousness

After the power is turned off and the victim is no longer in contact with the electrical current, follow the company's procedure for first-aid treatment, as well as the company's policy for reporting injuries. You can assist the victim by taking the following actions while waiting for medical help:

- Begin cardiopulmonary resuscitation, or CPR, if the person shows no signs of circulation, such as breathing, coughing, or movement.
- Try to prevent the injured person from becoming chilled.
- Cover any burned areas with a sterile gauze bandage, if available, or a clean cloth. Don't use a blanket or towel because loose fibers can stick to the burns.

# FIRST AID: HEAD INJURIES



This talk informs employees about head trauma hazards in the workplace, serious head injury symptoms, and first-aid measures for responding to head injuries. This talk is for employees who are not designated first-aid responders but explains how they can act quickly in a medical emergency in situations when a trained first-aid responder is not available. It is intended as general awareness information only and is not a substitute for detailed first-aid training.

## Materials to have on hand:

- First-aid kit
- Gloves and other personal protective equipment (PPE)

## Items for attendees to consider during the talk:

- What are some worksite hazards that could cause a head injury?
- What are some signs and symptoms of a head injury?
- What should you do if the person is bleeding?

## TALK

According to the Centers for Disease Control and Prevention, or CDC, even mild head injuries can result in brain damage. A serious head injury can

damage the scalp, skull, or brain in any combination. A harsh blow to the head can severely shake the brain, sometimes causing brain damage, even when there is no sign of harm. If an object penetrates the skull, foreign material can cause infection, or blood vessels may break or tear, causing hemorrhage. If a head injury is suspected, you must act quickly.

## Head trauma hazards

The possibility of suffering a head injury exists in an environment where you could be struck by falling objects. If those objects could possibly fall from a great height, the risk from even small objects is great. Other hazards that could cause a head injury include electrical systems, falls, and getting caught between something.

## Head injury symptoms

If the injury is mild, there may be no symptoms, other than a slight headache. In some cases, there is concussion, which may cause confusion, dizziness, blurred vision, slurred speech, and poor coordination.

Serious head injury symptoms include:

- Severe head or facial bleeding
- Bleeding or fluid leakage from the nose or ears
- Vomiting

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# FIRST AID: HEAD INJURIES

- Severe headache
- Change in consciousness for more than a few seconds
- Black-and-blue discoloration below the eyes or behind the ears
- Not breathing
- Confusion
- Agitation
- Loss of balance
- Weakness or an inability to use an arm or a leg
- Unequal pupil size
- Slurred speech
- Seizures

## Responding to a head injury

To give first aid to a person who has a head injury, immediately call 911 or your local emergency number, and convey to the dispatcher the severity of the person's injuries. While waiting for emergency medical help to arrive:

- **Keep the person still.** The injured person should lie down, with the head and shoulders slightly elevated. Don't move the person unless necessary, and avoid moving the person's neck. If the person is wearing a helmet, don't remove it.

- **Stop any bleeding.** Put on gloves from a first-aid kit. Then apply firm pressure to the wound with sterile gauze or a clean cloth. However, don't apply direct pressure to the wound if you suspect a skull fracture. In addition to bleeding at the area of injury, other symptoms of a skull fracture may include swelling and tenderness around the area of injury and bleeding from the nostrils or ears. ***[You may choose to present the "Medical emergencies on the job: Bleeding" toolbox talk.]***
- **Watch for changes in breathing and alertness.** If there are no CPR-certified persons present, begin CPR if the injured person shows no signs of circulation, such as no breathing, coughing, or movement, even if you aren't CPR-certified. Push down hard and fast in the center of the chest at a rate of 100 to 120 pushes a minute. Let the chest come back up to its normal position after each push. The American Heart Association, or AHA, recommends timing your pushes to the beat of the song "Stayin' Alive." This method of CPR is called "hands-only" and does not involve breathing into the person's mouth.



# FIRST AID

## PREVENTING AND TREATING BURN INJURIES



This talk informs employees about common burn hazards in the workplace, the categories of burns, and first-aid measures for responding to burn injuries.

### Materials to have on hand:

- First-aid kit with bandages and other burn-treatment items
- Examples of burn hazards in the workplace

### Items for attendees to consider during the talk:

- What kind of burn hazards are present in your workplace?
- When does a burn require medical attention?

## TALK

Did you know that burn injuries result in an average of 6 days off the job? For severe burns, recovery takes even longer. Burns can even be fatal. But if you understand some basic facts about the different types of burns and how to prevent and treat them, you can avoid these outcomes.

### Burn hazards

You've probably all burned yourselves by touching something hot, whether it was a hot stove, a fire, boiling water, a radiator, or something else. This is called a thermal burn, and it's the most common

type of burn injury. In the workplace, thermal burn hazards might include welding tasks, working with flammable liquids, hot machines, and even space heaters.

You can also burn yourself with certain chemicals, particularly those that are corrosive. Examples of common corrosive chemicals include hydrochloric acid, sulfuric acid, sodium hydroxide, and ammonium hydroxide. Always check the label and safety data sheet, or SDS, of any chemicals you use on the job to find out whether they are corrosive, and use appropriate personal protective equipment, or PPE, such as gloves and eye protection to prevent chemical burns.

Electricity can also burn you. This can happen if you touch overheated wires or equipment, live wires, or a machine or tool that isn't properly insulated. Arc flash and fire can also burn you. The most important step you can take to prevent electrical burns is to make sure all electrical equipment you use is in good condition, and stay away from exposed live electrical parts and wires.

### Categories of burns

Burns fall into one of these three categories according to how severe they are:

- **First-degree burns are the least serious.** They usually make the skin red and can be quite painful, but they affect only the outside of the skin and usually don't have long-term effects.

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# FIRST AID

- **Second-degree burns go deeper.** The skin gets very red and often blisters. These burns are also painful, though they don't usually become infected or scar as long as they are treated with the right first aid.
- **Third-degree burns are very serious.** They destroy the skin and leave it white or charred. These burns damage the tissue under the skin, including nerve endings, so they may not be painful. However, these burns are very dangerous and can become infected and lead to scarring.

## Responding to a burn injury

For first-degree and minor second-degree burns, place the burned area under cool running water until it is no longer painful or for 15 minutes. Cover it with a moist, sterile dressing. Don't pack the burn in ice or rub burned skin, and don't break skin blisters. If a

blister breaks on its own, clean the area with water, and apply an antibiotic ointment. Ibuprofen (Advil) or acetaminophen (Tylenol) can be used for pain relief if necessary. For chemical burns, always check the SDS for any specific first-aid instructions.

If a second-degree burn is larger than 2 to 3 inches or involves the feet, face, eyes, ears, or groin or is located near a major joint, it is considered a major burn that requires medical attention.

For third-degree burns, call 911 immediately. While waiting for emergency medical services to arrive, make sure the victim is breathing. Because burned areas can swell quickly, remove jewelry, belts, and other tight clothing items. However, do not try to remove any clothing or jewelry that is burned on, as this can cause more damage. Cover the burned area with a cool, moist bandage, and elevate the burned area. Keep the victim calm and comfortable until help arrives.

# FIRST AID: TREATING FRACTURES



This talk discusses the importance of responding to fractures that occur in the workplace that could lead to infection or permanent injury.

### Material to have on hand:

- First-aid kit

### Items for attendees to consider during the talk:

- Do you know where the first-aid kit is located?
- What are common causes of fractures in the workplace?

## TALK

A fracture, also known as a broken bone, can occur in any workplace but is more likely to occur in physical jobs involving heavy machinery. Common accidents that may result in fractures include falls, vehicle accidents, “struck by” accidents, “struck against” accidents, “caught in/compressed by” accidents, and repetitive motion injuries. A fracture injury requires weeks away from the job for the worker to recover. When a fracture occurs, it requires immediate attention.

### Symptoms

A broken bone can cause one or more of the following signs and symptoms:

- Intense pain in the injured area that gets worse when moved;
- Numbness in the injured area;
- Bluish color, swelling, or visible deformity in the injured area;
- Bone protruding through the skin; *and*
- Heavy bleeding at the injury site.

### Treatment

Call 911 or your local emergency number if someone at your workplace suffers a fracture as the result of major trauma or injury, including situations in which:

- The victim is unresponsive, isn’t breathing, or isn’t moving. Begin cardiopulmonary resuscitation, or CPR, if there’s no breathing or heartbeat.
- There is heavy bleeding.
- Even gentle pressure or movement causes pain.
- The limb or joint appears deformed.

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# FIRST AID: TREATING FRACTURES

- The bone has pierced the skin.
- The extremity of the injured arm or leg, such as a toe or finger, is numb or bluish at the tip.
- You suspect a bone is broken in the neck, head, or back.

Don't move the person except if necessary to avoid further injury.

Follow the company's policy for reporting injuries, as well as the company's procedure for first-aid treatment. Take these actions immediately while waiting for medical help:

- **Stop any bleeding.** Put on gloves from a first-aid kit. Then apply pressure to the wound with a sterile bandage, a clean cloth, or a clean piece of clothing. *[You may choose to present the "Medical emergencies on the job: Bleeding" toolbox talk.]*

- **Immobilize the injured area.** If you've been trained in how to splint and professional help isn't readily available, apply a splint to the area above and below the fracture sites. Padding the splints can help reduce discomfort. Don't try to realign the bone or push a bone that's sticking out back in.
- **Ice the injured area.** Wrap an ice pack in a clean piece of cloth, and apply it to the injured area for up to 10 minutes at a time. Don't apply ice directly to the skin.
- **Treat for shock.** If the person feels faint or has shortness of breath, lay the victim down, with the head slightly lower than the trunk. If possible, elevate the legs.

The victim should follow the company's procedure for seeking medical treatment.

# FIRST AID: TREATING STRAINS AND SPRAINS



This talk discusses the importance of responding to strains and sprains that occur in the workplace that could lead to infection or permanent injury.

### Material to have on hand:

- First-aid kit with an ice/cold pack and elastic compression bandages)

### Items for attendees to consider during the talk:

- Do you know where the first-aid kit is located?
- What are some causes of strains and sprains in the workplace?

## TALK

Sprains and strains are among the most common work-related injuries and can occur in any workplace industry, ranging from manufacturing and construction to health care and office settings. Causes of strains and sprains include improper lifting, pushing, pulling, overexertion, and performing repetitive motions. These injuries may require days away from the job for the worker to recover. When a strain or sprain injury occurs, it requires immediate attention.

### Strain vs. sprain

Strains are injuries that involve the stretching or tearing of muscle and tendons. Strains often occur from overuse, prolonged use, and repetitive movement of muscles or tendons, as well as from direct blows to the body. The most common strains occur to the back, neck, and hamstrings.

Sprains are injuries that involve the stretching or tearing of tissue that connects bone to bone, which helps provide stability. A sprain is caused by direct or indirect trauma, such as a fall, that knocks a joint out of position and over-stretches or ruptures ligaments. Sprains are most common in knees, ankles, and wrists.

### Treatment

When someone at your workplace suffers a strain or sprain, get emergency medical assistance if the victim:

- Is unable to bear weight on the injured leg or he or she cannot use the joint;
- Develops redness or red streaks that spread out from the injured area;
- Has pain directly over the bones of an injured joint;
- Hears a “popping” sound with the injury;

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# FIRST AID: TREATING STRAINS AND SPRAINS

- Has reinjured an area that has been injured several times in the past; *or*
- Has significant swelling, pain, a fever, or open cuts.

Follow the company's policy for reporting injuries, as well as the company's procedure for first-aid treatment. You can assist the victim using the RICE treatment to control the swelling. RICE stands for Rest, Ice, Compression, and Elevation.

- **Rest.** Have the victim take a break from the activity that caused the injury and rest the strained or sprained area.
- **Ice.** Ice the area as soon as possible using an ice or a cold pack for 20 minutes at a time. Do not apply ice directly to the skin. The victim should continue to ice the area several times a day.

- **Compression.** To prevent additional swelling and blood loss, have the victim wear an elastic compression bandage. Compressive wraps or sleeves made from elastic or neoprene are best.
- **Elevation.** To reduce swelling, have the victim elevate the injury higher than the heart while resting, if possible.

The victim should follow the company's procedure for seeking medical treatment if swelling and pain persist longer than 48 hours.

# FLAGGER SAFETY IN ROADWAY WORK ZONES



This talk discusses safe practices for flaggers who direct traffic around highway construction zones to protect themselves and safeguard other workers.

## Materials to have on hand:

- High-visibility apparel and personal protective equipment, or PPE, to be worn on the job
- SLOW/STOP paddles and flags used at the worksite

## Items for attendees to consider during the talk:

- Where should you stand to direct traffic?
- What is the best signaling device to direct traffic around a work zone?

## TALK

Roadside construction work involves a number of serious hazards, from heavy machinery to nearby vehicle traffic. If you are a flagger at a construction site, you play a critical role in the safety of the other workers at the site.

Highway work zones are divided into five separate areas:

- First, there is the **advanced warning area**, where signs warn drivers about construction ahead.
- Next is the **transition area**, where drivers are redirected out of their normal path using a taper. This is where you will usually stand as a flagger.
- Third is the **buffer zone**, or the dead space between the transition area and the work area that is designed to provide added protection for construction workers.
- The **work area** is where the construction work is actually taking place. It has barriers to keep traffic out and protect the workers inside.
- Finally, the **termination area** is where drivers return to the regular roadway and resume normal driving speed.

Sometimes traffic can be controlled using signs and barricades, but flaggers are often needed in addition to these measures. If you are a flagger, always wear any personal protective equipment, or PPE, and safety apparel your employer requires. Generally, this will include high-visibility apparel, hard hats, and work boots. You will probably also have communication devices, such as a handheld radio, in addition to a horn or loud whistle to warn workers of approaching danger.

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# FLAGGER SAFETY IN ROADWAY WORK ZONES

When directing traffic around a work zone, a SLOW/STOP paddle is the best signaling device. Only use flags in emergency situations. Follow these steps to use the paddle safely:

- To stop traffic, face road users, and aim the STOP paddle toward approaching vehicles in a stationary position with your arm extended horizontally away from your body. Hold your free arm with the palm of your hand above shoulder level toward approaching traffic.
- To let traffic proceed, face road users with the SLOW paddle aimed toward approaching vehicles in a stationary position with your arm extended horizontally away from your body. Motion with your free hand for road users to proceed.
- To alert or slow traffic, face road users with the SLOW paddle aimed toward approaching traffic in a stationary position and your arm extended horizontally away from your body. Motion up and down with your free hand, palm down.

Always follow these safe work practices:

- Stand facing traffic, either on the shoulder next to the road or in the closed lane.
- Make sure you are clearly visible to the first approaching vehicle at all times.
- Position yourself far enough ahead of the work zone to warn workers of out-of-control vehicles and other approaching hazards.
- Only stand in the lane being used by moving vehicles after the vehicles have stopped.
- Always stand alone; don't allow other workers to gather around the flagging station.
- When working at night, make sure the flagging station is sufficiently lit up so that drivers can see it.

If you follow these precautions, you will both keep yourself safe on the job and protect your coworkers from traffic hazards while they work.



# FLAMMABLE LIQUIDS

## HANDLING THEM SAFELY



This talk discusses safe handling practices for workers in industrial operations who handle flammable liquids.

### Items to have on hand:

- Flammable liquids with appropriate labeling used at this facility

### Items for attendees to consider during talk:

- Do you know the flash point of a flammable liquid?
- Do you know what to do with rags soaked in a flammable liquid?
- Do you know how to dispense a flammable liquid from a bulk container?



## TALK

Liquids are rated as flammable because the vapors they give off can catch fire. The term “flammable liquids” means any liquid having a flash point at or below 199.4 degrees Fahrenheit (°F) (93 degrees Celsius (°C)).

You need to store any large amounts of these liquids in a special storage room or cabinet specifically designed for flammable liquids. Keep only a 1-day or one-shift supply of a flammable liquid near any industrial operation. Flammable liquid containers need to:

- Be clearly identifiable, i.e., labeled with the flame pictogram, which is a diamond with a picture of flames on a white background with a red border and the words “Danger” and “Flammables” to address the hazards; *and*
- Be stored in a self-closing safety can with a spark arrestor in the pouring spout. Do not leave flammable liquids in open containers because the liquid can vaporize and cause an ignitable mixture to build up.

When you use rags or other materials with flammables, store the liquid-soaked rags in a metal container with a close-fitting lid. This keeps excess oxygen away from the rags and reduces the possibility of a fire. When exposed to the air, some rags can produce enough heat to cause them to ignite spontaneously.

You must control all ignition sources around flammable liquids. No smoking is allowed, and nonsparking tools may be required. Special explosionproof electrical equipment may also be required, and never use standard electric power tools around flammable liquids.

You must ground and bond all bulk containers during dispensing operations. This means that there must be a conductive connection between the receiving container, the dispensing container, and a specially installed ground, like a water pipe.

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# FLAMMABLE LIQUIDS

Some materials can be ignited by the minimal energy of a static spark; therefore, when you draw liquids from a bulk tank into a portable use container, you should bond the containers to the tank. This means that there should be a solid connection between the tank or barrel and the container. You must use self-closing valves with the dispensing containers to limit spills.

You must also take special care to clean up any spilled material and properly dispose of it.

You must keep paper and cloth away from open flames, and keep matches and cigarettes away from flammable liquids, such as gasoline, kerosene, or

other solvents. Also, watch for excessive heat, such as that generated by friction on machines.

A basic formula to keep in mind is that fire prevention requires:

- Keeping fuel sources to a minimum;
- Limiting the oxygen available to the fuel; *and*
- Controlling heat or ignition sources.

Being aware of and following these suggestions are essential for saving our homes, jobs, and even our lives.

# FLAMMABLE LIQUIDS: HOUSEKEEPING PRACTICES



This talk discusses housekeeping practices for employees to follow when handling flammable liquids in industrial operations at their facility.

## Materials to have on hand:

- Safety data sheets for the flammable liquids used at the facility
- Examples of receptacles to collect rubbish and other specific wastes
- Map that locates fire extinguishers

## Items for attendees to consider during the talk:

- Are you familiar with the flammable liquids used at the facility and where they're stored?
- Can you think of any ways that you can ensure that combustible waste materials are properly contained?
- Do you know where the closest fire extinguisher is located?

## TALK

Liquids are rated as flammable because the vapors they give off can catch fire. The term "flammable liquid" means any liquid with a flash point at or below 199.4 degrees Fahrenheit (93 degrees Celsius). The lower a liquid's flash point, the more likely its vapors are to ignite. For example, gasoline has a flash point lower than normal room temperature, so its vapors

will ignite at high enough concentrations in most work areas. Other examples can include certain solvents, thinners, cleaners, adhesives, oil-based paints, waxes, and polishes.

You're already familiar with the procedures for safely handling flammable liquids such as how to store these materials and how to identify and avoid potential ignition and heat sources. This talk reviews housekeeping practices that can help avoid fires.

## Storage areas and spills

Keep areas where flammable liquids are stored or used free of combustible materials. Clean up spills of flammable liquids immediately, and inspect areas where flammable liquids are stored for any sign of leakage from designated safety cans and storage cabinets.

## Safe movement

Don't store flammable liquids where they could block or restrict use of stairways, exits, or other areas normally used to safely exit the building. Keep those pathways clear.

Be sure to maintain at least one clear aisle that's at least 3 feet wide in storage rooms designated for storage of flammable liquids. Don't stack containers one upon the other in storage rooms if the containers are over 30 gallons capacity.

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# FLAMMABLE LIQUIDS

## Fire extinguishers

Unless you're using it, don't remove a fire extinguisher from its designated location. Be sure that no cartons or other objects block access to fire extinguishers, and don't stack materials too close to fire sprinklers, as there has to be a minimum of 18 inches of clearance below sprinklers.

***[Check your state and/or local fire code to confirm the sprinkler clearance distance.]***

## Disposing of waste materials

Put flammable liquid waste in approved waste containers designated for that purpose. This includes flammable liquid waste collected in drip cans and pans.

Be sure you know which receptacles are to be used for the disposal of specific wastes, and use the right one. Don't mix all dry waste in a common container. Some wastes need to be segregated due to their combustible nature. For example, because rubbish is most likely to be burned, you should not collect in rubbish containers any of the following materials:

- Pressurized cans such as aerosol cans
- Batteries that could explode if subjected to fire
- Solvent-contaminated oily wipes

# FLU PREVENTION

## GENERAL HYGIENE PRACTICES AT WORK



This talk discusses best personal hygiene practices for workers to stop the spread of the flu virus at work.

### Materials to have on hand:

- Examples or illustrations of surfaces or objects where flu particles can exist
- Notices where to get the flu vaccine

### Items for attendees to consider during the talk:

- Do you know the most effective way to stop the spread of the flu virus?
- What are two things you can do to prevent or minimize the spread of the flu at work?

## TALK

It's flu season, so this is a good time to talk about ways to stop the spread so you and your coworkers stay healthy and so you can protect your families. The flu season usually runs from the early fall to May. The flu is most commonly spread when viral particles are sent in the air by coughing and sneezing. It also spreads when you touch a surface that has viral particles on it and then you touch around your eyes or nose. Symptoms begin all at once, often with a fever, and are usually more severe than cold symptoms. Complications from the flu can lead to pneumonia and death.

*[Discuss the employer's policy, if any, about staying home if a worker has the flu or if working from home is feasible.]*

### Vaccinate

Get a flu shot or nasal flu vaccine every year. It may be the best and most effective way to prevent getting the flu or from spreading it if you are exposed. The vaccine protects against certain type A and type B influenza viruses but does not protect against the remaining 200 types of cold-causing viruses. Some antiviral drugs can help prevent infection in people at risk and shorten the length of time and severity of symptoms in those who are infected.

Antibiotics only work against bacteria; for example, a sinus infection is caused by bacteria. Antibiotics don't work against the flu or any other type of virus.

### WASH

Flu viruses can survive for several hours on an exposed surface like countertops or a doorknob once it's outside the body. To stop the spread, follow the WASH procedures:

Wash hands with soap and water for at least 20 seconds, especially after a cough, a sneeze, or after touching a surface like a doorknob, coffeepot, or refrigerator door handle that's been touched by many people. Use a hand sanitizer whenever soap and water aren't close by.

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# FLU PREVENTION

**A**void getting too close to people who are sick. Stay at least 6 feet from infected people to limit further spreading of the virus.

**S**anitize surfaces where people touch frequently. Use a commercial disinfectant or bleach with dilutions as low as 1 part bleach to 10 parts water to kill the virus on a work surface.

**H**old your elbow to your mouth instead of your hand when you sneeze or cough to stop the spread of germs from hand contact. Try to cover your nose and mouth with a tissue when coughing or sneezing, and properly dispose of the tissue immediately after use.

If you decide to wear a face mask to stop the spread of your flu or to protect yourself from flu particles in the air, wear the N95-rated respirator. Regular dust masks and surgical masks don't block the movement of the flu virus through the air very well.

As already mentioned, all kinds of surfaces in your work areas can be sources of viral infection when you

touch them if you are infected or when someone else who is infected touches them, such as:

- Handles on the refrigerator, microwave, coffeepot, and door
- Bathroom fixtures
- Countertops
- Food or food containers
- Copier machine buttons or parts
- Hand tools
- Elevator button
- Books and paper
- Phones

Remember, you are not defenseless against the flu. Vaccinate and follow the WASH procedures to stay healthy through the winter.

# FOOT PROTECTION

## CHOOSING THE RIGHT TYPE



This talk gives an overview of the different types of foot hazards that a worker might encounter and the appropriate type of foot protection for each.

### Materials to have on hand:

- Several types of protective footwear
- Toe guards and/or metatarsal guards

### Items for attendees to consider during talk:

- Is there one best type of footwear that is suitable for all foot hazards?
- What should your footwear have to protect your feet from falling object hazards?
- What conditions should you consider when selecting foot protection?

## TALK

According to the U.S. Bureau of Labor Statistics, in a recent year, workers experienced over 43,000 foot injuries requiring days away from work to recover. On average, these injuries required workers to take about 9 days off from work. That's a long time to be off the job. So, it's in your best interest to prevent foot injuries by selecting and using the right type of protective footwear.

The right kind of foot protection depends on the type of hazards you are exposed to at work. The following are some common types of foot hazards and the

best type of protective footwear to guard against these hazards. *[Note: Customize this list to the specific hazards at your facility.]*

**Falling objects.** To protect against falling objects that could injure you if they land on your feet, choose shoes with steel toes or toe caps made out of hard composite plastic. If your exposure to falling object hazards is only occasional, you can use a strap-on toe guard during these tasks instead of wearing shoes with built-in toe protection.

**Rolling objects.** If you are exposed to heavy rolling objects that could crush your feet, select footwear with good ankle protection. This is important when you are working with carts, pallet jacks, dollies, or any other item on wheels that could bang into an ankle or catch your heel and cause an injury.

Some footwear will have a steel shank in the heel to protect the heel and Achilles tendon from rolling objects, while other types have steel shanks going up the sides of the ankles to prevent the ankles from being twisted or damaged by rolling objects. You can protect your entire foot, not just your toes, from falling and rolling objects if you select shoes with metatarsal protection or use strap-on metatarsal guards made of aluminum or high-density plastic.

**Sharp objects.** To prevent puncture wounds from sharp objects such as metal chips, nails, or screws, choose puncture-resistant shoes. These have soles that are made of hard, dense materials. Some have

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# FOOT PROTECTION

steel shanks in the soles that prevent sharp objects from piercing through to the foot.

**Electrical hazards.** If your job requires you to work around live electrical components and conductors, wear nonconductive shoes. Nonconductive footwear is designed to reduce the potential for electric shock. The soles can typically be exposed to up to 600 volts in dry conditions while still protecting you from hazardous electrical energy.

**Chemical hazards.** If you work around liquid chemicals, acids, or caustic liquids that could get on your feet, you should wear chemical-resistant boots. These boots can be made of rubber, polyvinyl chloride (PVC), neoprene, or vinyl. The best choice of material for chemical-resistant boots depends on the specific chemicals you work with. Check the safety data sheet (SDS) to find out what materials will work best.

**Slippery walking surfaces.** If your workplace has slippery surfaces, wear slip-resistant shoes. These have soft rubber soles that grip the surface of the floor and have treads with channels that carry water, oil, chemicals, or other materials out from under the shoe. Even if you are wearing slip-resistant shoes, it is still very important to walk carefully in slippery areas to avoid falling. In wet or muddy conditions, wear waterproof boots to keep your feet dry. Basic rain boots made of PVC or rubber will work in these situations if you do not also need protection from other hazards.

**Cold conditions.** In cold conditions (which can be indoors or outdoors), you need footwear with insulated liners to keep your feet warm. If your feet could be exposed to moisture as well as cold, select footwear that is also waterproof.



# FORKLIFT OPERATOR

## SAFE PRACTICES FOR TRAVELING, MANEUVERING, AND PARKING



This talk discusses best safe operating practices for avoiding the most common types of forklift-related injuries during traveling, maneuvering, and parking operations.

### Materials to have on hand:

- Forklift
- Load that is too high or big to see over or through when seated on the forklift

### Items for attendees to consider during talk:

- If you have to leave your forklift for a few minutes, what safety measures should you take while it's unattended?
- If you are carrying a load that is too high or big to see clearly in front of you, how can you safely travel with the load?

## TALK

Operating a forklift and driving a car have a few basic things in common when it comes to traveling, maneuvering, and parking safely: Always maintain control of the vehicle, keep your eyes and mind focused on what you are doing, and operate at speeds safe for the particular task at hand and surrounding conditions. As we go through some good forklift safe operating practices, think about how some of them match exactly to driving a car.

**Traveling.** Remember these simple safe practices when traveling in a forklift:

- Look in the direction you are traveling; that means looking behind you while backing up. If you are carrying a load that completely blocks your view forward, travel in reverse while looking in the direction you are traveling. The key is to always keep a clear view in the direction you are traveling. If you travel in reverse, don't grab the overhead guard with your fingers through it—they could get crushed if something hits the guard.
- Keep your body inside the frame, and always stay in the seat when you operate the controls. The frame is there to protect you.
- Don't speed. Remember that the distance you need to stop will increase significantly with a full load. Slow down for wet and slippery floors.
- Keep the forks low when traveling. Keeping them raised reduces stability and could result in a tipover.
- Sound the horn at corners, aisles, doorways, and anywhere else that you might not see someone or someone might not see you.
- Finally, check your clearances. Look above you before lifting a load, and check your turning clearance because the rear end of the forklift will swing wide.

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# FORKLIFT OPERATOR

**Maneuvering.** There are two primary hazards to consider when changing directions in a forklift: a tipover and a collision with a pedestrian, another vehicle, or an object.

- When turning, reduce speed, especially when working in confined areas or narrow aisles. When the forklift turns a corner, the rear of the forklift swings in the opposite direction of the turn. Anticipate the rear-end swing, and start the turn as close to the inside corner as possible. Pay attention to the load to make sure it doesn't shift during the turn.
- Plan your route, and think ahead about the turns you'll make. Planning can help you stay focused even when there are distractions.
- Keep the forks as low to the ground as possible when turning.
- Never turn on a sloping surface. The forklift may tip over even on a very small slope.

**Parking.** Last year, a warehouse worker in Florida who was untrained in forklift operations tried to move an unattended forklift idling in front of a loading dock that was blocking a trailer ready to be unloaded. The worker got in the forklift, raised the forks, put the shift

lever in forward, and stepped on the pedal. The forks punctured several containers of chlorine bleach on a pallet, which spilled onto the loading dock floor.

Even when parked, a forklift can be a hazard, like the incident with the warehouse worker in Florida!

- Make sure the forklift is not blocking an aisle, travel paths for other equipment, or exit routes. Park a safe distance from fire aisles, stairways, or fire equipment. Do not block traffic.
- Never park within 8 feet of the center of a railroad track; your forklift could be struck by a passing train.
- Never walk more than 25 feet away from your forklift, even if you can keep an eye on it from that distance. When it's left unattended, the forks have to be fully lowered, controls put in neutral, power shut off and key removed, and brakes set.
- Tilt the mast forward slightly, and lower the forks to the floor until the fork tips touch the floor. This will make sure someone doesn't trip over or get hurt by hitting a fork when walking by.
- If the forklift is parked on a sloping or uneven surface, block the wheels.

# FORKLIFTS

## OPERATING SAFELY AROUND PEDESTRIANS



This talk discusses safe work practices and precautions for operating forklifts or fork trucks around pedestrians.

### Materials to have on hand:

- A forklift in an area where pedestrians routinely travel
- If not at the worksite, photographs or images of work areas where forklifts and pedestrians work

### Items for attendees to consider during talk:

- When is it OK to allow pedestrians to hitch a ride on a forklift?
- Is there a time when a forklift has the right-of-way over a pedestrian?

## TALK

An all-too-common cause of injuries related to forklifts, or fork trucks, is when someone walking near a forklift is struck by it or gets caught between a forklift and a wall or other object. Forklifts can be heavier than cars, so when a forklift hits something—at any speed—there is a huge impact.

Consider this scenario of a real workplace incident reported to the Occupational Safety and Health Administration (OSHA): A forklift traveling too quickly in reverse hit a metal scrap bin, pushing it toward a punch press machine where the press operator

was working. The bin struck and crushed the press operator against the machine.

Fortunately, there are simple, safe practices for forklift operators to follow that will prevent incidents with pedestrians like the one mentioned above.

- Never let anyone hitch a ride on a forklift or stand on the forks.
- Always look in the direction of travel, and make sure your view is unobstructed at all times.
- Always stop the forklift when you are talking or listening to someone on the floor or when using any communication device.
- Yield the right-of-way to pedestrians at all times.
- Sound the horn or give another appropriate warning, and move slowly or stop when you believe a worker may not know that a forklift is moving in his or her direction.
- Always drive slowly in areas with regular foot traffic or where people are working when going around corners and when your vision is limited by obstructions. Workers in a hurry sometimes try to pass in front or behind a moving forklift, thinking they have time to make it, when in fact, they don't.
- Cooperate and plan out communications with pedestrians when operating a forklift on tasks that require you to share the same work area.

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- Always stay within marked forklift travel lanes and aisles, and slow down and use the horn to alert pedestrians when you travel across any marked or customary pedestrian traffic lanes.
- Be especially alert to foot traffic during shift changes and at break times when it's more likely pedestrians will pass through areas they do not normally go.
- Look around you whenever raising the forks to ensure no one is nearby if the load falls, and when lowering the forks to make sure no one walks underneath them.
- When backing up, look in the direction the forklift is moving, constantly scan the area for pedestrians and objects to avoid, and proceed very slowly. Remember that the truck tends to accelerate and move more quickly when there is no load on the forks and that people may not hear the forklift's backup signal in areas with a lot of noise.
- When you leave a forklift unattended, make sure to set the forks close to the ground, turn off the power, set the brake, and remove the key. This way, the forklift can't move unintentionally, and unauthorized employees can't hop in and drive it, putting you and other pedestrians at risk.

# FORKLIFTS

## OPERATOR TIPS TO PREVENT TIPOVERS



This talk discusses hazardous conditions and actions that can cause a forklift tipover and safe operating practices to prevent it.

### Materials to have on hand:

- Forklift
- Pallet with load uneven or off-center
- Forklift attachment (fork extenders, man basket, etc.) if available

### Items for attendees to consider during talk:

- What is a forklift’s “center of gravity,” and why is it important to know where it is?
- Name an operator’s action or a worksite condition that will make a tipover more likely to happen?

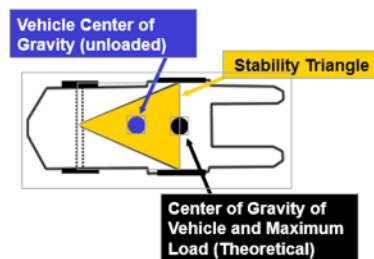
## TALK

You might think a forklift is too stable or heavy to tip over. But it’s actually not hard at all to do it, and it happens all too frequently. Recently, a warehouse worker in Arizona was killed when the forklift he was operating tipped over and crushed him. He apparently lost control of the forklift with a load on its forks, and the mast fully extended while he was making a right turn, causing the forklift to tip over onto its side. The operator wasn’t wearing the seat belt. He was thrown off the seat and crushed under the lift’s extended mast as it fell.

Remember that even if there is a tipover, you can survive it—often without significant injury—by always wearing your seat belt.

What can cause a tipover? It’s a combination of fairly common actions or circumstances that cause the forklift’s center of gravity to shift way off balance.

“Center of gravity” is the location where most of the weight of an object is concentrated. On a forklift, it’s the exact point where the fully loaded forks and the counterweight built into the truck (behind the driver’s seat) will balance. Ideally, that point is between the front wheels and low to the ground. When the forks are not carrying a load, the center of gravity is usually right under the driver’s seat. It’s not something you can easily see, but you can learn how to be aware of its location.



As long as the center of gravity stays inside what’s called the “stability triangle” — the area between the two front tires and the center point between the

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rear axles below the driver's seat—the forklift won't tip over. If the center of gravity moves outside of the stability triangle, there's a good chance the forklift will tip over.

You should be constantly aware of your actions and load conditions that will shift the center of gravity and tip you off to a potential tipover.

Actions that cause a greater risk of tipover include:

- Carrying the truck's maximum load capacity or overloading the forklift
- The mast tipping at a forward angle
- Traveling while the mast and forks are raised high off the ground
- Stopping abruptly
- Quickly accelerating in reverse
- Driving up a ramp in reverse
- Driving down a ramp with the load in front
- Traveling or turning sideways on a ramp or sloped surface
- High-speed turning
- Making a tight turn
- Inappropriate use of front-end attachments—remember that attachments reduce the truck's load capacity

There are some load and workplace conditions that can increase the risk of tipover, such as:

- An uneven, unbalanced, or shifting load
- The center of the load's weight is at the far end of the forks
- Driving on slick surfaces
- Unmarked or unprotected edges of loading docks or ramps

***[Prompt participants: "Can you think of other situations that would increase the chances of a tipover?"]***

Here are some more examples like the warehouse laborer's incident in Arizona when a combination of actions and conditions will cause a tipover:

- A forklift turns a corner while driving up a ramp, shifting the center of gravity too far backward and to the side at the left wheel axle.
- A forklift is moving forward with a capacity load and is forced to stop abruptly, shifting the center of gravity forward of the front wheel axles.
- The forks with fork extenders are raised with a maximum load that exceeds the forklift's rated capacity because the operator did not account for the weight of the extenders.

***[Prompt participants to add examples.]***

# FORKLIFTS

## TIPS FOR INSPECTIONS



This talk discusses best practices for forklift (lift truck, fork truck, or forklift truck) inspections. These practices apply to any forklift. Not covered in this talk are additional inspection requirements that apply to specific types of forklifts (e.g., electric, propane, gasoline) or requirements for operating in hazardous atmospheres.

### Materials to have on hand:

- Forklift
- Forklift inspection form

### Items for attendees to consider during talk:

- How often do you have to inspect a forklift to make sure it is working properly?
- What’s the first step to take before you start the inspection?

## TALK

The root cause of some forklift-related accidents nationwide is the poor condition or faulty equipment of the forklift. A thorough inspection of the truck *before you start each work shift* will identify maintenance problems before they cause an accident.

Start with a walkaround of the truck with your preoperational checklist in hand.

- The first thing is to make sure the forklift won’t move with the forks down, the key turned off,

the gear shift set in neutral, and the parking brake on.

- Second, walk to either side of the forklift—check the tires to make sure there are no gauges, tears, or imbedded metal and that they are properly inflated. Check the overhead guard, and make sure there is no debris lodged behind the mast.
- Next, put on your goggles or other eyewear, and check the front of the forklift—the forks and hoses should be in good condition, fork pins should be in place, the backrest should be solid, and the mast and chains should be greased. Look carefully for any hydraulic fluid that might be leaking or spraying from the hoses—that’s why you need the eyewear, to prevent any potential hydraulic spray from getting in your eyes. Even an almost invisible pinhole leak can damage your eyes.
- Finally, walk to the rear of the forklift—check that the counterbalance bolt is tight and that nothing is leaking.

Your inspection should continue when you sit in the operator’s seat.

- First, while the forklift is not moving, check the gauges, lights, horn, backup alarm, warning light, tilt-and-lift mechanism, and parking brake. Listen for any unusual noises from the tilt-and-lift mechanism. Test the parking brake by putting the forklift in gear and stepping on the accelerator—the forklift should not move when the parking brake is on.

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- Second, while the forklift is moving, check that the seat belt is secure around you. Check the brakes by stopping quickly. Check the steering by doing full turns and listening for unusual noises.
- Finally, look on the floor for oil, water, or any other leaks from the truck.

This basic inspection won't take much time and will definitely help keep employees safe.



# FORKLIFTS

## TIPS FOR SAFE OPERATIONS AT LOADING DOCKS



This talk discusses safe work practices for forklift [*lift truck, fork truck, or forklift truck*] operators who load and unload truck trailers or railroad cars at loading docks. The universal safe work practices for operating forklifts are covered in other forklift talks; the tips in this talk are limited to safe practices specific to loading docks.

### Materials to have on hand:

- Forklift
- A pallet set up with a load at the loading dock with a truck trailer or railroad car

### Items for attendees to consider during talk:

- What is the first safety measure to check before you enter a truck trailer or railroad car with a forklift?
- Can you name at least one hazard or unsafe condition unique to loading docks that you should watch for when operating a forklift?

## TALK

Loading and unloading materials with a forklift at loading docks require special skills and a good deal of concentration. There are a lot of activity and distractions at the dock that make for unpredictable or unsafe conditions. Dock plates that are badly placed or poorly secured, unprotected edges of the dock, and unstable truck trailers are all too

common conditions that cause forklift injuries, and even death, from forklift tipovers.

We'll talk now about safety tips specific to operations at loading docks; we'll cover the general safety practices for operating a forklift in other talks.

Always make the following safety checks before you enter a truck trailer or railroad car with a forklift:

- The first thing to check is make sure the truck trailer's rear wheels are chocked and the brakes are set to stop the trailer from rolling. **[Make sure wheel stops are in place so the railroad car does not move.]**
- If the truck trailer isn't attached to the truck cab or tractor, make sure fixed jacks are in place to prevent the trailer from upending during loading or unloading.
- Make sure the dock plates are strong enough to carry the fully loaded forklift and that they are securely in place and completely cover any gaps or space between the trailer and loading dock.
- Inspect the floor of the trailer to be sure it will support the forklift and load. Make sure there are no broken boards or cracked surfaces, no spills or leaks, and no large areas of the floor that are not supported by cross-members or other structural support.
- Make sure that the entry door of the loading dock and the truck trailer door are high enough

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# FORKLIFTS

to clear your forklift mast when it is raised high enough to carry a load.

## When you are loading or unloading:

- Make sure the load is within the forklift's rated capacity, is stable while sitting on the forks, and can be centered directly over the forks. If a load is loose or uneven, stack or tie the loose items together so they don't shift or fall.
- Drive straight across the dock plates when entering or exiting the truck trailer or railroad car, not at an angle.
- Use dock lights and headlights when working in a dark trailer.
- Sound the horn when going into or coming out of the trailer.

There are hazards when operating a forklift near loading docks when there is no parked truck trailer or railroad car.

## When operating near the exposed edge:

- Keep a safe distance from the edge of the loading dock. A good rule of thumb is to make sure no part of the swinging radius of the forklift can reach the edge of the dock.
- Watch out for "tail swing" —remember that the rear of the forklift has a very wide swinging radius when you turn. It would be easy to lose sight of your position and swing right off the edge of a loading dock that has no visible barriers.
- Keep floors around the dock clear and clean so there are no obstacles or surprises in your area of operation.
- Keep an eye on the painted edges of the loading dock as a point of reference to gauge your distance when maneuvering near the edge.

# GROUP SAFETY: WATCH OUT FOR THE SAFETY OF THE NEW PERSON



This talk discusses the safety hazards a new employee may encounter at his or her new job and how current employees can help a new coworker settle in safely at a manufacturing workplace.

## Materials to have on hand:

- Type(s) of personal protective equipment (PPE) the new employee will need, if applicable
- Safety data sheets (SDSs) of chemicals the employee will be working with, if applicable
- Map of the facility illustrating locations of emergency equipment and emergency exits

## Items for attendees to consider during the talk:

- What are some significant hazards for a new employee on this job?
- What are a few things a new employee should learn on his or her first day at work?
- What advice can you give a new employee to help the person perform his or her job safely?

## TALK

Working safely is a team effort. You look out for other workers, and they look out for you. It's especially important to watch out for the safety of the new

person. The odds of a new employee avoiding an injury greatly depend on the individuals around him or her. A new employee often wants to follow all the safety rules, especially if people on-site are following the rules, as well. If a new employee observes the other employees working safely, he or she will often want to do the same.

Everyone starts somewhere and needs guidance in the beginning. Think about your workplace from the new employee's point of view, and reflect on your own first day on the job. You see a busy place full of unfamiliar **[choose one or both of the following]** equipment and chemicals, as well as complicated tasks. Remember the struggles and important lessons you learned as a new employee, and pass that knowledge on.

First, let's go over the significant hazards on this job as a reminder of what you should watch out for with your new coworker and his or her tasks. These hazards include:

**[Choose one or more of the following for your facility, and expand if necessary.]**

- Slips, trips, and falls
- Machine guarding
- Powered industrial trucks (i.e., forklifts)

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# GROUP SAFETY

- Electrical hazards
- Scissor lifts
- Ladders
- Scaffolding
- Lockout/tagout

You can help the new employee settle into his or her job by being a mentor and doing the following:

***[Choose one or more of the following for your facility.]***

- Show your new coworker where to obtain safety materials and instructions at his or her machine.
- Help the new worker get equipped, fitted, and trained with the appropriate personal protective equipment, or PPE, needed for his or her job.
- Show your new coworker the safety data sheets, or SDSs, for any chemicals he or she will work with. Help the person understand how to read the SDSs and what PPE is required to use those chemicals.
- Point out the location of fire extinguishers, fire alarm boxes, and other emergency equipment.
- Make sure the new worker knows what to do in case of an emergency, such as a fire, including pointing out the emergency exits and where to assemble after exiting the building.
- Communicate the importance of leaving machine guards in place to prevent accidental contact with moving equipment and stock.
- If you see anyone wearing loose clothing or jewelry or with untied hair, which could become caught in machinery, say something.
- Make sure the new employee knows whom to talk to about any safety concerns or questions.
- If you see the new worker or any worker doing something unsafe, speak up. It's not interfering; it's looking out for the other worker.

Remember, your advice to the new coworker is not a replacement for proper safety orientation, training, and direct supervision. However, you can help make sure he or she picks up the information necessary to work safely. Watch out for those around you, and never hesitate to help a fellow employee.

# HAND PROTECTION

## Cut-resistant gloves



This talk discusses how to select and use gloves to protect hands from cuts, abrasions, and punctures.

### Material to have on hand:

- Cut-resistant gloves in use at the facility

### Items for attendees to consider during talk:

- When should you not wear cut-resistant gloves?
- What are some materials that cut-resistant gloves can be made of?
- What is the difference between cut-resistant and puncture-resistant gloves?

## Talk

Your hands are your most important tool. So, as you know, it's important to protect them against cuts, abrasions, and punctures. Machine guarding and safe use of tools and equipment are important ways to protect your hands, but sometimes you'll also need to wear gloves for additional protection.

Gloves come in many materials, each of which has unique protective qualities. A few common materials include:

- **Metal mesh**, which is made of stainless steel rings;

- **Steel core**, which is a fabric with steel woven into the material;
- **Kevlar®**; which is the material used in bulletproof vests; *and*
- **Rubber**-coated fabrics.

In addition to glove material, cut and puncture resistance depends on other characteristics, including thickness and coatings applied to the outside surface. It's important to select a glove that will protect your hands from the specific hazards you encounter.

Cut-resistant gloves provide protection from sharp objects like knives and blades, while puncture-resistant gloves protect against pointed items, such as needles. Abrasion-resistant gloves protect against rough surfaces. Manufacturer ratings will indicate how protective a particular glove is against these hazards.

Another factor to consider is grip. The material of a glove and the coatings applied to it affect how well you will be able to grip items while wearing it. Grip can be important for protecting against cuts and punctures, especially if you are working with slippery objects, because a secure grip on a tool like a knife makes it less likely that the tool will slip out of your hands and cut you.

It's also important to know when not to wear gloves. When you're working with certain types of machinery, such as powered rollers, belts, pulleys, chain drives,

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# HAND PROTECTION

and rotating or moving parts, gloves can create a greater hazard because they could be caught in the machinery and possibly pull your hands in with them.

It's very important that your gloves fit you properly. Gloves that are too small will limit your hands' mobility and could tear, while gloves that are too big will limit your dexterity and could get caught on sharp objects or in machinery. Also, make sure your gloves are the

right length for the job. Some gloves protect only your hands, while others are longer to provide protection to your forearms as well.

Inspect your gloves for damage each time you use them. If they have tears, holes, or other defects, discard them and get a new pair. Follow the manufacturer's recommendations for cleaning, storing, and caring for your gloves.

# HAND PROTECTION: REDUCING VIBRATION HAZARDS



This talk discusses how to select and use gloves to protect workers who regularly use pneumatic, hydraulic, electrical, or gasoline-powered hand tools from vibration hazards.

## Materials to have on hand:

- Pneumatic, hydraulic, electrical, or gasoline-powered hand tools used in the workplace
- Antivibration gloves used in the workplace

## Items for attendees to consider during the talk:

- What tasks in our workplace pose vibration hazards?
- How can you reduce your risk of hand-arm vibration syndrome (HAVS)?

## TALK

If you regularly use pneumatic, hydraulic, electrical, or gasoline-powered hand tools, such as jackhammers, rivet guns, and hand sanders, as part of your job, you are at an increased risk of hand-arm vibration syndrome, or HAVS. HAVS is an irreversible disease of the hands that results when the blood vessels in the fingers collapse due to repeated exposure to vibration. As a result, skin and

muscle tissue do not get the oxygen they need and eventually die.

The entire hand or arm may be affected by exposure to vibration. Early signs of HAVS are infrequent feelings of numbness and/or tingling in the fingers, hands, or arms or numbness and whiteness in the fingertips when exposed to cold. As the disease progresses, a worker experiences more frequent attacks of numbness, tingling, spasms, and pain and finds it difficult to use his or her hands. Symptoms can be made worse by cold temperatures and can result in attacks that can last between 5 and 15 minutes. HAVS can disable workers over time and even lead to amputation.

To reduce your risk of developing HAVS, keep the following tips in mind:

- When possible, use vibration control. Isolate machine vibrations from the surface if the tool is mounted or by use of vibration isolation mounts. Control vibrating panels of machine housings and guards by using damping materials applied to the panels. Felts, liquid mastics, and elastomeric damping sheets are effective damping materials.
- Maintain tools in proper working order. Unbalanced rotating parts or unsharpened cutting tools can give off excessive vibration.

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# HAND PROTECTION: REDUCING VIBRATION HAZARDS

- Arrange your work tasks so that you can alternate between vibrating and nonvibrating tools.
- Restrict the number of hours that you use a vibrating tool during the workday, and take 10- to 15-minute breaks from the source of the vibration every hour.
- Keep your hands warm and dry, and do not grip a vibrating tool too tightly. Allow the tool or machine to do the work.
- Wear antivibration gloves, which are designed to reduce the transfer of vibration from a powered hand tool to your hand and lessen the damage to your central nervous system. There are several types of these gloves available that use different methods of reducing vibration injuries, including those that use foam padding, air pockets, and gels. The effectiveness of these materials varies by glove manufacturer and by material.



# HAND PROTECTION

## Selecting chemical-resistant gloves



This talk discusses how to select the correct type of chemical-resistant glove for the hazards workers will face on the job.

### Materials to have on hand:

- Different types of gloves in use at your worksite
- Chemicals that pose hand hazards and the safety data sheets (SDSs) for those chemicals

### Items for attendees to consider during talk:

- Where would you look to find out what type of gloves to use for protection from a particular chemical?
- What manufacturer-listed characteristics are important to know when choosing a glove for chemical protection?

## Talk

You use your hands for just about everything you do, both at work and at home, so you know how important it is to protect your hands against injury. But you don't only need to guard your hands against cuts, punctures, and machinery accidents. When you work with chemicals, you need to be familiar with the hand hazards of those chemicals in order to select the right type of chemical-resistant glove.

Solvents, harmful dusts, pesticides, fertilizers, and other chemicals can be absorbed through the skin on your hands and can cause damage to your skin and internal organs. Other types of chemicals can burn your skin, cause a rash, or cause skin dryness.

Before working with a new chemical, the first thing you should do is review the safety data sheet (SDS). The SDS will tell you the characteristics of the chemical, the hazards the chemical poses, and the right type of glove material to protect yourself. Information on PPE, including gloves, can be found in Section 8 of the SDS.

### Manufacturer ratings

The glove manufacturer will list a characteristic known as the breakthrough time for various chemicals, which is the length of time between initial contact with a chemical and detection of that chemical on the inside of the glove. Make sure you select a glove with a breakthrough time longer than you will be working with the chemical. Higher chemical concentrations and higher temperatures will generally shorten the breakthrough time, so adjust your glove selections to account for this.

Two other manufacturer-listed characteristics to consider are the degradation rating and the permeation rate. Degradation is the change in a glove's physical properties in response to contact with a chemical, such as shrinkage or cracking. The permeation rate

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# HAND PROTECTION

is the rate at which a chemical passes through a glove material. These are both chemical-specific. Select a glove with the appropriate ratings for the chemical(s) you are using.

Breakthrough time, degradation rating, and permeation rate can be found in the glove manufacturer's chemical resistance guide. *[Inform employees of how to access this guide in your workplace.]*

## Common glove materials

The following are some common types of glove materials **[Note: Customize for the types of gloves in your facility.]**:

- **Butyl.** Butyl is a synthetic rubber that works for a variety of chemicals, including ketones, esters, alcohols, most inorganic acids, and caustics.
- **Latex.** Latex is a natural rubber that protects against most acids and caustics, salts, detergents, and alcohols. However, many solvents will break latex down, so you should select a different material if you are using solvents. Some people can develop a sensitivity or allergic reaction to latex.
- **Neoprene.** Neoprene is a synthetic rubber with good protective qualities against a variety of chemicals, such as oils, acids, caustics, and some solvents.
- **Nitrile.** Nitrile protects against a number of acids and caustics, as well as some solvents and fuels.

- **Polyvinyl chloride (PVC).** Gloves coated with PVC have good protection against some solvents, oil, and grease, as well as acids and caustics.
- **Polyvinyl alcohol (PVA).** PVA gloves protect against aromatics, ketones, and chlorinated solvents.
- **Viton.** Viton works well against aromatics, hydrocarbons, chlorinated solvents, ketones, acids, and amines.
- **Silver shield gloves.** Silver shield gloves resist breakthrough by more chemicals than any other material.

## Other characteristics

Characteristics besides glove material are also important. For example, if you are immersing your arms in a chemical, you'll want gloves that come up to your elbows or higher, whereas if you are only applying the chemical with a rag, gloves that cover just your hands may be sufficient. If the work you're doing requires a lot of manual dexterity, you'll want thinner gloves, but they still must be protective enough for the chemicals you're using.

Finally, make sure you take into account other hazards of the task, such as sharp objects or high temperatures. Different glove materials also offer different levels of protection against cuts, lacerations, punctures, heat, and other physical dangers, so make sure to select accordingly.

# HAND PROTECTION: SELECTING HEAT- AND COLD-RESISTANT GLOVES



This talk discusses how to select and use gloves to protect hands from thermal burns, frostbite, and other damage caused by extreme temperatures.

## Materials to have on hand:

- Heat- and cold- resistant gloves used in your workplace

## Items for attendees to consider during the talk:

- What tasks in our workplace require protection against extreme temperatures?
- What are some materials that heat- and cold-resistant gloves can be made of?

## TALK

Your hands are some of your most important tools for daily tasks. So, it's important to protect them against thermal burns, frostbite, and other damage from extreme temperatures. Machine guarding and safe use of tools and equipment are important ways to protect your hands, but sometimes, you'll also need to wear gloves for additional protection.

Heat- and cold-resistant gloves come in many materials, each of which has unique protective qualities. A few common materials include:

*[Discuss the following glove materials as they are used at your workplace.]*

- **Canvas.** Thick canvas gloves can protect against sustained heat and cold and also offer some protection against dirt, metal, or wood splinters; chafing; and abrasions.
- **Leather.** Thick leather gloves can also provide protection against sustained heat or cold. Gauntlet-style leather gloves in particular can be used when welding because they resist sparks and moderate heat. In addition to thermal protection, leather gloves offer some cut resistance and can protect against abrasions and punctures from chips or metal shavings.
- **Aluminized gloves.** Aluminized gloves are recommended for work with extreme heat, such as in welding, furnace, or foundry work, as they provide reflective and insulating protection and protect against sparks, contact heat, and molten metal splashes.
- **Kevlar®.** Kevlar gloves provide protection against both heat and cold and also protect against cuts, abrasions, and punctures.
- **Aramid fiber.** Aramid fiber gloves also offer protection against heat and cold. In particular, they protect against conductive and radiant heat

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# HAND PROTECTION: SELECTING HEAT- AND COLD-RESISTANT GLOVES

and offer excellent flame and abrasion resistance. They also resist cuts and abrasions and are fairly durable.

- **Neoprene.** Insulated neoprene gloves protect against cold, are resistant to both water and hazardous liquids, and can provide good grip and dexterity.
- **Wool, polypropylene, or Thinsulate linings.** Gloves lined with wool, polypropylene, or Thinsulate provide additional protection against cold.

When selecting gloves to protect against heat or cold, you will need to balance your needs for thermal protection, water resistance, and dexterity. Because some gloves designed for hot and cold conditions have multiple layers and are often insulated, a bulkier glove and less dexterity can result. Leather gloves can be less bulky and offer good dexterity but are less water-resistant. Gloves made from synthetic materials dry more quickly than those made from leather but may be slippery unless they have a PVC coating. Consider your tasks and the type of hand protection you'll need when choosing the right glove for the job.

## Care and maintenance

Once you have chosen the best gloves to protect your hands from extreme temperatures, it's important that you wear and care for them properly. Always follow the manufacturer's use and maintenance instructions to ensure the highest level of protection, and keep the following guidelines in mind.

- Check that your gloves fit comfortably. Gloves should not be too tight, which would restrict your hand movement, or too loose, which would create snagging hazards and limit your ability to grip and feel properly.

- Inspect your gloves for damage before each use. Heat- and cold-resistant gloves should not have abrasions on the outer surface or damage to the inner linings. Dispose of gloves that are damaged or show signs of wear or degradation.
- Keep gloves clean and dry between uses by storing them right-side out with the cuffs unfolded in a cool, dark, dry place.

If you follow these tips for selecting and caring for heat- and cold-resistant gloves, you can help reduce your risk of expensive and painful hand injuries in our workplace.

# HAND TOOL SAFETY

## POWDER-ACTUATED NAIL GUNS



This talk discusses the hazards of powder-actuated tools and safe work practices to avoid injury when using these tools.

### Materials to have on hand:

- Powder-actuated tools in use at the worksite
- Personal protective equipment (PPE) for use with powder-actuated tools

### Items for attendees to consider during the talk:

- What are some hazards of powder-actuated tools?
- What kind of PPE do you need to wear when you use a powder-actuated tool?

## TALK

Powder-actuated nail guns are very useful for quickly fastening materials together. However, they are very dangerous. They operate much like a loaded gun, so you need to treat them with the same amount of caution and respect.

To start with, only operate these nail guns if you have been trained and authorized to do so. Only use tools, shields, and fasteners that meet safety requirements for hand tools.

The hazards of powder-actuated nail guns include accidental discharge, ricocheting studs or chips,

explosions from use in combustible atmospheres, flying particles, and complete penetration of the work material by the stud. Personal protective equipment, or PPE, is necessary. Wear approved safety goggles, as well as a face shield and safety hat if necessary.

To protect against flying particles, powder-actuated nail guns should have interlocked shields that are designed to fit over the particular shape to be fastened. If a standard shield won't work, a special one may be designed but must provide the required protection, including interlock.

When you use a powder-actuated tool, check that:

- The bore is clear before loading.
- The cartridge is fully seated.
- The breech is closed and locked.
- All safety devices are in working order.

Inspect your nail gun for defects before each use. Do not use a defective nail gun, and report any defects to your supervisor.

Before starting work, familiarize yourself with what is behind the surface you'll be working on so as not to damage electrical wires or lines. Size up the job to be done, and select the proper stud and cartridge. Never use common nails in a powder-actuated nail gun; only use specialized fasteners that are designed for use with a powder-actuated tool.

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# HAND TOOL SAFETY

Do not drive studs into very hard or brittle substances. These include, but are not limited to, cast iron, glazed tile, hollow tile, face brick, glass block, or surface-hardened steel. Do not drive studs through existing holes unless you use a guide to secure alignment.

Don't use a powder-actuated nail gun on materials that are easily penetrated, on concrete under two inches thick or on steel less than one-quarter inch, unless sufficient backing such as sandbags or timber is placed behind the work.

Don't drive a fastener into materials such as masonry less than 3 inches from an unsupported edge or corner, or into steel surfaces less than ½ inch from an unsupported edge or corner. For low-velocity tools, the distances can be lowered to 2 inches for masonry and ¼ inch for steel surfaces.

Never point a powder-actuated nail gun at anyone, and don't rest it against your body. Carry your nail gun vertically, and don't drop it.

Insert a cartridge into the tool only when it is ready to be fired. Before firing the nail gun, make sure others in the area are clear and wearing proper eye protection.

In case of a misfire, hold your nail gun against the work surface in operating position for at least 30 seconds, then try again. If a second misfire occurs, repeat the 30-second wait, then remove the cartridge. Dispose of misfired cartridges safely to prevent anyone gaining access to them.

Never leave powder-actuated nail guns unattended; lock the tools, studs, and cartridges in a safe place. Transport loaded blank cartridges in a locked container.

It's difficult to cover all aspects of powder-actuated nail gun safety in just a few minutes, but we've touched on many important ones. Remember to follow safety rules and the manufacturer's instructions, and use necessary protective equipment.

If you're not quite sure you remember all the precautions, don't guess! Check with your supervisor.

# HAND TOOL SAFETY

## SAFE USE OF HAMMERS



This talk informs employees of safe practices for selecting, inspecting, and using hammers in the workplace.

### Materials to have on hand:

- Hammers used in the workplace
- Eye protection or other personal protective equipment (PPE) to be worn when using hammers

### Items for attendees to consider during the talk:

- What are the hazards of using hammers?
- What kind of PPE should you wear when using a hammer?

## TALK

Hammers are very simple tools, and many of you have probably been using them since you were children. You might assume you know all you need to know about using hammers safely. But it's important not to become complacent. Like any tool, hammers can cause serious injuries.

***[Replace or supplement the following examples with stories from your own workplace, if applicable.]***

We've probably all hit a thumb or finger with a hammer by accident, but that's not the only type of injury

you need to prevent. Consider these real examples of hammer-related injuries:

- A garage mechanic was striking an auto body with a hammer when a piece of rust flew into his eyes, sidelining him for 3 weeks.
- A construction worker fractured his hand when the swing of his hammer missed its target.
- A carpenter was working on a roof when the head of his hammer came loose and struck a nearby coworker in the forehead, causing him to fall backward.

To prevent injuries like these and others, always follow these safe practices when using a hammer.

### Select and inspect

First, make sure you have the right kind of hammer for the job. Using the wrong hammer can damage materials, cause an injury, or both. The hammer should be the right size and weight for the job, and you should be able to handle it comfortably. Select a hammer with a cushioned handle if you can. This will protect your hands from vibration, impact, and squeezing pressure.

Once you've chosen your hammer, inspect it. Make sure the head of the hammer is clean. Check the handle for cracks, splinters, or other damage. If the handle is defective, do not use the hammer until it has been repaired or replaced. Make sure the head of the hammer is attached securely. If the wedges

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# HAND TOOL SAFETY

that secure the head are loose, drive them back into place. If they are lost, replace them. Don't use screws or nails as wedges because they may come out or split the handle.

## **Wear personal protective equipment, or PPE**

Always wear eye protection when you use a hammer. This will protect you if a chip, splinter, or other object flies back toward you. You may need additional protective equipment, depending on the job you're doing; ask your supervisor if you aren't sure.

## **Work safely**

Always grasp a hammer firmly, close to the end. When you hold a hammer too close to the head, it becomes difficult to hold the head upright. Make sure the face of the hammer is parallel to the surface

you are hammering. This will prevent damage to the edges of the hammer head and will also keep the hammer from slipping and damaging the work surface.

Check the area around you, and make sure you have enough space to swing the hammer without hitting anyone working near you. In some cases, it may be helpful to secure the object you're working on in a vise.

Don't strike with the side of the hammer, and never use one hammer to strike another hammer. Never use a hammer for a job it wasn't designed to do. For example, don't use the claw of a claw hammer as a chisel, and don't try to use the handle as a pry bar.

Finally, never toss or throw a hammer. When you pass a hammer to someone, always hand it to him or her directly, handle first.



# HANDLING AND STORAGE OF REACTIVE CHEMICALS



This talk discusses the hazards associated with reactive chemicals and provides safe handling and storage information and recommendations for employees working with or around such chemicals.

## Materials to have on hand:

- A safety data sheet (SDS) for a reactive chemical used in your facility
- Appropriate equipment and personal protective equipment (PPE) for handling the reactive chemical

## Items for attendees to consider during the talk:

- Do you know where to find an SDS?
- What reactive chemicals are used in this facility, and where are they stored?

## TALK

Reactive chemicals are used in this facility. These chemicals can be hazardous to the health and well-being of you and your coworkers and, in many instances, have the potential to cause significant damage to the facility. Therefore, it is important that you know the hazards associated with these chemicals; where in the facility they are used and stored; how to safely handle them, including the use of personal protective equipment, or PPE; and how to respond in the event of a chemical release.

Reactive chemicals can be involved in chemical reactions, resulting in a broad range of undesirable outcomes, including:

- The release of gases that cause irritation, dizziness, vomiting, or asphyxiation;
- The release of toxic, corrosive, or flammable gases;
- A fire or an explosion; or
- The generation of heat that can accelerate the reaction or cause other reactions.

When we think of chemical reactions, we most often think of two or more chemicals reacting with one another, but certain chemicals have adverse, sometimes violent reactions when they contact air or water. Chemicals can also be self-reactive.

The best way to learn about the hazards of a reactive chemical and what it might react with is to read the safety data sheet, or SDS, for each chemical you use before you use it.

***[Speaker may opt to describe how to access SDSs at the facility.]***

***[Speaker may opt to describe what reactive chemicals are being used/stored in the facility/ operations and where they are being used/ stored.]***

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# HANDLING AND STORAGE OF REACTIVE CHEMICALS

## PPE

In the SDS, you will also find what type of PPE is necessary when working with the chemical. If you are working with a reactive chemical, it's likely that you will need chemical-resistant gloves and boots, splash goggles, a full-face shield, and possibly chemical-resistant or fire-retardant clothing. Not all chemical-resistant PPE is the same, so make sure the gloves, boots, and other PPE you are using are appropriate for the specific chemical you are working with. In addition, certain reactive chemicals may require the use of an air-supplied respirator. So again, be sure to read the SDS before you use a chemical, and make sure you have all of the required PPE and know how to use it properly before handling a dangerously reactive chemical.

***[Speaker may opt to describe proper procedures for obtaining and using appropriate PPE at the facility.]***

## Storage and Handling

All containers of reactive chemicals must be in good condition, properly labeled, and appropriately stored and handled. Safe practices for storing and handling reactive chemicals include:

- Storing, handling, and using the chemicals in well-ventilated areas and away from incompatible materials. If you have questions about incompatible materials, ask your supervisor, or consult the SDS beforehand.
- Storing the chemical in a cool and dry area, free of ignition sources, and within the recommended temperature ranges.
- Storing smaller containers at a convenient height to reduce the risk of their being dropped.
- Preventing containers of friction-sensitive or shock-sensitive chemicals from sliding or being impacted.
- Keeping containers closed when not in use, only dispensing the chemical into compatible containers, and never returning unused chemicals to the original container.

- Never keeping a chemical for longer than the chemical supplier recommends.
- Ensuring that unused waste chemicals are properly handled and disposed of as a reactive hazardous waste and never disposed of in the sink or poured down a drain.
- Practicing good housekeeping—for example, ensuring that combustible wastes are promptly removed from any area where a reactive chemical is used or stored.
- Using proper spill containment. Small containers should be stored in a tray made of compatible material, and for bigger containers, the storage area should be diked or otherwise contained.

All storage areas should have appropriate signs and be equipped with appropriate firefighting and spill cleanup equipment. Only properly trained and authorized personnel are allowed in the storage areas.

## Emergency Response

Whenever you are working with or around reactive chemicals or in an area where they are stored, always be on the lookout for leaks or signs of a reaction, such as smoke, fumes, bubbles, or unusual odors. If you see any of these signs of reactivity, immediately notify others in the area, and evacuate to a safe distance. Once out of the area, notify your supervisor and appropriate emergency personnel. Keep others away from the area, and do not attempt to respond to the incident unless you are properly trained and authorized to do so.

In the event you or a coworker is exposed to a reactive chemical, basic first aid may be required. Appropriate first aid is described in the SDS. But you should all know where the first-aid kits, safety showers, and eyewash stations are located within your work area.

Make sure you know the hazards and take care in how you handle and store the reactive chemicals that we use so you can keep yourself and your coworkers safe.

# HAZARD COMMUNICATION: CHEMICAL INFORMATION FOR EMPLOYEES



This talk informs employees of their right to have access to information about the chemicals in their work environment and the potential hazards resulting from exposure to those chemicals. In addition, this talk will stress the importance of using this information properly.

## Materials to have on hand:

- A safety data sheet (SDS) used in the facility
- Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-compliant chemical label used in the facility
- The facility's Hazard Communication Plan

## Item for attendees to consider during the talk:

- Where do I get information about the chemicals I might be exposed to while doing my job?

## TALK

Your job requires you to work with various chemicals on a regular basis. Do you know the names of these chemicals and the potential hazards associated with them? Do you know what to do if you are exposed to these chemicals?

You should know the answers to these questions, and that is why the Occupational Safety and Health Administration, or OSHA, established the Hazard

Communication Standard, which is often referred to as HazCom or the Worker Right-to-Know Standard.

## Chemical information and where to find it.

HazCom requires that the company provide each of you with detailed information about the chemicals used at this facility, including the names of the chemicals, the hazards associated with each chemical, precautions to take when using a specific chemical, and what actions to take if exposed to a specific chemical.

The company provides this information to you in several ways:

- First, the labels on chemical containers that identify the chemical, chemical hazards, and actions to take to deal with the hazards;

*[Speaker may opt to show a GHS-compliant label currently being used in the facility.]*

- Second, safety data sheets, or SDSs, for each chemical that also provide information about the chemical and its potential hazards, as well as information related to handling, storage, protective equipment, and responding to releases;

*[Speaker may opt to show an SDS and/or describe the location(s) or methods of accessing SDSs.]*

- And finally, training that teaches you about HazCom and tells you how to read and understand the information on SDSs and chemical labels. It

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# HAZARD COMMUNICATION

also shows you ways you can protect yourself against possible hazards.

All of this information is in our written HazCom plan.

***[Speaker should describe how employees may access the company's HazCom plan.]***

So, all of the information you need to safely work with the chemicals in this facility is available, but it is only useful if you actually use it. It's up to you to seek out that information and use it for your own protection and for the protection and well-being of your coworkers.

If there's something you don't know or aren't absolutely sure of, ask! Never start a job without knowing the properties and hazards of the chemical(s) you're working with and using the appropriate personal protective equipment.

What you don't know can hurt you, and it can hurt your coworkers, too. So, we are all depending on each other to know and use this information properly in order to stay safe.

# HAZARD COMMUNICATION

## ELEMENTS OF THE GHS-COMPLIANT LABEL



This talk discusses the basic elements of a hazardous chemical label as a refresher for your workers who will be working with hazardous chemicals at your facility.

### Materials to have on hand:

- A container label for the chemical(s) to be used today
- The company’s written hazard communication program

### Items for attendees to consider during talk:

- Do you remember all the required elements of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) container label you learned in your training session?
- Do you know our chemical-handling procedures?

### Talk

Because we work with hazardous chemicals, we need to be familiar with a chemical’s properties so we can take the proper precautions to avoid an exposure event. Since the Hazard Communication Standard rules aligned with GHS, they require that all workers who handle hazardous chemicals know the elements of the GHS label.

Labels on chemical containers are your first line of defense to know what you are using. The label

provides the information you need about the hazards of the product quickly and easily.

Today, let’s review the seven required elements of a GHS-compliant label that arrives on chemical containers from our suppliers—these are not our secondary or workplace labels. Workplace labels are discussed in another toolbox talk.

There is no set format for how all the information required on GHS-compliant chemical container labels should be displayed, as long as it is all there—so they may not look like the sample label we have.

Each hazardous chemical container shipped to us from our supplier must have the following elements (see the sample label):

1. **Product identifier(s)**—the product identifier is usually the common product name of the chemical, such as acetone, and it must match the product identifier on the safety data sheet (SDS).
2. **Supplier identification**—the supplier identification includes the name, address, and telephone number of the manufacturer or supplier of the hazardous chemical.
3. **Precautionary statements**—these describe general preventive, response, storage, or disposal precautions. A precautionary statement is tied to each hazard statement, such as “Do not breathe vapors.” These statements will be found on the chemical’s SDS.

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# HAZARD COMMUNICATION

- Hazard pictogram(s)**—a GHS hazard pictogram consists of a black and white symbol with a red diamond surrounding it. These pictograms are meant to quickly warn you about the potential hazards of the chemical.
  - Signal word**—the signal word indicates the hazard level of the chemical. “Danger” is used for the most severe instances, while “Warning” is less severe. The signal word will also be found on the SDS.
  - Hazard statement(s)**—these are phrases that describe the nature of the hazards of a chemical and the degree of hazard. For example, “May cause liver and kidney damage.”
  - Supplemental information**—the supplier could supply additional instructions or information it feels may be helpful. For example, the supplier might provide safe use instructions.
- If you need more detailed information on the chemical you are using, read its SDS.

**SAMPLE LABEL**

**PRODUCT IDENTIFIER** ← 1

CODE \_\_\_\_\_  
Product Name \_\_\_\_\_

**SUPPLIER IDENTIFICATION** ← 2

Company Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_  
Postal Code \_\_\_\_\_ Country \_\_\_\_\_  
Emergency Phone Number \_\_\_\_\_


**PRECAUTIONARY STATEMENTS** ← 3

Keep container tightly closed. Store in cool, well ventilated place that is locked.  
Keep away from heat/sparks/open flame. No smoking.  
Only use non-sparking tools.  
Use explosion-proof electrical equipment.  
Take precautionary measure against static discharge.  
Ground and bond container and receiving equipment.  
Do not breathe vapors.  
Wear Protective gloves.  
Do not eat, drink or smoke when using this product.  
Wash hands thoroughly after handling.  
Dispose of in accordance with local, regional, national, international regulations as specified.

**In Case of Fire:** use dry chemical (BC) or Carbon dioxide (CO<sub>2</sub>) fire extinguisher to extinguish.

**First Aid**  
If exposed call Poison Center.  
If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.

**HAZARD PICTOGRAMS** ← 4



**SIGNAL WORD** ← 5  
**Danger**

**HAZARD STATEMENT** ← 6  
**Highly flammable liquid and vapor.  
May cause liver and kidney damage.**

**SUPPLEMENTAL INFORMATION** ← 7

**Directions for use**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Fill weight: \_\_\_\_\_ Lot Number  
Gross weight: \_\_\_\_\_ Fill Date: \_\_\_\_\_  
Expiration Date: \_\_\_\_\_

# HAZARD COMMUNICATION

## HAZCOM VS. NFPA LABELS



This talk informs employees of the differences between chemical labels that contain the information outlined in OSHA's Hazard Communication (HazCom) Standards and labels that satisfy the National Fire Protection Association's (NFPA) Standard System for the Identification of the Hazards of Materials for Emergency Response, otherwise known as NFPA 704.

### Materials to have on hand:

- A HazCom shipped container label for a chemical used at the facility
- An NFPA 704 label for the same chemical
- A safety data sheet (SDS) for the same chemical
- The facility's HazCom Plan

### Items for attendees to consider during the talk:

- Where can I find an explanation of the chemical labels used at this facility?
- What do the colors and numbers on the chemical label mean?

## TALK

We use many different chemicals at this facility, and each container of chemicals is labeled so that the hazards associated with the chemicals are quickly

identifiable and that information is readily available to help you protect yourself and your coworkers from those hazards. There are different kinds of labels, and you need to know how to interpret the information on each so that you can be safe.

All chemical containers that enter or leave this facility have a Hazard Communication, or HazCom, shipped container label.

***[Speaker should show a HazCom shipped container label for a chemical used at the facility.]***

All of these HazCom labels contain the same categories of information, including:

- A product identifier, which is usually the common name of the chemical;
- Supplier information;
- Precautionary statements;
- Hazard pictograms;
- A signal word;
- Hazard statements; *and*
- Any supplemental information that may be helpful.

As I said, you will see these labels on all chemical containers entering or leaving the facility, and you may see them on containers used within the facility.

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# HAZARD COMMUNICATION

These labels are specifically designed to inform you about the hazards of the chemicals used in this facility. For all labeled chemicals, you also have access to the safety data sheet, or SDS, which provides more detailed and comprehensive safety information. If you do not know where to find SDSs in your work area, ask your supervisor.

You may also see National Fire Protection Association, or NFPA, labels on containers used within the facility. These are diamond-shaped, divided into four quadrants, with numbers or symbols in each. The top is a red diamond, the bottom is a white diamond, and the left and right diamonds are blue and yellow, respectively.

***[Speaker should show an NFPA container label for a chemical used at the facility.]***

These labels are designed to provide basic information to emergency responders. However, they can be used within a facility, with SDSs and other information, to provide chemical hazard information to you and your coworkers once you understand how to interpret them and where to find more information. All of the information on an NFPA label is elaborated on in the SDS.

There is one very important difference between an NFPA label and HazCom. It is the numbering system used to designate the severity of a hazard. NFPA labels use numbers from 0 to 4 to designate the severity of a hazard, with 0 being the least hazardous and 4 being the most hazardous. HazCom labels typically do not use hazard category numbers, but numbers are used in Section 2 of the SDS to classify hazards. However, the HazCom numbers are the opposite of the NFPA system. HazCom uses numbers from 1–4, with 1 being the most severe and 4 being the least severe. Please keep this in mind when you are evaluating the hazards associated with a chemical and the source you are using to determine the severity of the hazard. The hazard category numbers in the SDS should never be used as hazard ratings on an NFPA 704 label.

As for the colors of an NFPA label:

- Red represents the flammability hazard. More detailed flammability information is located in Section 9 of the SDS.
- Yellow represents the instability hazard associated with the chemical. See Section 10 of the SDS for more information.
- Blue represents the health hazards, which can be found in Section 11 of the SDS.
- White identifies specific, special hazards. The symbols you may see in this quadrant include a capital “W” with a line through it, representing reactivity with water; a capital “OX” indicates the material is an oxidizer; and a capital “SA” means that the chemical is a simple asphyxiant. More information on these hazards is found throughout Sections 9, 10, and 11 of the SDS.

So, where you see the NFPA labels on chemical containers in this facility, know that the corresponding SDSs are immediately available to you to provide more complete information on the hazards associated with those chemicals and the precautions you can take to mitigate those hazards. If you need help accessing an SDS, please ask your supervisor.

***[Speaker may opt to describe the facility’s system for accessing SDSs.]***

In addition, if you have any questions on the chemical labeling system used in this facility, it is outlined in our written HazCom Program, which is available for you to view anytime. Again, ask your supervisor if you wish to see it.

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize our risk. So pay attention to the labels on the chemical containers, and take the time to review the SDS. It will help keep us all healthy and safe.



# HAZARD COMMUNICATION

## WHAT IS A SAFETY DATA SHEET?



This talk provides an overview of the 16 sections of a safety data sheet (SDS) for your workers who will be working with hazardous chemicals.

### Materials to have on hand:

- The company’s written hazard communication program
- An SDS
- A chemical label

### Items for attendees to consider during talk:

- Do you know where to find an SDS?
- Do you know our chemical-handling procedures?

## TALK

Because we work with hazardous chemicals every day, we need to know about the chemicals we work with so we can take the proper precautions. This is done simply by using, reading, and understanding the SDS, which provides the information needed regarding the safe handling, storage, and use of a hazardous chemical. The hazard communication standard requires that we train you to know the use and location of SDSs. This talk serves as a refresher for the training you received.

### The SDS

We receive SDSs from the manufacturer of the hazardous chemical. SDSs are composed of 16 sections,

and these sections will always appear in the same order for any product, regardless of who manufactures a particular chemical.

*[Pass out an SDS for one of the chemicals used at the facility to each employee attending this discussion.]*

### The standardized 16-section SDS includes:

**Section 1: Chemical identification.** In this section, you will find a product identifier; manufacturer name, address, and phone number; an emergency phone number; and recommended use and restrictions on use.

**Section 2: Hazard(s) identification.** This discusses all of the chemical’s hazards and required label elements.

*[Refer to the Label Elements talk.]*

**Section 3: Composition/information on ingredients.** This section lists the ingredients of the chemical, and trade secret claims are discussed.

**Section 4: First-aid measures.** This area will tell you what to do if there is an exposure to this chemical in your workplace.

**Section 5: Firefighting measures.** The section discusses the proper fire extinguishers to use and any specific hazards that can be created should this chemical ignite.

**Section 6: Accidental release measures.** This section lists emergency procedures, protective equipment, and proper methods of containment and cleanup.

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# HAZARD COMMUNICATION

**Section 7: Handling and storage.** This section discusses how to safely handle and store the chemical, as well as information on how this chemical will react to certain conditions.

**Section 8: Exposure control and personal protective equipment (PPE).** This section lists permissible exposure limit (PEL) information, threshold limit value (TLV) information, appropriate engineering controls, and PPE required to handle the chemical.

**Section 9: Physical and chemical properties.** This section tells you the chemical characteristics of the product.

**Section 10: Stability and reactivity.** This section describes the reactivity hazards of the chemical and the chemical stability information.

**Section 11: Toxicological information.** This section discusses exposures routes, symptoms of exposure, acute (short-term) and chronic (long-term) effects, and the numerical measures of toxicity.

**Section 12: Ecological information.** This section tells you how the product may harm the environment.

**Section 13: Disposal consideration.** This section discusses how to properly dispose of the product.

**Section 14: Transport information.** This section discusses how to safely transport the product.

**Section 15: Regulatory information.** This section tells you what laws and regulations for use of this chemical may apply and potential means of compliance.

Sections 12 through 15 are not mandated by the Occupational Safety and Health Administration (OSHA) but are part of the SDS requirement and must be listed, even if the sections contain nothing.

**Section 16: Other information.** This section includes the date of the product preparation and the last revision date of the SDS or chemical.

Remember that you are responsible for your actions. Be alert, and pay attention to what you are doing. Take the time to review the SDS for any chemical before you begin to work with it, because, as the name of the OSHA standard implies, you have a “right to know”!

# HAZARD COMMUNICATION

## WORKPLACE LABELING FOR EMPLOYEES



This talk discusses secondary or workplace labeling for employees handling hazardous chemicals in the workplace.

### Materials to have on hand:

- Container label on shipped chemical
- Workplace container label used at this facility

### Items for attendees to consider during talk:

- Do you know our secondary labeling system?
- Are National Fire Prevention Association (NFPA) labels Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-compliant?

## TALK

You have a right to know about the physical and health hazards of a chemical that you use at work and how to safely work with it.

Portable or workplace chemical containers should be labeled with the identity of the hazardous chemical inside and appropriate hazard warnings so you will have general information about the hazards of the chemical.

All of our workplace containers will be labeled with at least the following information:

- Identity of the chemical;

- All potential hazards associated with the chemical; *and*
- Manufacturer’s name, address, and telephone number.

*[Discuss the current usage of NFPA/workplace labels at your facility.]*

You don’t have to label portable containers with hazardous chemicals that are transferred from a properly labeled container if it is for immediate use. For example, if you pour paint thinner from a labeled original container into a bucket for the purpose of cleaning some parts, the bucket does not need a label if you will use all of its contents during your shift. However, you cannot pass these containers to another coworker, and you cannot leave unlabeled or partially filled containers overnight.

We can keep the well-known NFPA labels that we’ve used for years. However, these labels are for emergency responders and do not provide the information that the Hazard Communication Standard (HazCom) and GHS require to keep you safe. So, since we will continue to use these labels, we will need to add the required information, like the common product name, the physical and health hazards of that chemical, and of course, the manufacturer’s contact information.

We are giving you this refresher toolbox talk because we want you to know what HazCom requires on all of our workplace labels so that you understand the hazards related to the chemicals you work with.

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# HAZARD COMMUNICATION

## WORKPLACE LABELING FOR SUPERVISORS



This talk discusses secondary or workplace labeling systems for employers/supervisors/managers.

### Materials to have on hand:

- Container label on shipped chemical
- Workplace container label

### Items for attendees to consider during talk:

- Do you remember all the required elements of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) container label you learned in your training session?
- Do you know our secondary labeling system?
- Are National Fire Protection Association (NFPA) labels GHS-compliant?

## TALK

The Hazard Communication GHS standard—or HazCom—requires that we train workers who will be handling hazardous chemicals about the physical and health hazards of a chemical and how to safely work with it.

One common problem facing companies is the use and labeling of portable or workplace containers. Portable containers should be dedicated for one specific use and labeled with the identity of the hazardous chemical inside and appropriate hazard warnings so employees will have general information as to the hazards relating to the chemical.

We are not required to label portable containers into which hazardous chemicals are transferred from properly labeled containers when the material transferred is for the immediate use of the person performing the transfer. For example, if paint thinner is poured from a labeled original container into a bucket for the purpose of cleaning some parts, the bucket does not need a label if the person transferring the thinner is the one who will immediately use it.

OSHA states that containers of this type do not need to be labeled if the entire contents are used in one shift by only one person, with the contents being used completely or returned to their original containers. The containers cannot be passed from one employee to another, and employees cannot leave unlabeled, partially filled containers overnight.

All workplace containers—not being used immediately—should be labeled with at least the following information:

- Identity of the chemical;
- All potential hazards associated with the chemical; *and*
- Manufacturer’s name, address, and telephone number.

OSHA does allow us to keep the well-known NFPA labels that we’ve used for years. However, these labels are for emergency responders and do not provide the information that HazCom GHS requires to keep our workers safe. So, if we continue to use

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# HAZARD COMMUNICATION

these labels, we will need to add the required information, like the common product name, the physical and health hazards associated with that chemical and, of course, the manufacturer's contact information.

We are not required to provide more detailed information on our workplace labels as long as the workers know where to locate the safety data sheets (SDSs) to get more information on the chemical, including the required personal protective equipment to use, the first-aid measures to take in the event of exposure, as well as measures for accidental releases.

The one caveat in maintaining the NFPA labeling is that we need to train our workers not only on the GHS label requirements but also on the differences of these systems.

Specifically, although we are familiar with the NFPA hazard rating systems, they are actually the reverse

of the GHS hazard rating system. This is not an issue on the label itself because the GHS labels do not have the rating numbers. But it can cause confusion for employees reading the SDS that does have the GHS hazard rating.

As we know, for the NFPA, 4 is an extreme hazard. But for GHS, 1 is considered an extreme hazard. All workers handling the hazardous chemical need to understand both of the rating hazards not only because we want them to work safely but also in the event of an OSHA visit—the Agency will ask our employees about both labels.

OSHA requires that we train our worker on the GHS label elements and the SDS, but let's include training on how the NFPA label is different. We do not want an employee who has worked for years using the NFPA system to read the SDS and not realize the hazards of that chemical are severe.

# HAZARD COMMUNICATION

## YOUR RIGHTS AND RESPONSIBILITIES TO KNOW ABOUT HAZARDOUS CHEMICALS IN CALIFORNIA



This talk discusses the rights of employees in California to have access to information about the chemicals in their work environment and the potential hazards resulting from exposure to those chemicals. In addition, this talk will stress the importance of using this information properly.

### Materials to have on hand:

- A safety data sheet (SDS) used in the facility
- Hazard Communication (HazCom)-compliant chemical label used in the facility
- The facility's Hazard Communication Plan

### Items for attendees to consider during the talk:

- Where do I get information about the chemicals I might be exposed to while doing my job?

## TALK

Your job requires you to work with various chemicals on a regular basis. Do you know the names of these chemicals and the potential hazards associated with them? Do you know what to do if you are exposed to these chemicals?

You should know the answers to these questions, and that is why the California Occupational Safety and Health Administration, or Cal/OSHA, established

the Hazard Communication Standard, which is also known as HazCom or the Worker Right-to-Know Standard. Under the standard, you have the right to information about hazardous chemicals to which you may be exposed, as do your physician and collective bargaining agent, and you cannot be fired or discriminated against for requesting or seeking out this information.

**Chemical information and where to find it.** HazCom requires that the company provide each of you with detailed information about the chemicals used at this facility, including the chemical names and associated hazards, precautions to take when using a specific chemical, and what actions to take if exposed to a specific chemical.

The company provides this information to you in several ways:

- First, the labels on chemical containers that identify the chemical, chemical hazards, and actions to take to deal with the hazards. The labels will also include required warning statements.

***[Speaker may opt to show a HazCom-compliant label currently being used in the facility.]***

- Second, safety data sheets, or SDSs, for each chemical that also provide information about the chemical and its potential hazards, as well as information related to handling, storage,

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# HAZARD COMMUNICATION

personal protective equipment, and responding to releases; and

***[Speaker may opt to show an SDS and/or describe the location(s) or methods of accessing SDSs.]***

- Finally, training that teaches you about HazCom and the hazardous chemicals present at this facility; tells you how to read and understand the information on SDSs and chemical labels; and shows you ways you can protect yourself against possible hazards.

All of this information is in our written HazCom plan, which is available for you to review.

***[Speaker should describe how employees may access the company's HazCom Plan.]***

So, all of the information you need to safely work with the chemicals in this facility is available, but it is only useful if you actually use it. It's up to you to seek out this information and use it for your own protection and for the protection and well-being of your coworkers.

If there's something you don't know or aren't absolutely sure of, ask! Never start a job without knowing the properties and hazards of the chemical(s) you're working with and using the appropriate personal protective equipment.

What you don't know can hurt you, and it can hurt your coworkers, too. So, we are all depending on each other to know and use this information properly in order to stay safe.



# HAZARD COMMUNICATION

## THE SDS: WHAT TO DO WHEN A WORKER IS EXPOSED



This talk discusses Section 4—First-aid measures of the safety data sheet (SDS) to help your workers who are working with a hazardous chemical know where to look for first-aid steps to take in an exposure incident.

### Material to have on hand:

- Examples of real-life injuries in the workplace as a result of exposure to a related hazardous chemical
- The company’s written hazard communication (HazCom) program
- An SDS

### Items for attendees to consider during the talk:

- Do you know where to find an SDS?
- Do you know our chemical-handling procedures?
- Do you know where the first-aid station, showers, and eyewashes are located?

## TALK

Because we work with hazardous chemicals, we need to be familiar with the chemicals’ properties so we can take the proper precautions and know the appropriate responses to an exposure event. This is done simply by using, reading, and understanding the SDS for the chemical.

### The SDS

SDSs are composed of 16 sections, and these sections will always appear in the same order for any product, regardless of who manufactures a particular chemical. For the purposes of this discussion, we’ll discuss Section 4, which contains first-aid measures. It provides steps to take after a coworker or workers have been exposed to a hazardous chemical.

*[Pass out an SDS for one of the chemicals used at the facility to each employee attending this discussion. If attendees are unsure of the standard 16-section SDS required by HazCom, present the “What is a safety data sheet” toolbox talk.]*

### Section: 4: First-aid measures

Section 4 provides information about symptoms or effects of exposure to a chemical that are immediate or delayed. Here is where you will also find a description of the initial care that should be given to an exposed worker, including first-aid instructions by relevant routes of exposure (such as inhalation, skin and eye contact, and ingestion). Section 4 also provides recommendations for immediate medical care and special treatment, if needed.

*[Show attendees Section 4 of the SDS you selected and passed out.]*

You need to know what to do if there is an employee exposure to this chemical before an emergency takes place. Be sure to read the SDS before you work

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# HAZARD COMMUNICATION

with a hazardous chemical so you know what to do immediately in case of exposure rather than wasting time having to go find the SDS to know what first-aid measures to take.

While you provide recommended first-aid measures, have another worker contact the appropriate professional healthcare provider immediately.

# HAZARD COMMUNICATION (HAZCOM)

## THE SDS AND ACCIDENTAL RELEASES



In the event of an accidental release of a hazardous chemical, workers need to know what actions to take. This talk discusses “Section 6—Accidental release measures” of the safety data sheet (SDS), which provides information and recommendations about appropriate actions to take when a hazardous chemical is accidentally released or spilled.

### Materials to have on hand:

- An SDS for a chemical used at the facility
- A copy of the facility’s written Hazard Communication Program

### Items for attendees to consider during the talk:

- Do you know where to find an SDS?
- Where can I find information on how to respond to a chemical spill?

## TALK

Your job requires you to work with various chemicals on a regular basis. We all do our best to be safe, but accidents happen, which is why you need to be familiar with the hazards associated with the chemicals used in your work area and what actions to take in the event of an accidental chemical release. This is

done by reading the chemical label and by reading, understanding, and using the chemical’s safety data sheet, or SDS.

### The SDS

SDSs are composed of 16 sections, and these sections will always appear in the same order for any product, regardless of who manufactures a particular chemical. For the purposes of this discussion, we’ll discuss Section 6, titled accidental release measures. It provides recommendations on the appropriate responses to hazardous chemical spills, leaks, or releases.

***[Pass out an SDS for one of the chemicals used at the facility to each employee attending this discussion. If attendees are unsure of the standard 16-section SDS required by OSHA’s Hazard Communication, or HazCom, standard, present the “HazCom: What is a safety data sheet” toolbox talk.]***

If you have any questions about how to locate an SDS for a chemical, please ask your supervisor or look it up in our facility’s written Hazard Communication Program.

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# HAZARD COMMUNICATION (HAZCOM)

## Section 6: Accidental release measures

Hopefully, you and your coworkers know how to respond to a chemical release in your work area because you took the time to read the SDSs and become familiar with the hazards of the chemicals you work with. However, if a hazardous chemical is accidentally released or spilled and there is uncertainty about what to do, find the SDS for that chemical. It can provide important information to help deal with the release and possibly prevent injury or damage to the facility.

***[Speaker may opt to show or describe the location(s) or methods of accessing SDSs.]***

Section 6 of the SDS provides information about what you should do if a hazardous chemical is accidentally released, including containment and cleanup practices to prevent or minimize exposure to people, property, or the environment. It may also help distinguish between large and small spills and the proper response for each. This may be very important if the volume of the chemical release directly relates to the magnitude or severity of the hazard.

***[Show attendees Section 6 of the SDS you selected and passed out.]***

In this section, you find information on:

- Personal protective equipment you may need to prevent exposure;
- Precautions you should take to prevent injury—for example, tips to remove ignition sources or provide proper ventilation;
- Emergency response actions you may need to take, including evacuations and when to consult with experts;
- Methods and materials you may need to contain the release—for example, covering drains in the event of a spill or using adsorbent materials; *and*
- Cleanup procedures, including the proper techniques and equipment to decontaminate and clean up the chemical.

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize the risk.

# HAZARD COMMUNICATION (HAZCOM): THE SDS AND CHEMICAL DISPOSAL



After using a hazardous chemical, workers need to know how to properly dispose of the chemical. This talk discusses Section 13 of the safety data sheet (SDS), titled Disposal Considerations, which provides information and recommendations for safe handling and disposal of chemicals and chemical containers.

## Materials to have on hand:

- An SDS for a chemical used at the facility
- A copy of the facility’s written Hazard Communication Program

## Items for attendees to consider during the talk:

- Do you know where to find an SDS?
- What types of disposal containers should be used for the hazardous chemicals you work with?

## TALK

Your job requires you to work with various chemicals on a regular basis. We all need to do our best to be safe, and a big part of being safe is being familiar with the hazards associated with the chemicals used in your work area and knowing how to properly dispose of,

recycle, or reclaim the chemical or its container. One of the places you may find this information is in the chemical’s safety data sheet, or SDS.

## The SDS

SDSs are composed of 16 sections, and these sections will always appear in the same order for any product, regardless of who manufactures it. For the purposes of this talk, we’ll discuss Section 13, titled Disposal Considerations.

***[Pass out an SDS for one of the chemicals used at the facility to each employee attending this discussion. If attendees are unfamiliar with the standard 16-section SDS required by OSHA’s Hazard Communication, or HazCom, standard, present the “HazCom: What is a safety data sheet” toolbox talk.]***

If you have any questions about how to locate an SDS for a chemical, please ask your supervisor or look it up in our facility’s written Hazard Communication Program.

## Section 13: Disposal Considerations

After using a hazardous chemical, you may find yourself wondering what to do with the waste chemical, contaminated packaging, or the

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# HAZARD COMMUNICATION (HAZCOM)

chemical container, which may still contain some chemical residue. All SDSs will have a Section 13 for disposal considerations, but it is not mandatory for manufacturers to provide information in this section. Even so, the SDS is one of the first places you should look to determine disposal practices and information on recycling or reclaiming the chemical or its container.

## ***[Speaker may opt to show or describe the location(s) or methods of accessing SDSs.]***

Section 13 of the SDS may provide useful information, including:

- A description of appropriate disposal containers to use. You want to be sure the container is compatible with the waste and that it complies with applicable waste management requirements.
- Recommendations of appropriate disposal methods to employ, including options for recycling or reclaiming the chemical or its container.

- A description of the physical and chemical properties that may affect disposal activities.
- Language discouraging disposal by discharging to a sewer.
- Any special precautions to consider before landfilling or incinerating the waste.

Improper disposal of hazardous chemicals can result in spills, dangerous reactions, fire, and even explosions that can have significant impacts on your safety and the safety of your colleagues. In addition, improper disposal can do great harm to the environment and result in enforcement actions being taken against this company. So be sure to take the time to check the SDS for any helpful information.

## ***[Show attendees Section 13 of the SDS you selected and passed out.]***

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize the risk, protect the environment, and avoid being fined.

# HAZARD COMMUNICATION (HAZCOM): THE SDS AND CHEMICAL STORAGE



Before using a hazardous chemical, workers need to know how to properly handle and safely store the chemical. This talk discusses Section 7 of the safety data sheet (SDS)—titled Handling and Storage—which provides information and recommendations for safe handling and storage of chemicals.

## Materials to have on hand:

- An SDS for a chemical used at the facility
- A copy of the facility’s written Hazard Communication Program

## Items for attendees to consider during the talk:

- Do you know where to find an SDS?
- What are the proper storage conditions for the hazardous chemicals you work with?

## TALK

Your job requires you to work with various chemicals on a regular basis. We all need to do our best to be safe, and a big part of being safe is being familiar with the hazards associated with the chemicals used in your work area and knowing how to properly handle and store those chemicals in a way that

minimizes those hazards. This is done by reading, using, and understanding the chemicals’ safety data sheets, or SDSs.

## The SDS

SDSs are composed of 16 sections, and these sections will always appear in the same order for any product, regardless of who manufactures it. For the purposes of this discussion, we’ll discuss Section 7, titled Handling and Storage. It provides information on the safe handling of chemicals, recommendations for incompatible chemicals, general hygiene practices, and recommendations on the conditions for safe storage.

***[Pass out an SDS for one of the chemicals used at the facility to each employee attending this discussion. If attendees are unfamiliar with the standard 16-section SDS required by the Occupational Safety and Health Administration’s, or OSHA’s, Hazard Communication, or HazCom, standard, present the “HazCom: What is a safety data sheet” toolbox talk.]***

If you have any questions about how to locate an SDS for a chemical, please ask your supervisor or look it up in our facility’s written Hazard Communication, or HazCom, Program.

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# HAZARD COMMUNICATION (HAZCOM)

## Section 7: Storage and Handling

Hopefully, you and your coworkers know what the best practices are for handling the chemicals used in your work area and how to store them safely because you took the time to read the SDSs and become familiar with the recommended practices. Anytime you are working with a hazardous chemical, be sure to check the SDS to make sure you are taking the proper precautions when handling the chemical and that you are storing the chemical under the correct conditions and with compatible materials.

***[Speaker may opt to show or describe the location(s) or methods of accessing SDSs.]***

Section 7 of the SDS provides three types of information: precautions for use, general hygiene practices, and recommendations for conditions of storage.

Precautions for you to take when using the chemical may include recommendations such as:

- “Do not breathe vapors or dust.”
- “Avoid contact with skin and eyes.”
- “Keep away from open flame, hot surfaces, or sources of ignition.”
- “Use only nonsparking tools.”
- “Ensure adequate ventilation,” or maybe something more specific, such as, “Only open the container under a ventilation hood.”

It may also provide recommendations for minimizing the accumulation of an electrostatic charge that could possibly ignite the chemical.

General hygiene information typically addresses actions such as avoiding eating, drinking, and smoking in the work area and washing hands after handling the chemical.

Recommendations for storage of the chemical may specify ventilation requirements, storage conditions such as the temperature and humidity of the storage area, proximity to heat, and incompatible materials. Always be sure the chemical is compatible with the other chemicals in the storage area or cabinet, meaning you should store chemicals with other chemicals with similar hazards. Storing chemicals with incompatible chemicals can result in spills, dangerous reactions, fire, and even explosions.

***[Show attendees Section 7 of the SDS you selected and passed out.]***

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize the risk.

# HAZARD COMMUNICATION (HAZCOM): THE SDS AND EXPOSURE CONTROL



Before using a hazardous chemical, workers need to know what measures should be implemented to limit their risk of exposure. This talk discusses Section 8 of the safety data sheet (SDS), titled Exposure Control and Personal Protection. This section provides information and recommendations about exposure limits and how to protect against harmful exposures.

### Materials to have on hand:

- An SDS for a chemical used at the facility
- A copy of the facility’s written HazCom Program

### Items for attendees to consider during the talk:

- Do you know where to find an SDS?
- Where can I find information on what personal protective equipment (PPE) to use when handling a hazardous chemical?

## TALK

Your job requires you to work with various chemicals on a regular basis. We all need to do our best to be safe, and a big part of being safe is being familiar with the hazards associated with the chemicals used in your work area and what you can do to protect yourself

from exposure. This is done by reading the chemical label and by reading, using, and understanding the chemical’s safety data sheet, or SDS.

### The SDS

SDSs are composed of 16 sections, and these sections will always appear in the same order for any product, regardless of who manufactures it. For the purposes of this discussion, we’ll discuss Section 8, titled Exposure Control and Personal Protection. It provides information on exposure limits and recommendations on engineering controls and personal protective equipment, or PPE, to limit exposure.

***[Pass out an SDS for one of the chemicals used at the facility to each employee attending this discussion. If attendees are unfamiliar with the standard 16-section SDS required by OSHA’s Hazard Communication, or HazCom, standard, present the “HazCom: What is a safety data sheet” toolbox talk.]***

If you have any questions about how to locate an SDS for a chemical, please ask your supervisor or look it up in our facility’s written Hazard Communication, or HazCom, Program.

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# HAZARD COMMUNICATION (HAZCOM)

## Section 8: Exposure Control and Personal Protection

Hopefully, you and your coworkers know what measures to take to limit your risk of exposure to hazardous chemicals in your work area because you took the time to read the SDSs and become familiar with the hazards of the chemicals you work with. Anytime you are working with a hazardous chemical, be sure to check the SDS to make sure you are using the proper controls and are equipped with the appropriate PPE.

***[Speaker may opt to show or describe the location(s) or methods of accessing SDSs.]***

Section 8 of the SDS provides several pieces of information about the hazardous chemical. The first is exposure limits, such as permissible exposure limits, or PELs, established by the Occupational Safety and Health Administration, or OSHA, and any other exposure limits recommended by the manufacturer. Your employer may conduct monitoring and perform calculations to determine if airborne concentrations of the chemical are reasonably expected to approach or exceed these

exposure limits. If so, additional monitoring will be conducted, and specific controls and PPE will be required.

The second category of information in Section 8 of the SDS addresses appropriate engineering controls to limit potential exposure. Here you may find recommendations for appropriate ventilation, if the process should be fully enclosed, or limits on the amount of time a worker is exposed to the hazardous chemical, for example.

The final category of information is recommended individual protection measures that you can take to limit exposure, such as appropriate PPE. For example, PPE may include specific types of eye protection; appropriate clothing to protect your skin; and, when necessary, appropriate types of respiratory protection.

***[Show attendees Section 8 of the SDS you selected and passed out.]***

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize the risk.

# HAZARD COMMUNICATION LABELS

## THE ENVIRONMENT PICTOGRAM



This talk informs employees of the meaning of the environment pictogram, including identifying the specific hazards associated with chemicals labeled with this pictogram and where the employee can go to get more information on minimizing the associated risks.

### Materials to have on hand:

- A large, color replica of the environment pictogram
- A Hazard Communication-compliant chemical label used in the facility with an environment pictogram
- The safety data sheet (SDS) for the same chemical labeled with the environment pictogram
- The facility's Hazard Communication Plan

### Items for attendees to consider during the talk:

- Where would you get information about the chemicals you might be exposed to while doing your job?
- What are the hazards associated with the environment pictogram?

## TALK

Your job requires you to work with various chemicals on a regular basis. Containers of hazardous chemicals

at this facility are all labeled in the same way and contain the same categories of information. You should take the time to read the labels on the chemicals in your work area and become familiar with the format and the types of information on the labels.

On each of these labels, you will see one or more pictograms. These are the red diamonds with the black pictures on a white background.

***[Speaker may opt to show a GHS-compliant label currently used in the facility and point out the pictogram(s).]***

Pictograms are meant to help you quickly identify the hazards associated with a chemical. There are nine different pictograms that represent different hazards. Today, we will focus on one specific pictogram: the environment pictogram. It is a red diamond, and inside the diamond is a black and white image of a dead fish and a dead tree.

***[Speaker may opt to show the large color replica of the environment pictogram.]***

So, what does this pictogram mean? Well, if you see this pictogram on a chemical label, it means that this chemical will injure or harm aquatic organisms, including fish.

***[Speaker may opt to mention some of the chemicals in the facility that are labeled with the environment pictogram and where they are used.]***

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# HAZARD COMMUNICATION LABELS

When you see this pictogram, be cautious and do things the right way, which includes following the Precautionary Statements on the label, which will likely include a statement to “avoid release to the environment.” However, it is important to note that, unlike other pictograms, this pictogram is not mandatory. So, not all chemicals that are hazardous to marine life will bear this pictogram, which is why we must always be cautious and take necessary actions to prevent releasing chemicals into the environment.

For those that do bear the pictogram, more specific information on the hazards of the chemical are listed in the Hazard Statement on the label and in the safety data sheet, or SDS, for the chemical.

***[Speaker may opt to show a GHS-compliant label currently used in the facility and point out the Precautionary Statement(s) and Hazard Statement(s).]***

The SDS will give you information on how to handle and store the chemical and what to do in the event of an accidental release. In addition, chemicals that

are toxic to the environment often present hazards to people, so the SDS should be referenced to determine what personal protective equipment, or PPE, to use and what to do if you or a coworker is exposed to the chemical.

***[Speaker may opt to show an SDS and/or describe the location(s) or methods of accessing SDSs.]***

At a minimum, you should take necessary measures to prevent chemical releases and promptly clean up any spillage. But accidents happen, and if a release does occur, report it to your supervisor as soon as possible so that actions can be taken to prevent the chemical from reaching drains, sewers, or any waterways.

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize the risk. So, pay attention to the labels on the chemical containers, and take the time to review the SDS. It will help keep us and our environment healthy and safe.



# HAZARD COMMUNICATION LABELS

## THE FLAME PICTOGRAM

This talk informs employees of the meaning of the flame pictogram, including identifying the specific hazards to which an employee may be exposed when using a chemical labeled with this pictogram and where the employee can go to get more information on protective measures to minimize associated risks.

### Materials to have on hand:

- A large, color replica of the flame pictogram
- An Occupational Safety and Health Administration (OSHA)-compliant chemical label used in the facility with a flame pictogram
- The safety data sheet (SDS) for the same chemical labeled with the flame pictogram
- The facility's Hazard Communication Plan

### Items for attendees to consider during the talk:

- Where would you get information about the chemicals you might be exposed to while doing your job?
- When a chemical is labeled with a flame pictogram, what hazards should you be thinking about?

## TALK

Your job requires you to work with various chemicals on a regular basis. Containers of hazardous chemicals at this facility are all labeled in the same way



and contain the same categories of information. You should take the time to read the labels on the chemicals in your work area and become familiar with the format and the types of information on the labels.

On each of these labels, you will see one or more pictograms. These are the red diamonds with the black pictures on a white background.

***[Show a Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-compliant label currently used in the facility, and point out the pictogram(s).]***

Pictograms are meant to help you quickly identify the hazards associated with a chemical. There are nine different pictograms that represent different hazards. Today, we will focus on one specific pictogram: the flame pictogram. It is a red diamond, and inside the diamond is an image of a black fire with a line underneath it, all on a white background.

***[Show the large color replica of the flame pictogram.]***

So, what does this pictogram mean? Well, if you see this pictogram on a chemical label affixed to a container, it means that the chemical inside is flammable. It may also mean that the substance is pyrophoric, meaning it may ignite shortly after coming in contact with air or it may gradually produce heat when mixed with air. This pictogram is also used for substances that may become spontaneously flammable or emit flammable gasses after interacting

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# HAZARD COMMUNICATION LABELS

with water; substances that are self-reactive or unstable; or organic peroxides capable of exploding or burning rapidly.

All substances labeled with this pictogram have the potential to cause a fire.

***[Mention some of the chemicals in the facility that are labeled with the flame pictogram and where they are used.]***

So, when you see this pictogram, be cautious and do things the right way, which includes following the Precautionary Statements on the label.

More specific information on the hazards of a chemical is listed in the Hazard Statement on the label and in the safety data sheet, or SDS, for the chemical.

***[Show a GHS-compliant label currently used in the facility, and point out the Precautionary Statement(s) and Hazard Statement(s).]***

The SDS will also give you information on what personal protective equipment, or PPE, to use; what to do if you or a coworker is exposed to the chemical; how to safely handle, store, and dispose of the

chemical; and how to handle leaks or accidental releases.

***[Show an SDS and/or describe the location(s) or methods of accessing SDSs.]***

Handle all flammable substances with care, and be sure the containers are properly closed and labeled. Store containers of flammable substances in cool, well-ventilated areas; away from any heat or other sources of ignition; and segregated from incompatible substances, such as oxidizing agents. So again, check the SDS for storage instructions, and make sure you store these chemicals correctly.

***[Mention where in the facility flammable substances are to be stored and any chemicals used at the facility that may react with those substances that, therefore, should not be stored with the flammable substances.]***

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize our risk. So, pay attention to the labels on the containers, and take the time to review the SDS. It will help keep us all healthy and safe.





# HAZARD COMMUNICATION LABELS

## THE GAS CYLINDER PICTOGRAM

This talk informs employees of the meaning of the gas cylinder pictogram, including identifying the specific hazards to which an employee may be exposed when using a chemical labeled with this pictogram and where the employee can go to get more information on protective measures to minimize associated risks.

### Materials to have on hand:

- A large, color replica of the gas cylinder pictogram
- A Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-compliant chemical label used in the facility with a gas cylinder pictogram
- The safety data sheet (SDS) for the same chemical labeled with the gas cylinder pictogram
- The facility's Hazard Communication Plan

### Items for attendees to consider during the talk:

- Where would you get information about the chemicals you might be exposed to while doing your job?
- When a chemical is labeled with a gas cylinder pictogram, what hazards should you be thinking about?

## TALK

Your job requires you to work with various chemicals on a regular basis. Containers of hazardous chemicals



at this facility are all labeled in the same way and contain the same categories of information. You should take the time to read the labels on the chemicals in your work area and become familiar with the format and the types of information on the labels.

On each of these labels, you will see one or more pictograms. These are the red diamonds with the black pictures on a white background.

***[Show a Globally Harmonized System of Classification and Labelling of Chemicals, or GHS-compliant label currently used in the facility, and point out the pictogram(s).]***

Pictograms are meant to help you quickly identify the hazards associated with a chemical. There are nine different pictograms that represent different hazards. Today, we will focus on one specific pictogram: the gas cylinder pictogram. It is a red diamond, and inside the diamond is a black silhouette of a gas cylinder on a white background.

***[Show the large color replica of the gas cylinder pictogram.]***

So, what does this pictogram mean? Well, if you see this pictogram on a chemical label affixed to a cylinder or tank, it means that the chemical inside is a compressed gas, or a gas under pressure. All compressed gases are hazardous because of the high pressure inside the cylinder or tank. The gas can be rapidly released if the cylinder is damaged, causing the cylinder to take off like an out-of-control rocket.

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# HAZARD COMMUNICATION LABELS

Obviously, that is a scenario that can result in injuries and significant damage.

Deliberately released gases can also cause problems if the release is poorly controlled, causing vessels, hoses, or pipes to rupture.

Compressed gases often present other hazards—they may be flammable, reactive, toxic, or corrosive. In addition, leaking gases can displace air and reduce oxygen levels, which can lead to loss of consciousness or even death from suffocation.

***[Mention some of the chemicals in the facility that are labeled with the gas cylinder pictogram and where they are used.]***

So, when you see this pictogram, be cautious and do things the right way, which includes following the Precautionary Statements on the label.

More specific information on the hazards of a chemical is listed in the Hazard Statement on the label and in the safety data sheet, or SDS, for the chemical.

***[Show a GHS-compliant label currently used in the facility, and point out the Precautionary Statement(s) and Hazard Statement(s).]***

The SDS will also give you information on what personal protective equipment, or PPE, to use; what to

do if you or a coworker is exposed to the chemical; how to safely handle, store, and dispose of the chemical; and how to handle leaks or accidental releases.

***[Show an SDS and/or describe the location(s) or methods of accessing SDSs.]***

Handle all gas cylinders with care, and properly store them in well-ventilated areas. Be sure the protective caps are on and the cylinders are secured when in use, in storage, and in transport. Keep cylinders away from excessive heat and ignition sources. Always use approved hand trucks or other approved equipment to move compressed gas cylinders. Improper storage and handling can damage cylinders, resulting in accidental releases. So again, check the SDS for storage instructions, and make sure you store these chemicals correctly.

***[Mention where in the facility gas cylinders are to be stored and any chemicals used at the facility that may react with those gas cylinders and that, therefore, should not be stored with the gas cylinders.]***

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize our risk. So pay attention to the labels on the cylinders, and take the time to review the SDS. It will help keep us all healthy and safe.



# HAZARD COMMUNICATION LABELS

## THE 'CORROSION' PICTOGRAM

This talk informs employees of the meaning of the “Corrosion” pictogram, including identifying the specific hazards to which an employee may be exposed when using a chemical labeled with this pictogram, where the employee can go to get more information on protective measures to avoid exposure, and actions to take in the event of exposure.

### Materials to have on hand:

- A large, color replica of the “Corrosion” pictogram
- A Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-compliant chemical label used in the facility with a corrosion pictogram
- The safety data sheet (SDS) for the same chemical labeled with the “Corrosion” pictogram
- The facility’s Hazard Communication Plan

### Items for attendees to consider during the talk:

- Where do I get information about the chemicals I might be exposed to while doing my job?
- What are the hazards associated with the “Corrosion” pictogram?

## TALK

Your job requires you to work with various chemicals on a regular basis. Containers of hazardous chemicals at this facility are all labeled in the same way



and contain the same categories of information. You should take the time to read the labels on the chemicals in your work area and become familiar with the format and the types of information on the labels.

On each of these labels, you will see one or more pictograms. These are the red diamonds with the black pictures on a white background.

***[Show a GHS-compliant label currently used in the facility and point out the pictogram(s).]***

Pictograms are meant to help you quickly identify the hazards associated with a chemical. There are nine different pictograms that represent different hazards. Today, we will focus on one specific pictogram: the “Corrosion” pictogram. It is a red diamond, and inside the diamond is an image of two vials of a corrosive substance damaging skin and another surface.

***[Show the large color replica of the “Corrosion” pictogram.]***

When you see this pictogram, it means the substance is corrosive—that is, it can damage and burn skin, eyes, metals, and other surfaces. Corrosives are usually thought of as liquids, but they can also be solids, such as granules or powders. Corrosive gases or mists can be released from concentrated corrosive liquids.

Unprotected exposure to corrosives is very dangerous. Your skin and eyes can be burned by contact with corrosives in any form, and breathing corrosive gases can damage your throat and lungs.

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# HAZARD COMMUNICATION LABELS

***[Mention some of the chemicals in the facility that are labeled with the “Corrosion” pictogram and where they are used.]***

Specific information on the hazards of a particular corrosive chemical is listed in the Hazard Statement on the label and in the safety data sheet, or SDS, for the chemical. The SDS will also give you information on what personal protective equipment, or PPE, to use; what to do if you or a coworker is exposed to the chemical; how to safely handle, store, and dispose of the chemical; and how to handle spills and leaks.

At a minimum, when working with a corrosive, you will probably need eye protection and chemical-resistant gloves. Depending on the specific chemical and how you are using it, you may also need a face shield, protective clothing such as an apron, or a respirator. Again, check the SDS to find out what PPE you need.

Make sure any containers you are using with a corrosive chemical will not be damaged by the chemical.

If you get a corrosive chemical in your eyes, immediately go to an eyewash station and flush your eyes with water for at least 15 minutes, then seek medical attention. If corrosives get on your skin, remove any clothing the corrosives contacted and wash the area with water immediately. Use a safety shower if the chemical covers your face or a large part of your body. If you breathe in corrosive gases, vapors, or mists, move into fresh air and see a doctor for follow-up.

***[Show an SDS and/or describe the location(s) or methods of accessing SDSs.]***

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize our risk. So, pay attention to the labels on the chemical containers, and take the time to review the SDS. It will help keep us all healthy and safe.



# HAZARD COMMUNICATION LABELS

## THE 'EXCLAMATION MARK' PICTOGRAM



This talk informs employees of the meaning of the “Exclamation Mark” pictogram, including identifying the specific hazards to which an employee may be exposed when using a chemical labeled with this pictogram, where the employee can go to get more information on protective measures to avoid exposure, and actions to take in the event of exposure.

### Materials to have on hand:

- A large, color replica of the “Exclamation Mark” pictogram
- A Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-compliant chemical label used in the facility with a health hazard pictogram
- The safety data sheet (SDS) for the same chemical labeled with the “Exclamation Mark” pictogram
- The facility’s Hazard Communication Plan

### Items for attendees to consider during the talk:

- Where do I get information about the chemicals I might be exposed to while doing my job?
- What are the hazards associated with the “Exclamation Mark” pictogram?

## TALK

Your job requires you to work with various chemicals on a regular basis. Containers of hazardous chemicals at this facility are all labeled in the same way and contain the same categories of information. You should take the time to read the labels on the chemicals in your work area and become familiar with the format and the types of information on the labels.

On each of these labels, you will see one or more pictograms. These are the red diamonds with the black pictures on a white background.

***[Show a GHS-compliant label currently used in the facility and point out the pictogram(s).]***

Pictograms are meant to help you quickly identify the hazards associated with a chemical. There are nine different pictograms that represent different hazards. Today, we will focus on one specific pictogram: the “Exclamation Mark” pictogram. It is a red diamond, and inside the diamond is a black exclamation mark on a white background.

***[Show the large color replica of the “Exclamation Mark” pictogram.]***

So, what does this pictogram mean? Well, if you see this pictogram on a chemical label, it means that exposure to the chemical may irritate your skin or eyes, or skin contact may cause an allergic reaction.

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# HAZARD COMMUNICATION

It may cause you to become nauseated or sick but likely won't be fatal. It may cause you to become dizzy or drowsy, slow your reflexes, or reduce your alertness; or, it may make it difficult to breathe or cause you to cough.

The pictogram can also be used to indicate that releasing the chemical into the air can cause damage to the earth's ozone layer.

These hazards are not as severe as those represented by some of the other pictograms, but they should not be taken lightly. So, when you see this pictogram, be cautious and do things the right way, which includes following the Precautionary Statements on the label.

More specific information on the hazards of a chemical is listed in the Hazard Statement on the label and in the safety data sheet, or SDS, for the chemical.

***[Show a GHS-compliant label currently used in the facility and point out the Precautionary Statement(s) and Hazard Statement(s).]***

The SDS will also give you information on what personal protective equipment to use and what to do if you or a coworker is exposed to the chemical.

**[Show an SDS and/or describe the location(s) or methods of accessing SDSs.]**

**[Mention some of the chemicals in the facility that are labeled with the "Exclamation Mark" pictogram and where they are used.]**

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize our risk. So pay attention to the labels on the chemical containers, and take the time to review the SDS. It will help keep us all healthy and safe.





# HAZARD COMMUNICATION LABELS

## THE EXPLOSIVES PICTOGRAM

This talk informs employees of the meaning of the explosives pictogram, including identifying the specific hazards to which an employee may be exposed when using a chemical labeled with this pictogram and where the employee can go to get more information on protective measures to minimize associated risks.

### Materials to have on hand:

- A large, color replica of the explosives pictogram
- A Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-compliant chemical label used in the facility with an explosives pictogram
- The safety data sheet (SDS) for the same chemical labeled with the explosives pictogram
- The facility's Hazard Communication Plan

### Items for attendees to consider during the talk:

- Where would you get information about the chemicals you might be exposed to while doing your job?
- What are the hazards associated with the explosives pictogram?

## TALK

Your job requires you to work with various chemicals on a regular basis. Containers of hazardous chemicals at this facility are all labeled in the same way



and contain the same categories of information. You should take the time to read the labels on the chemicals in your work area and become familiar with the format and the types of information on the labels.

On each of these labels, you will see one or more pictograms. These are the red diamonds with the black pictures on a white background.

***[Show a Globally Harmonized System of Classification and Labelling of Chemicals, or GHS-compliant label currently used in the facility and point out the pictogram(s).]***

Pictograms are meant to help you quickly identify the hazards associated with a chemical. There are nine different pictograms that represent different hazards. Today, we will focus on one specific pictogram: the explosives pictogram. It is a red diamond, and inside the diamond is a black exploding bomb on a white background.

***[Show the large color replica of the explosives pictogram.]***

So, what does this pictogram mean? Well, if you see this pictogram on a chemical label, it means that this chemical is explosive, and it may include self-reactive substances or organic peroxides. Explosives are solid or liquid chemicals that can rapidly produce gas at such a temperature and pressure that when released, there is enough energy to cause damage to the surrounding area, but I think we all have a good idea of what an explosion is.

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# HAZARD COMMUNICATION LABELS

Self-reactive substances are solid or liquid chemicals that slowly decompose. The decomposition might be started by heat, friction, impact, or contact with other substances, but the result can be an explosion, fire, or release of toxic gases.

Organic peroxides are chemicals of a specific structure that may decompose at room temperature or higher. Again, the decomposition might be started by heat, friction, impact, or contact with other substances. These chemicals are capable of violent reactions at normal temperatures that can cause fires and explosions and may also release toxic gases.

***[Mention some of the chemicals in the facility that are labeled with the explosives pictogram and where they are used.]***

So, when you see this pictogram, be cautious and do things the right way, which includes following the Precautionary Statements on the label.

More specific information on the hazards of a chemical is listed in the Hazard Statement on the label and in the safety data sheet, or SDS, for the chemical.

***[Show a GHS-compliant label currently used in the facility and point out the Precautionary Statement(s) and Hazard Statement(s).]***

The SDS will also give you information on what personal protective equipment, or PPE, to use; what to do if you or a coworker is exposed to the chemical; how to safely handle, store, and dispose of the chemical; and how to handle spills and leaks.

***[Show an SDS and/or describe the location(s) or methods of accessing SDSs.]***

All explosives must be handled with care and properly stored. Be sure they are stored in an approved container; in a secure location; and away from any ignition sources, extreme heat, and sources of impact or friction. Improper storage and separation of explosives from incompatible chemicals can cause a fire or explosion. So again, check the SDS for storage instructions, and make sure you store these chemicals correctly.

***[Mention where in the facility explosives are to be stored and any chemicals used at the facility that may react with those explosives and that, therefore, should not be stored with the explosives.]***

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize our risk. So pay attention to the labels on the chemical containers, and take the time to review the SDS. It will help keep us all healthy and safe.



# HAZARD COMMUNICATION LABELS

## THE 'HEALTH HAZARD' PICTOGRAM



This talk informs employees of the meaning of the “Health Hazard” pictogram, including identifying the specific health hazards to which an employee may be exposed when using a chemical labeled with this pictogram, where the employee can go to get more information on protective measures to avoid exposure, and actions to take in the event of exposure.

### Materials to have on hand:

- A large color replica of the “Health Hazard” pictogram
- A Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-compliant chemical label used in the facility with a health hazard pictogram
- The safety data sheet (SDS) for the same chemical labeled with the “Health Hazard” pictogram
- The facility’s Hazard Communication Plan

### Items for attendees to consider during the talk:

- Where do I get information about the chemicals I might be exposed to while doing my job?
- What are the hazards associated with the “Health Hazard” pictogram?

## TALK

Your job requires you to work with various chemicals on a regular basis. Containers of hazardous chemicals at this facility are all labeled in the same way and contain the same categories of information. You should take the time to read the labels on the chemicals in your work area and become familiar with the format and the types of information on the labels.

On each of these labels, you will see one or more pictograms. These are the red diamonds with the black pictures on a white background.

***[Show a GHS-compliant label currently used in the facility and point out the pictogram(s).]***

Pictograms are meant to help you quickly identify the hazards associated with a chemical. There are nine different pictograms that represent different hazards. Today, we will focus on one specific pictogram: the “Health Hazard” pictogram. It is a red diamond, and inside the diamond is a silhouette of a person’s head and upper body with a white star shape on the chest.

***[Show the large color replica of the “Health Hazard” pictogram.]***

So what does this pictogram mean? Well, if you see this pictogram on a chemical label, it means that exposure to the chemical may lead to cancer or may

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# HAZARD COMMUNICATION

alter your DNA and lead to defects in future children. It can cause fertility problems in women and men and impact your ability to conceive healthy children. It may cause you to become hypersensitive to the chemical and have severe reactions any time you are exposed to the chemical in the future. It can cause a specific organ in your body to no longer function as it should, or it may get into your lungs and cause what is referred to as chemical pneumonia.

These are all potentially very serious health problems, so when you see this pictogram, be cautious and do things the right way, which includes following the Precautionary Statements on the label.

More specific information on the hazards of a chemical is listed in the Hazard Statement on the label and in the safety data sheet, or SDS, for the chemical.

***[Show a GHS-compliant label currently used in the facility and point out the Precautionary Statement(s) and Hazard Statement(s).]***

The SDS will also give you information on what personal protective equipment to use and what to do if you or a coworker is exposed to the chemical.

***[Show an SDS and/or describe the location(s) or methods of accessing SDSs.]***

***[Mention some of the chemicals in the facility that are labeled with the “Health Hazard” pictogram and where they are used.]***

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize our risk. So, pay attention to the labels on the chemical containers, and take the time to review the SDS. It will help keep us all healthy and safe.



# HAZARD COMMUNICATION LABELS

## THE OXIDIZER PICTOGRAM

This talk informs employees of the meaning of the oxidizer pictogram, including identifying the specific hazards to which an employee may be exposed when using a chemical labeled with this pictogram, and where the employee can go to get more information on protective measures to minimize associated risks.

### Materials to have on hand:

- A large, color replica of the oxidizer pictogram
- A Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-compliant chemical label used in the facility with an oxidizer pictogram
- The safety data sheet (SDS) for the same chemical labeled with the oxidizer pictogram
- The facility's Hazard Communication Plan

### Items for attendees to consider during the talk:

- Where would you get information about the chemicals you might be exposed to while doing your job?
- What are the hazards associated with the oxidizer pictogram?

## TALK

Your job requires you to work with various chemicals on a regular basis. Containers of hazardous chemicals at this facility are all labeled in the same way and



contain the same categories of information. You must take the time to read the labels on the chemicals in your work area and become familiar with the format and the types of information on the labels.

On each of these labels, you will see one or more pictograms. These are the red diamonds with the black pictures on a white background.

***[Show a GHS-compliant label currently used in the facility and point out the pictogram(s).]***

Pictograms are meant to help you quickly identify the hazards associated with a chemical. There are nine different pictograms that represent different hazards. Today, we will focus on one specific pictogram: the oxidizer pictogram. It is a red diamond, and inside the diamond is a black flame over a circle on a white background.

***[Show the large color replica of the oxidizer pictogram.]***

So, what does this pictogram mean? Well, if you see this pictogram on a chemical label, it means that this chemical is an oxidizer and a severe fire hazard. Oxidizers are not necessarily combustible, but they can easily break down to provide oxygen that can intensify combustion and allow other chemicals to ignite more easily. Oxidizers can be solids, liquids, or gases. When an oxidizer comes into contact with certain other chemicals, the resulting reaction may be unpredictable, violent, or even explosive.

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# HAZARD COMMUNICATION

***[Describe some of the chemicals in the facility that are labeled with the oxidizer pictogram and where they are used.]***

So, when you see this pictogram, be cautious and do things the right way, which includes following the Precautionary Statements on the label.

More specific information on the hazards of a chemical is listed in the Hazard Statement on the label and in the safety data sheet, or SDS, for the chemical.

***[Show a GHS-compliant label currently used in the facility and point out the Precautionary Statement(s) and Hazard Statement(s).]***

The SDS will also give you information on what personal protective equipment, or PPE, to use; what to do if you or a coworker is exposed to the chemical; how to safely handle, store, and dispose of the chemical; and how to handle spills and leaks.

***[Show an SDS and/or describe the location(s) or methods of accessing SDSs.]***

At a minimum, you must wear adequate eye protection and appropriate protective clothing and gloves when working with oxidizers.

Proper storage of oxidizers is extremely important. Store oxidizers in a cool, dry, metal cabinet away from heat and separated from any organic, combustible, or flammable substances. Improper storage and improper segregation of oxidizers from incompatible chemicals can cause a fire or explosion, even without an ignition source like a spark or flame. So, make sure you put these chemicals away, where they belong.

***[Describe where in the facility oxidizers are to be stored and any chemicals used at the facility that may react with the oxidizers, which, therefore, should not be stored with the oxidizers.]***

We all know there are hazardous chemicals at this facility, but if we understand and use the information available to us, we can minimize our risk. So, pay attention to the labels on the chemical containers, and take the time to review the SDS. It will help keep us all healthy and safe.





# HAZARD COMMUNICATION

## LABELS: WHAT DOES THE 'SKULL AND CROSSBONES' PICTOGRAM MEAN?



This talk discusses the meaning of a skull and crossbones pictogram on the label of a hazardous chemical container with which they will be working.

### Material to have on hand:

- Examples of real-life injuries in the workplace as a result of exposure to a related hazardous chemical
- The company's written hazard communication program
- A container label with the "skull and crossbones" pictogram

### Items for attendees to consider during talk:

- Do you know our chemical-handling procedures?
- Do you know where the first-aid station, showers, and eyewashes are located?

## TALK

Because we work with hazardous chemicals, we need to be familiar with a chemical's properties so we can take the proper precautions to avoid an exposure event. Labels on chemical containers are your first line of defense to know what you are using. The label provides special pictograms, hazard statements, precautionary statements, and signal words that will give you information quickly and easily about the hazards of the product.

Today we will discuss the skull and crossbones pictogram on the chemical label. The skull and crossbones pictogram identifies "acute and potentially fatal toxicity hazards." So, with a quick glance, you can see that the product you are working with can cause death or toxicity with short exposure to small amounts.

*[Pass out a chemical label for one of the chemicals used at your facility with the skull and crossbones pictogram to each employee attending this discussion.]*

When you see a skull and crossbones pictogram on a chemical container label, check the hazard statement(s) that appear on that label, too. The hazard statements can provide more information about the level of hazard you are dealing with, as well as the chemical's routes of entry into your body and the particular organs targeted by the chemical. Examples of hazard statements include "Toxic if swallowed" and "Causes skin irritation."

Also, pay particular attention to the precautionary statements appearing on the label, too. They list recommended measures that should be taken to minimize the potential for developing an acute—or relatively quick—reaction resulting from use or handling of the hazardous chemical. Precautionary statements that could appear with the skull and crossbones pictogram include "Wear protective gloves/protective clothing/eye protection/face protection" and "Do not eat, drink, or smoke."

So, watch for the skull and crossbones pictogram on some of the container labels here at work, and heed the warnings and specific precautions provided for use of that hazardous chemical.

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# HAZMAT SPILL RESPONSE: FIRST PROCEDURES TO FOLLOW



This talk discusses the first procedures an employee should follow if the employee discovers a spill or leak in the workplace of what might be a hazardous material (hazmat).

## Materials to have on hand:

- The facility's emergency response plan (ERP)
- Materials to seal off an area where a spill has occurred

## Items for attendees to consider during the talk:

- Are you familiar with the facility's ERP?
- Do you know what your first actions should be if you discover a possible hazmat spill?

## TALK

Poorly executed hazardous material, or hazmat, spill response procedures can expose coworkers and responders to hazardous substances, risking their lives and health, as well as potentially risking the health of the surrounding community and causing irreparable harm to the environment. Today, we're going to review the first response procedures you should take if you're the person who discovers what is, or what might be, a spill of hazmat. Remember that it is not your responsibility to identify the material or dispose of it, and this talk does not

address those additional and very important responsibilities.

## Review the Emergency Response Plan

To be properly prepared to respond to a hazardous spill, be sure to review your company's emergency response plan, or ERP. The ERP should clearly outline the procedures in case of a hazardous spill and will contain phone numbers to call for help and a list of the protective gear, equipment, and cleanup materials you'll need.

## Evacuate the Area

The first thing you should do if you see or smell a hazardous spill is evacuate the area. Move a safe distance away, and turn off any potential ignition sources if you can. Do not stop to take a closer look, particularly without proper personal protective equipment, or PPE. Any size spill can be dangerous. If you don't know the hazmat or how to properly deal with it, keep your distance, and wait for someone with more training or experience to identify the substance.

## Get Help

Do not try to contain or clean up a spill alone. Follow proper notification procedures as described in the ERP so you can get the right help in the shortest-possible

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# HAZMAT SPILL RESPONSE: FIRST PROCEDURES TO FOLLOW

time. If you happen to know the identity of the spilled material, let those people who are coming to help know of it as soon as possible.

## Alert Others

You should next seal off the area and alert coworkers. Keep people who are not involved in the spill response away from the hazard, and warn your fellow employees of the dangers.

## Assist Injured Coworkers

Look around for injuries, and if you find an injured coworker:

- Get the person to fresh air as soon as safely possible.
- Keep the person comfortable.
- Get medical treatment as soon as possible.
- Administer first aid only if you have received specific training for the type of injury.

Never try to retrieve a person from the spill area unless you're completely protected with appropriate PPE. You don't want to become a casualty yourself.

If you follow these response procedures, you will have played a crucial role in helping to avoid a potentially catastrophic situation.

# HEAD PROTECTION

## INSPECTING AND MAINTAINING YOUR HARD HAT



This talk discusses the proper procedures for inspecting and maintaining a hard hat to keep it in good working condition.

### Items to have on hand:

- Hard hat

### Items for attendees to consider during talk:

- When do you need to replace your hard hat?
- What parts of a hard hat should you inspect regularly?

## TALK

You wear a hard hat to protect your head from falling objects and other hazards at the worksite. But to really make sure your head is protected, it's important to do more than just put your hard hat on at the beginning of a shift and take it off when you leave work. You also need to take proper care of your hard hat to make sure it stays in good condition.

A hard hat has two basic parts: the shell, which is the outer portion of the hard hat; and the suspension system, which is the inside part that keeps the hat securely on your head. The suspension system is usually adjustable. Some hard hats also have chin straps.

Before you use your hard hat, you should inspect it for damage. Check the shell for cracks, dents,

scratches, and other signs of wear. If you find even a small crack, the hard hat should be replaced because small cracks will only spread and widen. Keep in mind that if you have stickers on your hard hat, they can cover up cracks, so try to keep stickers to a minimum.

Also inspect the suspension system to make sure it's in good condition. Check the webbing and buckles for cuts, frays, and other damage, and also make sure that the suspension is properly adjusted to fit your head. You may have to adjust it after you get a haircut or if your hair has grown much longer than usual. Proper fit is very important; if the suspension is either too loose or too tight, it won't do its job and absorb the shock of a blow to the head.

To maintain your hard hat and keep it in good condition, follow these do's and don'ts:

- **DO** clean the shell and suspension with mild soap and warm water. Rinse it and wipe it dry.
- **DON'T** store your hard hat in direct sunlight, as this can damage the shell.
- **DON'T** use paints, solvents, chemicals, adhesives, gasoline, or any similar substances on your hard hat. All of these materials can weaken the shell.

No matter how well you take care of your hard hat, it will need to be replaced eventually. Hard hats are generally marked with date codes that indicate when they were made in the underside of their

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# HEAD PROTECTION

brims. Familiarize yourself with these date codes so that you know when it is time to replace your hard hat.

Shells should generally be replaced every 2 to 5 years, depending on working conditions. If your hard hat is frequently exposed to direct sunlight, chemicals, or extreme temperatures, replacement at 2 years is usually necessary. Suspension systems should

generally be replaced at least every 12 months, depending on the environment you work in.

If your hard hat undergoes a strong impact (such as an object falling on it), replace it even if it looks like there is no damage. The hat may be weakened even if there are no visible defects, and it will not be able to protect your head from the next impact.

# HEARING PROTECTION

## ADDRESSING COMMON CONCERNS



This talk outlines the dangers of noise exposure in the workplace and responds to common employee concerns about wearing hearing protection.

### Materials to have on hand:

- Examples of hearing protection devices used at your facility

### Items for attendees to consider during the talk:

- What are some sources of noise exposure at your job?
- Why should you wear hearing protection?

## TALK

How can you tell if you're losing your hearing? You probably can't. Hearing loss is a process that creeps up on you with little or no warning. As sound reception becomes fainter, you may try to compensate without even realizing it—for example, by turning the TV or radio up louder, by asking others to repeat themselves, or even by leaning closer to the source.

Prolonged exposure to loud noises on and off the job accumulates over years and can eventually cause permanent hearing impairment or deafness. By the time you realize you have a problem, the condition is likely irreversible.

Don't wait until it is too late. Make sure you wear your hearing protection devices. You are ultimately

responsible for consistent and proper use of your protective equipment.

### Common concerns

Some of you might not want to wear hearing protection, so let's review some common concerns.

A frequent claim is that you are used to the noise and it doesn't bother you. This may be true, but exposure to noise does not build up a resistance to hearing loss. The reason the noise doesn't bother you may be because you have already begun to lose your hearing, so it's critical that you wear your hearing protection to prevent further hearing loss.

Why should you wear hearing protection if you've already lost some hearing ability? You could easily lose the remaining hearing you have left. Early hearing loss is concentrated in the higher frequencies. As it progresses, it spreads to the lower frequencies and can affect your understanding of normal speech. Although hearing protection devices cannot restore noise-induced hearing loss, they can prevent additional losses.

Another common complaint is that you can't hear your coworkers while you're wearing hearing protection. Hearing protectors are actually designed to reduce hazardous noise levels to a manageable range while still allowing you to hear the sounds you need to hear. There are a number of hearing protection options available that have a range of noise reduction ratings, so if you are having

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# HEARING PROTECTION

trouble communicating with your coworkers, let your supervisor know, and we can work together to find the right device for you.

You might also think that hearing protection devices are uncomfortable. They shouldn't be, but like new shoes or glasses, they do need a period of adjustment. If the discomfort persists, it could be a sizing problem, or you may need a different type of protector. Again, let your supervisor know, and we will find the best device for you.

## How can you help protect your hearing?

To make sure that we all do our part to protect our hearing, it is important that we receive cooperation from everyone. Besides openly discussing your

concerns, you can make a difference by doing the following:

- Follow all precautions, procedures, and practices for your job duties and your hearing devices to minimize excessive exposure to noise.
- Watch for warning signs that are posted in areas where high noise levels exist, and make sure you wear your protectors in those areas.
- Let your supervisor know about any operation or condition that presents a noise hazard that we may be unaware of.
- Above all, wear your hearing protection when you are exposed to excessive noise! It's the best line of defense against hearing loss.

# HEARING PROTECTION: CANAL CAPS



This talk reviews how workers should properly use and care for canal caps to protect their hearing from occupational noise exposure.

## Materials to have on hand:

- Examples of the types of canal caps used at your facility
- Approved cleaning supplies for your canal caps

## Items for attendees to consider during the talk:

- Where should you wear canal caps in your workplace?
- Are you taking care of your canal caps properly?

## TALK

Have you ever had to shout to be heard by a coworker an arm's length away or had difficulty hearing signals or safety warnings? Have you ever experienced ringing in your ears or temporary hearing loss after leaving work or headaches from trying to hear? These are signs that you could be exposed to potentially damaging noise at work, and

you're not alone. Hearing loss is one of the most common workplace injuries that affects millions of workers like you every year.

Fortunately, there are many ways to protect your hearing despite high levels of workplace noise, including wearing canal caps. Canal caps are soft, flexible pads on the ends of a lightweight plastic or metal headband that fit snugly to seal the entrance to the ear canal. The earplug tips of a canal cap may be a formable or premolded material. Some canal caps have headbands that can be worn over the head, behind the neck, or under the chin. Newer models have jointed bands that increase the ability to properly seal the ear canal.

Canal caps are comfortable, cool, and convenient. When the workplace is quiet, employees can leave the band hanging around their necks. When hazardous noise starts again, they can quickly insert the pads into their ears. However, canal caps provide less protection than earplugs or earmuffs, and they don't always seal the ear canal. Additionally, some people find the pressure from the bands uncomfortable, and canal caps are not recommended for long-term wear.

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# HEARING PROTECTION: CANAL CAPS

To use canal caps, hold the large ends of the pads, swivel them to place the tips into your ear canal openings, and push and wiggle the pads into your ear canals until they seal snugly.

## Care and maintenance

To make sure that your canal caps will always provide you with the best hearing protection, make sure you clean and maintain them properly.

Before putting them on, examine your canal caps for dirt, damage, or hardness. Throw them away if they are damaged or too hard. Regardless of their condition, replace your canal caps every

2 to 4 weeks to ensure optimal protection and performance.

To clean your canal caps, wash the pads and bands with mild soap and warm water and pat them dry with a towel. Do not treat your canal caps with any other substances, as the pads may degrade and compromise the level of protection they offer.

If you keep these tips for using and caring for your canal caps in mind, you will make positive steps toward protecting your hearing from occupational noise exposure.



# HEARING PROTECTION: EARMUFFS



This talk reviews how workers should properly use and care for earmuffs to protect their hearing from occupational noise exposure.

## Materials to have on hand:

- Examples of the types of earmuffs used at your facility

## Item for attendees to consider during the talk:

- Are you taking care of your earmuffs properly?

## TALK

Have you ever had to shout to be heard by a coworker an arm's length away or had difficulty hearing signals or safety warnings? Have you ever experienced ringing in your ears or temporary hearing loss when leaving work or headaches from trying to hear? These are signs that you could be exposed to potentially damaging noise at work, and you're not alone. Hearing loss is one of the most common workplace injuries that affects millions of workers like you every year.

Fortunately, there are many ways to protect your hearing despite high levels of workplace noise, including wearing earmuffs. Earmuffs help protect

you from moderate- to high-level noise and have three basic parts:

- The headband is spring-loaded and holds the ear cups against your ears.
- The ear cups are plastic cups that cover your ears and are filled with sound-absorbing material, such as foam.
- The ear cushions are filled with air, liquid, or foam and seal around the ears to provide comfort and protection.

Your earmuffs must fit tightly over your ears to block noise properly. If the air seal between the ear and the ear cushions is broken, the earmuffs will be less effective.

To use your earmuffs, adjust the headband so the cushions press equally against both ears. Don't place anything between the cushions and your ears, and pull long hair back and away from beneath the cushions. Make sure the ear cups fit comfortably and that the headband is not too tight or too loose.

## Care and maintenance

To make sure that your earmuffs will always provide you with the best hearing protection, make sure you clean and maintain them properly.

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# HEARING PROTECTION: EARMUFFS

To clean your earmuffs, disassemble them and wash the ear cups and ear cushions with mild soap and warm water. Rinse them thoroughly with clear, warm water. Do not dip the earmuffs in water or treat them with any other substances because this could damage the ear cushions. Use a soft brush to remove oils and dirt that can harden the ear cushions. Squeeze excess moisture from the cushions, and place them on a clean surface to air-dry.

Regularly inspect the ear cups and ear cushions for cracks and leaks. Discard and replace the earmuffs if the ear cups are visibly damaged or compromised.

Because ear cushions and foam inserts can degrade over time, replace them every 6 to 8 months under normal conditions; every 3 to 4 months with heavy use or in humid climates; or more frequently if they become stiff or cracked or don't seal.

If you keep these tips for using and caring for your earmuffs in mind, you will make positive steps toward protecting your hearing from occupational noise exposure.

# HEARING PROTECTION: EARPLUGS



This talk reviews how workers should properly use and care for earplugs to protect their hearing from occupational noise exposure.

## Materials to have on hand:

- Examples of the types of earplugs used at your facility

## Items for attendees to consider during the talk:

- What type of earplug is best suited for your job?
- Are you taking care of your earplugs properly?

## TALK

Have you ever had to shout to be heard by a coworker an arm's length away or had difficulty hearing signals or safety warnings? Have you ever experienced ringing in your ears or temporary hearing loss when leaving work or headaches from trying to hear? These are signs that you could be exposed to potentially damaging noise at work, and you're not alone. Hearing loss is one of the most common workplace injuries that affects millions of workers like you every year.

Fortunately, there are many ways to protect your hearing despite high levels of workplace noise, including wearing earplugs. Earplugs are a form of

hearing protection that are inserted into the ear canal. They seal the ear canal and prevent noise from reaching delicate parts of the ear. If they're carefully fitted, earplugs can cut noise levels by up to 20 decibels. For some perspective, the noise level of a power sander is 85 decibels, and the noise level of a jackhammer is 110 decibels. There are several types of earplugs that may work best for you.

*[Discuss the following types of earplugs as they apply to your facility.]*

**Disposable and semidisposable.** Some kinds of earplugs are disposable, while others are reusable. Disposable earplugs are usually made of waxed cotton, acoustical fibers, or other formable material. They are used once and then thrown away.

Semidisposable plugs are made of formable foam material designed to expand and conform to the shape of each person's ear canal. They can be used for about a week.

To use formable earplugs, slowly roll and compress the plug into a thin cylinder using clean hands to avoid getting dirt and germs in your ears. Pull up and back on the top of your ear with the opposite hand to straighten your ear canal. Insert the compressed plug into your ear canal, and hold your finger against the earplug until it expands. Your voice will sound muffled when the plug has made a good seal.

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# HEARING PROTECTION: EARPLUGS

Once your earplugs are in place, check the fit. Most of the foam body of the earplug should be within the ear canal. Try cupping your hands tightly over your ears. If sounds are much more muffled with your hands in place, the earplug may not be sealing properly. Take the earplug out and try again.

**Reusable.** There are two kinds of reusable plugs:

- Premolded plugs are usually made of silicone, rubber, or plastic. They often come in two or more sizes and can be fitted individually to each ear. Have the fit checked after a week if the plugs are not comfortable—you may need a different size plug for each ear. The earplugs should seal the ear canal without being uncomfortable.
- Custom-molded plugs are usually made of silicone rubber or a plastic compound. They are made to the exact fit of the ear.

To use premolded or custom-molded earplugs, reach around the back of your head, and pull outward and upward on your ear while inserting the earplug with the opposite hand. Push and twist the earplug until it fits snugly.

Though your employer will provide you with appropriate forms of hearing protection if your noise exposure at work reaches a certain level, it's up to you to wear them to protect your hearing.

## Care and maintenance

Clean and store your earplugs properly to make sure they always provide you with the best hearing protection.

To clean formable earplugs, wash them in mild detergent and warm water. Squeeze out any excess water, and let them air-dry. To clean premolded or custom-molded earplugs, wash them in warm, soapy water, and rinse well. Dry them thoroughly with a cloth. Never use alcohol, acetone, or chemicals to wash earplugs, and always follow the manufacturer's care instructions.

Always store earplugs in a clean location when not being used. You might use the container they came in as a storage box. Some earplugs may also come with their own carrying case.

Replace earplugs if they are no longer soft and pliable, become misshapen, and/or become cracked.

If you keep these tips for using and caring for your earplugs in mind, you will make positive steps toward protecting your hearing from occupational noise exposure.

# HOUSEKEEPING

## 'KEEPING HOUSE' AT WORK



This discusses the importance of good housekeeping in the workplace to prevent injuries.

### Materials to have on hand:

- Provide examples of real-life injuries in the workplace as a result of poor housekeeping practice
- Company policy concerning good housekeeping

### Items for attendees to consider during talk:

- Do you know what good housekeeping is?
- Can you think of some hazards associated with poor housekeeping?

## TALK

Most of you probably have had to help with the housecleaning chores at some time or another, so no doubt you all agree that good housekeeping practices are important in the home.

Good housekeeping is a key duty on the job, too. The orderly arrangement of work areas is vital to the safety of all workers, regardless of whether they are involved with machines and tools or with appliances and furniture.

Poor housekeeping can be a cause of accidents.

Falls often happen from tripping over loose articles such as tools left in aisles and work areas. Tripping hazards also exist where there are loose floors or

ripped carpets, or even trash left on the floors or in stairways.

The company has placed trash receptacles in several areas, so there is no excuse for wastepaper, soda bottles, or other materials being thrown on the floor.

A word of caution—if a bottle smashes on the floor, don't attempt to pick up the glass with your bare hands. Wear gloves, or sweep up the pieces. Use the same procedure for cleaning up nails and other sharp objects.

During periods of rain and snow, you and your co-workers will likely track water into the building. Wet floors cause slips and falls. They should be cleaned up as soon as possible, regardless of who was responsible for the mess.

Let's face it, your job is much easier to do when your work area is kept neat. Keep your tools and equipment off the floor and stored in the proper places. This not only reduces tripping hazards but also protects the equipment you use to earn a living.

Did you ever go to the closet at home to get your umbrella and have to pull it out from under a large pile of stuff? Things start falling all over.

The same principles apply when storing materials or equipment on the job. Poorly stacked items can fall and injure you or a coworker. Take time to make the stacks neat—and not too high. If possible, keep the little-used items at the back or bottom, leaving articles that are needed most often readily accessible.

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# HOUSEKEEPING

Just as a quarterback has to keep his eyes open for changes in the moves of opposing players, we need to keep a lookout for danger signals on the job in order to keep “our team” safe and successful. These danger signals include evidence of poor housekeeping—a spill, a tear in the carpet, articles projecting from a shelf, wires across a walkway, open drawers, and so on. These things must be corrected immediately, so if you can’t do so your-

self, let your supervisor know so he or she can see that it’s taken care of.

In closing, let’s emphasize that we’re all dependent on each other for safety. It’s up to each of us to hold up our end of the deal. When each of us keeps our own area in order, the whole worksite is a safer place in which to work.

# HYDROGEN SULFIDE

## EXPOSURE DANGERS AND SAFETY PRACTICES



This talk informs employees about the dangers of being exposed to hydrogen sulfide in the workplace and safety practices to follow when working with or exposed to this chemical.

### Materials to have on hand:

- A list or map of where in your workplace hydrogen sulfide is produced or used
- Examples of personal protective equipment (PPE) needed when handling or exposed to hydrogen sulfide

### Items for attendees to consider during the talk:

- Are you aware of the dangers of this chemical?
- Do you know what steps to take to avoid a fire or an explosion of hydrogen sulfide?
- Are you familiar with what to do to avoid dangerous contact with hydrogen sulfide?

## TALK

Hydrogen sulfide is a gas and is most dangerous when inhaled. Inhaling very large amounts of hydrogen sulfide can quickly cause respiratory paralysis, loss of consciousness, and death. Hydrogen sulfide is produced naturally from decaying organic matter and can be released

from sewage sludge, liquid manure, and sulfur hot springs, as well as with natural gas. It is also used in or is a byproduct in many industrial processes.

**[Note to presenter:** As applicable, include a reference to the industrial process that applies to your workplace, such as one of these from the following list:

- Petroleum production and refining
- Sewer and wastewater treatment
- Agricultural silos and pits
- Textile manufacturing
- Pulp and paper processing
- Food processing
- Hot asphalt paving
- Mining]

### Symptoms you may experience

Inhaling very large amounts of hydrogen sulfide can quickly cause serious health problems. Symptoms of overexposure to hydrogen sulfide can include:

- Headache and dizziness
- Confusion

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# HYDROGEN SULFIDE

- Decreased coordination
- Visual disturbance
- Nausea
- Drowsiness
- Eye, nose, and throat irritation
- Breathing difficulties

Prolonged exposure, even at lower levels, may lead to respiratory problems, appetite and weight loss, and headache. Hydrogen sulfide is not believed to accumulate in the body. Skin contact is not generally a problem with gases, though prolonged or major exposure could cause dermatitis.

## Use the correct personal protective equipment, or PPE

Proper protective clothing is essential when working with hydrogen sulfide. We have provided you with PPE made from materials that protect you from exposure to this substance. Here's what you need to do:

- Always read, if applicable, the hydrogen sulfide's safety data sheet, or SDS, to identify the particular type of protection you need, such as gloves, clothing, or eye protection.
- Because hydrogen sulfide is a serious inhalation hazard, workers at risk of exposure at or above permissible limits must use a self-contained breathing apparatus, or SCBA, for protection.
- Inspect all PPE before you use it, and remember to clean or dispose of PPE properly when you finish using it.

## Be alert to the chemical's presence

Hydrogen sulfide is a colorless gas that smells like rotten eggs. But because exposure to hydrogen

sulfide can make you unable to recognize the smell, you can't depend on its odor to warn you. So be aware of any tasks or locations that could present exposure to hydrogen sulfide. For example, be especially careful in confined spaces, which can include sewers, pits, manholes, tunnels, and wells.

It's important to follow all applicable OSHA and company rules and procedures to avoid exposure to hydrogen sulfide. To avoid inhalation of hydrogen sulfide:

- Use all assigned respirators.
- Be sure ventilation where you are working is adequate.

Don't attempt to rescue anyone exposed to hydrogen sulfide unless you are trained and equipped to do so. Anyone who inhales hydrogen sulfide should immediately get to fresh air and get medical attention.

## Take proper precautions

In addition to being an inhalation hazard, hydrogen sulfide is flammable and explosive. Follow these steps to avoid such occurrences:

- Keep hydrogen sulfide away from heat, flame, sparks, or any ignition sources.
- Keep hydrogen sulfide away from oxidizers that could cause dangerous reactions.
- Do not smoke in the vicinity of hydrogen sulfide.
- Read labels and SDSs carefully for storage and handling instructions.

Take the time to understand the dangers of hydrogen sulfide and the steps you can take to help keep yourself and your coworkers safe.

# INJURY & ILLNESS RECORDKEEPING

## EMPLOYEE INFORMATION AND ANTIRETALIATION



This talk informs workers of the company’s injury and illness reporting procedures. It also informs workers that the rule prohibits employers from retaliating against any employee who reports an injury or illness.

### Items for attendees to consider during talk:

- Do you know how to report a work-related injury or illness?
- Why are near misses important to report?
- Do you understand that you have a right to report any work-related injury or illness without fear of retaliation from the company?

## TALK

Nobody wants a worker injured. But if such an incident happens, we want you to know the procedures our company has in place to report a work-related injury or illness. “Work-related” means an incident in the workplace that results in an injury or illness or that worsens a preexisting injury or illness.

You have the right to report any work-related injury or illness without fear of retaliation from the company. In fact, it is against the law for us to take action against you for reporting that can be considered a punishment. We encourage all of you to report any work-related incident.

And we ask you to report them for a big reason. Even minor injuries are warnings that something happened that wasn’t planned. Unless we know

about injuries, or even those incidents that don’t result in injuries (known as “near misses”), we can’t correct the problem that led to the incident. Left uncorrected, it can easily happen again, and it may be more serious the next time. So report every incident or unsafe condition that causes, or could have caused, an injury.

Our company has specific steps for us to follow in the event of a work-related injury or illness. If you or a coworker is injured or becomes ill as a result of normal work duties, you should take the following steps:

1. If it is a life-threatening emergency or a death, call 911.
2. Inform your supervisor as soon as possible—regardless of the severity of the injury.
3. If you see an unsafe condition or behaviors, we encourage you to report it immediately to your supervisor so we can prevent an injury.
4. Cooperate in the investigation of the event so that we can get to the root cause and make the necessary corrections.

*[If you have specific forms for listing near misses or additional steps employees must take, include them here.]*

It is important to report work-related injuries and illnesses so that you can receive the necessary treatment and so that steps can be taken to prevent the future recurrence of the incident.

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# INSPECTING HARNESSSES

## Safety ToolBox Talks



This talk describes how to conduct inspections of the harness component of personal fall protection systems used in general industry.

### Materials to have on hand:

- Examples of the harnesses used in your workplace

### Item for attendees to consider during talk:

- When do you need to inspect harnesses?

## TALK

Wearing a personal fall protection system when you work at height can help prevent you from falling and suffering life-threatening injuries. But did you know that if you don't regularly and properly inspect your fall protection system for wear and damage, it might not save you when it counts? In one recent incident, a worker was killed when he fell from a ladder platform while inspecting a water tower. Although he was wearing a personal fall arrest system consisting of a harness, lanyard, and lifeline, the harness shredded due to wear and the force of the fall, causing him to fall 113 feet to the ground. You can avoid a similar incident if you follow these inspection tips for harnesses.

Before you use a harness for the first time during your work shift, inspect it for mildew, wear, damage, and other deterioration. Be sure to:

- Check the entire length of the webbing on both sides of each strap for frayed edges, broken fibers, pulled stitches, stretching, cuts, burns, and chemical damage. To do this, begin at one end of the harness, and grab the webbing with your hands 6 to 8 inches apart, bending the webbing in an inverted "U." Damaged fibers will look like tufts on the webbing surface.
- Check D-rings for distortion, cracks, breaks, and rough or sharp edges, and check D-ring back pads for damage. D-rings should move freely.
- Inspect buckles for distortion. The outer bars and center bars must be straight. On friction and mating buckles, pay special attention to corners and attachment points at the center bar. On quick-connect buckles, make sure the dual-tab release mechanism is free of debris and engages properly.
- Inspect buckle or D-ring attachments for any unusual wear, frayed or cut fibers, and broken stitching. Make sure the rivets are tight and that they can't be moved with your fingers. Body-side rivet bases and outside rivets should be flat against the material.
- Make sure buckle tongues are not distorted and that there are no sharp edges. They should fit the shoulder of the buckle and move freely back and forth in the socket, and the roller should turn freely on the frame.

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# INSPECTING HARNESSSES

- Check for loose, distorted, or broken grommets. Webbing should not have any additional punched holes.
- Look for any other cuts, tears, scuffs, mold, stretching, and deterioration, and make sure there are no alterations or additions to the harness that could make it ineffective.

## Addressing damage

If you find any damage, remove the harness from service immediately, and tag or mark it as unusable.

If any part of the personal fall protection system is involved in a fall incident, remove it from service immediately. Do not use it again until a competent person inspects the system and determines that it is not damaged and is safe to use. In the meantime, be sure your employer provides you with a replacement means of fall protection, and never perform work at height without it!

***[You may want to present other toolbox talk titles on how to conduct inspections of lanyards and lifelines in addition to this toolbox talk.]***

# INSPECTING HORIZONTAL LIFELINES



This talk describes how to conduct inspections of horizontal lifelines that are used as components of personal fall protection systems in general industry.

## Materials to have on hand:

- Examples of the lifelines used in your workplace

## Items for attendees to consider during the talk:

- When do you need to inspect lifelines?
- What should you do if your lifeline is damaged or worn?

## TALK

Wearing a personal fall protection system when you work at height can help prevent you from falling and suffering life-threatening injuries. But, did you know that if you don't regularly and properly inspect your fall protection for wear and damage, it might not save you when it counts? This is especially important for lifelines, which are the critical link between your fall protection system and an anchorage point. Unlike harnesses, which distribute fall forces over many components, lifelines bear the greatest concentrated forces during a fall. Failing to notice damage, wear, or other problems with your lifeline could lead to catastrophic results if you fall. Here are some inspection tips to make sure your lifeline gives you the best protection when you work at height.

## What is a lifeline?

A lifeline is a flexible line that connects the other components of your personal fall protection system to an anchorage. A sliding fitting, such as a rope grab or shuttle, connects to the line, and a lanyard connects your harness to the sliding fitting. A horizontal lifeline connects to anchorages at both ends and allows you to move back and forth across a work area. Before you use a lifeline for the first time during your work shift, inspect it for mildew, wear, damage, and other deterioration.

## Horizontal lifelines

To inspect a horizontal lifeline:

- Check all screws, bolts, nuts, and any other fastening devices to ensure they are not loose or missing and that they haven't been altered in any way.
- Look for rust, corrosion, or any other deterioration of the metal components.
- Inspect wire ropes for broken wires, synthetic ropes for broken threads, and for any other obvious damage.
- Check all sleeves and connectors for distortion, cracks, dents, and proper installation. Make sure that a qualified person supervised the installation of the horizontal lifeline.

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# INSPECTING HORIZONTAL LIFELINES

- Examine the lifeline's impact detection system. If the lifeline was involved in a fall, remove it from service immediately.
- Make sure the lifeline is not compromised by sharp edges, abrasive structures, or other hazards.
- If there are any other mechanisms on your specific lifeline, ensure you are inspecting them according to the manufacturer's instructions.

## Addressing damage

If you find any damage, remove the lifeline from service immediately and tag or mark it as unusable.

If any part of the personal fall protection system is involved in a fall incident, remove it from service immediately. Do not use it again until a competent person inspects the system and determines that it is not damaged and is safe to use. In the meantime, be sure your employer provides you with a replacement means of fall protection, and never perform work at height without it!

***[You may want to present other toolbox talks titles on how to conduct inspections of lanyards and harnesses in addition to this toolbox talk.]***

# INSPECTING LANYARDS



This talk describes how to conduct inspections of the lanyard component of personal fall protection systems used in general industry.

## Materials to have on hand:

- Examples of the lanyards used in your workplace

## Item for attendees to consider during talk:

- When do you need to inspect lanyards?

## TALK

Wearing a personal fall protection system when you work at height can help prevent you from falling and suffering life-threatening injuries. But did you know that if you don't regularly and properly inspect your fall protection system for wear and damage, it might not save you when it counts? In one recent incident, a worker was killed when he fell from a crane while performing repairs. Although he was wearing a personal fall arrest system consisting of a harness, lanyard, and lifeline, the lanyard's hook broke, causing him to fall 34 feet to the ground. You can avoid a similar incident if you follow these inspection tips for lanyards.

Before you use a lanyard for the first time during your work shift, inspect it for mildew, wear, damage, and other deterioration. Begin your inspection at one end and work to the opposite end, slowly rotating the lanyard so that you check the entire surface.

- Inspect snaps closely for hook-and-eye distortions, cracks, corrosion, or pitted surfaces. The latch, or keeper, should fit into the nose without binding and should not be distorted or obstructed. The keeper spring should produce enough force to firmly close the keeper, and the keeper lock must prevent the keeper from opening when it closes.
- The protective plastic sleeve, called the thimble, must fit firmly in the eye of the splice, and the splice must not have loose or cut strands. The edges of the thimble must not have any sharp edges, distortions, or cracks.

***[Include the following tips as they apply to your worksite's personal fall protection systems.]***

- For wire rope lanyards, look for cuts, frayed areas, and unusual wearing patterns on the wire. Broken strands will separate from the body of the lanyard.
- For web lanyards, bend the webbing over a piece of pipe and look at each side. This will reveal any cuts or breaks. Check for swelling, discoloration, cracks, and charring, which are signs of chemical or heat damage, and make sure there are no breaks in stitching. Inspect shock-absorbing lanyards in the same way, but also check for the warning flag or signs of involvement in a fall.
- For rope lanyards, look for any fuzzy, worn, broken, or cut fibers. The rope diameter should

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# INSPECTING LANYARDS

be uniform throughout, and weakened areas will appear as noticeable changes in diameter.

- Examine shock-absorber packs for burn holes and tears. Check the stitching for loose strands, rips, and deterioration.

## Addressing damage

If you find any damage, remove the lanyard from service immediately, and tag or mark it as unusable. If any part of the personal fall protection system is

involved in a fall incident, remove it from service immediately. Do not use it again until a competent person inspects the system and determines that it is not damaged and is safe to use. In the meantime, be sure your employer provides you with a replacement means of fall protection, and never perform work at height without it!

***[You may want to present other toolbox talk titles on how to conduct inspections of harnesses and lifelines in addition to this toolbox talk.]***

# INSPECTING SELF-RETRACTING LIFELINES



This talk describes how to conduct inspections of self-retracting lifelines that are used as components of personal fall protection systems in general industry.

## Materials to have on hand:

- Examples of self-retracting lifelines used in your workplace

## Items for attendees to consider during the talk:

- When do you need to inspect self-retracting lifelines?
- What should you do if you find damage?

## TALK

Wearing a personal fall protection system when you work at height can help prevent you from falling and suffering life-threatening injuries. But, did you know that if you don't regularly and properly inspect your fall protection for wear and damage, it might not save you when it counts? In one recent incident, a worker was killed when he lost his footing and fell from the derrick of an oil rig. Though he was wearing a personal fall arrest system consisting of a harness, lanyard, and a self-retracting lifeline, the lifeline snapped, causing him to fall 80 feet to the ground below. You can avoid a similar incident if you follow these inspection tips for self-retracting lifelines.

Before you use a self-retracting lifeline for the first time during your work shift, inspect it for mildew, wear, damage, and other deterioration.

- Inspect the unit's housing for loose fasteners such as nuts, bolts, rivets, or screws and for bent, cracked, distorted, worn, malfunctioning, or damaged parts.
- Test the lifeline retraction and tension by pulling out several feet of the lifeline and allowing it to retract into the unit. Always maintain a light tension on the lifeline as it retracts. The lifeline should pull out freely and retract all the way back into the unit. Do not use the unit if the lifeline does not retract.
- Check the lifeline for signs of damage, including cuts, burns, corrosion, kinks, frays, or worn areas. Inspect any sewn areas for loose, broken, or damaged stitching.
- Test the braking mechanism by grasping the lifeline above the impact indicator and applying a sharp, steady pull downward that will engage the brakes. There should be no slippage of the lifeline while the brakes are engaged. Once tension is released, the brakes should disengage, and the unit will return to the retractable mode. Do not use the unit if the brakes do not engage.
- Inspect snap hooks closely for hook and eye distortions, cracks, corrosion, or pitted surfaces. The

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# INSPECTING SELF-RETRACTING LIFELINES

latch, or keeper, should fit into the nose without binding and should not be distorted or obstructed. The keeper spring should produce enough force to firmly close the keeper, and the keeper lock must prevent the keeper from opening.

- The protective plastic sleeve, called the thimble, must fit firmly in the eye of the splice, and the splice must not have loose or cut strands. The edges of the thimble must not have any sharp edges, distortions, or cracks.
- Check the snap hook load indicator, which is located in the swivel of the snap hook. The swivel eye will elongate and expose a red area when subjected to fall arresting forces. Do not use the unit if the load impact indicator has been activated.
- Make sure labels are present and legible, and inspect each system component according to the manufacturer's instructions.

## Addressing damage

If you find any damage, remove the self-retracting lifeline from service immediately and tag or mark it as unusable. If any part of the personal fall protection system is involved in a fall incident, remove it from service immediately. Do not use it again until a competent person inspects the system and determines that it is not damaged and is safe to use. In the meantime, be sure your employer provides you with a replacement means of fall protection, and never perform work at height without it!

***[You may want to present other toolbox talks titles on how to conduct inspections of lanyards and harnesses in addition to this toolbox talk.]***

# INSPECTING VERTICAL LIFELINES



This talk describes how to conduct inspections of vertical lifelines that are used as components of personal fall protection systems in general industry.

## Materials to have on hand:

- Examples of the lifelines used in your workplace

## Items for attendees to consider during the talk:

- When do you need to inspect lifelines?
- What should you do if your lifeline is damaged or worn?

## TALK

Wearing a personal fall protection system when you work at height can help prevent you from falling and suffering life-threatening injuries. But, did you know that if you don't regularly and properly inspect your fall protection for wear and damage, it might not save you when it counts? This is especially important for lifelines, which are the critical link between your fall protection system and an anchorage point. Unlike harnesses, which distribute fall forces over many components, lifelines bear the greatest concentrated forces during a fall. Failing to notice damage, wear, or other problems with your lifeline could lead to catastrophic results if you fall. Here are some inspection tips to make sure your lifeline gives you the best protection when you work at height.

## What is a lifeline?

A lifeline is a flexible line that connects the other components of your personal fall protect system to an anchorage. A sliding fitting, such as a rope grab or shuttle, connects to the line, and a lanyard connects your harness to the sliding fitting. A vertical lifeline connects to an anchorage at one end and allows you to move up and down across a work area. Before you use a lifeline for the first time during your work shift, inspect it for mildew, wear, damage, and other deterioration.

## Vertical lifelines

When inspecting a vertical lifeline, inspect the hardware, including any snap hooks, ferrules, and thimbles, for damage, breaks, and distortion. Hardware must be free of sharp edges, burrs, cracks, worn parts, and corrosion. Hook gates must move freely and lock when closed. Make sure labels are present and legible, and inspect each system component according to the manufacturer's instructions.

If your lifeline uses synthetic rope:

- Inspect the entire length of the rope for wear. Material must be free of frayed strands, broken yarns, cuts, abrasions, burns, and discoloration.
- Make sure there are no knots, excessive soiling, paint buildup, or rust staining.

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# INSPECTING VERTICAL LIFELINES

- Check that rope splices are tight and that thimbles are held firmly by the splice.
- Look for chemical or heat damage indicated by brown, discolored, or brittle areas and for ultraviolet damage indicated by discoloration and splinters along the rope surface.

If your lifeline uses wire rope:

- Wear protective gloves when conducting your inspection.
- Inspect the entire length of the rope for broken wires by passing the cable through your gloved hands, flexing the rope every few inches to expose breaks. Do not pull broken wires out of the rope.
- Check for evidence of corrosion and any other visible deformities that would weaken the rope or interfere with the free movement of the sliding fitting.

## Addressing damage

If you find any damage, remove the lifeline from service immediately and tag or mark it as unusable. If any part of the personal fall protection system is involved in a fall incident, remove it from service immediately. Do not use it again until a competent person inspects the system and determines that it is not damaged and is safe to use. In the meantime, be sure your employer provides you with a replacement means of fall protection, and never perform work at height without it!

***[You may want to present other toolbox talks titles on how to conduct inspections of lanyards and harnesses in addition to this toolbox talk.]***

# INTRODUCTION TO WORKPLACE SAFETY



This talk is for new employees, temporary employees, and contractors. The talk discusses general safety hazards, protection against those hazards, and basic safety procedures to follow. You will need to provide attendees with more detailed hazard-specific training based on a Job Hazard Analysis (JHA) of their job function.

## Materials to have on hand:

- Chemical safety data sheets (SDSs), if applicable
- Personal protective equipment (PPE), if applicable
- Map of the facility illustrating the location of emergency equipment and emergency exits

## Items for attendees to consider during the talk:

- What are some hazards you might encounter on the job?
- What type of PPE can help you work safely?

## TALK

Today, we're going to talk about one of the most important parts about working at this facility: safety.

## General hazards

First, let's go over some general hazards:

**[Choose one or more of the following for your facility:]**

- **Chemicals.** Most chemicals are safe when used properly, but some can catch fire or explode under certain circumstances. In some cases, overexposure can cause skin or eye burns or health problems. We can prevent these outcomes by following safety procedures.
- **Tools and machinery.** The tools and machinery we use are designed to prevent injuries. But to do that, they must be used properly. That can include leaving machine guards in place; wearing appropriate personal protective equipment, or PPE; and following sensible precautions when using, repairing, or maintaining equipment.
- **Electricity.** Electricity powers our equipment, but it can cause fires, shocks, or burns if not used and maintained properly.
- **Housekeeping.** Housekeeping is an essential part of safety. Many on-the-job injuries are the result of slips, trips, and falls that could have been prevented by a clean, neat work area.
- **Material handling.** Material handling can be a hazard if you don't know how to lift properly or don't follow safety procedures when using mechanical material-handling equipment.

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# INTRODUCTION TO WORKPLACE SAFETY

## Identifying hazards

As you participate in our safety training programs, you'll learn how to identify hazards on the job. It's up to us to make sure you have the training and knowledge to identify hazards. It's up to you to pay attention to training programs, ask questions, and take advantage of the procedures and PPE that are available to keep you safe on the job.

## Protection against hazards

Next, let's go over some basic protection against any hazards you may encounter:

**[Choose one or more of the following for your facility, and fill in the blanks as needed:]**

- Each hazardous chemical container has a label that shows hazard information and safety instructions. Each chemical also has a safety data sheet, or SDS. SDSs are kept \_\_\_\_\_ and include information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical.
  - Machine guarding helps prevent injuries caused from accidental contact with equipment during operation. Lockout/tagout helps safeguard employees from the unexpected energizing or start-up of machinery and equipment or the release of hazardous energy during service or maintenance activities.
  - If you spot a spill, a fire, or another emergency, it's best to leave the response to trained employees. To report an emergency, notify your manager or \_\_\_\_\_. We also have fire extinguishers located \_\_\_\_\_ that can be used, after training, for certain small fires.
- First-aid kits are located \_\_\_\_\_, eyewash stations are located \_\_\_\_\_, and showers are located \_\_\_\_\_ so that you can follow your first-aid training to mitigate the effects of exposure to a hazardous chemical.
  - PPE has been selected to protect you against the specific hazards you may encounter. Using and maintaining PPE according to instructions helps you stay safe.

## Safety procedures

Finally, a safety program can only be effective if everyone makes safety his or her responsibility. You will get more specific training on identifying hazards, as well as more detailed safety procedures. However, it's important to keep basic safety procedures in mind. Be sure to:

- Report any accident, injury, or illness immediately.
- Inspect tools and protective equipment before use.
- Report any defective or malfunctioning tool, machine, or protective equipment item immediately.
- Wear appropriate PPE.
- Follow instructions on using tools and machines safely.
- Keep the work area neat and the aisles clear.
- Ask questions about anything you don't understand.
- Always be alert to possible risks or anything that just "doesn't seem right."



# JOB HAZARD ANALYSIS: PLAN AHEAD!



This talk discusses some of the basics of a job hazard analysis and how it can help reduce your employees' chances of being injured.

## Materials to have on hand:

- Job hazard analysis forms, if you have one
- Photos/videos of job tasks

## Items for attendees to consider during the talk:

- What are my employees' daily tasks?
- What are the steps of the tasks my employees perform every day?
- What are the hazards of my employees' tasks?
- What are some controls I can use?

## TALK

You've likely heard the expression "An ounce of prevention is worth a pound of cure." This is especially true when it comes to safety. In this case, the prevention is a planning process called a job hazard analysis, or JHA. A JHA focuses on job tasks as a way to identify and control hazards before the job starts. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after you identify

uncontrolled hazards, you will take steps to control them. Supervisors, you can use the findings of a JHA to eliminate and prevent hazards in your workplaces. This is likely to result in fewer worker injuries and illnesses; safer, more effective work methods; reduced workers' compensation costs; and increased worker productivity. The analysis also can be a valuable tool for training new employees in the steps required to perform their jobs safely.

## The JHA Process

- Start by breaking the job down into steps. These don't have to be extremely detailed, but they should capture the basic steps. For example, a JHA for changing a flat tire should include steps like removing lug nuts and removing the tire, but it does not need to mention removing the jack from the car or opening the trunk.
- Next, identify the hazards of each task. Ask yourself what could happen to your employees while performing the task. Consider some of the following common hazards:
  - Chemical exposure
  - Fire and explosion
  - Electrical
  - Falls

*Continued on page 2*

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# JOB HAZARD ANALYSIS: PLAN AHEAD!

- Noise
- Caught between
- Struck against
- Flying objects

Be sure to write down the potential consequences of the hazards, as well. This will help you identify especially dangerous tasks.

- Finally, apply controls to eliminate or reduce the hazards. Hazard controls should be applied in the following order, based on feasibility. Remember that the effectiveness of these controls goes down as you get lower on the list. If at all feasible, use the top options on the list.
1. Eliminate the hazard entirely by removing it, such as cleaning up an oil spill.
  2. Substitute something less hazardous for the task. An example would be using a less flammable brake cleaner.

3. Engineer the hazard out, like installing guards on a machine.
4. Use administrative measures such as shift rotations on hot days.
5. Finally, use personal protective equipment, or PPE, for any residual hazards.

# KNIFE SAFETY

## SAFETY TIPS TO AVOID THE MOST COMMON INJURIES



This talk discusses the most common causes of injury when using knives at work and several tips for avoiding injuries.

### Materials to have on hand:

- Knives used at the facility
- Examples of material to be cut

### Items for attendees to consider during talk:

- What situations while working with a knife could cause you to cut yourself?
- What is a good daily practice to make sure the knives you use are in top condition for safe use?

## TALK

Knives are one of those handy tools that everybody uses from time to time. People in all kinds of jobs use them, but they are also injured by knives—the high school student working in the supermarket produce department, the store worker who attempts to cut open a box, the butcher, even the restaurant salad chef. It’s easy to take this common tool for granted. Even small knives can cause damaging and sometimes crippling cuts.

There are a few common causes of injury that, when safe practices are followed, could almost eliminate most injuries from knives:

- The most common hazardous condition in using a knife at work is your hand can slip from the handle onto the blade. That often happens when the handle—or hand—is wet or greasy.
- Another common injury is the knife striking the free hand or the body. That can be caused by a dull knife that forces you to put too much pressure on the object you’re trying to cut, and the blade could slip and slice you or someone nearby. Another cause of this type of injury is when you are in a hurry or aren’t focused 100 percent on the cutting task.

To avoid the often painful and sometimes crippling injuries when you use a knife at work—or at home—remember these important safety tips:

**Select the right knife for the job.** No single knife is suitable for every job. For example, too large a blade is awkward to handle, and too small a blade makes the job more difficult than it should be. Retractable blades are safer if you need to carry the knife around with you. Serrated edges are better for some purposes like cutting cardboard, boxes, or rope where a clean, straight cut isn’t critical but it gets the job done quickly. Straight blades are preferred for most straight, clean-cutting situations. Be sure to choose the blade that’s best for the job, not just the one that’s the handiest.

**Use your knife safely and keep it in good working condition.** Even with such a simple tool, proper handling is essential. Be sure to follow these basic safe practices whenever you use a knife:

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# KNIFE SAFETY

- The cutting stroke should be away from the body whenever possible.
- Practice using the knife blade on a spare piece of material. That way, you'll make a better cut without making a mistake, and make sure that you're using the right blade for the task at hand.
- Be certain that you have enough room to move your arm freely as you cut.
- Keep handles dry and free of grease or oil—this practice will help keep your hands from slipping onto the blade.
- Never use a defective knife—for instance, one that has a broken handle or blade.

Check the blade often to make sure it has a sharp cutting edge. Change the blade in a utility knife as often as necessary to make sure it's sharp.

**Store knives properly.** Never leave an open knife blade lying loose on a work surface when you've finished with it. A toolbox or desk drawer is the best place for this type of knife. And be sure to retract the blade or keep a fixed blade in a sheath. It's easy to make a simple sheath out of heavy corrugated cardboard, which may spare someone a serious injury.

**Get first aid whenever you are cut by a knife.** Even the smallest cut should be cleaned and treated to help avoid infection. Injury records are full of cases in which someone neglected a small injury and blood poisoning developed, causing several weeks of lost time from the job.

**Don't sacrifice safety.** Respect your knife, use it safely, and make sure it's always in top shape.

# LABORATORY SAFETY

## HANDLING ARBOVIRUSES SAFELY



This talk discusses safe work practices for workers in laboratories who handle arboviruses.

### Materials to have on hand:

- Company bloodborne pathogen program
- Exposure control plan
- A copy of the *Biosafety in Microbiological and Biomedical Laboratories* guidelines

### Items for attendees to consider during talk:

- What are some exposure hazards in our facility?
- Do you know what “universal precautions” are?

## TALK

Many countries in the Americas now have local transmission of multiple arboviruses that can cause flu-like symptoms. Zika, chikungunya, and dengue virus infections are all being investigated for patients with these symptoms who have traveled within the previous 2 weeks to an area with ongoing transmission or are living in an area with ongoing transmission.

Our lab and our work practices meet the appropriate biological safety level—or BSL—for the type of testing we perform to identify these viruses. This is important for your safety.

But the most important safe work practice for infection control in our laboratory is following universal precautions. “Universal precautions” means handling any blood or other laboratory agents as infectious. Always follow universal precautions for potential bloodborne pathogens exposures. And, you can go beyond the universal precautions by adding several additional protections, like wearing gloves, gowns, masks, and eye protection.

The main laboratory exposure hazards involve accidental injection, contact of the virus with broken skin or mucous membranes, and bites of infected laboratory rodents or arthropods.

For these reasons, it is vital to follow universal precaution. You also need to make sure you:

- Practice good hand hygiene. This means washing with soap and water or using alcohol-based hand rubs containing at least 60 percent alcohol. Handwashing needs to be performed before and after any contact with potentially infectious agents and before putting on and upon removing personal protective equipment, or PPE, including gloves.
- Follow workplace standard operating procedures and use the engineering controls and work practices available to prevent exposure to blood or other potentially infectious materials.
- Do NOT bend, recap, or remove contaminated needles or other contaminated sharps. Properly

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# LABORATORY SAFETY

dispose of these items in closable, puncture-resistant, leakproof, and labeled or color-coded containers.

- Use sharps with engineered sharps injury protection.
- Report all needlesticks, lacerations, and other exposure incidents to your supervisor as soon as possible.

Zika and dengue viruses are classified as BSL-2 pathogens, while chikungunya virus is classified as a BSL-3 agent. All should be handled as described in the *Bio-safety in Microbiological and Biomedical Laboratories*, or *BMBL*, guidelines. We will perform a risk assessment to determine if there are certain procedures or specimens that may require higher levels of biocontainment. So, please refer to the most recent *BMBL* guidelines for the appropriate BSL handling procedures.

# LANDSCAPING SAFETY

## SAFE USE OF LAWN MOWERS



This talk discusses the hazards associated with operating powered lawn mowers and provides information on safe work practices to prevent injuries.

### Materials to have on hand:

- Lawn mowers in use at the worksite
- Personal protective equipment (PPE) intended to be worn while using a lawn mower
- Manufacturers' instruction manuals

### Items for attendees to consider during the talk:

- What are the most common causes of injuries involving lawn mowers?
- What is the safest way to clean the blades of a lawn mower?

## TALK

In a recent incident, a 22-year-old landscaping worker nearly lost his finger while inspecting the blades of the lawn mower he was operating. Although the worker shut down the mower before reaching underneath to check the blades for grass buildup, the blades had not come to a complete stop, and one of his fingers was struck by the blades. The finger was fractured and nearly severed, and the worker couldn't use his hand for a month.

This incident demonstrates just one of the many hazards you could face while using a lawn mower.

Many of you probably use lawn mowers at home, so you're familiar with how they work and might not think of them as very dangerous. But as the incident we just described shows, lawn mowers have the potential to cause very serious injuries.

The main causes of injuries during lawn mower incidents are contact with the mower's rotating blades, being struck by an object thrown by the blades, overturning, and being run over by a riding mower. To prevent these incidents, follow these do's and don'ts:

- **Do** review the manufacturer's instructions before using a mower, and familiarize yourself with all controls.
- **Do** inspect the mower before each use to make sure all protective devices, shields, and guards are in place and that all parts are in good condition.
- **Do** use Roll-Over Protective Structures, or ROPS, and seat belts, if your mower is equipped with them.
- **Do** inspect the area you are mowing, and clear away any sticks, rocks, trash, and other objects that could be caught in or thrown by the mower's blades.
- **Do** wear all necessary personal protective equipment, or PPE. At a minimum, you will need eye protection and hearing protection. Check with your supervisor to see if there's additional PPE you should use.

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# LANDSCAPING SAFETY

- **Do** make sure your shoes are sturdy and have a closed toe, and don't wear clothing that's too loose.
- **Do** drive the mower slowly, and avoid sudden starts, stops, and turns.
- **Do** use caution when mowing in areas with drop-offs, bodies of water, wet surfaces, and other potential hazards. Stay clear of these obstacles.
- **Do** watch out for pedestrians and other workers in the area, and avoid operating the mower too close to them.
- **Don't** use your hands or any other body part to unclog or clean under a mower deck. Use a tool or a stick, or spray it with a hose to remove buildup.
- **Don't** run the mower when the grass is wet.
- **Don't** start the mower unless you are in the driver's seat.
- **Don't** run the mower over gravel, rocks, or other objects that could damage or be thrown by the blades.
- **Don't** allow any passengers to ride with you on the mower.
- **Don't** operate a mower on steep slopes. Check the manufacturer's instructions to find out the maximum angle on which the mower is designed to operate safely, and always mow up and down, rather than side to side, on sloped terrain.
- **Don't** fill a gasoline-powered mower indoors, and don't add gasoline while the engine is hot or running.
- **Don't** leave a mower unattended while it is running; turn it off and take the key with you when you leave the mower to prevent anyone from starting it unexpectedly.

# LEAD

## Preventing lead exposure at construction jobsites



This talk will help construction employees on a jobsite prevent lead exposure.

### Material to have on hand:

- Personal protective equipment (PPE) used for lead protection at your facility

### Items for attendees to consider during talk:

- Do you know what construction activities may expose a worker to lead?
- Are you familiar with proper work practices to minimize lead exposure?

## Talk

Did you know that over 838,000 workers in construction are potentially exposed to lead? You can be exposed to this harmful and potentially toxic substance by participating in a variety of construction activities. Common activities include abrasive blasting, sanding, cutting, and burning steel that is coated with lead-containing paints. Exposure can also occur when you are installing, maintaining, or demolishing lead pipes and fittings, lead linings, leaded glass, soldering, or other work that involves lead metal or lead alloys. Taking a few simple steps to protect yourself from lead exposure can go a long way.

### Know your exposure limits

The most common exposure to lead occurs by simply breathing. Lead particles are often suspended in the air during certain construction projects. You can also be exposed to lead by absorption through the skin or even by ingesting lead when eating.

To protect yourself from exposure, check with your supervisor to determine the lead concentrations present in the workplace. *[Insert supervisor name]* must assure that you are not exposed to lead at concentrations greater than 50 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) over an 8-hour period without the proper protection.

### Prevent exposure

*[Note to presenter: Point out applicable PPE relevant to your site.]*

When the potential for lead exposure is present, you will be given PPE, such as a respirator and protective clothing. Depending on your job responsibilities, these may include the following:

- Coveralls or protective clothing
- Gloves
- Hats
- Shoes or disposable shoe coverlets

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# LEAD

- Face shields or vented goggles
- Respirator

Preventing exposure is knowing how to properly wear your PPE. Make sure that the equipment is the right size, fits securely, and is properly worn. Also, it is critical to know how to properly care for, maintain, and dispose of the equipment.

## Practice safety

Protecting yourself from lead exposure is extremely important, but it is also important to practice safety by implementing housekeeping measures; using hygiene facilities, change areas, and showers; and eating in designated, lead-free areas. To practice safety, you should do the following:

- Keep surface areas free from dust, and clean floors where dust accumulates.
- Use high-efficiency particulate arrestance (HEPA) filters on vacuums, and empty vacuums in a manner so as to not reintroduce lead.
- Do not consume food or beverages, tobacco products, or apply cosmetics in areas where lead is present.
- Remove all protective clothing or equipment exposed to lead, and shower at the end of a shift.

Your best bet to avoid lead poisoning or long-term health consequences from lead is to know the concentration of lead in your work area, prevent exposure by using PPE, and practice lead safety measures.

# LEAD

## RECOGNIZING LEAD HAZARDS AT CONSTRUCTION JOBSITES



This talk is intended to help construction employees identify and minimize lead exposure on the jobsite. Understanding the basics of lead and recognizing the risks are important steps to protect workers from the significant health hazards associated with lead exposure.

### Items for attendees to consider during talk:

- Do you know what construction activities may expose a worker to lead?
- Do you know the possible health hazards related to exposure from lead?

### TALK

Lead is a naturally occurring element found in the air, soil, and water and is a beneficial metal used in a variety of man-made products. It is a harmful and potentially toxic substance if it enters the human body. Any exposure to lead is bad. Lead can enter the body through inhaling it as a dust, fume, or mist or ingesting it through the mouth. Preventing lead exposure before it occurs is the most important step in protecting your health.

**Knowing your surroundings.** Exposure to lead varies in scope and depends on the project at hand. It is critical to know if your construction project may contain lead so that you can take the adequate health and safety precautions. Lead is frequently used for roofs, cornices, tank linings, and electrical conduits. It can also be found in metal products

such as sheet lead, solder, some brass and bronze products, and in piping and in lead-based paints.

*[Presenter note: Select the following that apply to your facility.]*

Lead exposure can also occur from the following construction activities:

- Ironwork
- Demolition and salvaging
- Renovation and remodeling
- Painting and lead paint abatement
- Electrical and plumbing work
- Heating and air-conditioning maintenance
- Highway and bridge repair

**Recognizing the symptoms.** Lead exposure can occur over a matter of days or over a long-term period. Any type of over exposure to lead can result in damage to the central nervous system, cardiovascular system, reproductive system, blood system, and kidneys. Lead can even be toxic if it is absorbed into the body in high enough doses. Common symptoms of lead exposure include:

- Loss of appetite
- Constipation
- Nausea

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# LEAD

- Excessive tiredness
- Headache
- Fine tremors
- Severe abdominal pain
- Metallic taste in the mouth
- Weakness
- Nervous irritability and anxiety

- Hyperactivity
- Muscle and joint pain or soreness
- Insomnia
- Numbness and dizziness

So to minimize your exposure to lead, it is important to know your surroundings, recognize the symptoms of lead exposure, and speak with your supervisor in situations where you may be exposed to lead.

# LIFTING FOR ELECTRICAL CONTRACTORS



This talk discusses how electrical contractors can safely lift heavy objects and how they can safely lift items for long periods of time.

## Materials to have on hand:

- Commonly lifted items such as spools, transformers, switchgears, junction boxes, conduits, and machinery
- Cardboard template for mounting heavy items

## Items for attendees to consider during the talk:

- How can you safely lift heavy items?
- How can you relieve your muscles from holding items for long lengths of time or from repetitive tasks?

## TALK

Have you ever had pain, pulled a muscle, or hurt yourself after lifting a heavy item? Overexerting yourself or muscling your way through the work and the stress repeated heavy lifting has on your body are the biggest causes of shoulder and back injuries.

**Lifting heavy objects.** When you lift large spools of wire, bundles of conduit, and heavy tools or machinery, you put a lot of stress on your muscles and spine. When lifting heavy objects, use smart lifting practices, including the power zone, to avoid injury. The power zone is found between your mid-thigh

to mid-chest. You use the power zone to lift objects close to the body. When you use the power zone to lift, you are using your arms and back to safely lift the most weight with the least amount of effort.

We'll discuss some do's and don'ts for lifting heavy objects.

**Do** use mechanical equipment, such as forklifts or duct lifts, to lift heavy objects.

**Do** use suction devices to lift junction boxes and other materials with smooth, flat surfaces. The temporary handle makes lifting easier.

**Do** lift materials at the power zone height. Maintain a neutral and straight spine. Keep your elbows tucked in close to your body, and keep the load as close to your body as possible while you lift.

**Do** use your legs, not your back, when lifting an item from a low location.

**Do** not twist or bend awkwardly while you lift. Bend at the knees and not at the waist to keep good posture and to keep your spine straight. You are less likely to strain your body when lifting this way.

**Do not** lift heavy loads that weigh more than 50 pounds by yourself. Have two or more of your co-workers help you lift.

**Do not** roll spools. Once they are in motion, spools are difficult and dangerous to stop rolling.

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# LIFTING FOR ELECTRICAL CONTRACTORS

**Do not** carry loads on one shoulder, under an arm, or in one hand.

**High-frequency and long-duration lifting.** If you have ever installed a junction box or another fixture, you know that you may have to hold some items for a long period of time, which means you are more likely to have a back or shoulder injury. When you are constantly straining or exerting your muscles, you can experience muscle fatigue, meaning your limbs will tire out more easily, and you won't be able to lift as well or as safely.

**Do** take regular breaks to give your muscles time to rest.

**Do** use a template made of lightweight material, like cardboard, to mark holes for drilling when mounting

heavy items, such as junction boxes and service panels. Using a template means that you won't have to hold the heavy item itself to level and measure for anchor mounts.

**[Show cardboard template.]**

**Do** use a stand or mechanical lift to hold large, awkward materials in place for fastening.

**Do not** perform the same task for too long. Rotate with your coworker on tasks that have to be done over and over again.

**Do not** work alone. Work together in teams. While a coworker lifts and holds items, you can assemble. Take turns rotating your tasks.



# LITHIUM-ION BATTERIES: HANDLING AND STORAGE



This talk covers safe practices for employees responsible for handling and storing lithium-ion batteries.

## Materials to have on hand:

- An example lithium-ion battery and an associated device used in your workplace
- Manufacturer's instructions for the lithium-ion batteries used in your workplace

## Item for attendees to consider during the talk:

- What are lithium-ion batteries used for in your facility?

## TALK

Chances are that you own at least one device powered by lithium-ion batteries. Lithium-ion batteries are rechargeable batteries that are often used to power cellphones, hand-held power tools, appliances, electric vehicles, energy storage systems, and many other devices. Lithium-ion batteries have a high energy density, which means they store a large amount of energy in a small amount of space.

Lithium-ion batteries are normally safe to use. If defective or if handled, used, or stored improperly,

however, they can cause serious accidents. Following safe practices when working with lithium-ion batteries will help protect you.

## Handling

First and foremost, you should always follow the manufacturer's instructions for the batteries you are working with and use batteries as they were intended to be used with the devices they were designed for. It is especially important to only use the charger that came with a particular battery because it may have necessary safety features that other chargers don't have. For instance, many battery chargers are designed to turn off when the battery is fully charged in order to prevent overcharging.

Lithium-ion batteries that are damaged or defective are more likely to cause accidents. Batteries can be damaged by physical impacts from being dropped, crushed, or punctured. Exposure to temperatures above 130 degrees Fahrenheit can cause a buildup of pressure in the battery cells, leading to leaks, fire, and/or explosion. Overcharging is one way that batteries can become overheated and potentially ignite. Additionally, if a conductive material such as metal comes in contact with both the negative and the positive ends of the battery, it can create a short

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# LITHIUM-ION BATTERIES: HANDLING AND STORAGE

circuit and cause the battery to quickly heat up, potentially leading to fire.

Follow these general safety precautions when working with lithium-ion batteries:

- Protect batteries from physical impact and vibration.
- Do not wear metal jewelry or accessories.
- Let batteries cool down before charging.
- Use a designated charging area that is free of flammable and combustible materials.
- Keep as much space as possible between charging batteries to prevent transfer of heat.
- Never use damaged or defective batteries.

Lithium-ion batteries must be inspected regularly for signs of damage, especially if they are used close to the body, such as in wearable body cameras. Do not use batteries if you notice an odor, a change in color, excessive heat, smoking, dents, swelling, cracking, leaking, or hissing noises. If you observe any of these signs, remove the affected batteries from service immediately, and notify your supervisor. The batteries will need to be safely and properly disposed of as soon as possible.

***[See the toolbox talk “Handling Universal Waste—Lithium Batteries.”]***

## Storage

Proper storage of lithium-ion batteries is also critical to prevent accidents. Follow these safe storage tips for lithium-ion batteries:

- Store batteries in a dry, room-temperature location and out of direct sunlight.
- Batteries must be stored away from anything that could catch fire, such as flammable and combustible materials.
- Keep the minimum number of batteries stored as possible in fire-resistant containers.
- Do not store batteries at full charge. Many chargers have a storage setting that will allow you to set them to the appropriate charge.
- Do not store any defective or damaged batteries with useable ones. Place damaged batteries in a safe location, away from other batteries and ignition sources, until they can be properly disposed of.

If you follow these tips for handling and storing lithium-ion batteries, you will be well protected from potential injury. Remember, lithium-ion batteries are very safe to use when they're in good condition, so make sure you know the signs of damage to look out for.

# LOADING DOCK SAFETY: SAFE WORK PRACTICES



This talk discusses safe practices for warehouse workers who work on loading docks.

## Material to have on hand:

- An example of a visual warning or barrier used near the loading docks at your facility

## Items for attendees to consider during the talk:

- What hazards do the tasks you perform at the loading dock present?
- Do you currently follow safe practices for working in the loading dock area? Why or why not?

## TALK

You may not think of the warehouse as a particularly hazardous place, but the fatal injury rate for the warehousing industry is higher than the national average. In addition to the risks presented by manual lifting and handling and using material-handling equipment, warehouse workers face a number of other hazards. In particular, the loading dock is one of the most hazardous areas of the warehouse. Fortunately, there are a number of safe practices that you can follow to address these hazards and to ensure your safety while working in a warehouse.

If you work in the loading dock area, keep these safety tips in mind:

- Keep clear of dock edges, and always be aware of the activity around you. Pay special attention to the position of forklifts and other workers.
- Open tractor-trailer doors carefully, standing to one side and stepping back to minimize the hazard of falling objects. Loads can shift during transit in improperly loaded trailers, which can expose the person who opens the trailer door to the hazards of falling boxes or product.
- Use caution when working near open or exposed dock doors, and make sure there are clear visual warnings and barriers near dock edges.
- Always close dock doors when there is no trailer in the dock to eliminate a fall hazard.
- Never jump from the loading docks, which puts unnecessary strain on your knees, feet, and back and can result in serious injuries.
- Make sure the dock plate is in place before moving from the dock to the trailer to avoid getting caught in the gap.
- Communicate clearly with truck drivers to prevent loading dock separation accidents. One type of loading dock separation accident, called an early departure, occurs when a driver

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# LOADING DOCK SAFETY: SAFE WORK PRACTICES

of a truck that is not secured to the loading dock moves away from the dock while forklift operators or other workers are unloading or loading the truck. These types of accidents can cause serious, long-term injuries or fatalities. Use hand signals, lighting systems, signs, or mobile devices to help prevent these events by making sure the driver is aware of what is happening at the dock.

If you follow these safe practices for working on a loading dock, you can help prevent avoidable injuries for yourself and your coworkers.

# LOADING DOCK SAFETY

## USING DOCKBOARDS



This talk explains the necessary safety steps to take when using dockboards on loading docks to prevent accidents.

### Materials to have on hand:

- Dockboards in use at the facility

### Points to consider:

- What are the main hazards of using a forklift on a dockboard?
- What safety features should dockboards have?

## TALK

Dockboards are useful devices for bridging the gap between a loading platform and a truck or other vehicle while loading and unloading materials. They are commonly used on loading docks and may seem very simple. However, there are some important safety practices to keep in mind when using dockboards.

One of the most common hazards of working on a dockboard is the risk of a forklift running off its edge while loading or unloading materials. Incidents like this can cause serious injuries and damage to materials. Injuries can also occur if the dockboard moves out of place while workers, either pedestrians or forklift operators, are on it, as well as during handling and positioning of the dockboard.

To prevent such incidents, follow these safe practices:

- Make sure dockboards can safely support the weight they need to hold. Make sure to account for the weight of materials being transferred, the weight of the forklift or other equipment being used to transfer materials, and the weight of the people doing the loading and unloading.
- Use dockboards that have built-in runoff protection, unless there is no hazard of running off the dockboard edge.
- Secure portable dockboards by anchoring them in place or using equipment to prevent them from moving out of a safe position.
- If it is not possible to secure the dockboard, make sure there is enough contact between the dockboard and the surfaces it's connecting to prevent it from moving out of a safe position.
- To prevent the dockboard from moving out of place while workers are on it, take steps to prevent the truck or other vehicle that materials are being loaded into or out of from moving. Wheel chocks and sand shoes are two possible means of accomplishing this.
- When using a forklift on a dockboard, drive carefully and slowly. Make sure there is enough space for you to maneuver safely.
- If the dockboard is 4 feet (ft) or more above a lower level, make sure it has a guardrail system

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# LOADING DOCK SAFETY

or handrails to protect you from falling. The only time this is not required is if the dockboard is only used for material handling operations using motorized equipment and you will not be exposed to fall hazards greater than 10 ft on the dockboard.

- Make sure that the dockboards you use have handholds or other means for handling them safely.

Finally, it is important to keep dockboards in a clean and safe condition. This means inspecting them for damage every time you use them, cleaning up spills promptly to avoid slips and falls, and keeping them free of mud, water, and debris as much as possible. Before working on a dockboard, correct any hazardous conditions you have the training and ability to fix. If the dockboard is damaged, report it to your supervisor, and do not use it until it has been repaired.

# LOCKOUT/TAGOUT

## THE CASE OF THE JAMMED MACHINE



This talk discusses the safety procedures that machine operators should follow to protect themselves from injury when a machine becomes jammed.

### Materials to have on hand:

- Examples of locks and tags
- A jammed machine

### Items for attendees to consider during talk:

- What's the first thing to do when the machine you are operating gets jammed?
- Who is authorized to apply locks and tags on your machine for servicing?

## TALK

Today we will review an actual incident investigation where an employee in our industry lost several fingers trying to clear a jammed machine, in this case a shearing machine for cutting rolls of industrial air filter media. This incident had real-life implications for the worker, the worker's family, coworkers, and his employer. This case is a good example of the need to safely clear jammed machines of any kind.

A 42-year-old worker was operating a shearing machine used to cut sheets of air filter media. The machine got jammed with the media. The worker opened the side of the machine to access the material that was stuck and tried to pull it through the

machine. He reached into the shear section, or point of operation, of the machine. Right then an electric eye on the machine that activates the shearing ram to cut was triggered. No one knows exactly how the electric eye was triggered; it could have been by another employee's arm or hand, or even by the material itself as the worker pulled on it. The shearing ram started up and dropped a blade that cuts the filter media, cutting off three fingers on the worker's left hand.

What would you do if the machine you are operating got jammed? The temptation is to fix the machine as quickly as possible so you can continue working—but that decision is a bad call if you bypass safety guards and don't follow lockout/tagout procedures.

***[For the following paragraph, discuss the source(s) of power to the machine that will be shut off or disconnected: electricity, compressed air, hydraulic, gravity, steam, chemical, etc.]***

The first thing to do when a machine jams is to shut off the power supply. If you can't do that yourself, notify a supervisor or someone in charge who can shut it down. Never put yourself in danger by exposing your body to moving machinery parts, including the point of operation. Never reach around a guard or try to remove a guard in an attempt to fix a machine.

Once the machine is turned off, make sure other workers who may be affected by the shutoff are aware. If you are not authorized and trained to lock

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# LOCKOUT/TAGOUT

out or tag out machines, ask your supervisor or other person in charge of your operation what needs to be done next once the power supply is shut off.

The next step—to be done only by an employee authorized to do so—is to lock, block, or tag out the shutoff/restart device so that it is completely isolated from its source of energy so someone can't inadvertently restart the machine, like the incident of the jammed machine we talked about earlier. Keep in mind that control devices integrated into the machine, such as push buttons, selector switches, and other control circuit-type devices are not isolating devices for the energy source.

For those of you who are authorized and trained by the company to lock out and tag out machines, fol-

low all the safety procedures for shutdown, lockout/tagout, clearing the jam, and restart after the jam is cleared.

The authorized person in charge of lockout and tagout will notify you and other affected workers that the machine is going to be locked out for service or repair. Stay clear of a machine when it is locked out, and never tamper with a lock or attempt to start a machine that is locked out.

Wait for authorized employees to tell you it's OK before using equipment.

Verify that the machine is safe to operate after servicing or repairs have been completed and locks and tags have been removed.

# LOCKOUT/TAGOUT AFFECTED EMPLOYEE PURPOSE AND USE OF LOCKOUT DEVICES



This talk discusses the purpose and use of hazardous energy control procedures for “affected” employees, such as those who perform normal equipment operations or those who perform servicing and/or maintenance under the protection of normal machine safeguarding. It is not designed for the authorized person, but such persons can use it as a refresher. This talk does not apply to equipment that is powered by a plug-in power cord that is under the exclusive control of the person operating it.

## Materials to have on hand:

- Examples of locks and tags used at the facility
- A machine or equipment that is a source of hazardous energy

## Items for attendees to consider during talk:

- What is an example of a machine or equipment at the facility that could contain hazardous energy?
- What should you do if you see machinery or equipment with a lockout or tagout device on it?

## TALK

Every year, people are badly hurt or killed on the job by machinery that is inadvertently turned on or continues to run while someone is still working in it or on it. Many of those incidents can be prevented by following lockout and tagout procedures to turn off machinery that is being serviced or repaired and

by taking actions to ensure it can't be accidentally restarted before the work is done.

Hazardous energy can be live or stored electricity, heat, steam, pressurized fluids or chemicals, or a machine or equipment with parts that are still moving—or have the potential to move—after shutoff. For example, recently, a worker was inside a cement mixer that had been turned off, cleaning it. Another worker, who didn't know anyone was inside the machine, turned it on, and the worker inside was killed. Other good examples of machinery or equipment that contains or stores hazardous energy are presses, power saws, conveyors, pumps, production equipment, and trash compactors.

Lockout and tagout devices both prevent access to hazardous energy and warn you to keep away from it. Lockout devices prevent machinery or equipment from being turned on during servicing and maintenance and prevents machine and equipment parts from moving, usually by using locking or blocking devices. Tagout devices warn you, usually with warning tags, not to use the equipment. Tags are also used in situations when it is not possible to place locks on controls or parts.

When you see locks or tags on a piece of equipment:

- Leave all lockout and tagout devices in place while authorized employees are servicing or repairing machinery.

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# LOCKOUT/TAGOUT AFFECTED EMPLOYEE

- Wait for authorized employees to tell you it's OK before using equipment.
- Verify that the equipment is safe to operate after servicing or that repairs have been completed and locks and tags have been removed.

If you operate machinery or equipment, you should understand the procedure authorized employees follow to lock out machines or equipment, even though you don't perform it:

1. First, an authorized employee should notify affected employees such as yourself of the planned lockout or tagout.
2. Second, the authorized employee will shut down the machinery or equipment.
3. Next, the authorized employee will isolate the equipment from all energy sources.
4. He or she will then lock or tag out the energy isolation device to prevent unexpected start-up.
5. Then, he or she will release all stored energy from the equipment, such as steam or hydraulic pressure lines, or restrain it from moving or activating—as in the case of blocking to prevent movement of rotating parts or cylinders.
6. Finally, the authorized employee will test the machine—that is, there should be an attempt

to restart it—to make sure the power source has really been isolated and equipment actually de-energized.

Following proper restart procedures after lockout/tagout is as important for safety as the original shut-down. You may be on hand for the restart, so you should know what will happen:

1. First, the authorized employee who applied the lock or tag inspects the equipment carefully to make sure that nonessential items such as tools or old parts have been removed and that all components are intact.
2. Second, that authorized employee clears everyone else away from the equipment and notifies you that all lockout and tagout devices are about to be removed and that the equipment is about to be restarted.
3. Next, the authorized employee removes the locks and tags and reactivates any isolation devices that had been deactivated.
4. Finally, the authorized employee restarts the machinery or equipment.

If you've witnessed this procedure, you've notice how careful authorized employees are to follow all the steps. Although you are not responsible for these procedures, it's important to remember the purpose and use of lockout and tagout devices.

# LOCKOUT/TAGOUT AUTHORIZED EMPLOYEE

## COMMON MISTAKES TO AVOID

This talk discusses common mistakes made by authorized employees carrying out lockout and tagout procedures and how to avoid them.

### Materials to have on hand:

- Equipment subject to lockout/tagout requirements
- Examples of locks and tags used for lockout/tagout at the facility

### Items for attendees to consider during talk:

- What's the shortest amount of time you can service or repair equipment that usually requires lockout, without the need to perform the procedure of lockout/tagout?
- Are there situations when you think the lockout or tagout procedure is really a waste of time?

## TALK

As you know, any powered equipment is potentially dangerous—even when it's supposed to be shut down! Many preventable injuries occur when somebody turns on a machine that other employees are working on. "I didn't know anyone was working on it" is the usual alibi in accident investigations.

Injuries that occur when wrong assumptions about safety are made are often very serious, including



amputations, serious fractures, and sometimes death. There is one sure step you, as the person authorized to perform lockout and tagout, must take to prevent such incidents from happening: Make certain that power cannot possibly reach machinery while you are working on it.

***[State each mistake listed below and ask attendees if they have ever seen the mistake happen and what they would do to prevent it from happening to them.]***

The following are some common mistakes in lockouts/tagouts. See how many you have seen happen or that you've been involved with:

**Mistake 1:** "This job will only take a few minutes. I don't need to use a lock—I'll just shut it down." This is one of the most common mistakes that leads to totally preventable injuries.

Always assume this universal condition: If it can be turned back on, it will be turned back on.

**Mistake 2:** Your coworker shuts it down and correctly locks it out. Then you place your lock through his lock. When he finishes up first, he removes his lock and leaves yours lying on the ground near the switch. Now you have no protection.

Always use a group lockout device, group lockbox, or comparable setup when more than one person is servicing the equipment.

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# LOCKOUT/TAGOUT AUTHORIZED EMPLOYEE

**Mistake 3:** You're afraid you're going to lose the key, so you leave it in the lock. This is an incomplete lockout and does not guarantee the equipment will stay locked out.

Put a durable tag on the key with your name on it to make it easier to find. If you cannot carry a key, consider replacing the keyed lock with a combination lock.

**Mistake 4:** "Joe, could you take my lock and shut off the machinery and lock it out while I get my tools together?" Don't depend on the other guy! Always do the shutoff and lockout yourself.

**Mistake 5:** You locked out the control circuit on the equipment and thought that was good enough. Wrong! Also lock out the main disconnect or switch. This is especially critical for equipment activated with

sensors that can cause a machine to operate without anyone pressing any start buttons.

**Mistake 6:** Everything is correctly locked out. You only have an hour to finish the job, so the next thing you do is start work on maintenance or repairs. Stop! Did you miss a step? Before you do anything after lockout, take a few moments to test the controls to make sure they are definitely inoperative.

As you can see, it is up to you, the employee, to perform a proper lockout. Ask to see your company's written lockout and tagout procedures for the equipment you are responsible to service. Make sure you have received all the training you need and understand exactly what to do. Your life may depend on it!

# LOCKOUT/TAGOUT FOR 'OTHER' EMPLOYEES

## HOW TO IDENTIFY LOCKS, TAGS, AND ISOLATION DEVICES



This talk discusses how “other” employees who work in areas where lockout/tagout procedures are used can identify the various locks, tags, and isolation devices that keep machines and equipment shut down during servicing and repair.

### Materials to have on hand:

- Sample energy isolation devices, locks, and tags used in the facility for lockout/tagout operations
- Machines and equipment subject to lockout/tagout requirements

### Items for attendees to consider during talk:

- Can you tell the difference between an isolation device, a lockout device, and a tagout device?
- Describe at least one reason why a machine or equipment is still considered dangerous when shut down?

## TALK

All of you work around machines and equipment that are temporarily shut down for repairs or maintenance. Who would think that these shutdowns can actually be very dangerous, and sometimes deadly, operations?

The reason they’re dangerous is it’s often very easy for someone, or even an automated process, to

inadvertently start up the equipment and injure or kill anyone who is working on them. Also, many types of equipment still have energy “stored” or contained in them that can release at any time, such as presses, power saws, conveyors, pumps, and trash compactors.

Hazardous energy includes pressurized hoses, compressed springs, electricity, or chilled or hot substances that can injure people. It includes machine or equipment parts that are still moving—or have the potential to move—after shutoff. The spinning motion of a flywheel is an example of energy that can be dangerous. Steam stored in a pipe can also release stored energy and cause injury after shutoff.

Never try to restart or run machinery or equipment that is locked out or tagged out, and never try to remove or bypass lockout or tagout devices. Only someone specifically authorized to perform lockout and tagout procedures is allowed to use or handle the devices. If you don’t know what to do, ask an authorized person.

You need to be able to identify the three primary types of devices used to protect you from the hazardous energy of machines or equipment: energy isolation devices, locks, and tags.

### An energy isolation device

- Before any service or maintenance is performed on a machine, before there is any possibility that there could be an unexpected start-up or release

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# LOCKOUT/TAGOUT FOR 'OTHER' EMPLOYEES

of energy that could cause an injury, an isolation device is used.

- An energy isolation device is used to cut off the machinery or equipment from its energy source.
- Push buttons, selector switches, interlocking gates, and other control circuits located on a piece of equipment are NOT examples of energy isolation.
- Examples of an isolation device include an electrical circuit breaker or switch located in an electrical panel on a wall away from the equipment; or a valve to control liquid or gas pressure, such as a pipeline valve leading to equipment; or a machine block.

## A lockout device

- A lockout device physically prevents access to the controls to turn the machine or equipment on or off.
- Any machine with a power source has to be locked out when the unexpected start-up or release of stored energy could cause injury to employees.
- The lockout has to make the machine inoperative and immovable.
- Lockout devices have to be strong and durable enough to prevent removal except with bolt cutters or other metal cutting tools.
- Lockout devices have to include a tag or other legible means to identify the employee who applied the device. Examples include a padlock or combination lock, a block, chain, multilock hasp, wheel valve cover, or ball valve cover.

## A tag or tagout device

- A “tag” is a prominent warning device with a means to attach it securely to an energy-isolating device. The writing on the tag has to indicate that the energy-isolating device and the equipment being controlled cannot be operated until the tagout device is removed.
- A tag or tagout device is often used along with a lockout device, and it has to be used whenever the energy-isolating device is not lockable.
- Tags or tagout devices warn people not to start up the machine or equipment.
- Tagout devices are for warning purposes only and do not control hazardous energy.
- Tags have to be readable and legible with phrases such as “Do Not Start,” “Do Not Open,” “Do Not Close,” “Do Not Energize,” or “Do Not Operate,” so that anyone working near them can notice and understand them.
- They have to be attached securely to the isolating device at the same place a lockout device would be attached. They have to be durable so that they cannot be crumpled or made unreadable.
- Tagout devices can’t be removed by anyone except an authorized employee. The tagout device must identify the person who attached it.

You will stay safe around machinery and other power equipment if you don’t touch any piece of equipment or machinery unless you are trained and authorized to do so. Don’t touch anything that’s locked and tagged unless you are responsible for working on it and you are sure the power is disconnected.



# MACHINE GUARDING

## Safe use of grinding wheels



This talk discusses the common hazards of operating grinding wheels and best practices to prevent injuries.

### Materials to have on hand:

- A grinding wheel with guards or other safeguards in place
- Examples of defective grinding wheels

### Items for attendees to consider during talk:

- Describe at least one unsafe condition you can see by just looking at grinding wheel equipment.
- What are two ways to prevent flying debris from hitting your eyes?

## Talk

The grinding wheel (grinder, abrasive wheel) is one of the most common and useful tools we have. But it's also dangerous if it isn't handled correctly or if it is in poor condition. Skilled workers like you—toolmakers, grinder operators, and machinists—sometimes get hurt. There are two major sources of grinder-related injuries: at or near the wheel surface where items are worked, known as the “point of operation”; and flying debris.

**Grinding wheel point of operation.** First we'll consider injuries that happen at and near the grinding wheel surface itself and how to prevent them. Broken or defective wheels, improperly mounted wheels, and unprotected fingers and arms are common factors in grinder injuries.

Here are some common do's and don'ts for injury-free use at the point of operation.

### Do:

- Make sure the work is well-lit.
- Check the grinding wheel for sprung or cracked flanges that will put extra strain on it.
- Make sure the wheel is not cracked or broken.
- Before mounting a wheel, inspect it carefully for cracks or marks that indicate damage.
- Give it the “ring test” for defects by tapping it gently with a wooden mallet or the handle of a screwdriver; if the wheel is not defective, it will give a clear ring.
- Check that the wheel is the right size, grit, and bonding for the work to be done.
- Make sure the wheel is balanced and centered; if it's off balance, the wheel can explode.

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- Keep work rests securely anchored in place not more than one-eighth of an inch from the wheel.
- Make sure work rests are repaired or replaced when they are excessively worn.
- Grip the work securely, not too close to the wheel. Use the work rest whenever possible.

## Don't:

- Don't operate a grinder above the speed recommended by the manufacturer for the specific grinding wheel you are using.
- Don't hold the work in an unsafe way, or your fingers or hands will contact the wheel.
- Don't work the piece too close to the edge of the wheel or jab the work into the wheel.
- Don't force work against a cold wheel; apply the work gradually to let the wheel warm up.
- Don't leave a grinding machine unattended while the wheel is in motion.
- Don't use defective grinding wheels or used grinding wheels that have been removed.

**Flying debris.** Next, consider the flying debris. The greatest injury from flying debris is eye injury. Most grinding wheels have a protection hood that will shield you from flying fragments and keep pieces of the wheel from flying if it breaks. Choose the correct type for the work you are doing; check with your supervisor if you're not sure.

Even with the hood, debris can still hit you. That shows how important it is to have good eye protection. A flying particle can blind an unprotected eye beyond repair.

***[See the Eye and Face Protection talks for more information.]***

Eyewear like goggles or face shields that doesn't fit right and using the wrong type are other major factors in grinding wheel eye injuries. Eyewear should fit well. If it's really uncomfortable or keeps fogging up, talk to your supervisor about replacing or adjusting it.

Grinder shields of shatterproof glass are valuable as an additional factor in safe grinding. Large, clear shields will allow you to see the operation without eye fatigue.

Follow these safe practices, and you won't get "ground down" by injuries!

# MACHINE GUARDING

## The case of the inadequate guard



This talk discusses injury prevention precautions to take when working on or near machines and how to identify the safeguards on the machines.

### Materials to have on hand:

- A machine with adequate guards in place
- A machine without the proper guards in place

### Items for attendees to consider during talk:

- If you are asked to do some maintenance or service work on or around a machine that is running, what is the first thing to look for to see if it's safe to do so?
- How often should the guards on machines be inspected to make sure they are in place and working properly?

## Talk

We're going to talk about an actual industrial incident where a worker was hurt involving a machine with poor safeguards on it. It's a good exercise to help recognize the safeguards on the machines and equipment in your work area so that you can report inadequate or damaged guards. Hopefully, you'll get something out of it and think about steps to prevent a similar incident from happening here.

A worker at a food processing company was sweeping a large amount of ground wheat from around a flour milling machine that was running. She wasn't aware of any warnings or notices about working near the machinery, so she thought it was safe to clean in and around it. There were some guards on the machine, and she made no attempt to remove them.

The employee knelt down and reached in the space under a belt and pulley guard about 1 foot (ft) above the floor with a hand brush. There was a 6-inch (in.) gap between the guard and the mill machine body, and no guard between the belt/pulley assembly and the floor. This allowed the worker to reach her hand under the belt and pulley guard. Her glove was caught by the in-running portion of the notched flat belt, and it pulled her left hand into the motor pulley. She was able to pull it out, and then she ran to another employee who gave first aid and called for help. The worker suffered two compound fractures to her left arm and the complete loss of the middle and index fingers.

Consider these questions about the incident as we look at ways to prevent injuries around running machines:

*Why did the employee think it was OK to reach under the guard? Perhaps she thought it was safe since there were no warning notices and access under the belt and pulley wasn't blocked. Walk around your machines to see if there are ways you could be*

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# MACHINE GUARDING

easily hurt from exposed moving parts, and talk to your supervisor about how machines could be better guarded and where to post warnings.

*Was the employee aware of the hazards?* Either the employee wasn't aware, or she wanted to just get the job done quickly. A good practice for anyone working on or near a machine that he or she doesn't operate is to stay away unless he or she has been trained and made aware of the potential hazards of the machines. Even when only cleaning around the machine, it is important to stay away unless you have been trained on the hazards and danger zones of the machine. In this worker's case, if she was aware of the hazards associated with the machinery, she would not have reached under the machine.

*Was there something wrong with the guard?* The guard did not completely cover the hazard. According to the people investigating the incident, there was a 4-in. gap between the guard and the machine body, which means a worker could have reached into the gap from the top or the sides. Also, the bottom of the belt and pulley was over 1 ft from the floor, but the gap was not guarded at all.

*Since the guard was inadequate, who would be responsible for inspecting it and ensuring it was fixed?*

Clearly, the worker cleaning the machine did not have the training to properly inspect the guards. All machine operators should inspect the guarding on their equipment daily to make sure it has not been removed or damaged since they last operated it. Inadequate guarding should be reported immediately for repair or replacement.

*Is there a process she could have followed for cleaning in and around the machine that is safe?* If the employee had asked or waited for the machine to be shut down and locked and tagged out before cleaning under it, she would not have been injured.

*How should workers be informed about hazards of working around machinery?* According to the people who investigated the incident, there was no written safety procedure about working around machinery, especially when it was in operation. Anyone whose job duties could expose them to machine hazards should be trained about those hazards and the precautions to follow to prevent injury.

Can you think of any other causes or factors that may have contributed to this accident and ideas to prevent injuries from them?

# MACHINE GUARDING

## PROTECT AGAINST AMPUTATIONS



This talk discusses how to recognize common amputation hazards from stationary and portable machines and the safeguards and machine-guarding devices used to prevent amputations and other injuries.

### Materials to have on hand:

- A machine with guards or other safeguards in place
- A machine that is shut down without the proper guards or safeguards in place

### Items for attendees to consider during talk:

- Can you think of an instance at work or home when you were using a machine or equipment and almost lost a finger or other part of the body?
- What's an example of a safety device or guard that clearly protected you from a potential life-threatening injury when you used a machine or other equipment?

## TALK

Every day, several workers in our line of business lose fingers, hands, feet, and other parts of the body when using machines and equipment without guarding devices or other safeguards in place. Most amputations involve fingertips. The most common machine-related hazards that can cause amputations are cutting, compression, crushing, or getting caught between or hit by objects.

### Keep an eye out for potential amputation hazards.

When it comes to stationary machines (i.e., machines that are too large or heavy or not meant to be moved), amputations happen most commonly when workers are setting them up, threading, preparing, adjusting, cleaning, lubricating, performing maintenance, or clearing jams. These are the times when the guards are not in place, and the machines are supposed to be shut down and locked out.

For portable machines, many amputations happen during normal operations such as slicing, drilling, and sawing.

The following machine parts are the likely sources of amputation hazards:

- Point of operation—the area of a machine where it performs work on material
- Power-transmission parts—flywheels, pulleys, belts, chains, couplings, spindles, and other machine components that transmit energy
- Other moving parts that move during machine operation, such as reciprocating (i.e., back and forth like a jigsaw motion) and rotating; and “transverse” moving parts, such as a powered wheel turning a belt

### Make sure machine guards and other safeguards are in place to keep you safe.

The best way to prevent amputations is with machine guards and other safeguarding devices. Keep an eye out for the following safety devices, and make sure they are

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# MACHINE GUARDING

properly connected to the machine before you start work.

**Guards** are physical barriers that prevent any part of your body from contacting the hazardous areas or parts of machines. There are four basic types of machine guards:

- Fixed guards are attached permanently to equipment and can only be removed with considerable effort.
- Interlocked guards can be removed or opened to allow access to the hazard zone—for example, to insert or remove material from the point of operation.
- Adjustable guards allow a machine to handle a wide variety of material sizes while still protecting the unused portion of the blade or the point of operation.
- Self-adjusting guards, like the one on a circular saw, are pushed away from the point of operation when material is fed into the machine.

**Safeguarding devices.** Safeguarding devices help prevent contact with points of operation and may replace or supplement guards. Examples are:

- Restraints and pull-back devices that use a wire, cable, or strap attached to your hand, wrist, or arm that prevent you from putting your hand in the danger zone.
- Pressure-sensitive devices, such as mats, bars, and trip wires all act as emergency stops when activated.
- Chutes, plungers, and sticks that let you feed materials into the machine without putting your hands at risk.

Make sure the devices don't create their own hazards or interfere with normal machine operation and that they are secure, tamper-resistant, and durable.

Report any guards or safeguards that are preventing you from doing your normal work with a machine or that are defective and develop their own hazards—but don't try to bypass them. If a guard itself causes a hazard, like sharp edges or other defect, report it. It may be tempting to remove or disable a guard if you're in a hurry to meet production goals, but that greatly increases the chance of an amputation.

# MACHINE SAFETY

## AVOIDING PINCH POINT HAZARDS



This talk describes what pinch points are, where they are commonly located in the workplace, and steps attendees can take to prevent injuries from pinch points.

### Materials to have on hand:

- Examples of pinch points in the workplace and any injuries that they caused
- Tools, machinery, or equipment that contains pinch point hazards

### Items for attendees to consider during the talk:

- Where are the pinch point hazards in our workplace?
- What steps should you take to prevent injuries from pinch points?

## TALK

“Pinch points” are machine points that can pinch a part of your body between two moving parts or between one part that is moving and one part that is stationary. Pinch points are among the most common hazards in the workplace, and they cause many injuries, from scrapes and bruises to broken bones and worse.

Some pinch points occur on machinery. Examples include in-running calender rolls and other rotating parts, belts, and pulleys. These areas are generally

guarded with machine guards and other methods. Never remove a machine guard or try to get around any of the safety devices we have in place to protect you from pinch points. If a guard is missing or broken, tell your supervisor, and do not use the machine until it is fixed.

Follow these precautions to prevent pinch point injuries from machines:

- Make sure all covers, guards, and protective shields for machinery and equipment are in place before you use the equipment.
- Never place your hands near or reach across rotating machinery parts.
- Avoid wearing loose clothing and dangling jewelry around machinery and other pinch points. Keep long hair tied back.
- Use caution whenever you place your fingers, hands, feet, or other body parts between any objects.

Other pinch points are created by worker activity. It would be impossible to guard all of these, so you must be aware of where they are likely to occur and use caution.

Pinch points that are not guarded will be found just about everywhere that you look. The door hinge is a pinch point, pliers and similar tools can serve as pinch points, and pinch points can be found in storage areas where heavy boxes or barrels are stacked

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# MACHINE SAFETY

close together. A hand truck moving through a narrow doorway can be a pinch point; even an extension ladder has pinch point hazards.

The best defense against injuries from unguarded pinch points is awareness. As you work, think about where pinch points might be likely to occur, and work carefully to keep your hands, fingers, and other body parts away from those areas. Don't rush. When you

rush, you're more likely to make a careless mistake and end up with an injury as a result.

When a pinch point is not guarded by a safety device, that leaves it up to each of us to make sure that we don't get hurt. What are the unguarded pinch points in your own work space? Think about what these might be and approach them carefully.

# MAINTAINING FIRE DETECTION SYSTEMS



This talk informs designated employees of the procedures to follow to ensure that alarms and fire detection systems function properly.

## Material to have on hand:

- Floor plan of where fire detection apparatus is located

## Items for attendees to consider during the talk:

- Do the employees you supervise know how to activate and respond to a fire alarm?
- How do you ensure that the fire detection system is functioning?

## TALK

Fire detection systems, when combined with other elements of an emergency response and evacuation plan, can significantly reduce property damage, personal injuries, and loss of life from fire in the workplace. The main function of a fire detection system is to quickly identify a developing fire and alert building occupants and emergency response personnel before extensive damage occurs. In addition, designated employees must ensure alarm systems operate properly and procedures are in place to alert employees to workplace emergencies.

## Protecting the Fire Detectors

To verify that fire detectors can operate properly, designated employees must:

- Be sure that fire detectors are supported independently, such as by being securely mounted to a solid surface—they should not be supported by their wires or tubing.
- Protect all detection equipment from mechanical or physical impact, and
- Protect outdoor equipment from weather and corrosion, such as by a canopy, a hood, or another suitable device

## Maintaining and Testing Fire Detection Systems

Maintaining and testing fire detection systems are very important. Dirt, dust, or foreign materials can build up inside the sensor elements of a detector, causing a reduced sensitivity that can limit the warning time given during a fire or result in unwanted alarms that can desensitize employees to the alarm. For the alarm to work as it should in the event of a fire, those assigned to ensure the alarm system will perform properly must:

- Operate and maintain the system in a working condition, making sure it is always turned on, except during repairs or maintenance.

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# MAINTAINING FIRE DETECTION SYSTEMS

- Have fire detectors and fire detection systems tested and adjusted often to ensure that they operate correctly and maintain reliability. Detectors found to be unreliable and/or with reduced sensitivity must be replaced or cleaned and recalibrated.
- Have a qualified person service, maintain, and test all fire detection systems, including cleaning and necessary sensitivity adjustments.
- Have fire detectors cleaned of dust, dirt, or other particulates at periodic intervals to ensure their proper operation.

***[Include the following bullet if it applies to your detection system.]***

- Ensure that pneumatic- and hydraulic-operated detection systems installed after January 1, 1981, are equipped with supervised systems.

Fire detection systems and components must be returned to normal operating condition as soon as possible after each use or test.

## Maintaining and Testing Audible and Visual Fire Alarms

- Conduct visual checks to ensure that alarm devices are not obstructed or installed in a manner that would prevent sound or light from reaching or entering the protected areas. Alarms must be conspicuous and readily accessible.
- Use only properly trained persons to service, maintain, and test alarms.
- Test the reliability and adequacy of non-supervised alarm systems every 2 months.
- Maintain or replace power supplies as often as necessary to ensure a fully operational condition. Provide a backup means of alarm when systems are out of service, such as employee runners or telephones.

By playing your part in ensuring that fire detection systems function properly, you make an important contribution to the protective measures that maintain a safe workplace for us all.

# MATERIAL HANDLING

## REMOVING STEEL STRAPPING



This talk will discuss safe practices for removing steel strapping on containers and shipments to avoid injuries.

### Materials to have on hand:

- Cutting implements to be used to remove steel strapping
- Personal protective equipment (PPE) to be worn while removing steel strapping

### Items for attendees to consider during the talk:

- What PPE should you wear when cutting steel strapping?
- What kind of tool is best for cutting steel strapping?

## TALK

Steel strapping is an effective way of reinforcing binding boxes or containers, but when you attempt to remove it, a piece of steel strapping can become a dangerous weapon. Follow these tips for protecting yourself when you remove steel strapping.

Before attempting to remove steel strapping from a container, you should be dressed for the job and wearing appropriate personal protective equipment, or PPE. Wear safety goggles and leather palm gloves. When working with heavier weight straps, it

may be necessary to wear steel-studded gloves and a face shield in addition to goggles.

Wear long pants and a long-sleeved shirt to protect your legs and arms from cuts and blows. Safety shoes, of course, are a good idea for any material-handling job.

Before you remove strapping, make sure everyone else in the area is clear of the danger zone or is wearing appropriate PPE.

Also, make sure you know the contents of the container or box before cutting the straps. Some materials, such as auto springs or mattresses, may recoil violently when the steel binding is released. Skill and special instruction are required for opening bales of burlap or other materials that are highly compressed.

Use a cutting tool designed for the job. Duck-billed shears with long handles that keep the person doing the cutting at a safer distance from the strapping are usually the best option. Special cutting tools should not leave sharp edges. Make cuts squarely to avoid forming extra-sharp surfaces.

You may be tempted to snap the strapping with a crowbar, claw hammer, or similar tool. But don't do it. It will increase your chances of being injured by flying metal.

When you make the cut, hold down the strapping with one gloved hand to prevent it from flying loose while cutting with the other. However, when the strapping is

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# MATERIAL HANDLING

very heavy, the rebound may be too strong to control with your hands. In these situations, stand out of the likely path of the strapping when it is cut.

After cutting the straps, place the cut straps in a scrap container. Do not leave them on the floor to become a tripping hazard.

# MEDICAL EMERGENCIES ON THE JOB

## BLEEDING



This talk describes techniques to control bleeding so that employees who are not designated first-aid responders can act quickly in a medical emergency in situations when a trained first-aid responder is not available. It is intended as general awareness information only and is not a substitute for detailed first-aid training.

### Materials to have on hand:

- First-aid kit
- Gloves and other universal precautions to protect from bloodborne pathogens

### Items for attendees to consider during the talk:

- What should you do if an object is embedded in a wound?
- For how long should you apply direct pressure to a wound?

## TALK

A serious cut or injury can cause major blood loss. Adults have about 5 to 6 quarts of blood in the body. Most people can lose a little blood and be fine, but the loss of 1 quart or more can cause shock and even death. Therefore, it's critical to stop blood loss as soon as possible. Timing might be the difference between life and death.

For minor bleeding, you will usually be able to clean and bandage your own wounds. Wash your hands, then remove any dirt or debris with tweezers and gently clean the wound with warm water. Apply an antibiotic cream as directed on the packaging, and cover the wound with a sterile bandage. Keep the wound clean and dry, and change the bandage daily. Watch for signs of infection such as redness, tenderness, swelling, warmth, and discharge. Get medical attention if you notice any of these signs.

For serious bleeding, if you have been designated as a trained first-aid responder for your worksite, follow the procedures you learned during your first-aid training. If you aren't a trained first-aid responder, this brief talk is not a substitute for first-aid training. If a coworker is bleeding heavily, your first step should always be to locate someone who has been trained to perform first aid.

But if you can't locate a trained first-aid responder during a medical emergency involving heavy bleeding, these steps could save a life:

- Call for trained medical help immediately. Call 911 or another emergency number as appropriate.
- Remain calm, and assure the injured person that help is on the way.
- Put on gloves from a first-aid kit. This protects both you and the injured person.

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# MEDICAL EMERGENCIES ON THE JOB

To stop the bleeding, place clean gauze pads or cloths on the wound and apply direct pressure with the palm of your hand. Hold the dressings in place until the blood clots and the bleeding stops. Do not remove the dressings because you might restart the bleeding. If the dressings become blood-soaked, add more dressings and continue to apply pressure until the bleeding stops. Bandage the dressings in place.

If the wound is on an arm or leg, raise the injured limb above the heart to reduce blood flow. If possible, place the limb on a stable support surface, and keep it as still as possible.

If bleeding is life-threatening and does not stop when using other methods, tourniquets can help. A tourniquet is a tight band that helps to control bleeding by stopping the blood flow to a wound. However, you should only apply a tourniquet if you've been trained to do so, and it is only effective for bleeding from an arm or leg. Never remove a tourniquet yourself; only a medical professional should do so.

Leave objects that are embedded in the wound alone. Removing them could cause internal damage and increase the bleeding. Secure the object with clean,

sterile dressings so that it doesn't move, and apply pressure near the wound to control bleeding.

If the victim has an amputated body part, respond quickly. Wrap the body part in sterile cloth or gauze, place it in a waterproof container, and then lay the container on a bed of ice. Rush it to the hospital with the injured victim.

People who are seriously injured may go into shock. Shock occurs when there is not enough blood circulating in the body. It can be life-threatening, so you must act quickly.

Symptoms of shock include restlessness, pale skin, vomiting, decreased consciousness, sweating, a weak but rapid pulse, and difficulty breathing.

To help someone in shock, lay the victim on his or her back. Cover the victim with a light blanket to conserve body heat, and raise the person's feet above the level of the heart. Check regularly to make sure the victim is breathing, and don't give the victim anything to eat or drink.

If you act quickly and follow these steps, you could save a coworker's life.



# METALWORKING FLUIDS



Industrial operations requiring the grinding, cutting, or boring of metal parts use metalworking fluids to cool and lubricate the tool. Workers can be exposed to metalworking fluids by breathing in the mist or getting fluids on their skin, which can cause serious health issues. This talk discusses the ways workers can control their exposure to metalworking fluids.

## Materials to have on hand:

- The types of fluids used at your facility
- The safety data sheet (SDS) for the fluids used
- The metalworking fluids management program

## Items for attendees to consider during the talk:

- Do you know the different types of metalworking fluids?
- Do you know what you can do to reduce the risk of exposure to metalworking fluids?
- Do you know what kind of personal protective equipment (PPE) to wear?

## TALK

At this facility, we use metalworking fluids during the machining and grinding of metal parts to prolong the life of the tool, carry away metal chips and other

machining debris, and protect the surface of the work piece. The four major classes of metalworking fluids are straight oil, soluble oil, semisynthetic, and synthetic.

***[Inform your employees of the type of metalworking fluid(s) used at the facility.]***

You can be exposed to metalworking fluids by breathing in the mist or getting fluids on your skin while performing a machining task. Exposure is hazardous and can cause serious health issues, including respiratory diseases such as asthma, chronic bronchitis, and impaired lung function, as well as skin disorders like eczema and acne.

It's important to read the fluid's safety data sheet, or SDS, before working with the metalworking fluid so you are aware of the health hazards to which you may be exposed.

***[Describe the location of the SDS, or pass out an SDS for the metalworking fluid used at the facility.]***

We have already installed the following precautions to limit your exposure to metalworking fluids:

***[Choose the options currently in use at your facility.]***

- A delivery system that generates a minimum amount of fluid mist;

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# METALWORKING FLUIDS

- Splash guards and machine enclosures to isolate you from the machine and minimize skin and inhalation exposure;
- A local exhaust ventilation system to prevent the accumulation or recirculation of airborne contaminants in the workplace; *and*
- A general or dilution ventilation system to allow the contaminant to be emitted into the workplace air, then have the concentration of the contaminant diluted and eventually removed from the work area.
- Wear the appropriate personal protective equipment, or PPE, needed for a task, such as gloves, protective sleeves, aprons, trousers, caps, safety goggles, safety glasses, and/or respirators.
- Familiarize yourself with the metalworking fluids management program, which contains the information for who is responsible for performance of the system; who is responsible for adding materials; a written standard operating procedure, or SOP, for testing the fluid; and a data collection and tracking system.

Additionally, here are the ways **you** can control your exposure to metalworking fluids:

- Use good personal hygiene practices.
- Apply barrier and moisturizing creams.
- Keep your workspace free of clutter.
- Periodically inspect and maintain the process and control equipment.
- Follow the proper procedures to perform the task.

***[Pass around the metalworking fluids management program, and inform the employees where it's located for future access.]***

By following these practices, you can effectively control your exposure to metalworking fluids and avoid any serious health hazards.

# MOLD

## RECOGNITION AND REMOVAL IN CALIFORNIA



This talk informs employees how to recognize and prevent mold and the means by which it should be removed.

### Materials to have on hand:

- Detergent or disinfectant primarily used at the facility to remove mold
- Respirator and other personal protective equipment that should be used
- A copy of the facility's Injury and Illness Prevention Program

### Items for attendees to consider during talk:

- Can you tell if mold is present?
- Are you aware of the health effects caused by mold?
- Do you know how to control the growth of mold?

## TALK

Mold spores cannot grow without water or moisture. The spores tend to grow indoors when there is water damage, prolonged humidity, or dampness. This could occur for many reasons, including flooding, plumbing leaks, or a leaking roof. Small amounts of mold growth in workplaces aren't a concern if dealt with promptly. But large quantities of mold can cause allergic reactions and sometimes even serious health effects or

cancer. Mold can also damage building materials and finishes. It can even structurally damage wood. So today, we're going to review the steps we all can take to detect the presence of mold before it spreads, learn how to safely remove mold, and learn when mold removal requires a professional contractor.

### Detecting mold

So, what does mold look like? It's sometimes seen as a green, gray, or black fuzzy growth. However, mold can also grow unseen, such as behind water-damaged ceiling tiles; under carpeting; behind wallboard; in ductwork; or in heating, ventilation, and air-conditioning units. Often, mold can be detected by its musty odor. If you can't see mold but you believe you smell it, it's very possible that mold is growing behind or underneath wet or water-damaged materials.

Experiencing mold-related symptoms can also indicate that you've been exposed to mold. Allergic symptoms include:

- Red, itchy skin or a rash;
- Acute attacks of coughing or shortness of breath; *and*
- Asthma, which may be caused or aggravated by exposure to mold.

Other health effects can include fatigue, headache, fever, muscle ache, and difficulty concentrating. If

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# MOLD

your symptoms are worse at work than at home or during your vacations, that may indicate that your exposure to mold is happening at the workplace.

## Reporting mold

If you see or smell mold or if you or others are experiencing mold-related symptoms, you must report it to your supervisor or health and safety officer so that we can investigate the problem. Our workplace Injury and Illness Prevention Program describes the procedure for employees to report hazards in California. In addition, if the problem is due to water damage, we are required by law to correct any uncontrolled indoor accumulation of water that may cause mold.

## Eliminating mold growth

The key to preventing mold growth is controlling moisture. If an area can be dried within 24 to 48 hours after becoming wet or damp, it's unlikely that mold growth will occur. If you notice a small-scale plumbing leak or other source of moisture or wetness, such as condensation, report it to your manager immediately so that the moisture problem can be addressed as soon as possible.

## Removing mold

If mold is found, it should be scrubbed off hard surfaces with nonammonia detergent, disinfectant, and

water and then dried completely. This method works especially well for removing mold from surfaces such as metal, glass, and hard plastic. Do not use an ammonia cleaner with disinfectants because toxic gases can occur. Absorbent or porous materials such as wallboard, insulation, and carpeting are more difficult to clean because these materials retain moisture. Most times, absorbent materials should be put in sealed plastic bags and then thrown out.

## Personal protective equipment

Be sure to put on personal protective equipment, or PPE, when removing mold. Wear long gloves recommended for the types of detergents or disinfectants being used, and put on an N-95 respirator to avoid breathing in the mold. Wear goggles without ventilation holes because they will prevent mold or mold spores from getting in your eyes.

## When additional help is needed

Not all mold situations can be handled by our employees. If there's been a lot of water damage or if a large area has been affected, an experienced and knowledgeable contractor will be used to remove the mold. Damage caused by sewage backup or other contaminated water will also require a professional with experience in dealing with this problem.

# MOLD PREVENTION



This talk informs employees of the hazards of mold growth indoors in the workplace, how to identify areas where mold may be present, and how employees can help to avoid or eliminate mold growth in a building or facility.

### Materials to have on hand:

- Example pictures of mold growth on indoor building surfaces

### Item for attendees to consider during the talk:

- Are there any areas in the building where the conditions may allow mold growth?

## TALK

Mold: It seems harmless. Unfortunately, that's not the case. Indoor mold can cause a wide range of problems for your health and, eventually, damage the building and the furniture.

You are exposed to mold when you inhale or ingest it, or when it touches your skin. In most instances, exposure to mold will have no effect, or may cause mild allergic reactions with sneezing, a runny nose, red eyes, or a skin rash. However, mold exposure can also trigger asthma attacks, which can be serious. And some molds can be toxic, resulting in serious health effects like cancer and damage to your central nervous system.

**Identify mold and locations where mold might grow.** Mold can be any color, but most often, molds appear as green, gray, or black fuzzy growth. But mold growth often goes unseen, and the only clue that mold is present is a musty odor.

Under the right conditions, mold can grow:

- Behind drywall;
- Under carpet;
- Above ceiling tiles;
- On any wooden structures or components;
- In ductwork; *and*
- In heating, ventilation, and air-conditioning equipment.

So, it's best that we prevent mold from growing and causing problems.

The most important factor in mold growth is moisture, which may be the result of:

- Flooding;
- Any type of leak, whether it be from a roof, window, or any type of plumbing or piping component; *or*
- Anywhere in the facility where there is a high level of humidity or condensation.

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# MOLD PREVENTION

**Prevent mold growth.** The easiest way to prevent mold growth is to limit the presence of moisture. Mold will not grow in dry areas or areas that can be dried thoroughly within 24 to 48 hours after getting wet or damp.

So, please report immediately if you notice:

- A musty odor in a specific part of the building/facility;
- Any leaks;

- Any exhaust or ventilation fan or equipment that is not working properly;
- Any areas of the facility where there are abnormally high levels of humidity or condensation; *or*
- Any areas of the facility where the carpet, walls, ceiling tiles, or furnishings are damp or wet.

By speaking up, you will help us address the problem and, hopefully, prevent people from getting sick and avoid costly and inconvenient mold remediation.

# NOISE EXPOSURE: UNDERSTANDING OUR HEARING CONSERVATION PROGRAM



This talk gives workers at general industry facilities with hearing conservation programs an overview of the program, the dangers of noise exposure, and ways to prevent hearing loss.

### Materials to have on hand:

- Examples of hearing protection used at your facility

### Items for attendees to consider during the talk:

- What are some sources of excessive noise that you are exposed to on a regular basis?
- What types of hearing protection do we use at this facility?

## TALK

Have you ever had ringing or roaring in the ears, had difficulty hearing signals and safety warnings, or felt stress, poor concentration, and headaches from trying to hear? Those are signs that you might have been exposed to damaging noise. Hearing loss from excessive noise is a very common injury at work, affecting millions of workers like you every year.

If you are exposed to an average of more than 85 decibels over an 8-hour workday, you run the risk of hearing loss. For some perspective, dishwashers produce 65 decibels, power sanders produce 85 decibels, jackhammers produce 110 decibels, and jet engines produce 140 decibels.

Be alert for signs of hearing loss and report any symptoms to your supervisor, such as:

- Noise or ringing in the ears;
- Trouble hearing voices or high or soft sounds; or
- Needing TV or radio volume loud enough that others complain.

We have a hearing conservation program because our noise levels are at or above the regulated limit. We monitor these noise levels and tell you about the results and risks. We also test your hearing within 6 months of your first exposure to the high noise level and every year after that to make sure you do not suffer hearing loss.

### Hearing protection devices

As part of the hearing conservation program, our company also will provide you with appropriate hearing protection devices if you are exposed to the high noise levels. Types of hearing protection devices include:

- Earplugs, which are inserted into the ear canal. These may be premolded or custom-molded and reusable, one-use, or 1-week-use disposables;
- Canal caps, which cover and seal the ear canal entrance with soft flexible pads on a lightweight headband; *and*

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# NOISE EXPOSURE

- Earmuffs, which have a headband with cushioned plastic cups that cover each ear.

Don't use cotton balls, earbuds, other headphones, or other devices because they are not acceptable or effective forms of hearing protection.

## Device inspection and maintenance

You can help reduce your risk of hearing loss if you properly inspect and care for these hearing protection devices. Follow these tips:

- Inspect hearing protectors before each use. Report and don't use earmuffs or canal caps that are loose, cracked, or don't seal well and earplugs that are cracked, misshapen, or hard and inflexible.
- Wash your hands thoroughly before you insert or put on hearing protectors.
- Clean hearing protection devices regularly, following the manufacturer's instructions.
- Store hearing protection devices where they will stay clean and dry.

# OFFICE SAFETY

## ADJUSTING YOUR DESK CHAIR



This talk discusses how to adjust an office chair to ensure proper working posture and prevent back, shoulder, and other ergonomic injuries.

**Material to have on hand:** An adjustable desk chair

### Items for attendees to consider during talk:

- How do you know if your desk chair is properly adjusted?
- Why is it important to take the time to adjust your desk chair?

### Talk

Sitting in a poorly adjusted desk chair for long periods of time can cause back injuries, neck and shoulder pain, and other ailments. Today we'll talk about how your chair should be adjusted to provide comfort and support while you work.

Every office chair is different and provides a different level of adjustability. Get to know your chair, and take the time to adjust it to fit you and your workstation.

Here are some common parts of your desk chair that may be adjustable:

- **Seat height.** Adjust the height of your chair so that your feet are solidly on the floor, with your thighs parallel to the floor and your knees bent about 90 degrees. If you cannot adjust the height

as low as you need to rest your feet flat on the floor, you may want to consider using a footrest. Usually, the control for seat height will be underneath the seat, on the right side. To adjust the chair up, partially stand while pulling up on the lever. To lower the seat, sit on the chair as you pull the lever up.



- **Seat depth.** If your chair seat is too deep, the front edge will press against the back of your knees and may restrict blood flow. You may also end up sitting forward in the chair and not using the backrest for support. If your seat isn't deep enough, it won't give you enough support for your legs, which can cause hip and leg discomfort.

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# OFFICE SAFETY

Adjust the depth so that you are able to sit all the way back in the chair, but there is a little bit of space between the front edge of the seat and the back of your knees. Usually, there will be a lever or a knob either behind the seat where the backrest attaches or underneath the seat on the left side.

- **Backrest height.** Most office chairs have an outward curve called a lumbar support in the lower part of the backrest. This is designed to support the inward curve in your lower back, known as the lumbar curve. Adjust the height of your backrest so that the lumbar support on the chair aligns with the lumbar curve of your back. If you find that you need more lumbar support than your chair provides, you can purchase a lumbar cushion that attaches to your chair. To adjust the backrest height, typically you will either pull up on the backrest itself or use a knob on the backrest post.
- **Backrest tilt.** Most people find it comfortable to lean back 10 to 20 degrees, while others like to sit more upright. Find the position that works best for you. The backrest tilt adjustment mechanism will usually be one of the levers on the right side of the chair underneath the seat.
- **Armrests.** To provide comfortable arm and shoulder support, position your armrests so that your elbows are at approximately a 90-degree angle when you rest your forearms on the armrest. Typically, the mechanism to adjust the armrest will be either a knob or a button on the outside of the armrest. If the width (or distance apart) of your armrests is adjustable, they should be positioned as close to under your shoulders as possible. When your armrests are properly adjusted, they should be underneath your forearms, closer to your elbows than to your wrists. You should be able to pull your chair close to your desk so that you don't have to reach.

# OFFICE SAFETY

## COMPUTER ERGONOMICS



This talk covers the basics of configuring a desktop computer workstation ergonomically and offers tips for using mobile devices safely.

### Materials to have on hand:

- A typical computer workstation
- Common mobile devices used by employees

### Items for attendees to consider during talk:

- What kinds of injuries can result from a poorly configured desktop computer workstation?
- What unique ergonomic challenges do laptops pose, and what can you do to remedy them?

### Talk

A poorly configured computer setup can contribute to injury and discomfort by placing you in awkward postures, requiring excessive reaching, and causing eyestrain. Back pain, neck pain, and carpal tunnel syndrome are just a few of the conditions that can result from an improper computer setup.

If you use a desktop computer with a separate monitor and keyboard, follow these guidelines:

- **Keyboard height.** Position the keyboard at a height that allows you to keep your wrists straight and your shoulders relaxed as you type. Your forearms should be roughly parallel to the floor.

- **Keyboard distance.** If your keyboard is too far away, you may end up reaching and leaning forward as you type. If your keyboard is too close, your arms may be in an uncomfortably cramped position. To find the correct distance, sit with your shoulders back and your elbows close to your sides. Your fingertips should rest comfortably in the typing position.
- **Monitor distance and position.** Your monitor should be centered in front of you and placed at a distance where you can read text and see images clearly without straining your eyes or leaning forward. About an arm's length away is generally a good distance.
- **Monitor height.** With your head level, your eyes should be aligned with a point 2 to 3 inches below the top of the screen. You shouldn't have to tilt your head up or bend your neck down to see the screen.
- **Document holders.** If you frequently refer to paper documents while you work at the computer, you can use a document holder to avoid leaning forward and tilting your head down to read from papers lying flat on the desk. Position the document holder as close to the monitor as possible.

If you use a laptop, it is more challenging to find an ergonomically correct working position because of the fixed position of the keyboard and screen. However, there are a few things you can do to prevent injury if you use laptops regularly. Here are some tips:

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# OFFICE SAFETY

- Change positions periodically. For example, you can switch between working with the device on your lap, setting it on a desk, and setting it on a surface at standing height.
- If you're working at a desk for long periods of time, you may want to place your laptop or tablet on a stand to elevate the screen to eye level and attach an external keyboard.
- Adjust the screen angle to minimize glare. It may also help to avoid working directly under bright sources of light.
- If you regularly use a laptop for extended periods of time, consider using a docking station. This allows you to plug in a full-size monitor, keyboard, and mouse and use your laptop like a desktop computer.

# PAINTING AND SPRAYING

## Understanding painting health hazards



This talk discusses possible health hazards associated with residential or commercial painting operations, as well as the safe handling and storing of paints.

### Materials to have on hand:

- A can of paint used by your workers at the worksite
- Safety data sheet (SDS) for the paint

### Items for attendees to consider during talk:

- Do you think there are any health hazards associated with painting?
- What are some symptoms of short-term overexposure to paint?
- What should you do if you or a coworker is overexposed to a paint product?

## Talk

We use paints so often and in so many ways that we tend not to think of them as being hazardous. But overexposure to any chemical, including those in paints, presents the possibility of health hazards.

It is very important to always read the label on the paint container and the corresponding SDS before you start a painting job. The SDS will tell you what personal protective equipment (PPE) you may need to use, such as chemical-resistant gloves, safety

glasses or goggles, and coveralls or other garments to cover exposed skin.

### Health hazards from paint

Inhaling too much paint vapor or mist or getting too much on your skin can cause health problems. These are some of the symptoms that can result from short-term overexposure to paint:

- Runny nose
- Fatigue
- Dizziness
- Eye irritation
- Sore throat or cough
- Nausea
- Skin rashes
- Flu-like symptoms (e.g., chills, fever)

Many paint-related health problems show up immediately and stop when exposure to paint stops. However, long-term overexposure to some paints may cause adverse effects to the central nervous system, kidneys, liver, and blood. Some ingredients in paint have even caused cancer or birth defects in laboratory animals.

Also another health problem, sensitization—or allergic reaction—can develop from one large or several

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# PAINTING AND SPRAYING

repeated exposures. The skin may develop rashes, blisters, or scales. More seriously, it can affect the respiratory system, causing coughing, shortness of breath, and other asthmatic symptoms.

If you or a coworker is overexposed to a paint product:

- Get to fresh air immediately. Provide oxygen or artificial respiration if necessary.
- For skin contact, remove contaminated clothing and then wash area with soap and water.
- For eye contact, flush with warm water for 15 minutes.
- Get medical attention as soon as possible.

If you use common sense, paints have fairly low physical and health risks.

## Other paint hazards

If not handled properly, paint could cause these other possible hazards:

- *Fire*—especially if paint is used in an unventilated area near an ignition source, such as a spark, cigarette, or even static electricity.
- *Explosion*—especially if a closed paint container is exposed to high temperatures.
- *Reactivity*—which may occur if paints react with other substances. Read your SDS or ask your supervisor before mixing paints with anything.

## Here are some safety tips for handling and storing paint:

- Keep containers closed and tightly sealed when not in use.
- Don't use an unlabeled container.
- Check for, and promptly repair, any leaks in paint containers.
- Dispose of empty paint cans properly.
- Contain and clean up any spills right away following the procedures on the SDS.



# PAINTING AND SPRAYING SAFELY



This talk informs employees as to how to remain safe and avoid dangers associated with painting or spraying at the worksite.

## Materials to have on hand:

- The type or types of paint used by workers at your worksite
- Safety data sheets (SDS) for the paints

## Items for attendees to consider during the talk:

- How can the paint’s SDS help you with your job?
- Do you know how to protect yourself from the hazards associated with paint?
- Are you aware of the procedures to follow when working with paint?

## TALK

*[You may want to present the ToolBox Talk “Painting and spraying: Understanding painting and health hazards” in addition to this ToolBox Talk.]*

## Read the paint’s label and SDS

Before beginning any paint job, always read the label on the paint can and consult the safety data sheet, or SDS. Because there are so many types of paint

designed for different purposes, don’t assume you know what hazards may be involved. The label and SDS will tell a lot of what you need to know to use the product safely, including:

- Physical and health hazards.
- What personal protective equipment, or PPE, to wear; common items are gloves, coveralls, long-sleeved shirts, and safety glasses or other face protection. Note that spray booth work usually involves respirators.
- What safety precautions to take.
- What to do if someone is overexposed to the product.
- How to dispose of paint safely.

## Be aware of the physical hazards associated with paint

Paints can pose these physical hazards. A fire hazard is possible if ventilation is inadequate or paint is exposed to a heat source. The chance of an explosion increases when paint is stored in high temperatures in a closed container. There’s also the chance of a reactivity hazard when paint is mixed with other substances, including water, unless the SDS tells you it’s not a reactive substance.

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# PAINTING AND SPRAYING SAFELY

## Follow these paint-handling precautions:

- Avoid contact with eyes, skin, and clothing.
- Wear the required PPE, including goggles, gloves, and, if necessary, a respirator.
- Use protective skin cream when appropriate to prevent drying of skin.
- Ventilate the paint area.
- Use water-based paints whenever possible.
- Store paint away from incompatible materials.
- Contain and clean up any spills quickly and completely.
- Keep paints away from ignition sources such as heat, sparks, and flame.
- Use grounded equipment and nonsparking tools.
- Keep containers tightly closed and sealed when not in use.
- Dispose of combustible rags in designated closed containers that are emptied daily.
- Wash thoroughly before eating or smoking.

## Don't make these paint-handling mistakes:

- Smoking in paint areas.
- Painting from a container that's either missing a label or has one that's unreadable.
- Mixing paints with other substances without prior approval.
- Using solvents or thinners to remove paint from your skin—follow the manufacturer's recommendations for paint removal.

## Follow safe disposal guidelines

You should never throw out solvent-based paints and oil-based paints in the regular trash; they must be managed as a hazardous waste in accordance with company guidelines. Water-based paints are not considered hazardous and may be disposed of with ordinary trash in solidified form. To solidify the paint, add mulch, cat litter, shredded paper, or paint hardener.

# PALLET JACKS

## WORK PRACTICES FOR SAFE USE



This talk discusses safe work practices for using manual or electric pallet jacks (also known as a pallet truck, pallet pump, or pump truck). Rider pallet jacks are not covered in this talk.

### Materials to have on hand:

- Pallet jacks (electric or manual)
- A pallet set up with a load

### Items for attendees to consider during talk:

- Is it safer to push or to pull a manual pallet jack?
- How do you know when a load is too heavy for the pallet jack?

## TALK

Hand pallet jacks help you handle heavy loads safely without the need for extra hands or a forklift. They may not seem like dangerous pieces of equipment, but they can cause painful injuries. There are a few simple safety tips you can follow to make sure you don't get hurt using a pallet jack.

### Before you use a pallet jack:

- Know the maximum load capacity—it should be marked on the label stamped on the jack.

- Wear sturdy footwear to prevent injuries like having a foot run over, stubbing a toe, or being hit by items falling from a load.
- Wear gloves to reduce the risk of cuts, bruises, and blisters.
- Wear eye protection when the load on the pallet has strapping that could break and hit you and when moving loads that contain hazardous chemicals.
- Never carry riders or ride the equipment yourself.

### While using the pallet jack:

- Put the forks completely under the pallet.
- Center the forks evenly under the load to maintain good balance and ensure stability of the load.
- A clearance of 1 inch between the floor and the pallet is usually enough to move the load, and the load is more stable if it is kept close to the floor.
- For electric pallet jacks, put the actuating level in a neutral position to move the load—the forks will stay in the raised position.
- Make sure your foot is safely out of the way before you lower the load.
- Push—don't pull—manual pallet jacks, except for minor adjustments or unloading a truck trailer.

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# PALLET JACKS

Pulling puts excess strain on your back and shoulders. Pushing makes it much easier to stop or maneuver the load in an emergency. If you have to pull to clear a pallet from a tight space or truck trailer, move slowly with extreme caution or get a forklift to do the job.

- Stop moving your load if someone is in your way—don't assume the person sees you and can avoid you.
- Use traffic lanes and be very cautious and slow at corners to avoid collisions.
- Ask a spotter to assist you when your view forward is blocked by the load.

## When done using the pallet jack:

- Park the jack in a level place with the forks lowered when you are finished using it.
- Make sure the handle is up and the jack is out of a traffic area so no one will trip over it.
- Don't block exits or emergency equipment like fire extinguishers.
- Pallet jacks are meant to help—not hurt—you. Follow these safe practices and that's what they'll do.

# PATIENT LIFT BEST PRACTICES

## HOSPITAL AND NURSING HOME WORKERS



This talk informs healthcare workers in hospital and nursing home settings about best practices when repositioning or lifting patients.

### Materials to have on hand:

- Lift devices particular to your healthcare setting. These can include powered sit-to-stand or stand-assist devices, electric lift devices (sling lifts), ambulation-assist devices, slip sheets, slide boards, convertible wheelchairs, transfer boards, lift cushions and lift chairs, and gait belts/transfer belts with handles.

### Items for attendees to consider during the talk:

- How do you assess if a patient can safely be moved?
- When are lifting devices used?
- What lifting devices do we use?
- What are best practices to follow when lifting or repositioning patients?

## TALK

Repositioning or lifting patients can be very dangerous and demanding work on your body. You might think it's safe to lift a patient with just your hands, but if the patient is heavy or frail; has no ability to understand or cooperate; or has a medical condition that may prevent lifting, such as spasms, manually

lifting the patient is out of the question. You might injure not only the patient but also yourself. You could throw out your back, pull a muscle, or suffer other injuries. Use lift devices to minimize the number of times you need to manually lift patients, or find ways to avoid manually lifting them entirely.

**Assess the patient.** Before moving a patient, you need to assess if the patient can be safely moved. Answer these questions:

- What is the level of assistance this particular patient requires?
- What is the size and weight of the patient?
- What is the ability and willingness of the patient to understand and cooperate?
- What are the medical conditions that might influence the choice of methods for lifting or repositioning?

**Choose a lift device.** Based on your patient assessment, if the patient can safely be moved, you need to choose what lift device is best to use to move the patient. The type of lift or repositioning you will perform will be a factor in this decision.

Each lift device is different, so read the manual for each lift device before using it. Lift devices can be used when patients are:

- Moved to and from a bed to a chair, from a chair to a toilet, from a chair to a chair, or from a car to a chair;

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# PATIENT LIFT BEST PRACTICES

- Moved to and from a bed to a stretcher or trolley;
  - Moved to and from a chair to a stretcher;
  - Repositioned in a bed from side to side or up in bed;
  - Repositioned in a chair from a wheelchair or a dependency chair; *or*
  - Moved up from the floor.
- These are the lift devices we use.
- [Name, show, and explain the available lifting devices.]***
- Maintain good posture, and work together.**  
Even when using a lift device to help with the lift or repositioning, maintain a good posture and good lift practices. Here are best practices to follow:
- Get a coworker to help you with the lift. Do not perform lifts alone.
  - While performing tasks at the patient's bedside, try to find a way to get closer to the task. Move along the side of the patient's bed instead of reaching over the bed.
  - If you have to manually move or lift the patient, stand as close as possible to the patient. Keep your knees bent and your feet apart. Do not twist your back.
  - Keep the head of the bed flat or down when pulling a patient up in bed.
  - If possible, raise the patient's knees and encourage the patient to push. This will help you lift or move the patient more easily.

# PERSONAL FALL ARREST SYSTEMS FOR GENERAL INDUSTRY



This talk discusses fall hazards and the safe use of a personal fall arrest system for general industry workers.

## Materials to have on hand:

- Examples of real-life injuries/fatalities from falls in general industry work activities
- A full body harness, lanyard and/or lifeline, and an anchorage point

## Items for attendees to consider during the talk:

- What are some types of fall protection?
- When are you required to have appropriate personal fall protection?
- How often should your fall protection system be inspected?

## TALK

The company is required to provide you with an appropriate personal fall protection system if you will be working in unprotected areas where you can fall 4 feet or more. Today we will be using personal fall arrest systems—also known as PFAS.

Fall arrest stops you from falling. The entire PFAS needs to be capable of withstanding the tremendous impact forces involved in a fall. A person without protection will free-fall 4 feet in half a second and 16 feet in 1 second! A PFAS includes a full-body harness,

a shock-absorbing lanyard or rope grab, vertical lifeline, and a sound anchorage able to support a load of up to 5,000 pounds.

The PFAS will be rigged so that you cannot free-fall more than 4 feet or hit a lower level. You are not allowed to use body belts as part of your PFAS. Body belts have proven to cause even more hazards to a worker. For example, a worker could suffer internal injuries or even death from pressure on the internal organs while suspended, or you could suffocate by a belt that shifted upward from the waist to the armpits. So, do not use them as part of your PFAS.

Let's talk about some do's and don'ts of your PFAS.

## Do

- Pick an anchorage point that will support 5,000 pounds (strong enough to support a pickup truck).
- Rig the fall arrest systems so you can't free-fall more than 4 feet (or contact any lower level).
- Tie off above your head. A 6-foot person who ties off at the feet could free-fall as much as 12 feet.
- Place your anchorage directly above/behind your work area to avoid potential swing fall hazards.
- Use the shortest lanyard possible. The shorter the tie-off, the shorter the fall.
- Have your anchorage points selected by a competent person.

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# PERSONAL FALL ARREST SYSTEM

## Don't

- Don't tie a knot in the lanyard. This will reduce its strength.
- Don't use water pipes, electrical conduits, light fixtures, or guardrails as anchor points.
- Don't use any lanyards without self-locking snap hooks.
- Don't join multiple lanyards together to reach an anchorage.
- Don't tie-off to the same anchorage as another worker unless it is designed and approved by an engineer.
- Don't unhook from your fall protection while exposed to a fall of 4 feet or more.

- Don't allow someone else to rig your equipment unless you verify that it has been done correctly.
- Don't use an anchorage that is not independent of any anchorage used to support or suspend platforms.

And finally:

- You must inspect your equipment daily before each use for wear damage, deterioration, fraying ropes, cracks, or other defects in the hardware;
- Tag and remove any defective equipment from service; *and*
- Make sure you are attached to a sound anchorage.

Remember, if you have any questions or concerns, please speak up. Think safety first!

# PORTABLE LADDER SAFETY IN CALIFORNIA

## SAFE WORK PRACTICES



This talk discusses safe practices for climbing up and down and working from a portable straight or extension ladder in accordance with California requirements.

### Materials to have on hand:

- Extension or straight ladders in use at the worksite

### Items for attendees to consider during talk:

- How far does an extension ladder need to extend beyond an upper landing surface?
- What does it mean to maintain three points of contact with a ladder?
- What is the minimum overlap between the two sections of a 24-foot extension ladder?

## TALK

Portable ladders are a simple and effective means for safe climbing. However, they are so easy to use that it's easy to overlook normal precautions for using them safely. One mistake or misstep can cause injuries ranging from a sprain to a crippling or fatal fall. Follow these safe work practices for setting up, climbing, and working from a portable straight or extension ladder.

### Setting up safely:

- Check the ladder's label to determine how much weight it is rated to hold, and do not exceed that weight, rating. Make sure to account for your own weight, as well as the weight of any tools, materials, or equipment you will be using.
- Place the base of the ladder on a secure, level surface. If the surface is uneven, use a ladder leveler to provide equal support to both rails. If the surface is slippery, secure the ladder at the base.
- Never place ladders on boxes, barrels, or other unstable surfaces to gain additional height.
- Do not place ladders in a doorway, driveway, passageway, or any other place where they might be displaced by movement or activities unless you use barricades or guards around the ladders.
- Keep the area around the top and bottom of the ladder clear and free of debris.
- Set up ladders at the correct angle. The horizontal distance from the top support to the base of the ladder should be one-quarter of the length along the ladder between the base and the top support. In other words, with the ladder standing vertically against the surface where the top of the ladder is leaning, pull the base of the ladder 1 foot away from the surface's base for every 4 feet of vertical height you have to climb. For example, if the vertical distance from the base to the top support

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# PORTABLE LADDER SAFETY IN CALIFORNIA

point is 8 feet, pull the base of the ladder 2 feet away from the vertical position.

- Make sure the side rails of the ladder extend at least 3 feet above the upper landing surface, such as a roof or platform. If this is not possible, secure the ladder at the top to a rigid support, and use a grasping device such as a grab rail to mount and dismount the ladder.
- When using an extension ladder, make sure the top section is above and resting on the bottom section of the ladder and the rung locks are engaged.
- When using a two-section extension ladder, the two sections must overlap one another by the following minimum amounts:
  - For a ladder up to 32 feet long, the overlap must be at least 36 inches.
  - For ladders longer than 32 feet and up to 36 feet long, the overlap must be at least 46 inches.
  - For ladders longer than 36 feet and up to 48 feet long, the overlap must be at least 58 inches.
  - For ladders longer than 48 feet and up to 60 feet long, the overlap must be at least 70 inches.
- Work carefully and deliberately. Do not rush or make any sudden movements. Keep your attention on your task, and avoid distractions such as cell phones.
- Face the ladder and keep three points of contact with the ladder at all times. Three points of contact means that you have either two feet and one hand or two hands and one foot touching the ladder.
- Do not carry tools, equipment, or materials in your hands while you are on the ladder. Use a tool belt or hoist items up with a rope.
- Never move, shift, or extend the ladder while you are on it.
- Do not stand or work from the top three rungs of the ladder unless there is a structure that provides a firm handhold or you are using a personal fall protection system appropriate for the work you are doing.
- Keep your body near the middle of the ladder while you work, and avoid reaching too far to the side. Reposition the ladder if you need to reach farther than you can safely reach while working. In cases when this is not practical, secure the ladder at the top, and use a personal fall protection system that meets the requirements for the type of work you are doing.

## Climbing and working:

- Wear sturdy footwear with nonslip soles, and make sure that your shoes are not wet, muddy, icy, or covered in any slippery substances.

# PORTABLE LADDERS

## CHOOSE THE RIGHT ONE



This talk discusses how to choose the right portable ladder for the job and how to make sure it is safe to use. The talk covers straight ladders and extension ladders. Stepladders are covered in a separate talk.

### Materials to have on hand:

- Samples of portable ladders (wood, metal, fiberglass, etc.) used in the workplace
- Samples of broken or defective ladders, if available

### Items for attendees to consider during talk:

- How often should you inspect the condition of a ladder?
- How do you know the weight capacity of a ladder?
- What kind of ladder is best to use around electrical equipment or power lines?

## TALK

Portable ladders are a simple and effective way to climb safely to a work area. But incorrect or careless use of ladders often causes serious injuries—and even death. You can avoid injuries by following these basic safety rules.

**Use the right type of ladder for the job.** The “right” type of ladder means using one that is the right height for the job, has the capacity to support the weight on it, and is made of the right material for the job.

Never use a metal ladder if you work near exposed electrical equipment or power lines—use a wooden or fiberglass ladder that will not conduct electricity. There is a real danger of electrocution or other physical damage even if you work away from power lines—for example, a gust of wind could blow the ladder into those lines if unattended.

Use a heavy-duty ladder—not a light, household-type ladder—for construction work where a ladder may have to carry a variety of loads. Read a duty rating chart or the rating on the ladder’s label that lists the load the ladder can safely handle.

Don’t splice or tie ladders together. If you need more height, wait to get a longer ladder or an extension ladder before working on it.

**Don’t use a ladder that’s in poor condition.** Inspect the ladder before you use it at the beginning of the day, before your work shift, or after someone else has used it. Check for missing, broken, or weakened rungs, side rails, and cleats. Make sure ladder parts such as ropes, pulleys, and extension ladder locks are in good shape. Clean oil or grease off ladder rungs and side rails to prevent slipping. Don’t use a defective ladder.

**Mark or tag a defective ladder “DANGEROUS—DO NOT USE!”** if it needs repair. If the ladder can’t be fixed, dispose of it permanently.

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# PORTABLE LADDERS

## INSPECTIONS



This talk discusses inspection practices to ensure all portable straight and extension ladders—whether they are made of metal, wood, fiberglass, or plastic—are safe to use. Stepladders are covered in a separate talk.

### Materials to have on hand:

- Types of portable straight and extension ladders used in the workplace (e.g., metal, wood, fiberglass, plastic)
- Broken or defective ladders to demonstrate items that will not pass inspection

### Items for attendees to consider during the talk:

- How often should a ladder be inspected?
- What should you do if you find that a ladder is defective or damaged?

### Talk

A ladder should always be examined before it is used to be sure there are no defects or damaged parts that would make it unsafe. The inspection is easy to do and will only take a few minutes to complete.

**All ladders** must be inspected to make sure that:

- There are no missing rungs (also called cleats or steps), and they can't be moved by hand.
- Rungs and side rails are free of grease and oil.

- All hardware, fittings, and connectors are securely attached.
- There are no cracked, split, or broken side rails, rung braces, or rungs, and no sharp edges or splinters on rungs or side rails.
- There are no damaged or worn endcaps or anti-slip shoes, if so equipped, on the side rail footings.
- Joints between rungs and side rails are tight and can't be moved by hand.

If a ladder falls over or is dropped, make sure it's free of dents, cracks, or bends in the side rails or rungs. Make sure to check for damaged connections of rungs to the side rails and for sheared rivets connecting parts of ladders, and make sure there is no damage to any other hardware connections.

**Extension ladders** have unique parts for routine inspection. Inspect often to make sure that:

- The rung locks are intact and functional with no loose, broken, or missing parts. Check that the locks seat properly and that the lock flippers work when extending and retracting the top section of the ladder. All sharp points on the locking device must be covered or removed.
- All moveable parts operate freely without binding or undue play.
- There are no frayed, excessively worn, or damaged ropes or parts of rope/pulley systems.

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# PORTABLE LADDERS

- There are no missing, broken, or weakened cleats, rungs, or treads by placing the ladder flat on the ground and walking on it.

**Wooden ladders and ladders with wooden parts** should be free of sharp edges, splinters, splits, or decay in the side rails or rungs. If you suspect decay, carefully probe the area with a sharp object for excess softness. Also inspect to make sure that:

- There is no opaque paint or coating that could cover a defect or damage.
- There are no loose nails, screws, bolts, or other connectors.
- There are no holes or knots in the wood.

**Check metal ladders** for:

- Damage from corrosion
- Dented rungs or side rails
- Any loose or sheared metal parts, including bolts, screws, and rivets

**Inspect fiberglass or plastic ladders** for deformed side rails or rungs from chemicals or heat.

All ladders with defects or damage must be clearly tagged or marked “DANGEROUS—DO NOT USE!” and placed somewhere that they will not be mistakenly used until they are either repaired or discarded.

# PORTABLE LADDERS

## SAFE PRACTICES WHILE CLIMBING AND WORKING FROM THEM



This talk discusses safe practices for climbing up and down and working from a portable straight or extension ladder. Stepladders are covered in a separate talk.

### Materials to have on hand:

- One or more portable straight and extension ladders set up for use
- Tools or other supplies used while working from a ladder

### Items for attendees to consider during talk:

- Do you know the 3-point rule for climbing a ladder?
- What is the safest way to get tools or other items up and down ladders?
- What section of the ladder should you never stand on?

## TALK

Portable ladders are a simple and effective means for safe climbing, except for one major problem. They are so easy to use that it's easy to overlook normal precautions for using them safely. Take for example some real workplace incidents with ladders:

- A worker named Bill had his hands full carrying supplies up a ladder, lost his balance and fell, and suffered a spinal injury. He was bedridden for over a month.

- Carla didn't secure an extension ladder at the top, and she broke her ankle when the ladder slid sideways along a wall and her foot slipped between two rungs.
- Frank overreached while on a ladder to drill a hole above his head, and then he slipped and fell to the ground.

One mistake or misstep can cause injuries from a sprain to a crippling or fatal fall. Follow these safe practices for injury-free work while climbing up, working from, or descending a ladder.

### When climbing up or down:

- Check the bottom of your shoes, and wipe off wet, muddy, or greasy soles.
- Face the rungs while climbing. Also face the rungs when climbing down, and don't focus your eyes at the ground.
- Always keep three points of contact (3-point rule) with the ladder—two hands and one foot/two feet and one hand. Alternate one hand with one foot as you climb up or down.
- Keep your body centered on the ladder and as close to the ladder as possible. A good rule of thumb is to keep your belt buckle between the rails.
- Don't carry anything in your hands that will interfere with a firm grip on the rungs or side rails. Carry your tools or supplies on a belt or shoulder

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# PORTABLE LADDERS

strap, or hoist them up or lower them with a rope once you're at your working point on the ladder. Don't suffer Bill's fate of falling off the ladder!

- Don't hurry climbing up or down the rungs, but take it one rung at a time.
- Never climb above the top three rungs of a ladder—it's dangerous because it's the most unstable part of the ladder, and there is a very high risk of losing your balance.
- Never slide down a ladder—even stuntmen in movies get hurt doing it!

## When working from a ladder:

- Don't try to reach so far that you have to move your body outside the centerline between the

side rails, or lift a foot off the rungs. Overreaching is a major cause of injuries from ladders—Frank's overreaching and fall is not an isolated case! Move the ladder as work requires.

- Don't reach too far overhead either. Use a taller ladder when you have to reach higher.
- When using your hand to work with tools, stock supplies, or to perform any type of work, ALWAYS keep one hand firmly on a rung or side rail.
- Keep tools in a secure hanger or holder around your belt when you're not using them.
- Never try to reposition the ladder while you're standing on it. Climb down and move it.

# PORTABLE LADDERS

## SETTING UP SAFELY



This talk discusses the safe procedures to set up and secure portable ladders for different types of surfaces and environments. The talk covers straight ladders and extension ladders. Stepladders are covered in a separate talk.

### Materials to have on hand:

- Samples of portable ladders commonly used in the workplace
- Boards and other means of stability and securement when demonstrating on soft or uneven surfaces

### Items for attendees to consider during talk:

- Do you know the safe distance to place the foot or base of a ladder away from a wall or side of a building?
- How would you stabilize and secure the foot of a ladder on soft or muddy ground?

## TALK

A portable ladder is a simple device for safe climbing, but don't mistake its simplicity for the potential for injury if it isn't set up properly. Mistakes during setup often lead to bruises and broken bones from falls and can expose you to other serious injuries.

We'll talk about several safe practices for setting up portable ladders.

- Read the safety label on the ladder, and follow the setup instructions.
- Place the foot or base of the ladder on a firm, level, nonslippery surface, and make sure the ladder is stable. Put boards under the ladder footings to give it stability if the ground is soft or muddy.
- Tie off or otherwise secure the base and contact point at the top of the ladder if there is any risk of movement.
- Make sure both side rails at the top of the ladder have contact with the surface it is leaning against, unless it's equipped with a single-support attachment.
- Never set a ladder on top of a box, stack of pallets, or other object to gain more height. Use a taller or extension ladder instead. If you set up a ladder on an unstable base, you're creating a high risk for injury.
- Never set up a ladder in front of a door unless the door is blocked—or you've got someone standing on the other side to keep people from opening the door.
- Never lean the top of a ladder against a surface that isn't strong enough to support your weight, such as a window or other surface that might move.

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# PORTABLE LADDERS

- Never fasten two ladders together for additional height. Instead, use a taller ladder or an extension ladder.
- Make sure the locking devices on extension ladders are secured.
- Remember the 4-to-1 rule: With the ladder standing vertically against the surface where the top of the ladder is leaning, such as a wall, side of a building, or roof overhang, pull the base of the ladder 1 foot (ft) away from the surface's base for every 4 ft of vertical height you have to climb. For example, if it is 8 ft vertical distance from the base of a ladder to its support point at the top, pull the base of the ladder 2 ft away from the vertical position.
- Make sure the top of the ladder extends at least 3 ft above a support point that is an edge of a roof or platform.
- Also, make sure that the upper section of an extension ladder overlaps and rests on the bottom section. The upper section should always be on the climbing side of the ladder. For ladders of 36 ft or more, the overlap of upper and lower sections should be at least 3 ft.

If these setup precautions are followed, and if the ladder is in good condition and is the right one for the job, a simple device for climbing is a safe one, too.

# PORTABLE STEPLADDERS

## WORK PRACTICES FOR SAFE USE



This talk discusses how to make sure a stepladder is the right type and in good condition for the job, along with work practices for using it safely.

### Materials to have on hand:

- Type(s) of stepladder(s) (e.g., wood, metal, fiberglass) used in the workplace.
- Samples of broken or defective stepladders, if available.

### Items for attendees to consider during talk:

- How often should you inspect the condition of a stepladder?
- What's a good way to estimate if a stepladder is not tall enough to safely use it for the job?

## TALK

Stepladders are self-supporting A-frame ladders that are a simple and effective way to climb safely to a work area. You'll prevent injuries by following a few basic safe practices. Many of the safe practices for climbing and working from other types of portable ladders also work for stepladders, but for now we'll just review ones that are unique to stepladders.

**[See Talks that apply to portable straight and extension ladders.]**

**Make sure a stepladder is the right type for the job.** The "right" type means using one that is the right

height, one that has the capacity to support the weight on it, and one that is on a level surface for all four legs.

Painter's stepladders have a maximum height of 12 feet. The maximum height for any stepladder is 20 feet, so consider that when choosing the right type of ladder for the job. A good rule of thumb is if the worker would have to stand on the top step or cap of a stepladder to reach the work area, choose a taller straight or extension ladder or a scaffold instead.

Use a heavy-duty stepladder for construction work where it may have to carry a variety of loads—not a light household-type ladder or painter's ladder. Read a duty rating chart or the rating on the ladder's label for the load the stepladder can safely handle. The load should include your weight plus the weight of any equipment or supplies you may handle.

Never use a metal stepladder if you work near exposed electrical wiring, equipment, or power lines—use a wooden or fiberglass stepladder that won't conduct electricity. There is a real danger of electrocution or equipment damage, even if you work away from power lines, because wind could blow the ladder into those lines when unattended.

**Set up and use the ladder safely.** Make sure the ground surface is level for all four legs of a stepladder—if the ground is uneven, the steps of the ladder will be uneven for climbing and working, creating a high risk for a fall.

Always maintain three points of contact with the ladder—two hands and a foot or both feet and a

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# PORTABLE STEPLADDERS

hand. Alternate one hand with one foot as you climb up or down. Keep contact with both feet and one hand while working.

Don't climb higher than the second step from the top of a stepladder—at that height, it's likely you'll lose your balance or the ladder will tip over. NEVER stand on the top or cap of the stepladder.

Make sure the spreader bars open and close freely and are fully extended and locked in place before you climb.

Never use the cross bracing on the rear or back side rails for climbing up or down.

Check the spreader bar hinges to make sure they are secure and in good condition—no rust or corrosion and not loose or damaged.

If there is a pail shelf attachment, make sure it is securely attached and in good working condition.

Never leave tools or equipment on the pail shelf when you're not using the ladder. People can get hurt by falling objects left on the shelf when moving the ladder.

Never use a stepladder with the spreader bars closed as if it is a straight ladder, because the steps won't be level and the feet of the side rails can easily slide out during use.

## **Don't use a stepladder that's in poor condition.**

Inspect the stepladder before each use and after someone else has used it. Check for missing, broken, or weakened rungs and side rails. Clean oil or grease off ladder rungs and side rails to prevent slipping. Don't use a defective ladder.

Mark or tag a defective ladder **DANGEROUS—DO NOT USE!** if it needs repair. If it can't be fixed, dispose of it.

# PPE FOR CONSTRUCTION WORKERS

## EYE PROTECTION



This talk addresses common eye hazards and the proper use of eye protection for construction workers.

### Materials to have on hand:

- Tools used at the worksite that could cause eye injuries
- The types of eye protection used at your worksite

### Items for attendees to consider during the talk:

- What types of jobs at the worksite have eye injury risks?
- What types of eye protection should you use for your type of work?

## TALK

A 26-year-old construction worker was using a hammer to strike nails into a concrete wall at a jobsite in Maryland. When a nail rebounded, it struck the man in his eye. Emergency services took him to the hospital. He underwent laser eye surgery, but the accident unfortunately impaired the worker's vision. As with most eye injuries at construction sites, this incident could have been prevented if the worker had been wearing the proper personal protective equipment, or PPE.

### The risks

The construction industry has one of the highest eye injury rates in the country because of the dangerous

nature of our work. Hammering, sawing, grinding, sanding, and masonry work can create flying particles of dust, metal, wood, drywall, and cement that can get in your eyes. Wet or powdered cement can cause chemical burns, and nails can become projectiles if you're using hammers or nail guns. Chemicals can splash in your eyes if improperly handled, and welding can cause eye injuries from heat, glare, sparks, splashing metals, arcs, and ultraviolet radiation. Even seemingly minor eye injuries from any of these hazards can cause lifelong vision problems.

If you use the proper eye protection, however, you can significantly reduce your risk of eye injuries as you work around our jobsite.

### Types of eye protection

We will give you the right type of eye protection for your job, but you should be familiar with your options. Be sure to ask your supervisor if you are ever unsure about what type of eye protection to use.

**Safety glasses.** Use safety glasses with side protection to protect against flying particles or objects from jobs like sawing, hammering, and drilling.

Wear safety glasses with shaded filter lenses to protect against harmful light radiation, such as during welding. Safety glasses used in torch soldering must have a shade number between 1.5 and 3 on the lens. Gas or arc welding requires shade 4 or higher.

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# PPE FOR CONSTRUCTION WORKERS

**Goggles.** Goggles will give you greater protection from flying particles or objects, chemical splashes, and light radiation. Use them if you are sawing, chipping, grinding, doing masonry work, using a nail gun, pouring cement, working with chemicals, or welding.

Goggles for splash or high dust protection should have indirect venting. Goggles with direct venting, which is a mesh of small holes around the sides, tend to fog up less, but they should not be used with liquid or fine dust hazards.

If you are using goggles for welding, make sure they are the proper shade number. The shade number will be marked on the lens and shows how dark the lens is.

**Face shields.** Use face shields to protect your eyes and face from splashes, hot slag, sparks, high temperatures, light radiation, flying debris, and molten metals when spraying, chipping, grinding, or welding. Always wear face shields over safety glasses or goggles.

**Prescription lenses.** Prescription safety glasses, safety goggles designed to fit over eyeglasses, or protective goggles with mounted corrective lenses may be appropriate if you need corrective eyewear. Make sure to let us know if you need this type of equipment. We don't recommend wearing contact lenses if you will be exposed to dust, hazardous liquids or vapors, or high temperatures, and we won't allow you to wear contact lenses if you will be exposed to harmful materials or light flashes unless medically approved.

## Using your eye protection

Properly wearing and caring for your eye protection is critical if you want it to work. Here are some tips to keep in mind:

- Eye protection should always fit comfortably; it shouldn't pinch your nose or put pressure on your head. Make sure there are no gaps that would allow hazards in.
- Eyewear shouldn't distort or block your vision. If you are experiencing dizziness or headaches from wearing it, let us know, and we can provide you with another style or brand.
- Remember to put your eye protection on before being exposed to a hazard. This may seem obvious, but many eye injuries occur each year because workers forget to put on their PPE before starting a job.
- Keep your eye protection clean by washing it regularly with soap and water or with special cleaning products. Regular cleaning helps make sure that your vision is not blocked or blurred. If you are exposed to dust or hazardous liquids while wearing goggles, make sure to clean off the top rim of the goggles before removing them. This prevents dust or liquid from dripping or falling into your eyes when you take them off.
- Throw your protective eyewear away if it is scratched or otherwise damaged because it may not fit correctly, distort your vision, or provide inadequate protection.

If you follow these simple steps and make a habit of wearing your eye protection, you can save your sight and prevent needless injuries.



# PPE FOR CONSTRUCTION WORKERS

## FOOT PROTECTION



This talk provides an overview of common foot hazards and the types and proper use of foot protection for construction workers.

### Materials to have on hand:

- Tools used at the worksite that could cause foot injuries
- Types of foot protection used at your worksite

### Items for attendees to consider during the talk:

- What types of foot hazards does your job have?
- What is the best type of foot protection for you?

## TALK

Foot hazards are easily overlooked, but even one nail puncture can cause weeks of time away from your job. In a recent year, more than 50,000 construction workers were sidelined by foot injuries caused by falling objects like dropped tools and equipment; crush hazards from heavy machinery and building materials; punctures from rebar, nails, and wire; and burns from caustic chemicals and concrete. Fortunately, if you choose the appropriate footwear and know how to keep it in good condition, you can reduce these everyday risks.

### Safety-toe footwear

Wear safety-toe footwear, such as steel-toe, alloy-toe, or composite-toe work boots or shoes, to prevent crush injuries from heavy equipment and falling or rolling objects. While all types of safety-toe footwear must meet the same impact and compression standards, there are some differences between them.

**Steel toe.** Steel-toe boots are less expensive than alloy- and composite-toe safety boots but also tend to be heavier. They conduct heat and cold, so you will be more likely to feel the effects of the weather. They also conduct electricity and can be hazardous around live wires. However, steel-toe boots provide the best protection against impact, crush, and shearing injuries.

**Alloy toe.** Alloy-toe boots are made from a mixture of aluminum and titanium and are up to 50 percent lighter than steel-toe boots. Because these materials are much thinner than steel, these boots can be more comfortable. However, alloy safety boots will still conduct electricity and are generally less protective against impacts from falling objects, compression, and shearing than steel-toe boots. They are also more expensive.

**Composite toe.** Composite-toe boots use materials like Kevlar®, plastic, and carbon fiber and should be used when your feet are exposed to electrical hazards. These boots are not as strong as steel- or alloy-toe boots, so they must be thicker to achieve the same safety ratings, and the composite material can weaken over time. They are also less protective

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against dropped objects and shearing than steel- or alloy-toe footwear, and it can be difficult to tell if the toe cap has been damaged. However, composite-toe boots are lighter than steel-toe boots, and they insulate better against hot and cold temperatures.

## Safety soles

You should also make sure that you choose footwear with the right kind of sole for your job. Different types protect against different kinds of hazards. Some soles are puncture-resistant to protect against sharp objects, while slip-resistant soles prevent injury on wet or slippery floors. Heat-resistant soles are necessary for work involving hot surfaces, such as paving operations. Still others prevent the absorption of water or hazardous substances. Safety shoes with a defined heel are best if you climb ladders often, but they do not provide as much slip resistance.

## Specialized footwear

Keep in mind that your job may require more specialized footwear if you work with certain materials. If you have a risk of splashes from chemicals, acids, or caustics, you will need chemical-resistant boots. Wear rubber boots to prevent severe burns if you place concrete. If you work with a jackhammer, choose boots that cover your whole foot with steel,

not just your toes. Use metatarsal guards to protect the tops of your feet from compression injuries if you work with heavy materials that could fall, drop, or roll onto them.

## Proper wear and care

Once you choose the right work boots or shoes for your job, always wear and care for them properly to maximize the protection they give you.

- Make sure your work boots are comfortable, just like everyday shoes. They should grip your heel and allow freedom of movement for your toes.
- Inspect all footwear before each use to ensure that it will provide the intended protection. Make sure there are no holes or cracks in waterproof boots or footwear designed to protect against hazardous liquids. Check soles for excessive wear, especially if they are intended to protect against slips or punctures.
- Finally, keep your foot protection clean. Remove dirt, mud, and hazardous materials after each use to help keep the footwear in good condition.

Remember, every jobsite can have accidents. But when you wear the right foot protection, injuries are less likely, less serious, and less expensive.

# PPE FOR CONSTRUCTION WORKERS

## HAND PROTECTION



This talk addresses common hand hazards and the proper use of hand protection for construction workers.

### Materials to have on hand:

- Tools used at the worksite that could cause hand injuries
- The types of gloves used at your worksite

### Items for attendees to consider during the talk:

- What types of jobs at the worksite have hand injury risks?
- What types of gloves should you use for your type of work?

## TALK

You might think that injuries to your fingers or hands are not that serious, but did you know that the average cost of a cut is \$10,000 or that a severed tendon can set you back \$70,000? These hefty price tags don't even account for time away from work or lost productivity due to long-term damage from seemingly minor hand injuries.

### The risks

We have a higher risk of hand and finger injuries in the construction industry because we use tools like hammers, saws, drills, and nail guns, as well as heavy machinery such as bulldozers, dump trucks,

and cement mixers. When used incorrectly, these tools and pieces of machinery can cause hand injuries from flying particles, crushing, pinching, puncturing, or cutting. Jobs like welding and electrical work can also cause burns or electrocution.

Fortunately, the majority of hand injuries at construction sites can be prevented if you wear the appropriate personal protective equipment, or PPE, including gloves.

### The right glove for the job

Keep in mind that not all gloves are the same. So, how do you choose the right type?

- Use metal mesh, Kevlar®, or other cut-resistant gloves to protect against cuts and punctures if you are handling saws, knives, glass, or other sharp objects.
- Use leather or canvas work gloves to protect against scrapes from rough surfaces, chips, sparks, and moderate heat. These can be coated with other materials to improve your grip.
- Use cotton gloves to protect against dirt, splinters, and scratches and to help you grip slippery objects. However, never use them with rough or sharp materials.
- If you are doing electrical work, use specially insulated rubber gloves to protect against electrical shocks and burns.

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- If you are welding, use fire-retardant, gauntlet-type gloves to protect against high heat, sparks, and spatter. Leather is usually the preferred material for welding gloves.
- If you are working with chemicals, use chemical-resistant gloves made of rubber, latex, Viton®, butyl, nitrile, neoprene, or PVC. The type of gloves you should choose will be specific to the chemical you are using and the length of time you are using it. The glove packaging will tell you which chemicals the glove is designed for and how long the glove will protect you.

We will provide the correct gloves for each job, but be sure to ask your supervisor if you're not sure what you should be using.

## Using your gloves properly

To best protect your hands, make sure you're wearing and caring for your gloves properly.

- Check that your gloves fit comfortably. Gloves should not be too tight, which would restrict your hand movement, or too loose, which would create snagging hazards and limit your ability to grip and feel properly.

- Inspect your gloves before each use. Check chemical-resistant gloves for cracks, holes, cuts, or other damage. Gloves that protect against cuts and punctures should not show wear and tear. Gloves for electrical work should not have any tears or scrapes. Heat-resistant gloves should not have abrasions on the outer surface or damage to the inner linings.
- Keep gloves clean and dry.
- Decontaminate chemical-resistant gloves after each use or place them in the proper containers for decontamination or disposal.
- Throw gloves away if they become torn, cracked, or otherwise damaged.
- Don't use your gloves if they could create a greater hazard by getting tangled in moving machinery or materials.
- Don't wear wrist watches, rings, or other jewelry if you are working with or around machinery or electrically energized equipment.

If you follow these important tips, you will significantly reduce your risk of expensive and painful hand injuries here at our jobsite.

# PPE FOR CONSTRUCTION WORKERS

## HEAD PROTECTION



This talk provides an overview of the types and proper use of head protection for construction workers.

### Materials to have on hand:

- Tools used at the worksite that could cause head injuries
- The types of head protection used at your worksite

### Items for attendees to consider during the talk:

- What type of head protection should you use for your job?
- How should you maintain your hard hat?

## TALK

Did you know that construction workers experience the most fatal and nonfatal traumatic brain injuries among all occupations nationwide? Head protection is our first line of defense against these injuries from falling objects, heavy equipment, and electric shocks and burns, but we have to remember to use it correctly.

### Hard hats

Hard hats are typically made of high-density plastic so that they are lightweight but strong enough to protect against the common hazards we encounter at construction sites, including impact or penetrating injuries caused by falling or flying objects and

shocks and burns caused by electrical hazards. All hard hats are classified based on the level of protection they provide against these impact and electrical hazards.

**Impact protection.** Hard hat impact protection is divided into two categories: Type I or Type II. Type I hard hats reduce the force of impacts to the top of the head, such as from a dropped hammer or nail gun. Type II hard hats reduce the force of impacts to the top or sides of the head, such as from contact with a side beam.

**Electrical protection.** Electrical protection is designated as Class G, Class E, or Class C. Class G hard hats, also called general hard hats, are designed to reduce the danger of exposure to low-voltage conductors. They offer head protection up to 2,200 volts. Class E hard hats, also called electrical hard hats, are designed to reduce the danger of exposure to high-voltage electrical shocks and burns. They offer the highest head protection—up to 20,000 volts. Class C hard hats, also called conductive hard hats, are not designed for electrical resistance. They are designed for lightweight comfort and impact protection and are not intended to protect against electrical hazards.

Our hard hats at this worksite meet industry standards and are marked with the standard number and date, the manufacturer, the designated electrical class, and the impact type. Check the label to make sure you're wearing the right kind of hard hat.

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# PPE FOR CONSTRUCTION WORKERS

## Proper use and maintenance

If you want your hard hat to give you the best protection, you need to wear and care for it properly.

- Make sure your hard hat fits properly but comfortably. There are different kinds of suspension systems for hard hats, and you should follow the manufacturer's instructions on how to adjust the suspension for a secure fit. The cushion of air between the shell and the suspension is an important part of a hard hat's protection, so don't interfere with it or carry anything like tools or cigarettes inside your hard hat while you're wearing it.
- Baseball caps should not be worn under hard hats, but winter liners and cooling headwear are allowed as long as they don't interfere with the suspension. Don't wear your hard hat backward unless it is designed to be worn that way, and never cut, bend, or heat it.
- Inspect your hard hat before each use. Check for cracks or any other damage that might reduce the protection level of the hard hat. Inspect

the suspension system for cracks, worn straps, or other damage, and make sure it is installed properly. Replace your hard hat immediately if you see damage to the shell, liner, or suspension. You should also replace your hard hat if there has been a significant impact, even if you can't see any damage.

- Check the manufacturer's recommendations if you are considering painting or putting stickers on your hard hat. Most manufacturers don't recommend painting the hard hat because paint can damage the shell, but stickers may be allowed. However, keep in mind that stickers or paint may prevent you from seeing any damage and can reduce the hard hat's electrical resistance.
- Finally, only use hard hats for their intended purpose. They should not be used as a seat or a step stool, as this might damage them and reduce their ability to protect your head properly.

If you keep these tips in mind as you work around the jobsite, you will significantly reduce your risk of serious and preventable head injuries.



# PPE—GENERAL

IT ONLY WORKS IF YOU WEAR IT!



This talk discusses the importance of proper use of personal protective equipment, or PPE, in the workplace.

### Materials to have on hand:

- Company policy on PPE use
- PPE used at your facility

### Items for attendees to consider during talk:

- Have you a reason for not wearing your PPE?
- What PPE are you required to use at our facility?
- What should you do if your PPE is uncomfortable?

## TALK

Some hazards at work simply can't be eliminated completely by engineering controls or substitutions. That's when the company needs to provide you with personal protective equipment—or PPE. Sounds simple—yet, is it?

Think of some reasons you or others have had for not wearing your PPE: “The glasses are uncomfortable.” “The shoes pinch my toes.” “This hard hat is too heavy.”

The type of equipment required to provide the needed protection depends on the particular type of work being done. In areas where flying particles are likely to be found, goggles need to be used to protect the

eyes. Similarly, the kind of protection safety shoes are supposed to provide determines what type of shoe is appropriate. In other words, it must be slip-proof, nonconductive, high-topped, or steel-toe. And the type of safety helmet to be worn depends on the type of hazard the wearer is likely to encounter. In some jobs, hard hats may be adequate; in many they are not.

*[Customize for your specific workplace]*

[ \_\_\_\_\_ ] has conducted a hazard analysis for every job at our facility—to make sure all the factors in our work that would call for requiring PPE are identified. The company will supply all the necessary protective equipment to protect you from the safety and health hazards identified in the hazard analysis.

We want you to be safe at work, and your PPE is designed to protect you, but it only functions if you wear it. If your equipment is uncomfortable or you have some other concerns about using the PPE, please let your supervisor know immediately. Don't begin a task that requires the use of PPE without it.

If your PPE is uncomfortable, it probably doesn't fit properly. The company is here to help you because we want you to go home safe every day. We will work with you to find the correct fit for the equipment you need. You can try out several different types to see if there is one that feels better. But sometimes it just takes some time to get used to wearing the equipment.

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# PPE—GENERAL

It's also very important to inspect your PPE before each time you use it. Don't use any equipment that is damaged. And be sure to report any damaged, lost,

or worn out PPE to your supervisor. Your safety is our priority!

# PPE

## STRATEGIES TO BEAT THE HEAT



This talk provides tips for staying cool to outdoor workers required to wear personal protective equipment (PPE) in hot weather conditions.

### Materials to have on hand:

- PPE designed for hot weather, such as ventilated gloves, hard hats with vents, and sweat liners
- Cooling accessories like evaporative cooling towels, bandanas, and vests

### Items for attendees to consider during the talk:

- What are some ways you can stay cool while wearing your PPE?

## TALK

When it's hot outside, it may be tempting to remove your personal protective equipment, or PPE, to cool down for a moment. You might not even want to put it back on. But you need to remember that PPE is the last line of defense protecting you from workplace hazards. Removing any piece of required PPE, even for a short time, can increase your risk of injury or illness and put us all at risk of Occupational Safety and Health Administration, or OSHA, violations. Here are some tips that will help you beat the heat while staying safe:

- Wear PPE that addresses the hazards caused by sun and heat exposure. These items include vented hard hats, sweat liners for your hard hats

or gloves, ventilated gloves, and anti-fogging goggles. PPE that is made from breathable materials and lighter colors is also available and can help reflect the heat. Heat-protective gloves or sleeves can help you handle materials that have become hot from the sun. Ask your supervisor if you think any of these pieces of PPE could help you better cope with the weather so we can provide them to you.

- Wear accessories beneath or attached to your PPE to protect against the heat and sun. Cooling items, such as tank tops, vests, bandanas, and towels, disperse heat. There are also neck shade attachments available for hard hats.
- You can also choose to wear sunscreen, sunglasses, and clothing designed to protect you from harmful UV rays to give yourself additional relief from the sun.
- Stay hydrated! Because working in the heat makes you sweat, you will need to drink more water to stay hydrated. We will provide water for you. Make sure you take water breaks throughout the day to avoid dehydration.
- Set up a buddy system so you and your coworkers can be on the lookout for signs or symptoms of heat-related illness or dehydration in each other.

If you remember these strategies, you can keep cool while protecting yourself from our workplace hazards.

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# PREPARING FOR EARTHQUAKES IN CALIFORNIA



This talk discusses the steps that employees should take in the event of an earthquake in their workplace.

## Materials to have on hand:

- A floor plan indicating the location of emergency exits
- An example of a disaster kit

## Items for attendees to consider during the talk:

- Do you know if objects in your work area have been secured to resist falling?
- Are you aware of the actions you should take if an earthquake occurs?
- Do you know the locations of the exit routes at our facility?

## TALK

Everyone knows that California is particularly susceptible to earthquakes because of the San Andreas Fault, which passes through much of the state. In fact, California leads the contiguous United States in having the largest number of earthquakes with a magnitude of 6.0 and greater. Because of the possibility of an earthquake in our area at any time, it's important that we review the steps that all of us can take to ensure our safety should the "big one," or, more likely, a smaller earthquake, occur.

## Securing moveable objects in your space

Earthquakes can easily move heavy objects, so be sure to identify those in your space that could be tossed around and/or fall upon you during an earthquake. These could include:

- Bookcases,
- Filing cabinets,
- Computers,
- Shelving units,
- HVAC units,
- Emergency batteries,
- Lockers and storage cabinets,
- Chemicals, *and*
- Gas cylinders.

Many of these objects can be secured to the wall with bolts, flexible fasteners, and the like. Items on open shelving units, such as chemicals, can be restrained by wood or plexiglass strips, and gas cylinders and large fire extinguishers can be secured with rope and eyebolts. Management will take the steps to secure these objects, but you can help by pointing out ones that are not already secure. You can also move heavy or large items in your work area to the floor or low shelves. Also be on the lookout for any heavy or unstable items that are near doors and escape routes.

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# PREPARING FOR EARTHQUAKES IN CALIFORNIA

## Drop, Cover, and Hold On

Most emergency preparedness experts recommend the “Drop, Cover, and Hold On” actions as the best way to protect yourself during earthquake shaking. This is how it works:

- **Drop** where you are onto your hands and knees. This position protects you from being knocked down and allows you to stay low and to crawl to nearby shelter.
- **Cover** your head and neck with one arm and hand. If there’s a sturdy table or desk nearby, crawl underneath it for shelter, or crawl next to an interior wall that’s away from windows. Stay bent over on your knees to protect vital organs.
- **Hold** on until the shaking stops. If you’re under shelter, hold on to it with one hand, and be ready to move with your shelter if it shifts. If you’re not sheltered, hold on to your head and neck with both arms and hands.

If you’re seated and unable to drop to the floor, you should bend forward and hold on to your head and neck with both arms and hands.

## Prepare a kit of disaster supplies

Keep a kit of disaster supplies at the location in the facility where you spend most of your time so you can reach it even if the building is badly damaged. Keeping a second kit in your vehicle is also a good idea. Here are items you should include:

- Medications, prescription list, copies of medical cards, doctor’s name, and contact information;

- First-aid kit and handbook;
- Dust mask;
- Spare eyeglasses or contact lenses and cleaning solution;
- Bottled water and snack foods that are high in water content and calories;
- Whistle for alerting rescuers to your location;
- Sturdy shoes;
- Emergency cash;
- Personal hygiene items;
- Working flashlight with extra batteries and light-bulbs or light sticks; *and*
- Copies of personal identification, such as your driver’s license and work identification card.

Keep the disaster supplies, preferably in a backpack, so that you can take them with you if you evacuate.

## Leaving the building

If you are inside, don’t go outdoors until you’ve been advised that it’s safe to do so by the emergency coordinator. It will not be safe to exit the building until the ground has stopped shaking and the surrounding area is deemed safe. At that point, our facility’s emergency action plan will kick into place, and you will exit in accordance with the exit drills that we’ve previously practiced.

If you follow these steps, you will be confident that you know what to do in the event of an earthquake, and you will increase your chances of remaining safe throughout the event.

# PRESSURE WASHER SAFETY



This talk discusses the hazards associated with industrial-strength pressure washers and safe practices for employees to follow to avoid injury.

## Materials to have on hand:

- Pressure washers in use at the worksite
- Any personal protective equipment (PPE) required to be worn while using a pressure washer

## Points to consider:

- What kinds of injuries can pressure washers cause?
- What PPE should you wear when using a pressure washer?

## TALK

In a recent incident, an employee was inspecting a leak under the valve of a pressure washer when the valve came off. The employee was struck by high-pressure water that penetrated his torso, and he was killed. In another incident, an employer was using a high-pressure water hose when his left foot slipped into the water stream, causing an amputation of one of his toes.

Pressure washers may seem like relatively safe tools—after all, it’s just water—but these incidents and many others like them illustrate their dangers.

The water in industrial pressure washers often comes out with a force of over 2,000 pounds per square inch, or psi. For comparison, the average garden hose puts out about 40 psi of pressure.

That pressure is useful for cleaning and other jobsite tasks, but it is very dangerous if it is aimed in the wrong direction. The spray from a pressure washer can cause cuts, eye injuries, organ damage, and even amputations, as we heard in the previous example. In addition, the spray can throw objects that strike and injure others who are nearby. Depending on the type of pressure washer, there can also be risks of electric shock and carbon monoxide poisoning.

If you injure yourself with a pressure washer, tell your supervisor and seek medical attention. Fluid injection injuries can be more dangerous than a simple cut, so simple first aid may not be enough.

## Before use

Before you use a pressure washer, always review the operator’s manual and make sure you understand all the instructions for using the equipment safely. Make sure you know where all the controls are located and what they do.

Inspect the equipment before you begin, looking for signs of cuts or nicks in the hose, loose connections, broken or missing parts, and leaks. Tell your supervisor if you find any defects, and don’t use the equipment until it is repaired.

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# PRESSURE WASHER SAFETY

## Starting

Before you start the pressure washer, connect the water hose to the water source, and then connect the high-pressure hose to the pump. Connect the spray gun to the other end of the high-pressure hose, and attach any additional nozzles or accessories to the spray gun. Never attach or remove nozzles, hose fittings, or accessories while the system is pressurized.

Turn the water source on, and flush air out of the pump and hose by holding down the trigger until a steady stream of water appears. Make sure you aim away from people and equipment. Then, follow the manufacturer's instructions for starting the engine or connecting the washer to a power source.

Before you begin the job, test the washer on a small area of the surface you are cleaning to make sure the pressure level does not cause damage. Refer to the manufacturer's instructions for specific information about the pressure levels that can be used on different surfaces.

## Safe operation

To prevent injuries when using pressure washers, always follow these precautions:

- Never point a pressure washer at yourself or another person.
- Never try to push or move objects using spray from a pressure washer.
- Always keep your hands, feet, and body out of the way of the water stream.
- Hold onto the spray wand with both hands.
- Maintain firm footing and a secure grip.
- Never try to remove or bypass any safety features. For example, do not try to secure the trigger in a permanently open position.
- Use the widest-angle tip and the lowest pressure that will effectively do the job. Narrower-angle tips produce higher pressure, which is more dangerous.
- Never exceed the maximum pressure of the lowest-rated accessory attached to the washer.
- Wear appropriate eye and hearing protection, as well as long pants and closed-toe footwear. **[Describe the specific PPE employees must wear while using pressure washers.]**
- Never leave a pressure washer unattended while the power is on. Set the trigger lock when the wand is not in service to prevent accidental operation.
- Turn off and unplug or lock out the washer whenever you need to make adjustments or repairs.
- For electric pressure washers, always plug the equipment into a properly grounded outlet with a ground-fault circuit interrupter, or GFCI.
- If you must use an extension cord, keep the power cord connection away from water, and use a heavy-duty extension cord rated for use in wet locations.
- Never direct the spray of a pressure washer at outlets or other electrical equipment.
- Never use a gasoline-powered pressure washer in an enclosed space.
- When you are finished using the pressure washer, release the pressure by shutting off the power to the sprayer and continuing to operate the trigger until water stops flowing.

# PREVENTING EXPLOSIONS IN THE WORKPLACE



This talk discusses how employees can recognize the substances and conditions that lead to explosions and the best management practices to follow to safely handle and store explosive materials.

## Materials to have on hand:

- Examples or a list of the materials stored or used at your facility that could explode under certain conditions
- An example of a safety data sheet (SDS) for a substance that has a risk of explosion

## Items for attendees to consider during the talk:

- Are you aware of how to determine whether a substance used at your facility has the potential to explode?
- Are you familiar with the factors that can trigger explosions?
- Do you know the safe management practices that can prevent explosions?

## TALK

While we all understand that materials such as dynamite, blasting caps, and industrial explosive materials can go off accidentally, there are other substances in a workplace that can cause an explosion. Today, we're going to talk about what an explosion is and

how to safely handle materials that have the potential to explode. We'll also discuss the steps you can take to prevent explosions.

## Materials and substances with potential to explode

An explosion is a very rapid expansion of gases often accompanied by fire and a high-pressure shock wave. Flammable materials, especially in the form of confined vapor, gases, or dusts, can explode when triggered by a spark or friction. Certain highly reactive (also called unstable) chemicals can explode if they're mixed with incompatible substances, and some will explode even if exposed to air or water. In addition, equipment that is not properly maintained can lead to an explosive pressure release in cylinders or large pressure vessels that contain compressed gases.

## Conditions that can lead to an explosion

Be on the lookout for the following situations that can lead to the explosion of certain materials:

- Overheated, poorly maintained, or sparking machinery
- Confined spaces with inadequate ventilation
- Dust buildup in grain silos or similar areas
- Stuck boiler relief valves

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# PREVENTING EXPLOSIONS IN THE WORKPLACE

- Oil leaks soaking into flammable materials
- Static electricity or sparks from tool or machine friction
- Temperature buildup that causes substances to reach their flash point
- Static electricity or sparks caused by friction from tools, machinery, or welding and cutting equipment

## What to look for when reviewing an SDS

Check the chemical's safety data sheet, or SDS, for the two key indicators of a chemical's risk of explosion:

- Flammability limits, *and*
- Flash point.

The flammability limits are the safe minimum and maximum amounts of vapor or gas in the air. Ignition is not possible if a vapor or gas mixture is outside of the indicated range.

The flash point is the minimum temperature at which a flammable liquid can give off enough vapors to ignite. The closer the liquid gets to the flash point, the more likely it is that the liquid will explode. If the pressure or temperature rises, however, the flammability limits will change, and the possibility of explosion increases. Flammability and flash point information is usually found in Section 9 of the SDS or sometimes in Section 5.

In addition, review the hazard statement on the SDS, and follow the SDS instructions on avoiding heat or proximity to incompatible substances.

Be sure also to look to see if the explosive pictogram is on the SDS, and also check the hazard communication labels on the chemical to determine its explosion potential.

## Work practices

Follow these Do's and Don'ts of safe work practices to prevent accidents and explosions:

- **Don't** expose explosives to heat sources or let heat build up in the air or in containers.
- **Do** store explosives in approved containers and cabinets only.
- **Do** ventilate properly all areas containing explosives or flammables.
- **Do** store explosives in approved containers in clean, ventilated areas, and be sure containers used to transfer flammables are grounded.
- **Do** check that cylinders and pressure vessels have safety relief devices to vent or release dangerous pressure buildup.
- **Do** avoid air or heat exposure when transferring explosives to new containers.
- **Don't** keep explosives like dynamite past their shelf-life dates.
- **Do** dispose of flammables properly—never on the ground or in sewers.
- **Do** place oily rags and other flammable waste in closed metal containers.
- **Do** clean up spills of possible explosives quickly, and remove heat and ignition sources from the area.
- **Don't** smoke in or around any area that contains explosives or flammables.
- **Do** report immediately any equipment problems such as overheating, leaks, sparks, or carbon buildup corrosion. Remember that stress and weak connections can contribute to explosions.
- **Do** make sure ventilation equipment is working properly to remove vapors and dusts from the area.

# PREVENTING FIRES: ELECTRICAL HAZARDS IN THE WORKPLACE



This talk discusses how employees can recognize the conditions that lead to electrical fires and the best management practices to follow to avoid this disaster in the workplace.

## Materials to have on hand:

- Examples of damaged electrical wiring
- No-smoking signs used at your facility

## Items for attendees to consider during the talk:

- Are you aware of electrical fire hazards in your workplace?
- Do you know the facility's smoking rules and the location of designated smoking areas?
- Do you know the safe management practices that can prevent electrical fires?

## TALK

Fires are the most common type of emergency at any workplace, with electrical fires being the most typical cause of fires. Other factors, such as smoking in the wrong location or sparking machinery, can also lead to fires. Today, we're going to talk about recognizing electrical hazards that have the potential to cause fires and the steps you can take to prevent these occurrences.

## Conditions that can lead to fires

*[Modify this as appropriate to your organization.]*

Everyone needs to be on the lookout for the following conditions that can lead to fires:

- Overloaded electrical outlets or circuits;
- Damaged insulation on wires and cords;
- Damaged plugs;
- Malfunctioning electrical equipment;
- Overheated, poorly maintained, or sparking machinery; *and*
- Static electricity or sparks caused by friction from tools, machinery, or welding and cutting equipment.

## Work practices

Let's now go over a list of safe work practices to prevent fires. Regarding electrical equipment:

- Do be aware of damaged wires, cords, and plugs.
- Do report malfunctioning electrical or other equipment.
- Don't overload electrical outlets or circuits.

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# PREVENTING FIRES: ELECTRICAL HAZARDS IN THE WORKPLACE

Also, here are some housekeeping tips that can help avoid a fire due to an electrical malfunction:

- Do keep your work area clean and clear of combustible materials.
- Do place oily rags and other flammable waste in closed metal containers.
- Do report immediately any equipment problems, such as overheating, leaks, sparks, or carbon buildup corrosion.
- And finally, do smoke only in designated areas, and look for no-smoking signs before you light up.

If you follow these safe work practices, you can help reduce the risk of fires in your workplace.

# PREVENTING HEAT STRESS IN CALIFORNIA



This talk discusses the hazards of heat stress, provides tips for outdoor workers to stay safe when working in hot conditions, and describes the employer's procedures for protecting workers from heat stress as required by California's heat illness prevention regulation (8 CCR 3395).

## Materials to have on hand:

- Local weather forecast and/or current heat index

## Points to consider:

- When do you have the right to take a cool-down rest break in the shade?
- How much water should you drink to prevent heat stress?

## TALK

Heat illness, also called heat stress, occurs when your body can't adequately cool itself through sweating. This is most likely to happen during hot, humid weather, especially when you perform hard physical work. Wearing heavy personal protective equipment, or PPE, can also increase the risk of heat illnesses.

There are five main heat-related illnesses you should watch out for. Not all of them are serious, but even a mild heat illness can quickly turn into something very dangerous or even life-threatening, so always pay attention to any symptoms you notice in yourself or in your coworkers.

**Heat rash.** Heat rash consists of a red, bumpy rash that can be itchy. It is usually not dangerous, but it can be uncomfortable, and it is a sign that hot conditions are affecting your body.

**Heat syncope (fainting).** Sometimes heat can cause you to faint. This is called heat syncope and usually occurs if you are not used to working in a hot environment. It is usually not dangerous, and you can prevent it by moving around a little rather than standing still for long periods of time in the heat.

**Heat cramps** are painful muscle cramps caused by a loss of salt when sweating. Drinking electrolyte fluids to replace your body's salt can relieve heat cramps, but severe cramps may require a visit to a medical professional.

**Heat exhaustion** is more serious. It results from the loss of fluid or salt, or both, through sweating. You might feel weak, dizzy, and nauseated; your skin might become clammy; and your body temperature may be above normal. To treat heat exhaustion, rest in a cool place, drink sports drinks, and remove any heavy clothing. If this doesn't help, and you or a coworker starts vomiting or loses consciousness, call for emergency assistance immediately.

**Heatstroke** is the most dangerous type of heat illness. It occurs when the body's natural cooling processes stop working and the ill person stops sweating. Symptoms include very hot and dry skin, confusion, convulsions, seizures, and loss of consciousness. Heatstroke can cause death, so call an

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# PREVENTING HEAT STRESS IN CALIFORNIA

ambulance immediately if you or a coworker shows symptoms. While you're waiting for the ambulance, try to keep the victim cool, and provide fluids if he or she is conscious.

If you notice symptoms of heat stress in yourself or a coworker, tell your supervisor immediately, and move to a cool, shaded area. Your supervisor will make sure the right first aid is provided. For severe symptoms such as altered consciousness, vomiting, disorientation, and convulsions, emergency medical services will be called. Although [name(s)] are responsible for calling emergency medical services, if they are not available during an emergency, anyone can make the call.

***[Describe your procedure for contacting emergency medical services, including means of communication, responsible individuals, directions to the worksite for emergency responders, and how employees will be transported to a location accessible to emergency medical service providers if necessary.]***

Heat stress can be prevented by taking some very simple steps when working in hot conditions:

- Drink plenty of water throughout the day. In hot conditions, you should aim for about 1 cup every 15 to 20 minutes. It's better to drink smaller amounts of water more often than larger amounts less frequently. On our worksite, water is available free of charge. ***[Describe location where employees can access cool, fresh drinking water.]***
- Take frequent breaks in a cool, shady place. On our worksite, shade is available. ***[Describe location where shade or other equally effective cooling measures are available.]*** You have the right to take a cool-down rest break to prevent yourself from overheating whenever you need to.

- If the temperature spikes suddenly or you are new to working in hot conditions, take more frequent breaks, and gradually build up your workload while your body adapts. This is called acclimatization, and your supervisor will observe you more closely for signs of heat stress during this process. ***[Describe your specific acclimatization procedures.]***
- Wear a hat and light-colored clothing.
- Drink sports drinks to help replace the salt you lose when you sweat.
- Avoid caffeine and alcohol, which can both cause dehydration.
- ***[Describe any other heat stress prevention procedures in use at the worksite.]***

When the temperature is 95 degrees Fahrenheit or higher, it's even more important that you drink plenty of water and take rest breaks in the shade to prevent yourself from overheating. ***[Note: When temperatures equal or exceed 95 degrees Fahrenheit, agricultural workers must take at least a 10-minute preventive cool-down rest period every 2 hours.]***

We will also observe everyone more closely for signs of heat illness when the temperature reaches this level. Our procedure for monitoring is:

***[Read the options that apply to your worksite.]***

- Having a supervisor or another designated person observe groups of 20 or fewer employees
- A buddy system where you will be paired with a coworker and watch one another for symptoms of heat stress
- Regular check-ins using a radio or cell phone ***[for lone workers]***
- ***[Other effective monitoring procedures]***

# PREVENTING OCCUPATIONAL SKIN DISEASE: INDOOR ENVIRONMENT



This talk discusses occupational skin diseases that may impact employees working indoors and the actions they can take to prevent and protect themselves from such diseases.

## Material to have on hand:

- Exclamation Point pictogram and Corrosion pictogram



Exclamation Mark



Corrosion

## Item for attendees to consider during the talk:

- Have I ever had a rash or another skin condition that might have been work-related?

## TALK

You got some sort of rash. It itches. It burns. You think of it as an inconvenience. Often, it is a minor, treatable condition, but in some situations, skin

disease can develop into a serious condition with long-term effects that can impact your quality of life.

Skin disease is the most widespread reported occupational illness. So, you should be aware of the different types of skin diseases, how you might get them working indoors, and actions you can take to protect yourself.

## Cause of Skin Disease in an Indoor Environment

Chemicals are the primary cause of occupational skin disorders. Chemical irritants may cause a reaction upon direct contact with your skin. Chemicals can also be sensitizers, which may not cause an immediate reaction, but repeated exposure may cause an allergic reaction.

## Common Types of Skin Diseases

*[Speaker may opt to modify the content of this section to only include diseases and/or causes appropriate to the audience.]*

The most common occupational skin disease is contact dermatitis, which is an inflammation of the skin resulting from exposure to a hazardous substance. It is often itchy or painful. Acute dermatitis may appear red, swollen, or blistered, while those with chronic dermatitis may have skin that is dry or cracked.

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# PREVENTING OCCUPATIONAL SKIN DISEASE: INDOOR ENVIRONMENT

- Irritant contact dermatitis typically appears at the point of exposure. Chronic dermatitis can occur due to prolonged or recurring exposure to mild irritants such as solvents, detergents, or other cleaning agents. More severe irritants, such as acid, oxidizing agents, or heavy metals, can cause a more severe acute reaction.
- Allergic contact dermatitis is an immune system response triggered by skin contact with an allergen to which a worker had been previously exposed and sensitized. The response can be a rash at the point of contact, but it is often systemic and not limited to the site of contact. Typical causes include industrial chemicals.

Other common occupational skin diseases include:

- Folliculitis, which is more commonly referred to as occupational acne or oil acne, which appears as small red bumps or pustules. It often develops due to prolonged contact with oil or being exposed to oil-soaked clothing. It is commonly seen in workers exposed to cutting oils in machining operations or mechanics exposed to grease and other lubricants.
- The final common skin disease I am going to mention is skin cancer. It can develop from exposure to certain chemicals. However, symptoms may not appear for years or even decades after exposure.

## Prevention

As a company, we incorporate viable engineering and administrative controls, including training, to help reduce your risk.

But there are also actions you can take to protect yourself, with the most important being knowing the hazards associated with the job you are performing. If you are working with chemicals, review the label and the safety data sheet, or SDS. They will provide

you with information on the hazards associated with the chemical and appropriate precautions to take to avoid exposure, including necessary personal protective equipment, or PPE, such as gloves, aprons, footwear, and shields. The SDS will also tell you what actions to take in the event the chemical contacts your skin. In addition, the following pictograms on a label may indicate the potential to cause skin disease:

- The Exclamation Mark pictogram indicates that the chemical may be a skin sensitizer or skin irritant.
- The Corrosion pictogram indicates that the chemical may have more severe, irreversible effects on the skin and may cause burns.

***[Presenter may want to display appropriate pictograms.]***

Other things you can do to protect your skin include:

- Using barrier creams to protect against mild irritants such as oils and greases.
- Washing your work clothes frequently.
- Maintaining proper hygiene and washing your hands. Gently scrub hands or other areas exposed to hazardous substances with soap and warm water for 20 seconds. Dry your hands thoroughly, and use lotion to prevent dry, cracked skin that is more susceptible to infection.

Finally, be aware that some of the things you use to protect your skin may actually irritate your skin. For example, your skin may be sensitive to certain soaps, or you may be sensitive or allergic to latex, which can be found in gloves and other types of PPE.

If you experience any type of skin condition that you believe is work-related, please report it to your supervisor.



# PREVENTING OCCUPATIONAL SKIN DISEASE— OUTDOOR ENVIRONMENT



This talk discusses occupational skin diseases that may impact employees working outdoors and the actions they can take to prevent and protect themselves from such diseases.

## Materials to have on hand:

- Pictures of hazardous plants
- The safety data sheet, or SDS, for any chemicals used while working outdoors

## Items for attendees to consider during the talk:

- Have I ever had a rash or another skin condition that might have been work-related?
- Do I know what poison ivy or other hazardous plants look like?

## TALK

You have some sort of rash. It itches; it burns; you think of it as an inconvenience. Often, it is a minor treatable condition, but in some situations, skin disease can develop into a serious condition with long-term effects that can impact your quality of life.

Skin disease is the most widespread reported occupational illness, so you should be aware of the different types of skin diseases, how you might get

them working outdoors, and actions you can take to protect yourself.

## Causes of Skin Disease

Chemicals are the primary cause of occupational skin disorders. Chemical irritants may cause a reaction upon direct contact with your skin. Chemicals can also be sensitizers that may not cause an immediate reaction, but repeated exposure may cause an allergic reaction.

Other causes of skin disease include:

- Physical hazards such as overexposure to the sun and extreme temperatures, hot or cold, that can result in burns, frostbite, and cancer; and
- Biological hazards such as parasites and plants that can lead to rashes and diseases.

## Common Types of Skin Diseases

***[Speaker may opt to modify the content of this section to only include diseases and/or causes appropriate to the audience.]***

The most common occupational skin disease is contact dermatitis, which is an inflammation of the skin resulting from exposure to a hazardous substance. It is often itchy or painful. Allergic contact dermatitis is an immune system response triggered

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# PREVENTING OCCUPATIONAL SKIN DISEASE—OUTDOOR ENVIRONMENT

by skin contact to an allergen to which a worker has been previously exposed and sensitized. The response can be a rash at the point of contact, such as with poison ivy, but is often not limited to the site of contact and can be systemic. Typical causes include plants and agrochemicals, including pesticides and fertilizers.

Another skin disease common in outdoor occupations is skin cancer. It can develop from environmental exposure to ultraviolet light or radiation, including sunlight. However, symptoms may not appear for years or even decades after exposure.

## Prevention

As a company, we incorporate controls, including training, to help reduce your risk.

But there are also actions you can take to protect yourself, with the most important being knowing the hazards associated with the job you are performing.

- If you are working with chemicals outdoors, review the chemical label and the safety data sheet, or SDS. They will provide you with information on the hazards associated with the chemical and appropriate precautions to take to avoid exposure, including necessary personal protective equipment, or PPE.
- When you begin working outside, identify the physical and biological hazards of your surroundings. Wear appropriate clothing and PPE to protect yourself from extreme temperatures. Be sure to protect yourself from overexposure to the sun and use sunscreen when appropriate. Also, be sure you are able to recognize hazardous plants, such as poison ivy, so you can wear appropriate clothing and avoid contact.

***[Speaker may opt to identify specific outdoor hazards, including hazardous plants, at a particular jobsite to which the workers in the audience may be exposed.]***

Another thing you can do to protect your skin is maintain proper hygiene and wash your hands. Unless instructed otherwise by the SDS, gently scrub hands or other areas exposed to hazardous substances with soap and warm water for 20 seconds. Dry your hands thoroughly, and use lotion to prevent dry, cracked skin that is more susceptible to infection.

Finally, be aware that some of the things you use to protect your skin may actually irritate your skin. For example, your skin may be sensitive to certain soaps or sunscreens, or you may be sensitive or allergic to latex, which can be found in gloves and other types of PPE.

If you experience any type of skin condition that you believe to be work-related, please report it to your supervisor.

***[Speaker may opt to present any of the following toolbox talks to employees working outdoors:***

- ***PPE: Strategies to Beat the Heat***
- ***Working Safely Outdoors: Preventing Heat Stress***
- ***Working in Cold Conditions: Preventing Frostbite.]***

# PROTECTING YOURSELF FROM FALLING OBJECTS



This talk discusses the hazards of falling objects and safe work practices to follow to avoid injury.

## Materials to have on hand:

- Examples of tools or other materials that may be dropped from heights at your workplace

## Items for attendees to consider during the talk:

- What are some falling object hazards at your workplace?
- What work practices can you use to prevent injuries caused by falling objects?

## TALK

A few years ago, a man delivering sheet rock to a construction site in New Jersey was killed by a tape measure. How is that possible, you ask? As he was speaking with a coworker, he was struck by a 1-pound tape measure that was accidentally dropped from 50 stories above him.

Though not all dropped objects cause fatalities, there are more than 50,000 “struck by falling object” recordable injuries every year. That’s one injury caused by a dropped object every 10 minutes. Fortunately, these injuries are preventable.

Look around the workplace, and you’ll see that many precautions have been taken to protect you from falling objects. For the most part, however, the people

below depend on those working above for their safety. Here are a few rules to follow that help make everyone’s job safer.

If you are working from a height:

- Have the area below cleared, and post necessary warning signs. Rope off or barricade the area.
- If possible, verbally warn those below that you’re about to begin an overhead job, and make sure they hear you.
- Use toeboards, guardrails, screens, and/or paneling to make sure objects don’t fall off of scaffolding or platforms. You can also use nets or canopies to catch any falling objects.
- Keep materials far enough from an edge, hole, or opening to prevent them from falling to a lower level.
- Stack materials securely to prevent them from sliding, falling, or collapsing.
- Don’t carry tools or materials up a ladder. Use a tool belt, hand winch line, containers, or buckets lifted by a line.
- If you use a tool belt, make sure pockets, pouches, and slots are the correct size and shape to keep tools from falling out. The belt should be made of a sturdy material and reinforced for the points of tools. If possible, tether the tools to the belt with lanyards. Tools with sharp edges or points should be guarded to prevent injury to you

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# PROTECTING YOURSELF FROM FALLING OBJECTS

and workers below. Never use a tool belt as a safety belt.

- Make sure any load being lifted is secure, balanced, and that no one is under it.
- Practice good housekeeping, and properly store tools and materials that are not in use.
- Don't carry tools in your pockets because when you bend over or reach, they may fall out.
- Never throw materials or tools.
- Never sweep material off the edge of the working surface.
- Don't work, or allow others to work, under obviously unsafe conditions. Talk to your supervisor if you have any concerns.

If you are working on the ground or below other employees:

- Always wear your hard hat and protective footwear.
- Observe restricted areas where overhead work is being performed. Don't cross the barriers, even to take a quick shortcut.
- Pay attention to what is going on around you, particularly when cranes and other equipment are being used to hoist materials in the air, or you are working near overhead bricklaying, painting, or conveyor belts.
- Don't walk near roofs after a snowstorm or ice storm.

Following these rules and using safety equipment may not only eliminate many accidents but can make any accidents that do occur, despite all precautions, less severe. If you make safety part of your daily routine, you will protect not only yourself but also those around you.

# RAKING SAFETY



This talk discusses practices for employees to follow when using a leaf rake, lawn rake, landscape rake, garden rake, or gravel rake to loosen soil or gravel, remove stones, weed, level soil or sand, and collect leaves or other debris at their workplace.

## Material to have on hand:

- The type(s) of rake available to move materials at the jobsite

## Items for attendees to consider during the talk:

- Do you know how to choose the right rake?
- Can you think of how best to position your body when raking in order to avoid injury?

## TALK

Every year, thousands of people are treated in emergency rooms, clinics, and doctors' offices for raking-related injuries. Common injuries include sprains and strains to the wrists, back, and shoulders; less common injuries are lacerations caused by stepping on a rake. So let's review some steps that all of us can take to avoid and reduce injuries when we're using a rake.

## Selecting the right rake

The important features in choosing a rake include its weight, the rake's handle type, and shaft length. The weight of the material being moved must also be considered.

- Use a rake that is comfortable for your height and strength. Do not use one that is too long or heavy for you. When a rake is too short, you can strain your back. When it's too heavy, it adds strain to your neck and shoulders. A sturdy, medium-sized rake, such as one that is 24 inches, is best for most people.
- Because your sweat may interfere with your grip when raking in hot weather, use a nonslip handle, which will lower the force needed to hold the rake.
- A padded rake handle can help avoid pain from gripping too tightly.
- A leaf rake has a long fan-shaped set of typically plastic tines and is used for raking leaves.
- A lawn rake is similar in its fan-shaped tines design to a leaf rake but has long, slender, flexible metal tines that are well-suited to raking up garden debris such as gravel, sand, and soil.

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# RAKING SAFETY

- A landscape rake is designed to complete large jobs quickly and is used in leveling soil or sand over a large area with its wide head of many short metal tines.
- A garden rake, also known as a bow rake, typically has a long, straight handle with a stiff, wide head at a right angle to the handle and many short rigid tines. These are used for breaking up compacted soil and leveling soil or sand, as well as raking up mulch.
- A stone or gravel rake is designed for heavy-duty jobs and will typically have a wider head than a garden rake with widely spaced chunky tines made from strong metal.

Take time to determine the type and design of rake that seems best for you and for your job. Be sure to examine the rake for signs of defect or damage could include splintered, loose, bent, or cracked handles; loose connections; and damaged tines. If the rake doesn't pass your inspection, don't use it.

## Before you rake

It can be strenuous to rake, so if you have a history of back or heart problems, it might be best to avoid this task. Even if you are physically fit, it's a good idea to do some flexing and stretching exercises to warm and loosen your muscles before you rake. Wear gloves that protect your hands and improve your grip, and wear sturdy, nonslip footwear with good arch support.

## Using a rake

Follow these tips when raking:

- Stand upright, and use the rake to pull leaves, dirt, or other materials toward you.
- Bend your knees when picking up leaves or debris for disposal.
- Instead of twisting your trunk, always keep your feet, hips, and body moving toward the work.
- Try to avoid bending at the waist when raking.
- When raking for long periods, vary your arm and leg positions and movements.
- Never lay a garden or stone rake down with the teeth pointing up. The teeth should always be pointing down.

Finally, when you've finished raking, remember that it's a good practice to repeat your stretching exercises.

# LEAD

## RECOGNIZING LEAD HAZARDS AT CONSTRUCTION JOBSITES



This talk is intended to help construction employees identify and minimize lead exposure on the jobsite. Understanding the basics of lead and recognizing the risks are important steps to protect workers from the significant health hazards associated with lead exposure.

### Items for attendees to consider during talk:

- Do you know what construction activities may expose a worker to lead?
- Do you know the possible health hazards related to exposure from lead?

### TALK

Lead is a naturally occurring element found in the air, soil, and water and is a beneficial metal used in a variety of man-made products. It is a harmful and potentially toxic substance if it enters the human body. Any exposure to lead is bad. Lead can enter the body through inhaling it as a dust, fume, or mist or ingesting it through the mouth. Preventing lead exposure before it occurs is the most important step in protecting your health.

**Knowing your surroundings.** Exposure to lead varies in scope and depends on the project at hand. It is critical to know if your construction project may contain lead so that you can take the adequate health and safety precautions. Lead is frequently used for roofs, cornices, tank linings, and electrical conduits. It can also be found in metal products

such as sheet lead, solder, some brass and bronze products, and in piping and in lead-based paints.

*[Presenter note: Select the following that apply to your facility.]*

Lead exposure can also occur from the following construction activities:

- Ironwork
- Demolition and salvaging
- Renovation and remodeling
- Painting and lead paint abatement
- Electrical and plumbing work
- Heating and air-conditioning maintenance
- Highway and bridge repair

**Recognizing the symptoms.** Lead exposure can occur over a matter of days or over a long-term period. Any type of over exposure to lead can result in damage to the central nervous system, cardiovascular system, reproductive system, blood system, and kidneys. Lead can even be toxic if it is absorbed into the body in high enough doses. Common symptoms of lead exposure include:

- Loss of appetite
- Constipation
- Nausea

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# LEAD

- Excessive tiredness
- Headache
- Fine tremors
- Severe abdominal pain
- Metallic taste in the mouth
- Weakness
- Nervous irritability and anxiety

- Hyperactivity
- Muscle and joint pain or soreness
- Insomnia
- Numbness and dizziness

So to minimize your exposure to lead, it is important to know your surroundings, recognize the symptoms of lead exposure, and speak with your supervisor in situations where you may be exposed to lead.

# RECOGNIZING UNSAFE CONDITIONS AND ACTIONS



This talk discusses unsafe conditions, unsafe acts, and the actions employees should take when they witness such a condition or act.

## Material to have on hand:

- None

## Item for attendees to consider during the talk:

- What do I do if I see an unsafe condition?

## TALK

Most accidents result from unsafe conditions, unsafe acts, or both. In order to prevent accidents, all of us need to be able to recognize unsafe conditions and unsafe acts.

So what is an unsafe condition? It is any condition or circumstance in the workplace that is likely to cause an injury or property damage. This can include a broad scope of conditions or circumstances such as:

***[Speaker may modify this list to include unsafe conditions witnessed in his or her workplace.]***

- Defective tools, equipment, or supplies;
- Inadequate machine guarding or barriers;
- Poor housekeeping, including wet floors, debris, cords across aisles, and blocked exit doors;

- Inadequate warning signs and systems;
- Poor lighting;
- Insufficient personal protective equipment, or PPE;
- Inadequate training programs;
- Bad weather;
- Hazardous environmental conditions, including exposure to smoke, gases, or noise; *and*
- Inadequate ventilation.

Unsafe acts are the actions and behaviors that may compromise the health and safety of you and your coworkers and that may lead to injury or property damage. Again, this can include a broad scope of actions and behaviors such as:

***[Speaker may modify this list to include unsafe acts witnessed in his or her workplace.]***

- Using defective tools, equipment, or supplies;
- Removing machine guards or barriers;
- Overloading outlets;
- Failing to use appropriate PPE or using PPE improperly;
- Lifting incorrectly;

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# RECOGNIZING UNSAFE CONDITIONS AND ACTIONS

- Noticing that warning signs are in inconspicuous locations or are not posted altogether;
- Failing to follow rules, training, and safety procedures; *and*
- Taking shortcuts and goofing around.

Recognizing unsafe conditions and unsafe acts is one thing, but reporting them and taking actions to correct them is another. How many times have you heard someone say “that is an accident waiting to happen,” only to see that person continue about his or her day without doing anything? Do not be that person! Do not wait for a safety inspection to identify the problem. Do not assume someone else has recognized the problem and is addressing it.

Workplace hazards of any kind, including unsafe conditions and unsafe acts, are everyone’s problem, and we all need to be part of the solution. Start

by talking to your coworkers in the area about the unsafe condition or act to make them aware, and, if possible, take corrective actions. If you can’t correct it, report it to a supervisor. Then follow up; if the unsafe condition has not been corrected within a reasonable time frame, report it to a more senior manager. If the unsafe condition continues to go unaddressed, you have the right and are encouraged to report the condition to OSHA **[or state agency, if applicable]**.

***[Speaker may choose to describe the company’s reporting procedures and reporting structure.]***

It is up to all of us to do what we can to prevent accidents in the workplace.

# REFUSE COLLECTION VEHICLE SAFETY FOR COLLECTORS



This talk will inform employees who ride on refuse collection vehicles (e.g., garbage, recycling, or food waste collection trucks) and collect refuse along the route of the safe work practices to prevent injuries and fatalities from moving vehicle-related incidents.

**Materials to have on hand:** N/A

## Items for attendees to consider during the talk:

- When can I ride on the riding step?
- How do I work safely around the collection vehicles?

## TALK

Refuse collectors face many hazards—while riding on or loading the vehicle, you are at risk of a serious injury or death from falling off the riding step or being struck by the collection vehicle, other vehicles on the roadway, or another object. In a recent incident, a worker riding on the riding step reached into his pocket and fell from the step. He hit his head on the pavement and died from his injuries.

Today, we'll discuss the safe work practices you should follow to avoid getting hurt or killed on the job.

If you are collecting refuse along the route, you should ride only in the vehicle's cab or on the steps that are specifically designed for riding, called riding steps. Never ride on the loading sills or in hoppers.

If you are a passenger in the vehicle's cab:

- Always wear your seat belt.
- Remain inside the vehicle until the vehicle comes to a complete stop. When it's stopped, open the door slowly and exit the vehicle carefully.

If you are riding on the riding steps:

- Step—don't jump—onto or off the riding steps.
- Hold on to the handhold and maintain a good grip.
- Be aware of your surroundings. Watch out for obstructions like tree limbs and parked cars that could injure you.
- Remain on the riding step until the vehicle comes to a complete stop.
- Be careful in wet conditions when the step or handhold may be slippery.

Sometimes, riding on the riding steps is not safe. Do not use the riding steps when:

- The vehicle is backing up.
- The vehicle is traveling at speeds greater than 10 miles per hour.
- The vehicle is traveling more than 0.2 miles. In this event, sit in the cab—if there is not a seat for you in the cab, you should be transported by a separate vehicle.

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# REFUSE COLLECTION VEHICLE SAFETY FOR COLLECTORS

When you are working around the collection vehicle:

- Stay clear of any hydraulic lifts.
- Never cross behind the vehicle when you see it backing up, when you hear the backup alarm, or when you see the backup lights flashing.
- Watch out for other vehicles, bicyclists, and pedestrians.

Make sure to wear the proper personal protective equipment, or PPE, including:

- Slip-resistant footwear (if you are using the riding steps, don't wear shoes with cleats and spikes)
- Highly visible or reflective clothing
- Gloves
- Safety glasses

# REFUSE COLLECTION VEHICLE SAFETY FOR DRIVERS



This talk will inform drivers of refuse collection vehicles (e.g., garbage, recycling, or food waste collection trucks) of the safe work practices to prevent injuries and fatalities from moving vehicle-related incidents.

**Materials to have on hand:** N/A

## Items for attendees to consider during the talk:

- What safe driving practices should I follow so that coworkers riding on the vehicle's riding steps are not injured?
- When driving a refuse collection vehicle, how do I back up safely?

## TALK

Drivers of refuse collection vehicles must also follow safe work practices to ensure the safety of themselves, coworkers, and others, such as pedestrians, along their route.

When driving a collection vehicle, it is important to follow safe driving and backing up practices. Fatalities have occurred when workers on the ground were struck or run over by the vehicle. As the driver, it is your responsibility to ensure this doesn't happen.

Drivers should:

- Obey posted road signs and speed limits along your route.
- Always wear your seat belt.
- Know the blind spots on every vehicle you operate. Blind spots are zones around your vehicle where you can't see and are hazardous to anyone who enters them.
- Avoid sudden stops. Know the distance needed to stop the vehicle gradually, without throwing a rider from the riding steps.
- Wait for the collector to signal before moving to the next pickup point (this could be a hand signal, or it could be a mounted buzzer that the collector activates).
- Pay close attention to the road conditions and surroundings along your route. Be on the lookout for bicyclists, pedestrians, and the movement of other vehicles. In residential areas or near schools and playgrounds, be on the lookout for children who may dart into the road unexpectedly.
- Don't drive distracted—never talk on a cell phone or text.

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# REFUSE COLLECTION VEHICLE SAFETY FOR DRIVERS

Backing up the truck is one of the most dangerous maneuvers you'll perform. While some trucks are equipped with cameras to increase visibility and safety, drivers should still observe the following safe backing procedures:

- Practice backing up in safe surroundings until you become familiar with the way each truck you drive handles while backing up.
- Roll down the driver's side window so you can hear honking horns and any other warning sounds that come from outside the vehicle.
- Use a spotter. Make sure to agree on hand signals before backing up, and always maintain visual contact with your spotter while backing up. If visual contact is lost with workers on foot, stop moving immediately and resume backing only when visual contact is restored.
- Make sure the truck's backup alarm is working properly, turn on flashers, and use the horn as necessary to warn anyone behind you.
- Move very slowly while backing up, and be prepared to stop.
- Use any safety devices on your truck, such as rearview cameras and obstacle detection systems. These can help improve your ability to see your path and avoid collisions.



# RESPIRATOR MAINTENANCE

## CLEANING AND STORAGE



This talk discusses how employees in general industry, construction, shipyards, marine terminals, and longshoring should properly clean and store respirators.

### Materials to have on hand:

- Respirators used at your facility
- Manufacturer's instructions, if applicable

### Items for attendees to consider during the talk:

- What types of respirators do you use at your facility?
- How often should you clean your respirators?
- Where should you store your respirators?

## TALK

You might think that wearing a respirator is inconvenient or uncomfortable, but it's a critical piece of personal protective equipment. If worn properly, a respirator guards you and your lungs from airborne particles and toxins that can make it hard to breathe or that can cause cancer or even death. For our respirators to work as they should, we have to correctly clean, disinfect, and store them.

### Cleaning

If you are the only person using your respirator, clean and disinfect it as often as necessary. If more than one person uses a respirator, make sure it is cleaned and disinfected before being worn by different workers. Clean and disinfect respirators used for emergencies or for fit testing and training after each use.

To clean a respirator:

- Remove the filters, cartridges, or canisters. Take apart the face piece, and throw away or repair any defective parts.
- Wash the pieces in warm water with a mild detergent or other cleaner. You may use a stiff bristle brush to remove dirt, but do not use a wire bristle brush.
- Rinse the parts thoroughly in clean, warm, running water and drain.
- If the cleaner you use does not contain a disinfecting agent, you should submerge the respirator parts for 2 minutes in a disinfectant solution.
- Rinse the respirator parts again in clean, warm, running water and drain. Thorough rinsing is very important because detergents or disinfectants that dry on face pieces can cause skin conditions. In addition, some disinfectants can damage rubber or metal parts if not completely removed.

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# RESPIRATOR MAINTENANCE

- Air-dry the respirator parts, or hand-dry them with a clean, lint-free cloth.
- Put the face piece back together, replacing the filters, cartridges, and canisters where necessary.
- Test the respirator to make sure that all parts work properly.

***[Alternatively, your facility may choose to use the manufacturer's cleaning recommendations as long as they are equally effective and do not cause harm to the user or respirator. If your facility follows these recommendations, substitute them for the bulleted list above.]***

Keep in mind that because filtering face piece respirators cannot be cleaned or disinfected, it is important for you to inspect them for cleanliness and damage before each use. For respirators that use filters to clean the air, the filters must be replaced whenever they are damaged or dirty or make it hard to breathe.

## Storage

To keep your respirator in good working condition, store it so that it is protected from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. Never leave your respirator hanging on a machine, lying on your workbench, or tossed into a drawer or toolbox, and don't carry a cup-shaped filtering face piece respirator in your pocket or toolbox. This could crush it and cause the face piece to be bent out of shape, which prevents the respirator from sealing tightly to your face and protecting you.

If you have an emergency respirator, store it in a compartment or cover that is accessible to the work area and that is clearly marked as containing an emergency respirator. Make sure you follow any additional manufacturer instructions for respirator storage.

# RESPIRATOR MAINTENANCE

## INSPECTIONS AND REPAIRS



This talk discusses how employees in general industry, construction, shipyards, marine terminals, and longshoring should inspect and repair respirators.

### Materials to have on hand:

- Respirators used at your facility

### Items for attendees to consider during the talk:

- What types of respirators do you use at your facility?
- How often should you inspect your respirators?

## TALK

You might think that wearing a respirator is inconvenient or uncomfortable, but it's a critical piece of personal protective equipment. If worn properly, a respirator guards you and your lungs from airborne particles and toxins that can make it hard to breathe or that can cause cancer or even death. For our respirators to work as they should, we have to correctly inspect and repair them.

### Inspections

If you use your respirator for routine work, inspect it before each use and during cleaning. If you have a respirator for use during emergencies, inspect it before and after each use to make sure it's working properly and also at least monthly according to

the manufacturer's recommendations. Inspect emergency escape-only respirators before carrying them into the workplace for use.

To inspect your respirator, check for:

- Proper function;
- Tight connections;
- Good condition of the parts, including the face piece; head straps; valves; connecting tube; and cartridges, canisters, or filters; and
- Pliability and signs of deterioration in all flexible parts.

Additionally, because filtering face piece respirators cannot be cleaned or disinfected, inspect them for cleanliness and damage before each use. For respirators that use filters to clean the air, replace the filters whenever they are damaged or dirty or make it hard to breathe. Before each use, inspect the outside of the filter material, and if the filter material is damaged or dirty, replace the filter if possible or throw the respirator away. Keep in mind that there may be other reasons to stop using a filtering face piece respirator that seems to work. Check your facility's procedures for when a filtering face piece respirator should be discarded.

If you use a self-contained breathing apparatus, or SCBA, inspect air and oxygen cylinders monthly to make sure they are fully charged, and recharge them

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# RESPIRATOR MAINTENANCE

when pressure falls to 90% of the manufacturer's recommended pressure level. Also check that the regulator and warning devices function properly.

If you inspect emergency respirators, document the date the inspection is performed, your name or signature, the findings of the inspection, any required corrective action, and the serial number or other way of identifying the respirator. Provide this information on a tag or label attached to the

storage compartment, or keep it with the respirator or inspection report.

## Repairs

If your respirator fails an inspection or you find it to be defective in some way, remove it from service and either throw it away or have it repaired. You may only make repairs or adjustments if you have been properly trained.

# RESPIRATORY PROTECTION

## Understanding our respiratory protection program



This talk discusses the company’s respiratory protection program for workers who may be required to use a respirator.

### Material to have on hand:

- Copy of the company respiratory protection program

### Items for attendees to consider during talk:

- Do you know what is in our respiratory protection program?
- What is an example of a physical condition that could affect your ability to wear a respirator?
- What is not allowed when using a tight-fitting respirator?

### Talk

When it comes to personal protective equipment (PPE), certain requirements need to be met for it to do its job properly, which is to guard you from injury or illness. This applies to respiratory protection, and there is an extensive set of OSHA requirements about how we decide when to require it and how we make sure the equipment is used properly.

Basically, it’s a matter of evaluating all the tasks performed by our workers and determining which of them call for some level or form of respiratory protection. To a minor degree, all forms of protection do the same job: They assure that the wearer gets enough oxygen

but does not inhale harmful dusts, sprays, gases, fumes, chemical vapors, and so on. But different types of respiratory protection are not interchangeable.

*[Note to presenter: Customize for the hazards at your worksite.]*

Management needs to purchase the right types of respirators for specific jobs that require their use. And since we use respirators, the company needs to have a written respiratory protection program. As part of our respiratory protection program:

- If you are required to wear a respirator, you will be evaluated medically. The evaluation can be done with a physical exam, through use of a health questionnaire, or a combination of the two. The purpose is to get a recommendation from the doctor or other licensed healthcare professional on your ability to use a respirator. Mainly, this is to identify any physical conditions that would make wearing a respirator inappropriate for you (such conditions include respiratory disorders, being overweight, or having past heart conditions). It also takes into account the type and weight of the respirator and the atmosphere in which it will be used—any temperature or humidity extremes, for example.
- The company will arrange for any necessary follow-up medical examinations in the event of a significant change in workplace conditions or the physical effort required by you to wear the respirator.

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# RESPIRATORY PROTECTION

- The company will conduct or arrange for fit-testing of any tight-fitting face piece you're required to use. This will be repeated at least every year and whenever there's a change in your physical condition, such as a visible change in your weight. If you are required to wear a tight fitting respirator, you are not allowed to have facial hair—it prevents a tight fit.
- The company will also provide you with thorough and clearly understandable training before you use the respirator and at least annually after that.

The training will include why the respirator is needed, the importance of proper fit, use, cleaning and maintenance, any limitations of the equipment, and what to do in any emergency situation such as a malfunction.

You are not yet required to use respirators. But we feel it is important, though, to outline the general elements of our respirator program for all of you so that you understand the careful procedures that will be followed if you are required to use one in the future.

# RESPONDING TO INDOOR SPILLS: SPILL KITS



This talk reviews how to use a spill kit to clean up a chemical spill in the workplace.

## Materials to have on hand:

- A sample spill kit
- A copy of your facility spill prevention and response plan, emergency action plan, or another plan pertaining to spill response
- A floor plan showing the locations of spill kits in the facility

## Items for attendees to consider during the talk:

- Do you know how to use a spill kit?
- Do you know the locations of spill kits in your facility?

## TALK

If a chemical spill occurs in your workplace, it can create a dangerous situation for both your health and the environment. Immediate action may be necessary to prevent a spill from spreading and to ensure the safety of workers in your facility. Of course, the type and quantity of substance spilled will determine the specific actions that need to be taken. Only trained, qualified employees may handle spill cleanup in the workplace.

Spill kits are containers that house absorbent materials; personal protective equipment, or PPE; and other necessary gear for cleaning up chemical spills. Spill kits are often strategically placed throughout a facility in areas where there is significant risk for spills, such as chemical storage areas. Some spill kits are mobile and can be wheeled to any location within a facility.

The contents of a spill kit may vary depending on its intended use. For instance, some spill kits are designed for corrosive chemical spills and will contain absorbents that neutralize acid. Others are meant for oil. Many spill kits are universal and are suitable for cleaning up most types of spills. Generally speaking, spill kits should contain the following:

- Absorbent materials such as booms, mats, pillows, and loose or granular absorbents;
- PPE such as hazmat suits, safety goggles, face shields, protective boots, and gloves;
- Tools such as a shovel, broom, and dustpan;
- Disposal bags; *and*
- Safety cones, caution tape, or other barricades for restricting access to the spill zone.

In some cases, the remnants of a chemical spill and materials used to clean it up will be considered

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# RESPONDING TO INDOOR SPILLS: SPILL KITS

hazardous waste, as defined by applicable federal and state laws, and must be managed accordingly.

Before attempting to handle a spill, you need to make sure you are wearing the right PPE for your safety. For example, corrosive chemicals will burn your skin on contact, and handling them will require chemical-resistant gloves, a hazmat suit, protective boots, and a face shield to protect against splashes. Always check the safety data sheet, or SDS, for the chemical you are working with, once identified, to see what the PPE requirements are for handling it.

## Liquid Spills

- Once your PPE is donned, you will need absorbent materials to soak up the spill. If the spill is in danger of spreading, you will first need to place an absorbent boom around the edges of the spill to contain it.
- Once the spill is contained, you can place safety cones and/or other barricades around the spill area to keep passersby from getting too close.
- Put down absorbent mats and/or loose absorbent materials like vermiculite to soak up the spill. Make sure the absorbents have sufficient time to soak up the spill before attempting to gather and dispose of them, but also make sure you don't forget to come back and finish the cleanup!

- Place contaminated absorbents in bags or other appropriate disposal containers, and properly characterize the waste.

***[See the toolbox talk “SPCC—Using Active Secondary Containment” for specific information on containing oil spills.]***

## Solid Spills

- Spills of solid materials should be cleaned up using tools like a shovel or dustpan and broom. As with liquid spills, the waste must be placed in a proper disposal container, characterized, and then managed accordingly.

***[Take out a sample spill kit, and review contents, explaining use for each item.]***

Last but not least, help make sure your facility stays prepared for potential spills by restocking spill kits after each use. If you notice materials are missing from the stock area, notify your supervisor.

# RESTRAINING VIOLENT PATIENTS IN HOSPITALS



This talk discusses the procedures that security and safety workers in hospitals must follow when responding to situations involving a violent or self-destructive patient.

*[This talk complies with federal and California rules for patient restraint.]*

## Materials to have on hand:

- Examples of real-life workplace violence incidents in healthcare environments
- Your organization’s workplace violence policy
- Company restraint and seclusion policy and procedures

## Items for attendees to consider during talk:

- Do you know when it is acceptable/legal to use a form of restraint on a patient?
- Do you know techniques for restraining or secluding a violent patient?
- How often should you check on restrained patients?

## TALK

In many healthcare settings, patients and their family members and even coworkers can experience anxiety, stress, grief, and anger. Under those conditions, they

can lose control of their emotions and act verbally or physically aggressive.

There are methods to de-escalate aggressive or abusive behavior in a positive way and defuse potential violent situations before they become dangerous. But sometimes, we are left with no alternative but to restrain someone who becomes a danger to him- or herself or others. But only a physician or licensed healthcare professional primarily responsible for the patient’s ongoing care can order the use of restraints.

There are times when certain physical interventions are appropriate to use. The use of restraints is limited to specific situations. These include:

- The patient is an immediate danger to self, a staff member, or others.
- Other less restrictive interventions to manage the patient’s dangerous behavior have failed.
- Staff members have been trained in safe implementation of a restraint or seclusion.

Here are some steps to help you reduce the risks associated with physical intervention:

- Participate in training on safe ways to restrain a patient—and take advantage of opportunities to practice the skills learned on a regular basis.
- Use the least restrictive method of restraint necessary for the protection of the patient and others.

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# RESTRAINING VIOLENT PATIENTS

- Use only “reasonable force” when applying physical control. This is generally defined as the use of force equal to, or minimally greater than, the amount of force being exerted by the resisting patient.
- Monitor the patient being restrained for signs of physical or psychological distress, such as positional asphyxia. Some people are more at risk for restraint-related positional asphyxia than others. For example, obesity, heart disease, breathing problems, and the use of drugs or alcohol are risk factors.
- Ensure restraint orders include the medical reason and the behavior requiring the patient to be restrained and the type and location of restraint.
- Make sure the physician completes a face-to-face assessment within 24 hours.
- Get a new order from a physician if the patient must be restrained the following day. By law, a doctor’s order for restraints expires after 24 hours.
- Check on restrained patients at least every 15 minutes. Remove the restraint at least every 2 hours to check for skin irritation and proper blood circulation, exercise the joints that are inhibited by the restraint, and determine whether the device is still necessary.
- Be sure to provide the patient with liquids and take him or her to the bathroom as needed.
- Restrain patients for the limited amount of time allowed:
  - 4 hours for adults 18 years of age and older;
  - 2 hours for children and adolescents 9 to 17 years of age; *and*
  - 1 hour for children under 9 years of age.

When the restraint episode ends, the physician or your supervisor will schedule a debriefing process for all team members involved in the restraining incident. Through a debriefing, we can take a closer look at the event before and during the restraint. What triggered the event? Did we miss any warning signs? Is there anything that could have been handled differently? Information gained from debriefing helps your team design therapeutic interventions that may help prevent the need for restraints. The debriefing must be documented.

# SAFE DRIVING: AVOIDING COLLISIONS



This talk discusses the missteps that can lead to vehicle collisions and the steps employees should take to avoid such collisions.

## Materials to have on hand:

- Recent news story about vehicle collisions
- Company driving policy, if applicable

## Items for attendees to consider during the talk:

- What are some common causes of vehicle collisions?
- What can you do as a driver to prevent collisions?

## TALK

We're all so used to driving that we forget that it's a dangerous and risky activity. According to the National Safety Council, motor vehicle-related deaths occur more often in collisions between motor vehicles than any other type of incident. This type of crash represents about three-quarters of injury crashes, while single-vehicle collisions with fixed objects or pedestrians result in fewer yet significant injuries, including death. Even when collisions do not result in death or injury, damage to vehicles can be extensive and costly. So let's review some causes

of vehicle collisions and the steps that all of us can take to avoid and/or reduce vehicle collisions.

## Before you get on the road

The condition of your vehicle is a contributing factor to preventing collisions. Before you get on the road, note whether your vehicle has been properly maintained and whether your equipment is defective or properly working. Bad tires; faulty brakes; and, if applicable, an improperly functioning collision avoidance warning system are important elements that could contribute to a collision. If you're driving a truck with cargo, remember that an improperly loaded or secured cargo can shift and affect the truck's stability or handling.

## Impatience

Impatience is often considered the most common driving error and the one that leads to many other errors. If you are impatient, you are prone to take risks you shouldn't, such as speeding, tailgating, and impulsively changing lanes. Impatience is often the result of a lack of preparation. For example, you can make dangerous driving choices if you haven't left enough time to reach your destination, if you haven't planned your route, or if you haven't checked the weather or local traffic information.

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# SAFE DRIVING

## Distraction

It's easy to be distracted and lose your focus when you're on the road, especially if you have a long and perhaps boring drive ahead. Distractions include the most obvious one, which is using your cellphone for calls, browsing, or texting. Other distractions include eating and drinking, adjusting the radio or navigation system, not looking at the road, and zoning out. There's evidence that shows that drivers whose attention is diverted away from driving for more than 2 seconds at a time are at an increased risk of a crash.

## Impairment

The most common impairment to safe driving is alcohol or other drugs, but there are nonchemical conditions that can also impair your driving. Fatigue, stress, and illness can affect your reaction time and ability to make correct driving decisions. For example, some studies have shown that fatigue can be just as dangerous as alcohol impairment. So be sure you're well-rested and healthy before you drive.

## Speed

Driving too fast is one of the main causes of collisions. Speed decreases both your reaction time and your ability to control your vehicle. The National Safety Council has stated that for every 10 miles per hour, or mph, over 50 mph, you double the risk of injury and death, as speed contributes to the severity of the collision impact. Overall, the most important action you can take to avoid a collision is to slow down and increase the distance between you and other vehicles.

Driving safely requires thinking ahead and giving it your undivided attention. Follow these safe driving practices, and you'll be able to reduce your risk of collisions and help keep yourself and others safe on the road.

# SAFE DRIVING: BACKING UP WITH CONFIDENCE



This talk will go over some techniques you can use to back your vehicle up with confidence.

**Materials to have on hand:** N/A

## Items for attendees to consider during the talk:

- Why is backing up riskier than driving forward?
- What is “First Move Forward,” and how do you apply it?
- How do you use mirrors, backup cameras, and other aids in your driving?

## TALK

Shifting into reverse and backing up your vehicle to get going or park seems simple, right? It’s something that we all do on a daily basis. However, a study found that approximately 18,000 backover injuries occurred in the United States. Tragically, many of these involved children.

Backing up is riskier than driving forward because of vehicle blind spots and limited field of vision for the driver. Therefore, the best method of avoiding backing accidents is to avoid backing up to the greatest extent possible. When parking your vehicle, try to park in a way that makes your first move after getting back in your vehicle forward.

If you’re unable to pull forward into a space, you will need to back into the space. Do this by following the steps below:

- Always drive past the area in which you are going to park, checking for obstacles and hazards.
- Back from the driver’s side. This means that you turn toward the driver’s side of the vehicle as you are backing up.
- Use your mirrors to your advantage. Make sure they are adjusted to maximize your field of vision. Check them often as you are reversing.
- Back up slowly. Don’t be afraid to stop if you’re unsure of your position.
- Don’t rely fully on backup aids such as cameras or sensors. Use them in conjunction with your eyes and mirrors.
- Use a spotter if one is available, even in wide-open spaces.

***[Keep the group engaged by asking questions about backing techniques students have used in the past or stories of mistakes and accidents.]***

***[You may want to present “Commercial driver safety: Safe backing techniques” in addition to this toolbox talk.]***

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# SAFE DRIVING

## CELL PHONE SAFETY WHILE DRIVING



This talk gives an overview of the dangers of distracted driving and some tips for safe cell phone use.

### Materials to have on hand:

- Recent story about a distracted driving-related traffic accident
- Company cell phone/distracted driving policy
- Applicable state laws related to distracted driving

### Points to consider:

- Why is using a cell phone while driving dangerous?
- Do voice-activated features and hands-free devices make cell phone use safer while driving?
- What are some ways you can stay in touch on the road while staying safe?

## TALK

Cell phones make communication easier and help you stay connected from any location. But using a cell phone while driving endangers not only you (the driver) but also your passengers, other motorists, and pedestrians.

In a recent year, more than 3,300 people were killed in distracted driving-related traffic incidents, and over 400,000 people were injured in motor vehicle crashes involving a distracted driver. *[Discuss recent/ local example or incident.]*

Texting while driving is one of the most dangerous behaviors because it involves three types of distraction at the same time as you look away from the road, use your hands to type a message, and think about what you are reading or writing.

In fact, sending or reading a text message while driving at 55 miles per hour is like traveling the length of a football field blindfolded! Other common smartphone activities, such as reading e-mail, browsing the Web, and manipulating navigation applications, are equally hazardous and should not be done while driving.

Many mobile devices now include voice-activated features and other hands-free options. These may seem safe, but they are not. When you talk on a cell phone while driving, regardless of whether the phone is handheld or hands-free, you experience slower reaction times because your mind is on your phone conversation, not on your surroundings—and when it comes to detecting and avoiding hazards on the road, every second counts.

**The safest way to use your cell phone while driving is simple—*don't do it*.** Many cell phones allow you to program an automatic message that informs anyone who tries to contact you while you're behind the wheel that you're driving and will get back to him or her as soon as possible.

If you're on the road frequently for work, one way to stay in touch while staying safe is to assign a distinct ringtone to important business contacts. If you hear

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# SAFE DRIVING

that ringtone while driving, pull over to a safe area to return the call.

*[Mention applicable company policies regarding distracted driving.]*

Using a cell phone while driving is also illegal in many places. In 44 states, text messaging is banned for all drivers, and in 12 states, all drivers are prohibited from using handheld cell phones while driving. *[Mention specific applicable state laws here.]*

Finally, using a cell phone while driving is dangerous, but having a cell phone in your vehicle is an important safety measure. If you experience vehicle trouble, witness an accident, or encounter another emergency situation, you can use a cell phone to call for help—but make sure you do so safely.

Remember, your cell phone is a valuable tool, but it's important to make sure you don't create hazards for yourself and others by using it behind the wheel.

# SAFE DRIVING

## DRIVING DEFENSIVELY



This talk discusses what defensive driving is and how to drive defensively in order to stay safe on the road. The information can apply to employees who drive as part of their job or to those who merely commute to and from work. It is not intended for commercial drivers.

**Material to have on hand:** Recent news story about a traffic accident

### Items for attendees to consider during talk:

- What is defensive driving?
- How can defensive driving help you stay safe on the road?
- Have you experienced a situation where defensive driving helped you avoid an accident?

## TALK

Defensive driving is the idea that although you can't control the actions of other drivers, the hazards on the road, or the weather conditions, you can reduce your risk of accidents by driving in a way that anticipates potential dangers and allows you time to avoid them.

In order to drive defensively, you must constantly monitor the conditions on the road and the other drivers around you. To do this successfully, you can't be distracted. Do not send or read text messages, talk on a handheld cell phone, or otherwise try to

manipulate electronic devices while you're behind the wheel.

Scan the road ahead of you for potential hazards, and frequently check your rearview and side mirrors for hazards approaching from behind. Hazards can range from obstacles in the road to weather conditions to drivers behaving unsafely. Remember that conditions can change very suddenly. For example, a child walking on a sidewalk could suddenly run out into the road, or a driver ahead of you may realize that he has missed a turn and may stop without warning.

Also consider potential hazards common in your surroundings. For example, in a city, you should be particularly alert for pedestrians, while in a more rural environment, you may need to watch out for wildlife crossing the road. For each potential hazard you identify, consider how you would respond. Would you have time to stop? Could you safely steer around the hazard?

Be aware of when your visibility is compromised, and adjust your speed accordingly. Your visibility can be reduced by many conditions: Darkness, rain, snow, and fog are just a few. If you can't see around a curve ahead of you or over the top of a hill, this is another situation where you should reduce your speed to prepare for any unexpected obstacles.

Do not rely solely on other drivers' turn signals to know their intentions. For example, if you are waiting

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# SAFE DRIVING

to turn onto a busy road, do not assume that it is safe to merge in front of an oncoming vehicle just because its turn signal is on. The driver may have left the signal on from an earlier turn, or he or she may be planning to turn at a different location than you anticipate. Similarly, people often forget to use their

turn signals, especially when changing lanes. Be alert for drivers who swerve or turn without warning.

Remember—you can't control the hazards on the road, but if you drive defensively, you'll have a better chance of coming home safely every night.

# SAFE DRIVING

## DRIVING IN WINTRY CONDITIONS



This talk provides information on driving safely in wintry conditions. The information can apply to employees who commute to and from work in winter weather or to those who drive in these conditions as part of their job. It is not intended for commercial drivers.

### Materials to have on hand:

- A sample emergency kit
- Current, local weather forecast
- Company work-from-home and/or storm closing policies

### Items to consider:

- What are the hazards of winter driving?
- What kinds of wintry conditions occur most often in your area?
- Are there parts of your commute that are particularly hazardous?

## TALK

Winter driving poses a number of hazards. Snow, ice, and mixed precipitation can make roads slippery and reduce visibility. Cold weather can also interfere with vehicle performance. Therefore, it is important to take extra precautions when driving in wintry conditions.

When driving in snowy or icy conditions, slowing down to a safe speed for the road and weather conditions is the most important safety measure you can take. Increase your following distance from other vehicles, and allow yourself extra time to stop when approaching an intersection.

Be alert for other drivers. Some may lack winter driving experience and may not know how to drive safely for the conditions. Others may be driving vehicles that are not equipped to handle snow and ice. For your own safety and that of your fellow drivers, you should always avoid sudden swerves, turns, and lane changes, but it is even more important during wintry weather.

For maximum visibility, make sure to use your headlights, windshield wipers, and defroster. If you are driving after a snowstorm, clean the snow and ice off your entire vehicle, not just your windshield. Snow left on the roof or other areas of your vehicle can slide off while you are in motion, creating a hazard for you and for other drivers.

Also remember that just because it isn't currently snowing or sleeting, that doesn't mean the roads are safe. Black ice—nearly invisible ice that forms on roadways—is a serious hazard throughout the winter, not just during a storm. Be particularly alert for black ice on bridges and overpasses, which often freeze sooner than other road surfaces.

If your vehicle starts to skid on ice or snow, remain calm. Slow down gradually by easing off the gas, and carefully steer in the direction you want the front of your vehicle to go until you have regained traction.

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# SAFE DRIVING

During whiteout conditions and severe storms, it is best to avoid driving altogether. *[Mention work-from-home or storm closing policies if applicable here.]* If you are already on the road when these conditions occur, find a safe place to pull over, and resume your trip when conditions have improved.

If you become stranded, don't panic. If you can, try to move your vehicle to a safe location away from

traffic (but don't overexert yourself doing so), and call 911 or a roadside assistance number for help. Stay with your vehicle, but limit your use of your car's heater to about 10 minutes every hour to avoid asphyxiation from carbon monoxide poisoning, and make sure your exhaust pipe is clear before running the heater. Use the blanket from your emergency kit for extra warmth if necessary.

# SAFE DRIVING

## NAVIGATING TURNS AND INTERSECTIONS



This talk discusses driving strategies for safely navigating turns and intersections to reduce the risk of collisions with other cars, bicycles, and pedestrians.

**Materials to have on hand:** N/A

### Items for attendees to consider during the talk:

- Who has the right-of-way at a four-way stop?
- What should you do if you are at an intersection and you realize you are in the wrong lane?

## TALK

Most of us drive so often that we become complacent about the risks. But driving is one of the most dangerous activities we do, and intersections are particularly hazardous. With cars, bicycles, and pedestrians approaching from different directions, the potential for collisions is high. But if you take some steps to approach and navigate intersections carefully, you can keep yourself, your passengers, and others safe on the road.

When you approach an intersection, make sure you know which direction you are heading and which lane you need to be in. Last-minute lane switching is a frequent cause of traffic backups and accidents. If you realize that you are in the wrong lane, and you cannot change lanes safely, do not attempt to force your way in or block traffic while you wait for an opening. Instead, proceed through the intersection

in the direction indicated by your current lane. Then, find a safe place to turn around and head back in the direction you need to go.

Always use your turn signals, both when making right and left turns and when changing lanes, so that others can tell where you intend to go. Remember to turn off your signals when you have completed the turn or lane change if they did not turn off automatically. Turn signals that are left on accidentally can be confusing to others on the road.

### Traffic lights

At an intersection with a traffic light, never run a red light. If the light turns yellow while you are approaching an intersection, stop if you have enough time to do so safely. Do not speed up or try to beat the light before it turns red.

When you're waiting at an intersection and the light turns green, don't move forward immediately; look in all directions to make sure the traffic has cleared first. Always check for bicycles and pedestrians as well as for cars and motorcycles. Pedestrians always have the right-of-way.

Making a left turn is particularly risky because you must cross oncoming traffic to do so. If you need to turn left at an intersection without a green left turn arrow, remember that you do not have the right-of-way; you must yield to traffic going straight or turning right, as well as to any pedestrians crossing the intersection.

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# SAFE DRIVING

To make a right turn on red, first make sure that there is no sign forbidding it at that intersection. If a right turn on red is allowed, come to a complete stop, look at all directions of traffic, and proceed with your turn only when there are no motor vehicles approaching or pedestrians or bicycles crossing. Remember, you must yield to vehicles traveling with the green light.

## Stop signs

At an intersection with a stop sign, always come to a complete stop and check for traffic, pedestrians, and bicycles in all directions before proceeding. At a T intersection where a side street meets a through road, yield to the traffic on the through road.

At a multiway stop, yield the right-of-way to the vehicle that reaches the intersection first. If two or more

vehicles reach the intersection at the same time, yield to the vehicle on your right. You should also yield the right-of-way if you are making a turn and another vehicle is going straight. If one vehicle is turning right and the other vehicle is turning left, the right-of-way should be yielded to the vehicle turning right.

Always try to make eye contact with other drivers at stop sign intersections and pay attention to their movements and turn signals. You can never assume they will give you the right-of-way. When it is not clear who should have the right-of-way, use your judgment and try to communicate with the driver in the other car so that one person yields to the other.

If you follow these tips, you can reduce your risk of collisions at intersections and help keep everyone safe on the road.



# SAFE DRIVING: PARKING A VEHICLE SAFELY



This talk discusses the hazards and best practices for parking your vehicle and navigating the parking area.

## Materials to have on hand:

- None

## Items for attendees to consider during the talk:

- Which is the best way to park: backing in or pulling forward into the parking spot?
- Can I rely on my backup camera to safely back out of a parking space?

## TALK

Your GPS tells you that you have arrived at your destination, but your trip is not quite over. As you pull into the parking lot or parking garage, you must remain alert because parking lot collisions are one of the most common types of vehicle accidents. Crowded lots and tight corners make it hard to see; combine that with vehicles backing out of parking spaces, distracted drivers, and pedestrians, and it is easy to understand why so many accidents occur in parking areas.

As you enter and drive around the parking area:

- Drive slowly, and obey the parking lot speed limits. Planning ahead and giving yourself

enough time will help you avoid being in a rush to get parked.

- Always use your directional signals to communicate your intended path to other drivers and pedestrians.
- Follow lane designations in the proper direction, and do not cut diagonally across the lot.
- Obey all stop signs, no-parking signs, and all other posted signs.
- Avoid distractions. Do not talk on the phone, text, or eat while you are trying to park.
- Be alert to pedestrians walking to and from vehicles. Use extra caution if you are in a parking garage, as it tends to be darker and more difficult to see.
- Watch out for other vehicles, especially vehicles backing out of parking spaces.
- Scan the area to find a parking spot. It is always best to park near the building in a visible, well-lit area or near the parking area attendant, if there is one. This is safer and makes it easier to locate your vehicle. If you are unsure of where you are going, it may help to call ahead for instructions on where to park.

When you locate a parking spot, pull through or back in if possible, unless otherwise instructed by a

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# SAFE DRIVING

parking lot attendant. This allows you to pull forward out of the parking spot when you leave. You have much better visibility when pulling forward out of a parking spot than when backing out, which will lessen the likelihood of an accident.

Always make sure your vehicle is within the designated lines of the parking spot and is not interfering with the flow of traffic. Once parked, put the transmission in “park” and turn off the vehicle, or, if it is a manual transmission, set the parking brake, turn off the vehicle, and leave the vehicle in gear. Always keep your seatbelt fastened until the car is safely parked.

If you are parking on the street:

- Obey all parking signs and restrictions.
- Park as close to the curb as possible, and make sure your vehicle is out of the flow of traffic.
- If you are on a hill, turn your wheels toward the curb.
- Check for traffic before opening the door to exit the vehicle, and shut the door as soon as possible after getting out.

When you return to the vehicle, do a quick scan or walk around the vehicle to make sure there is nothing that may inhibit you when leaving or damage the vehicle as you pull out of the parking spot. When you get in and start up the vehicle, do everything you need to do before leaving the parking space—adjust your seat and mirrors, check your phone, find a good radio station, program your GPS, figure out how to get out of the parking lot, and whatever else—so you are not distracted as you are leaving the parking area.

As you are leaving the parking space, your eyes should be scanning left and right to ensure no pedestrians or other vehicles are entering your path. If you have to back out of the parking spot, don’t rely solely on your vehicle’s backup camera and sensors. Always use the vehicle’s mirrors, and turn and look over one shoulder and then the other to ensure your path is clear. And always be mindful of the clearance between your vehicle and the vehicles parked beside you as you leave the parking spot.

Parking lots and garages can be busy, somewhat chaotic places, but if you remain focused and aware of your surroundings and avoid distractions, you should be able to safely navigate them without incident.

# SAFE DRIVING

## PREPARING FOR WINTER DRIVING



This talk provides information on preparing a vehicle for winter driving. The information can apply to employees who commute to and from work in winter weather or to those who drive in these conditions as part of their job. It is not intended for commercial drivers.

### Materials to have on hand:

- A sample emergency kit
- Current, local weather forecast

### Items to consider:

- How should you make sure your vehicle is prepared for wintry conditions?
- What should you keep in your vehicle during the winter in case of emergency?

## TALK

Safe winter driving begins before you even leave your driveway. Winter's snow, ice, and cold temperatures pose a unique set of challenges that can interfere with your vehicle's performance, creating a hazard for you, your passengers, and other drivers on the road.

Therefore, before you get on the road, it is important to make sure your vehicle is in good working condition and is equipped for winter driving. Begin by inspecting or having your mechanic inspect the following items:

- **Tire pressure.** Make sure your tires are inflated to the correct air pressure. This is particularly important in the winter, as cold weather can cause tire pressure to drop. Check your tire pressure frequently.
- **Tire tread and traction.** Check that the tread on your tires is sufficient to provide traction. If it is not, replace your tires. If you live in an area where snowy roads are a frequent concern, consider purchasing snow tires. Tire chains are another option for snowy roads, but make sure you know how to install and use them correctly.
- **Fluids.** Check the levels of your windshield washer fluid, oil, antifreeze (coolant), brake fluid, and power steering fluid.
- **Gas.** In the winter, it is a good idea to keep your gas tank at least half-full at all times to prevent your gas line from freezing.
- **Brakes.** Test them to ensure that they are in good working order. If possible, practice stopping on snow and ice in a safe place to become familiar with how your vehicle performs.
- **Lights and signals.** Check to make sure your headlights, high beams, taillights, brake lights, turn signals, and hazard lights are in good working order. Clean exterior lights if they are dirty.
- **Windshield wipers.** Make sure your windshield wipers, both front and rear (if you have them),

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are in good working condition. Replace the wiper blades if they are worn.

- **Heater/defroster.** Make sure the heater is functioning properly and that the defroster removes condensation and frost from your windshield.
- **Battery.** Have your mechanic check your battery for sufficient voltage, and inspect the charging system, belts, and cable connections.

Can you think of any other areas to inspect before driving in wintry conditions?

You should also assemble an emergency kit to keep in your vehicle in case you become stranded or experience mechanical difficulty. This is a good idea year-round, but it is particularly important during the winter because of the greater likelihood that you could become stranded in hazardous weather conditions. Your winter emergency kit should include:

- Blankets and warm, dry extra clothes
- Water and nonperishable food
- Essential medications
- Ice scraper, snow brush, and small snow shovel
- Flashlight and extra batteries
- First-aid kit
- Jumper cables
- Container of sand or kitty litter for traction if you get stuck in snow or ice
- Emergency flares or triangles
- Inflated spare tire, tire jack, and tools
- Cell phone and car charger
- Extra windshield washer fluid

Can you think of any other items to include?

# SAFE DRIVING

## PREVENT REAR-END COLLISIONS



This talk discusses the primary causes of rear-end vehicle collisions and details the safe driving practices that can prevent these incidents.

### Materials to have on hand:

- Examples of recent rear-end collisions

### Items for attendees to consider during the talk:

- What are some common causes of rear-end collisions?
- What can you do to prevent rear-end collisions?

## TALK

Rear-end collisions are a very common type of vehicle accident. Every year, these accidents kill tens of thousands of people and injure hundreds of thousands more. And even when these collisions do not cause death or injury, they can cause extensive and costly damage to vehicles. If you drive on the job, or even if you just commute by car, knowing the causes and ways to prevent rear-end collisions can help to keep you safe.

Rear-end collisions usually happen for the following reasons:

- **Distracted driving.** Drivers who text, talk on cell phones, or engage in other behavior that takes their hands away from the wheel, their eyes off the road, and their mind off their driving are more

likely to cause a rear-end collision because they cannot react quickly enough to changing traffic patterns or road conditions in front of them. The solution is simple: Don't try to multitask when you're driving. If you need to make a phone call, send a text message, or check your e-mail, pull over to a safe place to do so.

- **Tailgating.** It should go without saying that following another car too closely will increase the likelihood of hitting that car from behind in the event of a sudden stop. Avoid tailgating by always leaving at least 3 seconds' following distance between your vehicle and the vehicle in front of you.
- **Road and weather hazards.** If a road is icy, wet, snowy, or slippery, it can be more difficult to bring your vehicle to a stop. In addition, foggy conditions or poor visibility during a storm can prevent you from seeing a car in front of you until it's too late. To prevent rear-end collisions in bad weather, slow down and increase your following distance.
- **Speeding.** When you drive too fast, you are more likely to lose control of your vehicle, putting you at risk of causing a rear-end collision. Always follow posted speed limits and adjust your speed to the traffic, road, and weather conditions so that you are always in control.
- **Heavy traffic.** In traffic jams, like those that occur during rush hour or in a construction zone, the stop-and-go flow of traffic frequently causes

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rear-end collisions. To prevent these accidents, pay close attention when driving in heavy traffic. Try to keep your frustrations under control, and be courteous in letting other drivers merge and change lanes as necessary.

- **Driving under the influence.** Alcohol and other drugs impair your judgment and vision, including your ability to judge depth perception and react to a vehicle in front of you. Never drive when you are under the influence of any substance that interferes with your ability to do so safely. Remember, even some prescription and over-the-counter

drugs can make driving dangerous. Check with your doctor if you are unsure.

- **Fatigue.** Driving while drowsy interferes with your concentration and puts you at risk of falling asleep behind the wheel, both of which can lead to a rear-end collision. Make sure you get adequate rest before driving. If you become drowsy, pull over and take a short break.

By following these basic safe driving practices, you'll reduce your risk of causing a rear-end collision and keep yourself, your passengers, and other drivers safe.

# SAFE DRIVING: SIGNALING SAFELY



This talk discusses how to signal safely while employees are on the road. This information can apply to employees who drive as part of their job or to those who merely commute to and from work.

**Materials to have on hand:** N/A

## Items for attendees to consider during the talk:

- When should you use your turn signal?
- Why is it important to use your turn signal?
- What should you do if your turn signal malfunctions?

## TALK

According to the Occupational Safety and Health Administration, or OSHA, car accidents occur every 5 seconds in the United States, with injuries occurring every 10 seconds and someone dying every 12 minutes. Many of these incidents occur during the workday as employees drive work vehicles or commute to and from work. Recently, the Society of Automotive Engineers found that up to 2 million of these crashes per year are caused by turn signal neglect. Despite these sobering figures, many drivers continue to signal inconsistently, late, or not at all.

## Turn signals

When you use your turn signal properly, you communicate your intentions to other drivers on the road or in parking lots and give them more time to react. Not only is it the safe thing to do, but it's also legally required. Be sure to always use your turn signal before changing lanes, turning right or left, merging into traffic, pulling over to the side of the road, leaving a traffic circle, or parking.

Here are some other reminders about the safe use of turn signals while you are driving company or personal vehicles:

- Signal every time you change direction, even when you do not see anyone else around.
- Signal at least 3 seconds before you make your move. If the speed limit is 45 miles per hour, or mph, or less, signal at least 100 feet before a turn. If the speed limit is faster than 45 mph, signal at least 300 feet before you turn.
- Be careful that you do not signal too early. If there are streets, driveways, or entrances between you and where you want to turn, wait until you have passed them to signal.

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# SAFE DRIVING

- If another vehicle is about to enter the road between you and where you plan to turn, wait until you have passed it to signal your turn. If you signal earlier, the other driver may pull into your path.
- After you have made a turn or lane change, make sure your turn signal is off. If you don't, other drivers might think you plan to turn again.

## Hand signals

But what should you do if your vehicle's signal or brake lights stop working? Roll down your driver-side window, extend your arm outside the car, and use these universal hand signals:

- To indicate a left turn, extend your arm straight outward.

- To signal a right turn, bend your arm at the elbow, with your hand pointing upward.
- To indicate a stop or slowdown, bend your arm at the elbow, with your hand and forearm pointing toward the ground and your palm open and facing backward.

While these tips may seem obvious, it's easy to get distracted and forget basic driving safety. If you keep these steps in mind, you can prevent avoidable accidents and protect yourself and other drivers on the road.

# SAFE DRIVING

## VEHICLE MAINTENANCE BASICS



This talk discusses why vehicle maintenance is important for safety and gives an overview of the basics of vehicle maintenance. The information can apply to employees who drive as part of their job or to those who merely commute to and from work. It is not intended for commercial drivers.

**Items to have on hand:** Tire pressure gauge, oil dipstick

### Items for attendees to consider during talk:

- What are the hazards of having a poorly maintained vehicle?
- What maintenance tasks can you perform yourself? Which tasks are better left to a mechanic?
- What should you always inspect before you begin driving?

## TALK

In order to be a safe driver, you need to make sure that your vehicle is in good working condition. A vehicle in poor condition can be dangerous for you and for other drivers if it suddenly breaks down, if your brakes or another important part fails, or if your vehicle performs poorly due to maintenance issues.

The first step to keeping your vehicle in good working condition is following the maintenance schedule in your vehicle owner's manual. This specifies how

frequently you should get oil changes, replace filters, inspect brakes, and perform other maintenance tasks.

Periodically check (or have your mechanic check) your levels of coolant, brake fluid, power steering fluid, and other necessary fluids. Keep your windshield washer fluid tank full so you don't run out when you need it. If you will be driving in messy conditions on a long trip, it may be a good idea to carry an extra container of windshield washer fluid in your vehicle.

Between oil changes, check the level of oil in your engine. To do this, with the engine off, open the car's hood and locate the dipstick. Pull out the dipstick, and wipe off any oil. Reinsert the dipstick into its tube, pushing it all the way in, and pull it back out. Examine the dipstick to see how much of it is coated with oil. There will be indicators on the dipstick for the minimum and maximum oil levels. If your oil level is below the minimum, add oil, a little at a time, until it is in the recommended range.

When you get an oil change, have your tires rotated so that they wear evenly, and check periodically to make sure the tread level is safe. In most states, a tread depth of at least  $\frac{1}{16}$  of an inch is required. Your tires should also have indicators called wear bars that will show when your tire tread is too worn. If your tire tread is insufficient, you need to replace your tires.

Every other time you fill your gas tank, it is a good idea to check your tire pressure. Cold weather causes tire pressure to drop, so this is especially important in the winter. The optimal tire pressure for

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# SAFE DRIVING

your vehicle will typically be listed on the inside of the driver door. If the pressure is too low, add air until it is at the proper level.

Wiper blades need to be replaced periodically. If you notice that your windshield wipers are leaving streaks or are doing a poor job of clearing precipitation from your windshield, this is generally a sign that you need new wiper blades.

Pay attention to the indicator lights in your vehicle. Modern cars have an increasing number of indicator lights to alert the driver to problems with the vehicle. These include the check engine light, the tire pressure light, temperature gauges that alert you if a vehicle is overheating, and many others, depending on your vehicle. Don't ignore these warning lights; either correct the problem yourself if you can do so, or take your vehicle to a mechanic.

# SAFE OPERATION OF EXCAVATORS



This talk discusses the hazards associated with the operation of excavators and the actions properly trained and authorized operators must take to safely operate the machines and minimize such hazards.

## Materials to have on hand:

- Equipment operation manual or manufacturer’s specifications

## Items for attendees to consider during the talk:

- Are you properly trained and authorized to operate an excavator?
- Have appropriate personnel already checked for underground utilities or power lines?

## TALK

This project/jobsite requires the use of an excavator. As properly trained and authorized operators, you are responsible for ensuring this machine is used in a safe manner, so let’s review some of the components of safe operation.

Excavators are only to be operated by properly trained and authorized operators, according to procedures in the operation manual. No one other than the operator is allowed inside the cab while the machine is operating. When operating the machine, you must wear your seatbelt and always keep all

body parts inside the cab. Never lift, carry, or allow workers to ride on the excavator, and don’t allow workers to store tools, water, or personal items on the machine; you don’t want them trying to retrieve these items while the excavator is operating.

When getting into and out of the machine, always use proper handholds and maintain three points of contact. Make sure the handholds are free of grease, oil, mud, or anything else that may impact your ability to get a good grip.

Always check the jobsite for electrical hazards before operating the excavator. Confirm that “Call Before You Dig,” or 811, has been contacted and underground utilities have been located. Always check for overhead power lines or utility cables before moving the boom. Confirm with your supervisor the minimum safe working distance from power lines or utility cables. Never operate the excavator within that safe distance from a live electrical source unless the appropriate utility company has de-energized the electrical source.

Excavator operation presents numerous hazards that you must be aware of. The rotating boom creates a struck-by hazard. The rotating upper structure creates caught-between hazards—between the rotating upper structure of the excavator and the stationary lower structure or other objects. An elevated boom also creates a caught-between

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# SAFE OPERATION OF EXCAVATORS

hazard as it descends, and material falling out of the bucket can also cause injuries. To minimize these hazards:

- Ensure all workers are aware of the full boom radius, or the complete circle around the machine with the boom fully extended.
- Never allow anyone to stand under the boom or within the boom radius.
- If possible, set up barriers or warning lines to prevent entry into the boom radius.
- If possible, position the excavator to prevent caught-between hazards with other objects.
- Always check surroundings and use mirrors before swinging the boom. If your field of vision is obstructed, use a signal person to verify the boom radius is clear.

Never exceed the rated lift capacity of the machine, and limit the possibility that the excavator will tip over by avoiding sudden swinging or swing braking.

When moving excavators, always confirm that the surface is not overly steep and is firm enough to support the machine and allow adequate traction. Check the surroundings to ensure side and overhead clearance and that the entire machine—both the lower and the upper structure, including the boom and counterweight—has a clear path. Never travel with a load to the side. Sound the horn before beginning travel, travel slowly, and always look in the direction you are traveling.

Before shutting down the excavator, be sure all loads are placed on the ground and that the upper and lower structures of the machine are aligned. Be sure the machine is properly shut down before dismounting the excavator.

And finally, always report any malfunctions or necessary maintenance to your supervisor.

# SAFE TEAM LIFTING PRACTICES



This talk discusses safe lifting techniques for lifting activities involving two or more workers.

### Material to have on hand:

- A large item to lift for demonstration purposes

### Items for attendees to consider during talk:

- Do you know how to lift safely?
- What are some things you shouldn't do when lifting?

## TALK

There are times when we can't or shouldn't lift something by ourselves. Items that are heavy, large, awkward in shape or awkward in weight need two or more people to lift. However, if you don't do that in an organized fashion, a helping hand could become a hurting hand.

When two or more workers move a load together, the risk of accidents and injuries increases. Team lifting requires some special lifting rules to make sure everyone involved lifts and moves together as one.

How do you do it?

1. First, you have to plan the lift. Each worker should understand what to do before you begin.

2. One person will lead and give orders to lift, turn, and set down. Everyone must lift and move together.
3. Lift and lower in the same way: You squat down close to the load; get a firm grip; keep your back straight; and lift slowly using leg power. For setting down, reverse the procedure. Take care to keep fingers and hands from being caught underneath the load.
4. Carry the load without sudden starts or stops. Move slowly, and watch where you step.
5. Avoid stairs whenever possible. Use an elevator or hoist to move loads to different floor levels.
6. Keep the load level and the weight evenly distributed. Be especially careful when you are going up and down inclines.
7. Long loads should be carried on the same shoulder of each team member. If the object is rigid, you should walk in step.
8. Walking out of step will keep flexible objects from bouncing.
9. Avoid walking backwards. If it's necessary, be sure the path is clear, and have someone guide you.

### What shouldn't you do:

- Don't twist your body when lifting or carrying.
- Don't lift from one knee.

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# SAFE TEAM LIFTING PRACTICES

- Don't change your grip while holding a load.
- Don't step over objects when you are moving.

There may be only a few occasions when team lifting is necessary. But, when teamwork is used, you'll find the lifting and moving much easier—and safer.



# SAFETY CULTURE

## DEVELOP A GOOD SAFETY ATTITUDE



This talk reminds workers of the importance of approaching safety with a positive attitude in order to prevent accidents.

### Items for attendees to consider during talk:

- What are some signs of a poor safety attitude?
- Why is it important to have a positive safety attitude?

## TALK

You know your job. You have the ability to do it well. But do you have the attitude required to do the job both well and safely?

If you have a poor attitude about safety, it will show up in everything you say and everything you do. Sometimes, workers develop the attitude that safety rules were made to be broken—especially when no one is looking.

Even those who are hardworking and conscientious about every other aspect of their jobs can have a poor safety attitude. They may take shortcuts not because they are lazy but because they want to get the work done more quickly. Remember, though, that ignoring safety in order to get a job done more quickly is likely to cause accidents and injuries that slow down production more than working safely in the first place.

Other workers may think that not following the rules won't cause a problem if they think a risk is small.

They take chances, and this leads to accidents. These individuals don't take safety seriously—until it is too late.

Most people don't intend to work with a bad safety attitude or even realize they have one. They think their last couple of accidents were just that—accidents that couldn't have been prevented.

Here's how you can develop a good attitude concerning safety:

- Keep your mind focused on the job at hand. Put aside any personal problems that have been bothering you so that you can watch for hazards and accomplish what you have set out to do.
- Tell yourself that you will not let nearby noises or conversations interrupt your concentration or prevent you from doing the job safely.
- Don't give in to pressure from your coworkers to be unsafe. You don't have to join in with horseplay, take shortcuts, or participate in cover-ups. Instead, take the lead in behaving in an adult and responsible manner. If coworkers are behaving in an unsafe manner, tell a supervisor.
- Report all accidents and near misses, even if they seem unimportant at the time. *[Instruct workers on your specific accident and near-miss reporting procedures.]*
- Try to understand why an accident occurred to avoid making the same mistake twice.

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# SAFETY CULTURE

- Always follow safe work practices and wear any personal protective equipment (PPE) that you are required to wear.
- Practice good housekeeping. Keep your work area free of clutter, and clean up spills promptly.
- Be considerate of your coworkers. Don't do anything that would endanger them. In fact, go a

step farther and remind coworkers about safety. Say something when they forget to put on PPE or when they ignore the rules.

By following these suggestions, you can develop a positive safety attitude, one that others will respect and look up to as an example. But even better than that, you'll be able to do productive work and stay safe at the same time.

# SAFETY CULTURE

## DEVELOP SAFE HABITS



This talk discusses safe habits to prevent errors on the job that can lead to injuries.

**Materials to have on hand:** [N/A]

### Items for attendees to consider during the talk:

- What are some situations where you might be more likely to make an error?
- What safe behaviors are habits for you? Which ones do you need to work on?

## TALK

All of us take risks and shortcuts from time to time, both on and off the job, and most of the time, nothing bad happens. So, why is it so important to work to eliminate these shortcuts and do things the safe way every time? The answer has to do with habits.

When you're working at full capacity—your full attention is on the task, you have plenty of time to complete it, and you're not tired or distracted—you may be able to get away with operating a machine without a guard, or not wearing your personal protective equipment, or PPE, without hurting yourself. But, how often is that situation the reality? Most of us have at least some distractions to contend with every day, and there's always the potential for something unexpected that takes our attention away from the task at hand. When you combine distraction with an unsafe practice, tragic accidents can happen.

That's where habits come in. If you consistently wear your PPE, follow safe work practices, and avoid shortcuts, those behaviors will become routine, and you'll do them without thinking. When safety becomes automatic, distractions, fatigue, and other things that can interfere with your attention are less likely to lead to an accident.

Think about wearing your seat belt when you ride in a car. It's probably automatic; you get in the car, you close the door, and reach for your seat belt without pausing to consider whether it's really necessary. But, what if you had to think about wearing your seat belt every time? You might remember to put it on most of the time, but what if you were running late? Rushing to the hospital after you received a phone call that a family member had been injured? Your mind would be elsewhere, and the chances are higher that you'd forget about your seat belt.

You might get lucky and arrive at your destination unharmed. But nobody plans to get into an accident, whether you're on or off the job. And being distracted means that you're likely to make other careless errors, in addition to forgetting your seat belt, which increases the risk of an accident even more. On the other hand, if you've made it a habit to wear your seat belt, you'll do it every time, including when you're not thinking clearly, and even if you do get into an accident, you'll have that safeguard to reduce your risk of injury.

The same idea applies at work. If you choose safe behaviors every time and make them into ingrained habits, the protection they provide will be there when you need it most. So, get into the habit of choosing safety and avoiding shortcuts every day.

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# SAFETY CULTURE

## TAKING RESPONSIBILITY FOR SAFETY



This talk reminds workers of the importance of taking responsibility for safety and making sure the workplace is safe for everyone.

### Material to have on hand:

- Example of a recent incident or near miss that could have been prevented if someone spoke up about an unsafe condition (if applicable)

### Items for attendees to consider during talk:

- Who is responsible for making sure our workplace is safe?
- What should you do if you notice a hazard in the workplace?
- What kinds of hazards do we need to particularly be aware of at our worksite?

## TALK

You're probably aware of the safety rules we all need to follow at work. Most of you do a good job at wearing your personal protective equipment (PPE) and following safe work practices. But when you see something unsafe, what do you do? Do you think to yourself, "I'm following the rules, so it's not my problem"? Or do you say or do something to make sure the hazard is fixed before someone gets hurt?

It's important to watch out for your own safety, but it's just as important to take a look around you and

make sure the workplace is safe for everyone. Safety isn't just the job of the safety manager or the supervisors—it's everyone's job.

Consider this example [*or share a real example from your workplace if applicable*]: Steve was walking through a worksite one morning on his way to do some painting when he noticed a broken guardrail. He thought to himself, "Someone should fix that," but he was in a hurry to get to work, so he continued walking and forgot about the guardrail. Several more people walked by the same area, but like Steve, they were all focused on their own tasks, so the guardrail remained broken.

Later that day, Bob was carrying some bulky materials through the area. He couldn't see very well around the materials he was carrying, so he got a little too close to the edge of the walkway. Because the guardrail was broken, he fell 8 feet down and broke his leg.

This story is a good example of why you should always say something when you see something dangerous. It may not be your job to inspect guardrails, just like it wasn't Steve's job. But if Steve or any of the other people who noticed the broken guardrail had said something to a supervisor, the guardrail could have been fixed before Bob got hurt.

Whether you're at work or at home, make it a point to look around with an eye toward safety. Do you see anything dangerous? Some hazards are very easy to overlook. For example, a loose extension cord in

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# SAFETY CULTURE

a walkway is a trip hazard. A burned-out lightbulb makes it more difficult to see what you're doing, which can increase the chance of getting hurt. A machine with a broken or missing guard can easily cut off or crush someone's hand.

When you notice a hazard, don't assume that someone else will see it and fix it. Take the time to report it to a supervisor. If the hazard is something you can easily and safely fix, like a trip hazard in a hallway, go ahead and do so. It is still a good idea to tell a supervisor, though, so that he or she can take steps

to make sure it doesn't happen again. *[Review your specific procedures for reporting hazards.]*

Never put yourself in danger to fix a hazard. If you can't safely fix a hazard yourself, and no one who can fix it is available, the best thing to do is to put up a sign alerting your coworkers to the issue so they know to avoid the area or piece of equipment.

If we all make a little extra effort to be aware of workplace hazards and fix them or report them, the workplace will be a safer place for everyone. Remember, safety is everyone's responsibility.

# SAFETY WITH BATTERY-OPERATED POWER TOOLS



This talk discusses the hazards of battery-operated power tools and details safe work practices for using, charging, and storing battery-powered tools.

### Materials to have on hand:

- Battery-powered tools in use at the worksite
- Chargers and battery packs

### Items for attendees to consider during the talk:

- Where is the best place to store a battery-operated power tool?
- What are some situations where a battery-powered tool is not safe to use?

## TALK

Battery-powered tools, such as cordless drills, saws, screwdrivers, and more, are convenient both on the job and at home. They allow you the flexibility to work in areas where running an electrical cord would be difficult or impossible, and they avoid the mess and fumes that gasoline-powered tools can create. But battery-operated tools are not without hazards of their own.

First, there are the hazards of the operation of the tool itself. In this respect, battery-powered tools are just like any other power tool in the dangers they pose. A cordless saw is still a saw with a sharp blade.

Regardless of what kind of tool you're using, make sure you understand and follow the manufacturer's guidelines for safe use, and always wear the appropriate personal protective equipment, or PPE. The specific PPE you'll need varies depending on the kind of tool you're using. Ask your supervisor if you aren't sure what PPE a particular tool requires.

Follow these safe work practices:

- Keep your hands away from moving or rotating parts at all times.
- Never use cordless tools near open flames, in an explosive atmosphere, or near flammable liquids.
- Never leave tools outdoors unattended.
- Don't wear loose clothing or jewelry when using a power tool, and keep long hair tied back.
- When a tool is not being used, or when it's being adjusted or cleaned, remove the battery or lock the power switch in the off position to prevent injuries from accidental start-up.
- Never use a tool for a purpose for which it was not intended.

### Battery safety

It's important to treat the battery pack that powers your tool with care. Use only manufacturer-approved chargers and battery packs; other battery packs could

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# SAFETY WITH BATTERY-OPERATED POWER TOOLS

cause fire or explosion. Check the battery pack for damage each time you use the tool. If a battery pack or charger has been dropped, hit, or damaged, do not use it.

Damaged battery packs can leak chemicals that can cause burns. If you get these chemicals on your skin, flush the area with water promptly. Seek medical attention if you get battery liquid in your eyes or if it is ingested.

Don't place battery packs near fire or heat, and store them away from moisture, including excess humidity. Charge battery packs in a cool, dry location away from combustible materials.

When the battery is not in use, keep it away from metal and other conductive materials. In particular, small metal objects like paper clips, nails, screws, and coins can make a connection from one terminal to another and short-circuit the battery.

If a battery pack or charger is not working properly, never attempt to repair it yourself. Consult the manufacturer to find an authorized repair facility.

Finally, when a battery pack reaches the end of its life, make sure to dispose of it properly. Consult the manufacturer's instructions for recycling or disposal, and follow all applicable local, state, and federal laws.



# SAFETY WITH NONPOWERED HAND TOOLS



This talk discusses hazards and safe work practices for using nonpowered hand tools, such as screwdrivers, chisels, hammers, wrenches, and more.

## Materials to have on hand:

- Nonpowered hand tools in use at the worksite

## Items for attendees to consider during the talk:

- Do you know how to select the right hand tool for the job?
- What are some hazards associated with non-powered hand tools?

## TALK

When you think about safety with hand tools, you probably mostly think about powered tools like chain saws and power drills. Nonpowered hand tools like hammers and screwdrivers are so commonplace that you probably don't stop to think about their dangers. But you can still injure yourself with a nonpowered hand tool, so it's important to take precautions.

Follow these safe practices for some common types of hand tools:

### Screwdrivers:

- Repair worn, bent, or broken tips, or throw the screwdriver away.

- Grind or file the tip of the screwdriver whenever necessary. It should fit the screw snugly.
- Don't use a screwdriver as a punch, chisel, or nail puller.
- Select the right size screwdriver to fit the screw.
- For electrical work, use a screwdriver with an insulated handle.
- Use a vise or other support to hold the piece being worked, instead of holding it with one hand and using the screwdriver with the other.
- Use an awl, drill, or nail to make starting holes for screws.
- Don't force a screwdriver by using a hammer or pliers on it.
- Don't carry screwdrivers in your pockets.

### Chisels:

- Keep the cutting edge sharp at all times.
- Repair the chisel head or discard the chisel at the first sign of mushrooming, which can result in hazardous flying particles.
- Select the right size chisel for the job.
- Use a mallet rather than a hammer whenever possible. Make sure the mallet is the right size for the chisel.

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# SAFETY WITH NONPOWERED TOOLS

- Wear goggles when chipping. Shield the work to protect others.
- Chip in a direction away from you, and don't use unnecessary force.
- Hold the chisel toward the work end so your hand won't get the full force of a blow if you miss with the mallet stroke.

## Hammers:

- Make sure that the hammer head fits tightly.
- Replace cracked heads and loose or cracked handles.
- Use the right hammer for the job (for example, a soft metal hammer on highly tempered tools such as drills or dies; a claw hammer for driving nails).
- Heads should be of proper hardness so they won't chip or mushroom.
- Grip the handle close to the butt end.

## Pliers

- Don't use pliers on a hard metal surface. This will dull the teeth and loosen the pliers' grip.
- Grasp plier handles at the ends, not near the hinge.
- Never use pliers on nuts; use a wrench instead.

## Wrenches

- If a wrench is bent, cracked, badly chipped, or has a loose or broken handle, discard it. Don't straighten a bent wrench; that will weaken it.
- Keep the jaws of the wrench sharp.
- Use the right wrench for the job, and be sure it fits snugly on the nut. Never use a shim to make a wrong-sized wrench fit.
- If you can't loosen a nut with the wrench you're using, get a larger wrench. Never add an extension—or "cheater"—to the handle for more leverage.
- Pull the wrench—don't push it. Make sure your footing is secure, and allow plenty of clearance for your fingers. Use a short, steady pull.
- Don't pull on an adjustable wrench until it has been tightened on the nut. The jaws should be pointed in the direction of the pull.

In general, keep tools clean and in good condition. Have a place for every tool, and keep it there when you're not using it. Sharp tools don't belong in your pocket. Never leave tools lying on the floor or ground—or where they can fall. Many injuries are caused by stepping on, tripping over, falling on, or being struck by tools that have been left lying around.

# SCAFFOLDING

## WORKING SAFELY ON SCISSOR LIFTS



This talk discusses the hazards and safe work practices when operating a scissor lift in general industry and construction workplaces.

### Materials to have on hand:

- Scissor lifts in use at the facility
- Any personal protective equipment intended to be worn while using scissor lifts
- Lift operator manuals

### Items for attendees to consider during the talk:

- What are the hazards you could face while using a scissor lift?
- Is it a common practice to move a scissor lift while the platform is elevated?
- What conditions can increase the risk of a tipover?

## TALK

Sometimes, a ladder isn't practical or safe when you need to reach a high area to work. In those situations, a scissor lift can be a good alternative. A scissor lift consists of a work platform with guardrails mounted on a wheeled base with an apparatus that raises and lowers the platform. Scissor lifts are quite safe when used properly, but you need to be aware of the hazards you could encounter and how to avoid them.

### Know your equipment

Never use a scissor lift unless you have been trained to do so. Before you use a scissor lift, review the manufacturer's operating instructions. Pay attention to weight limits, instructions for raising and lowering the lift, and instructions for moving and positioning the lift. Make sure you know where all the controls are located and how to operate them. Test and inspect the controls before each use of the scissor lift, and tell your supervisor if anything isn't working.

### Safe positioning

Positioning your scissor lift safely can protect you and others in the area from a variety of hazards. Follow these safe practices:

- If you are working outside, make sure the lift is at least 10 feet away from energized power lines.
- Look for overhead obstructions such as branches, building overhangs, door frames, and utility structures, and position your lift to prevent being struck by these obstacles.
- Use traffic controls such as cones, barricades, and signage to prevent other workers or vehicles from getting too close.
- Drive the lift slowly, and communicate with a guide on the ground when operating or moving the scissor lift around the worksite to help you avoid obstructions, pedestrians, and other vehicles.

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# SCAFFOLDING

- Test the brakes before you use the scissor lift, and set them once you are properly positioned.
- Position the scissor lift close enough to your work so that you can avoid leaning or reaching too far away from the lift.

## Prevent falls

Falls are the most common cause of scissor lift injuries. Guardrails built in to the lift provide fall protection. Always inspect the guardrails before you use a scissor lift to make sure they are not missing, broken, or damaged. If a scissor lift has missing guardrails or guardrails that are in poor condition, do not use it.

If the lift operator's manual recommends additional fall protection, the guardrail is less than adequate, or there is a chance you could leave the safety of the platform, a personal fall protection system may be required.

Always follow these safe work practices to prevent falls:

- Stand only on the work platform; never stand on the guardrails.
- Close and secure the guardrail gate before elevating the platform.
- Never use a ladder, planks, or any other device inside the platform to gain additional height.
- Follow the manufacturer's instructions for moving the lift. In most cases, scissor lifts are not designed to be moved while the platform is elevated or can only be moved while elevated under specific conditions.
- Position the scissor lift on a firm, level surface away from drop-offs, holes, slopes, and other potential hazards that could cause a tipover.
- Avoid using a scissor lift outside during very windy conditions. Most scissor lifts rated for outdoor use should not be used when wind speeds are greater than 28 miles per hour.
- Never exceed the weight limit of the lift. Make sure to include the weight of all personnel on the platform, as well as any tools or equipment.

## Tipovers and collapses

Tipovers and collapses can occur when a scissor lift is unbalanced or when carrying too much weight. To prevent these incidents, follow these safe practices:

# SELECTING PPE FOR WOMEN



This talk discusses best practices for choosing safe and effective personal protective equipment (PPE) for women in the workplace. While the talk is designed to advise female workers about safe practices for choosing and wearing PPE, the information can be valuable to all audiences, particularly regarding the safety risks involved in modifying PPE.

## Material to have on hand:

- Different types of PPE available at the workplace that are appropriately sized for women

## Items for attendees to consider during the talk:

- Have you modified your existing PPE to better fit you? Has that created a different hazard?
- What types of PPE could be better suited to you and your job?

## TALK

Many women in the workforce, particularly in the construction trades and other male-dominated professions, often encounter improperly fitting personal protective equipment, more commonly referred to as PPE. Not only can this impact an employee's ability to perform her work efficiently, but more importantly, it can also compromise her

personal safety. PPE that does not fit properly will not adequately protect against occupational hazards and may increase the risk for illnesses, injuries, or death. For example, oversized protective clothing can lead to tripping hazards or become caught in machinery and result in a serious injury. Poorly fitted fall protection harnesses may lead to injuries such as suspension trauma or may not be effective in the event of a fall. Gloves that are too big put a worker at risk of coming in contact with chemicals that can cause dermatitis or other skin diseases.

Fortunately, there are a number of safe practices you can follow on the job to make sure your PPE fits properly and provides you with the best protection.

- Test your employer-provided PPE. If it's uncomfortable, fits improperly, is damaged from wear or another defect, or is otherwise unsuitable, report the condition to your supervisor to find an appropriate replacement. Also tell your supervisor if appropriately sized PPE is not available.
- Try on more than one size of each type of PPE that you are required to wear to find the best fit.
- Do not select PPE designed for men and try to modify it to fit a woman's body. Such PPE will likely not fit a woman due to differences in body size, height, and composition. Modifying it by rolling up sleeves or pant legs can hinder

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## SELECTING PPE FOR WOMEN

movement, and the excess material can become caught in machinery.

- When selecting hearing protection, you may want to use disposable, foam earplugs, which are more likely to fit women due to typically smaller ear canals and may be more comfortable.
- When selecting head protection, adding a chin strap can help hard hats or bump caps fit better and not fall off, especially if you have a smaller-sized head.
- In terms of selecting eye protection, beware of safety goggles that are “one size fits all.” Some may be too large for a woman’s face and could allow debris, fluids, sparks, chemicals, or other hazardous materials to enter through gaps in the seals.
- Finding proper-fitting gloves is a particular challenge for women at most worksites because men’s larger sizes are commonly the only ones available. When choosing safety gloves, make sure all of your exposed skin is covered; that the gloves allow for a safe grip so tools will not easily slip out of your hands; and that the finger length, width, and palm circumference of the gloves match those of your hands. If the appropriately sized glove is not available, tell your supervisor. Do not try to modify larger gloves, which can create further hazards.
- When selecting safety footwear, make sure the boot or shoe fits comfortably but snugly around the heel and ankle areas when laced. It should also fit comfortably at the ball of the foot. Check

the distance between your toe and the toe of the boot. To do this, push your foot to the front of the boot while standing, and check the space difference at your heel. Allow at least 3/8 of an inch of space. Allow room for swelling, especially if you stand or walk all day on the job. Try not to “make do” with men’s safety footwear. If you wear safety footwear that is too big, you risk additional injury from tripping, slipping, and falling, as well as suffering from blisters, burning soles, and sore feet.

- Finally, when selecting protective clothing, make sure it is specifically designed for women. The areas most important for consideration include torso length, shoulders, chest, waist, and hips. Wearing men’s protective clothing can restrict the ability to move easily and, in some cases, the ability to work safely. For example, chainsaw pants that are too large are dangerous to a female worker because the ballistic nylon strips could turn while working and leave her legs unprotected. Poor-fitting equipment also tends to reduce the productivity of the woman while she compensates to do her job safely. Modifying protective clothing can also be dangerous. As discussed earlier, rolling up excessively long sleeves or pants can create excess bulk, which can increase the risk of becoming caught in machinery.

If you keep these tips in mind, you can stay aware of the particular hazards you face as a woman in the workplace, protect against them, and advocate for better-designed PPE at the worksite.

# SHELTER-IN-PLACE

## CHEMICAL SPILLS OR RELEASES



This talk discusses the steps that employees should take in the event of an emergency that requires them to shelter in place because of a nearby chemical spill or explosion.

### Materials to have on hand:

- A floor plan indicating the shelter locations inside the building
- The name(s) of the emergency coordinator(s)

### Items for attendees to consider during the talk:

- Do you know how you will be warned if an emergency requires you to remain in the building?
- Are you familiar with the locations of the safe places to shelter in our facility?
- Do you know who our emergency coordinator(s) are?

## TALK

There are several types of emergencies that can make it safer for our employees to remain in our facility, to “shelter-in-place,” rather than to evacuate the building. These emergencies include the more obvious ones such as hurricanes and tornadoes, but other emergencies can include a chemical explosion in a nearby facility, a chemical spill from a derailed tank car, or a highway accident close to our facility. So, we’ll review the steps that all of us can take to

ensure our safety if we need to shelter in place because of a chemical spill or release.

### Chemical spills or releases

The purpose of sheltering in place during a chemical spill or an accidental release of chemicals into the air is to avoid exposure to airborne chemicals, which can be inhaled or absorbed through your skin.

When a warning of a chemical spill or release is issued by sirens or other means, you must seek inside shelter. Try to stay calm and await instructions from our emergency coordinator(s) or a designated official.

The locations in which we’ll shelter will have enough room for everyone and, if possible, have a hard-wired telephone and access to a bathroom. These locations will also have few or no vents and be either an interior room above ground level or a room above ground level with the fewest number of windows.

To avoid exposure to the chemicals, we need to take the following steps:

- Close all windows and exterior doors.
- Close blinds and shades if there’s danger of an explosion outside.
- Turn off all heating, ventilation, and air conditioning, or HVAC, systems, as well as fans and heat pumps.
- Do not use the elevators.

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# SHELTER-IN-PLACE

- Go to the shelter location.
- Prevent air from entering the shelter location by using wet towels and duct tape to seal gaps in doors and, for a shelter location with windows, use plastic sheeting and duct tape to seal the windows from the inside. (Sheeting will be pre-cut and stored in the shelter location.)
- Seal electrical and cable outlets with duct tape.
- Seal HVAC ducts and outlets with plastic sheeting and duct tape.
- Drink only bottled water, as faucet water may be contaminated.

- Monitor the Internet and local television and radio stations for instructions.

If we are advised to shelter in the facility for some time, we will gather essential disaster supplies, such as nonperishable food, bottled water, battery-powered radios, first-aid supplies, flashlights, and batteries, and take them to the shelter if they're not already stocked there.

Be sure to remain sheltered until it has been announced that the chemical emergency is over and that it's safe to leave the building.

# SHELTER-IN-PLACE

## HURRICANES AND TORNADOES



This talk discusses the steps that employees should take in the event of an emergency that requires them to shelter in place because of a hurricane or tornado.

### Materials to have on hand:

- A floor plan indicating the shelter locations inside the building
- The name(s) of the emergency coordinator(s)

### Items for attendees to consider during the talk:

- Do you know how you will be warned if an emergency requires you to remain in the building?
- Are you familiar with the locations of the safe places to shelter in our facility?
- Do you know who our emergency coordinator(s) are?

## TALK

There are several types of emergencies that can make it safer for our employees to remain in our facility, to “shelter-in-place,” rather than to evacuate the building. Two examples are impending hurricanes and tornadoes. So, we’ll review the steps that all of us can take to ensure our safety if we need to shelter in place to avoid exposure to these natural disasters.

### Hurricanes and tornadoes

When a warning is issued of a tornado or hurricane by sirens or other means, you must seek inside shelter. Try to stay calm and await instructions from our emergency coordinator(s) or a designated official.

The locations in which we’ll shelter will have enough room for everyone and, if possible, a hard-wired telephone and access to a bathroom. Ideally, each location will meet one of the following descriptions:

- A small interior room on the lowest floor and without windows; *or*
- A hallway on the lowest floor away from doors and windows; *or*
- A room constructed with reinforced concrete, brick, or blocks with no windows.

To protect yourself from a tornado or hurricane, take the following steps:

- Do not use the elevators;
- Go to the shelter location and stay as close to the center of it as possible;
- Keep away from overhead fixtures, filing cabinets, and electrical power;
- If possible, get under a table or other sturdy object and use pillows, blankets, or other cushiony materials to protect your head and neck; *and*

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# SHELTER-IN-PLACE

- Monitor the Internet and local television and radio stations for weather updates and instructions.

If we are advised to shelter in the facility for some time, we will gather essential disaster supplies, such as nonperishable food, bottled water, battery-powered radios, first-aid supplies, flashlights, and batteries,

and take them to the shelter if they're not already stocked there.

Stay in the shelter until it has been announced that the tornado threat or the hurricane is over and that it's safe to leave the building.

# SHIFTWORK SAFETY



This talk discusses some unique hazards faced by shiftworkers and the steps they can take to stay safe and healthy.

## Items to have on hand: N/A

## Items for attendees to consider during talk:

- What are some of the health issues that can result from shiftwork?
- What are some of the safety issues that can result from shiftwork?
- What can you do to decrease the health and safety risks of shiftwork?

## Talk

As a shiftworker, you have an extra set of hazards to deal with. Not only do you need to know about the specific hazards of your job and how to protect yourself, but you also need to understand how shiftwork can add to those hazards and create unique risks of its own.

The following are some health risks associated with shiftwork:

- Because shiftwork disrupts your body’s natural circadian rhythm, or internal time clock, you might experience health problems, including cardiovascular issues, such as high blood pressure, and gastrointestinal issues, such as indigestion, heartburn, stomachache, and loss of appetite.

- You may have trouble sleeping during the day when you need to, and when you do sleep, you may not sleep as soundly or as deeply. This can lead to feelings of sleepiness while you are at work, which is very dangerous if you operate machinery or perform other safety-sensitive tasks. Even if you don’t do anything particularly dangerous on the job, you might feel sleepy during your commute, putting you at higher risk for car accidents.
- Your eating habits and exercise might suffer. Shiftworkers often eat fast food from late-night restaurants or processed foods that are easy to microwave or that come from a vending machine. These foods are often heavy, difficult to digest, and low in nutritional value. Exercise might be difficult to make time for if you work a schedule that changes frequently.
- Your family and social life might be disrupted because you are on a different schedule than everyone else. This can impact your emotional health, and you might feel socially isolated or depressed.

In addition to the health risks, nightshift workers often experience higher rates of accidents and injuries than dayshift workers. These are some reasons for the increased safety risks:

- **Reduced concentration and fatigue.** Mental performance levels are typically at their lowest between 3:30 a.m. and 5:30 a.m., meaning that

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# SHIFTWORK SAFETY

nightshift workers will have extra difficulty focusing on tasks and staying alert.

- **Reduced reaction time.** Your reaction times are likely to be slower at night, which could increase your chance of accidents.
- **Reduced motivation.** Staffing levels are often lower during night shifts, which might mean you have fewer coworkers and supervisors around. This could make you feel tempted to take shortcuts or be less diligent about safety procedures.

The good news is that most of these risks and problems can be prevented if you take some simple steps. The following are some ways to reduce the negative effects of shiftwork:

- **Take steps to get more and better sleep.** Stick to a sleep schedule that works for you even on weekends and days off. Sleep in a quiet, cool, dark room where you won't be disturbed, and make sure your family and friends are aware of your sleeping needs and schedule.

- **Eat a balanced diet.** Just like with sleep, it's important to stick to a regular eating schedule. Make sure you eat a nutritious diet that contains appropriate levels of protein, carbohydrates, and fat. Avoid processed and sugary foods, and avoid heavy and greasy foods at night. While working, avoid snacks like candy bars and chips; instead, eat fruit, nuts, or other healthy options. Avoid caffeine 4 hours before your scheduled sleep time.
- **Get regular exercise.** Following a consistent exercise routine will give you more energy, help you get better sleep, and help adjust your circadian rhythms. But you should avoid exercising right before your scheduled sleep time.
- **Change tasks frequently.** If possible, changing tasks every couple hours while you work can help improve your concentration and prevent drowsiness.
- **Stay alert with activity.** Physically active work will help to keep you alert. If your job does not require much physical activity, get up and stretch, or take a short walk periodically to stay alert.

# SHOVELING SAFETY



This talk discusses practices for employees to follow when using a shovel to move loose materials such as gravel, dirt, sand, and mulch at their workplace.

## Material to have on hand:

- The type(s) of shovel available to move materials at the facility

## Items for attendees to consider during the talk:

- Do you know how to choose the right shovel?
- Can you think of how best to position your body when shoveling in order to avoid injury?

## TALK

According to the U.S. Consumer Product Safety Commission, in any given year, thousands of people are treated in emergency rooms, clinics, and doctors' offices for injuries occurring due to their use of unpowered tools such as shovels. The most common injuries include sprains and strains to the back and shoulders. So let's review some steps that all of us can take to avoid and reduce injuries when we're using a shovel to move loose materials such as gravel, dirt, sand, and mulch.

## Selecting the right shovel

The important features in choosing a shovel include its weight, the shovel's handle type, shaft length, and the size and shape of the shovel blade. The weight of the material being moved must also be considered.

- Regarding the weight of a shovel, its weight should match the type of job being done. A light shovel, such as one around 3 pounds, is suitable for mulch, but a sturdier one would be needed for gravel.
- The handle type is important. A D-grip handle helps keep your wrists in a neutral, untwisted position and can provide more comfort and control.
- Because your sweat may interfere with your grip when shoveling in hot weather, use a nonslip handle, which will lower the force needed to hold the shovel.
- Longer shovel shafts, such as ones that are no higher than your chest, ease the strain on back muscles, whereas shorter lengths have better stability when transferring materials. A strong and light shaft is ideal.

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# SHOVELING SAFETY

- A shovel with a larger blade is best to use for lighter materials.

**[Include the following bullets as they apply to your facility.]**

- Use a round-point shovel to dig into a pile of medium gravel, as this type of tip produces minimum friction as it cuts into this material. Don't drive the shovel into the gravel straight on; slide the shovel into the pile at about a 30-degree angle.
- Use a square-point shovel (also known as a flat-head shovel) to move dry or moist sand or any powdered product or fluffed mulch.

Take time to determine the type and design of shovel that seems best for you. Be sure to examine the shovel for signs of defect or damage, and don't use it if it's damaged. For example, a wooden-handled shovel that's been left out in the rain could be subject to wood decay inside the shovel head attachment area, which may lead to the shovel head breaking off and possibly causing an injury.

## Before you shovel

It's strenuous to shovel, so if you have a history of back or heart problems, it might be best to avoid this task. Even if you are physically fit, it's a good idea to do some flexing and stretching exercises to warm and loosen your muscles before you shovel. Wear gloves that protect your hands and improve your grip, and wear sturdy, nonslip footwear with good arch support.

Before you begin to shovel, decide how and where you will move the material.

## Using a shovel

Follow these tips when shoveling:

- Stand upright, and bend your knees slightly so that your leg strength moves the load.
- Keep your arms and elbows close to your body, and when you lift the load, straighten your knees so you are lifting with your legs instead of your back.
- Instead of twisting your trunk, always turn your feet and body in the direction of where you want to drop the shovel's load.
- Do not throw the material more than 3 feet, and be sure to turn your feet in the direction of where you're throwing it.
- Never throw a shovel load over your shoulder. It's actually a better practice to walk closer to where you want to dump the material than to throw it.

When you shovel materials at a high rate, such as 15 scoops per minute, the maximum weight of both shovel and load should not exceed 10 to 15 pounds. However, it's safer for you to complete multiple loads with a lighter weight than to lift heavier weights less often.



# SIX STEPS TO JOB HAZARD ANALYSIS



This talk describes the six basic steps to completing a job hazard analysis (JHA). It is appropriate for any employees, supervisors, or managers who participate in or oversee JHAs as part of their jobs.

## Materials to have on hand:

- Company JHA forms
- Sample completed JHA

## Items for attendees to consider during the talk:

- What is the purpose of a job JHA?
- How do we prioritize which jobs to analyze first?
- Do you know the steps of a JHA?

## TALK

A job hazard analysis, or JHA, is a way of breaking down a job or task into its basic steps to find the hazards it poses. JHA is an essential tool in our safety program, so it's important that you understand the process.

There are six basic steps to job hazard analysis:

**Step 1: Select jobs or tasks to analyze.** Not every single job or task will be the subject of a JHA. Generally, we prioritize the most hazardous jobs or the jobs that have caused injuries in the past. Managers will typically be in charge of this step, but if you think

a job or task that hasn't been selected for a JHA needs one, suggest it to your supervisor.

**Step 2: Observe the job or task and list its steps.** Once a job has been selected for JHA, think carefully about all the steps it involves, and list them on the JHA form. Pay attention not only to the obvious steps of the job but also to startup, shutdown, and any necessary maintenance steps.

When you list the steps on the JHA form, try to find the right balance between being too brief and too detailed. Most of the time, you should be able to describe the job in 10 or fewer steps. If you feel that you need more steps, that's probably a sign that you're either trying to be too detailed or that the job you're analyzing is too broad to be covered by a single JHA.

**Step 3: Describe the hazards in each step.** For each step you've listed on the JHA form, think about the hazards associated with it. Record the hazards that correspond to each step on your JHA form. Remember to look at the working environment as well as the task itself.

**[Note to presenter: Select the hazards from the list below that are relevant for your employees.]**

These are some of the common types of hazards you should look for:

- Heavy lifting, repetitive motion, or awkward postures or movements

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# SIX STEPS TO JOB HAZARD ANALYSIS

- Chemical exposure
- Hot or cold conditions
- Electrical hazards
- Burn hazards
- Fire or explosion hazards
- Dangerous machinery or equipment
- Slips, trips, and falls
- Workplace conditions like lighting, noise, and ventilation
- Human-related hazards like vulnerability to crime or violence

**Step 4: Develop corrective measures.** For each hazard you identified in Step 3, think about what could be done to reduce the risk. Should machine guarding be installed? Would changing the setup of a work area or modifying the process make the job

safer? Is personal protective equipment, or PPE, needed? In general, you should always try to think of a way to eliminate the hazard before you suggest other types of hazard controls like PPE.

Record your suggested corrective measure for each step on the JHA form.

**Step 5: Write safe job procedures.** Once you've completed Steps 1 through 4, the next step is to write a safe job procedure for the task that takes your hazards and corrective measures into account. These safe job procedures are an important resource for employees, so make sure they're clear and easy to understand. Write in a step-by-step format, use simple language, and include any necessary special equipment or PPE.

**Step 6: Keep records.** Once everything is complete, you'll need to submit it to be reviewed by **[the safety manager/other job title]**. He or she will maintain the records of all the JHAs performed at the facility so that they can be updated and revised as needed.

# SKID STEER LOADER SAFETY



This talk describes the safety practices that workers need to follow when operating a skid steer loader, as well as the things they need to look for during a pre-start inspection of the equipment. This talk is meant for employees in various industries who may operate or work around skid steer loaders in performing their job duties.

## Materials to have on hand:

- Company's written skid steer loader safety procedure (if applicable)
- Skid steer loader operator's manual to review equipment-specific safety information

## Items for attendees to consider during the talk:

- Are you aware of the hazards associated with skid steer loaders?
- Do you know how to safely operate the skid steer loader(s) in your workplace?

## TALK

A skid steer loader, which is often just called a skid steer or a wheel loader, is a small vehicle that can be used for a variety of construction, landscaping, or other jobs. As far as construction equipment goes, skid steers are relatively lightweight and easy to maneuver and can have tools attached to them for

performing different tasks, like digging. Because of the hazards they pose, however, you need to learn some important safety precautions before operating or working near skid steers. Skid steers can cause severe injuries and even death if they aren't used safely. The two most commonly reported causes of serious injury and death associated with skid steers are being crushed by moving parts and rollover accidents. These types of accidents are preventable, however, if you understand and follow the necessary safety precautions. First and foremost, only operate a skid steer if you are trained and authorized to do so. You should also inspect a skid steer for any safety hazards before operating it. If you notice any issues at all, report them immediately to your supervisor, and don't operate the vehicle until a qualified person has said it's safe to do so.

Pre-start inspection. Every time you prepare to use the skid steer, be sure to walk around it and see if it's ready to safely operate. Follow the equipment manufacturer's recommended pre-operation inspection guidelines. In general, the following should be included in a pre-start inspection:

- Check the tires to make sure they are properly inflated. Tire pressure requirements will be printed on the sidewall of the tires.
- Check the condition of the tracks if the vehicle has them.

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# SKID STEER LOADER SAFETY

- Check to see if the cab frame or side screens are damaged. These features are designed to protect you if the vehicle rolls over or if something falls into the cab.
- Check the safety belt and safety bar for damage. These are meant to keep you securely in the driver's seat while the vehicle is running.
- Make sure the hand grips are intact so that your hands don't slip while you're holding on.
- Look at the steps to see if they are clean. If you notice any debris, ice, or mud, clean them off to reduce your chances of a slip and fall.
- Make sure attachments such as buckets and backhoes are correctly mounted and fastened to the vehicle. Otherwise, an attachment could detach, causing a load to fall and potentially injure someone.
- Check for puddles of liquid under the vehicle, which are a sign of a fluid leak. Fluid leaks can cause the skid steer loader to break down and can also be a fire hazard.

After completing the pre-start inspection and making sure the skid steer loader is safe to operate, check the following before starting up the vehicle:

- Be aware of your surroundings. Make sure that anyone working in the area is at a safe distance and aware of your presence before starting up the engine.
- Also check the area you will be operating the skid steer loader in for any obstacles, like rocks or other debris that could cause the vehicle to tip over.
- Fasten your seat belt.
- Lower the safety/restraining bar if the vehicle has one.
- Make sure the controls are in neutral and the parking brake is set.

Now, it's time to start the engine. Once you do that:

- Test all of the vehicle's controls, including steering, forward, reverse, raising and lowering lift arms, and any attachment controls.
- Check the brakes.
- Test the horn and backup alarm if the vehicle has them.

When operating the skid steer loader, bear these general safety rules in mind:

- Follow the safety instructions in the operator's manual, and don't take any shortcuts. This is especially important when carrying heavy loads or driving on uneven ground.
- Pay attention to any safety warnings and/or symbols on the skid steer loader itself. These are meant to warn against specific hazards or unsafe conditions.
- Never climb out of the vehicle while the engine is running or when the lift arms are raised.
- Always keep your seat belt on when operating the vehicle.
- Don't rush—take your time, and operate the skid steer loader carefully.
- Never operate a skid steer loader if any parts are damaged, defective, or missing.

***[Review your company's skid steer loader safety procedure, if applicable, and any additional safety precautions noted in the equipment operator's manual.]***

Always follow these tips for inspecting and operating a skid steer loader to keep yourself and your coworkers safe. Remember, it's never a good idea to take risky shortcuts—they could cost you your life.

# SLIPS, FALLS, AND CUTS HAZARDS IN FOOD SERVICE



This talk will help food service workers recognize and minimize the many potential slips, falls, and cuts hazards of working in the restaurant and food service industry.

### Material to have on hand:

- Company policy on housekeeping (if available)

### Items for attendees to consider during the talk:

- Do you know the hazards you could face every day at work?
- Do you wear the proper footwear to prevent slips and falls?
- What do you do if you see a spill on the floor?
- Do you know how to safely pick up broken glass?

## TALK

The restaurant or food service industry is not without its share of hazards that could injure or disable workers. And those hazards are no less serious than those found in other industries—they are merely different.

But, as with any business, injury prevention requires you to be alert to hazards, use equipment correctly and carefully, dress appropriately, and minimize the

chance for falls and lacerations. Let's discuss these hazards we face.

### Slips and trips

Good housekeeping is one basic means of avoiding falls at home and at work. This means keeping boxes and litter of all sorts out of walkways. Working and walking surfaces in the workplace can become slippery, particularly in areas where the food is prepared. If you work in these areas, wear shoes with low heels and soles made of rubber or other slip-resistant material.

A good rule to remember is “Pick up anything you drop, and wipe up anything you spill.” Greasy floors are especially hazardous, so wipe up the spill immediately, and sprinkle some salt over the area to provide extra traction until the floor can be more thoroughly cleaned. A floor that has been soaked with warm, soapy water should be dry mopped to remove the excess water. Then, place a “wet floor” sign in plain sight.

Falls can also occur on dimly lit or congested stairways. Don't use stairways as a storage area. When bulbs are burned out or are too dim to provide adequate light, either change the bulb yourself, or check with your supervisor.

If these hazards are ignored, they can result in sprains, strains, fractures, bruises, and other injuries.

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# SLIPS, FALLS, AND CUTS HAZARDS IN FOOD SERVICE

## Cuts and punctures

Other common—and serious—injuries are cuts. It is important that you use the right knife for the job you're performing. For example, don't use a boning knife for slicing foods. Never use a knife as a meat cleaver—it could break apart and send flying metal toward your eyes. Make sure your knives are sharp; a dull knife is more likely to slip because of the extra force being exerted to use it effectively.

Avoid horseplay with knives, such as using them for swords in a mock duel.

Broken glass may also be a problem in the kitchen and dishwashing areas. Never pick up broken glass with your bare hands; sweep it up, and put it in a separate trash container. Glass slivers can be

picked up with several thicknesses of wet paper towels. Cutting and slicing machines should be used properly.

Never force food through a grinder or chopper with your hands—use a plunger or other approved tool. Machines should be turned off before cleaning or performing maintenance—and make sure to disconnect the electrical cord. Before plugging the machine into the socket, make sure the switches are off.

Do not remove guards or shields while using these kitchen machines.

These are some of the hazards to watch for. If you are aware of any others, notify your supervisor. Let's all work together to provide a safer, more healthful working environment.

# SNOW SHOVELING AND REMOVAL SAFETY



This talk discusses practices for employees to follow when using a shovel or snow blower to remove snow at their facility.

## Materials to have on hand:

- The type(s) of shovel available to move snow at the facility
- The type(s) of snow blower used to move snow at the facility

## Items for attendees to consider during the talk:

- Do you know how to choose the right shovel?
- Can you think of how best to position your body when shoveling in order to avoid injury?
- Are you aware there's more to using a snow blower than pushing it in the right direction?

## TALK

According to the U.S. Consumer Product Safety Commission, in any given year, more than 100,000 people are treated in emergency rooms, clinics, and doctors' offices for injuries occurring while they shovel snow or use a snowblower. The most common injuries include sprains and strains, particularly in the back and shoulders, as well as

lacerations and finger amputations. So let's review some steps that all of us can take to avoid and reduce injuries when we're removing snow.

## Selecting the right shovel

The important features in choosing a shovel include its weight, the weight of the material being moved, the shovel's handle type, and the shovel's shaft length.

- Regarding the weight of a shovel, its weight should match the type of job being done. A light shovel, such as one around 3 pounds, is suitable for light snow, but a sturdier one would be needed for wet, heavy snow.
- The handle type is important. A D-grip handle helps keep your wrists in a neutral, untwisted position and can provide more comfort and control.
- Longer shovel shafts, such as ones that are no higher than your chest, ease the strain on back muscles, whereas shorter lengths have better stability when transferring the snow. Shovels with bends in the shaft or a second handle mid-shaft can decrease the amount of forward back-bending needed. A strong and light shaft is ideal.

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# SNOW SHOVELING AND REMOVAL SAFETY

Take time to determine the type and design of shovel that seems best for you. Be sure to examine the shovel for signs of defect or damage, and don't use it if it's damaged.

## Before you shovel

It's strenuous to shovel, so if you have a history of back or heart problems, it might be best to avoid this task. Even if you are physically fit, it's a good idea to do some flexing and stretching exercises to warm and loosen your muscles before you shovel. Wear gloves that protect your hands and improve your grip, and wear sturdy, nonslip footwear with good arch support.

Before you begin to shovel, decide how and where you will move the snow.

## Using a shovel

Follow these tips when shoveling:

- Stand upright, and bend your knees slightly so that your leg strength moves the load.
- Keep your arms and elbows close to your body, and when you lift the load, straighten your knees so you are lifting with your legs instead of your back.
- Instead of twisting your trunk, always turn your feet and body in the direction of where you want to drop the shovel's load.
- Do not throw the snow more than 3 to 4 feet, and be sure to turn your feet in the direction of where you're throwing the snow.

- Never throw a shovel load over your shoulder. It's actually a better practice to walk closer to where you want to dump the snow than to throw it.

When you shovel snow at a high rate, such as 15 scoops per minute, the maximum weight of both shovel and load should not exceed 10 to 15 pounds. However, it's safer for you to complete multiple loads with a lighter weight than to lift heavier weights less often.

## Using a snow blower

Follow these tips when using a snow blower, and you'll protect yourself from injuries:

- Read the instruction manual before using the blower.
- Add fuel before starting the blower and never when the engine is running or hot.
- Only add fuel and start the blower outside—never in an enclosed area like a garage—to avoid the risk of carbon monoxide poisoning.
- Never stick your hands in the snow blower; if it jams, turn it off and wait for a minute to clear debris with a solid object, not your hand.
- Don't leave the blower unattended when it's running. Turn it off if you must leave it.
- Watch out for the brief recoil of motor and blades that occurs after the machine has been turned off.

# SOLDERING IRON SAFETY



This talk discusses safe practices employees should use when working with a soldering iron.

## Materials to have on hand:

- Soldering iron and manufacturer’s instructions
- Safety data sheets (SDSs) for all chemicals used in the soldering process

## Items for attendees to consider during the talk:

- How can you avoid getting burned when working with a soldering iron?
- How can you decrease your chemical exposure when working with a soldering iron?
- How can you avoid a fire when working with a soldering iron?

## TALK

Soldering irons are commonly used to join components together with metal filler called solder. Soldering irons are useful for performing precision work on small surfaces, and unlike welding, the process does not involve melting the work pieces.

However, working with a soldering iron exposes you to burn hazards and dangerous fumes and can present a fire hazard. To prevent injuries and other

incidents from occurring when using a soldering iron, always follow the manufacturer’s instructions, and use the following safe work practices.

### To avoid burns:

- Pick up and handle a soldering iron, like a pen, by the insulated handle. Never touch the metal parts, especially the tip. The tip gets extremely hot—to melt solder, it can reach up to 800 degrees Fahrenheit.
- Always return the iron to its stand when not in use. If you lay it on your workstation, you may accidentally make contact with the tip, or the tip may melt objects on the workstation.
- Different types of solder have different melting points. Always set the soldering iron to the lowest temperature that melts the solder you are working with.
- Keep your fingers out of the way. If possible, use tweezers, pliers, or clamps to hold the soldering wire and other components.
- Solder can “spit”—wear appropriate eye protection, long sleeves, and long pants.
- Allow joints some time to cool before touching.

If your skin does make contact with the hot tip, immediately cool the affected area by running it under

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# SOLDERING IRON SAFETY

cold water for 15 minutes. If necessary, seek medical attention.

*To avoid chemical exposure:*

- Read and understand the safety data sheets, or SDSs, for all materials before beginning work.
- Only perform soldering in a well-ventilated area. Soldering generates fumes and smoke from the melting metal, as well as the flux, a chemical agent that helps the metals join properly. Flux can irritate the eyes and respiratory system and worsen asthma symptoms.
- It is recommended that a fume extractor be used at your workstation. If it has a flexible hose, position it so that it can effectively remove the fumes.
- Ensure that all chemical containers used near your workstation are properly labeled.
- To avoid ingestion, never eat or drink in the work area. Always wash your hands after soldering and before eating, drinking, and smoking.

***[Include the following bullet point if your facility provides lead-free solder.]***

- Solder is commonly an alloy of tin and lead. Lead exposure can result in chronic health effects. If possible, use lead-free solder.

*To avoid fires:*

- Always plug the soldering iron into a grounded outlet.
- Turn off or unplug the soldering iron when not in use.
- Prevent damage to cords by ensuring the soldering iron tip never touches them. If you observe any damage to the cords or unit for whatever reason, remove the damaged item from operation.
- Perform soldering iron work on a bench with a nonflammable surface.
- Don't mix and match components. Always use the tips manufactured by the same brand as the soldering iron.
- Know the location of the fire extinguisher and how to use it.

# SOLVENTS—FIRE AND SPILL PREVENTION



This talk informs employees about how to prevent fires and spills of solvents in their workplace.

## Materials to have on hand:

- The solvents used at your facility, such as acetones, methylene chloride, toluene, Trichloroethylene, and isobutyl alcohol
- A safety data sheet for each solvent you use
- A list of those solvents with a flash point that renders them flammable

## Items for attendees to consider during the talk:

- Are you aware of how to determine whether a solvent is likely to cause a fire?
- Do you know how to prevent spills?
- Are you familiar with how to safely dispose of solvents?

## TALK

*[Present the toolbox talk “Solvents—Safe Handling and Storage” in addition to this toolbox talk.]*

Today, we’re going to talk about how to prevent the fires and spills of solvents that can result when solvents are not managed properly.

## Fire prevention

**Flash point.** Whether a solvent is likely to cause a fire depends on the solvent’s flash point. Here’s what you need to know:

- The flash point is the lowest temperature at which a liquid will give off enough vapors, in a high enough concentration, so that the vapors can be ignited.
- A low flash point indicates a more flammable solvent. For example, acetone has a flash point of 50 degrees Fahrenheit, which means that the solvent vapors could easily ignite and burn at room temperature. A solvent with a high flash point—say, 300 degrees Fahrenheit—would have to be heated before it would give off enough vapors to be ignited.
- Solvents are considered flammable when they have a flash point of less than 100 degrees Fahrenheit.
- Nonflammable solvents, with flash points above 100 degrees Fahrenheit, are still dangerous. Although they often do not give off enough vapors to be ignited under normal conditions, they will burn easily and readily when heated and ignited.

Be sure to review the safety data sheet, or SDS, for each solvent to understand the flash point of the solvent and the fire, explosion, and reactivity hazards. If you’re aware of which solvents in our workplace are flammable and could easily start a fire, you will handle them with extra care.

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# SOLVENTS—FIRE AND SPILL PREVENTION

**Fire prevention tips.** To prevent fires when using solvents, follow these important steps:

- Use solvents only in well-ventilated areas to prevent the buildup of vapors.
- Keep solvents away from ignition sources, such as flames, sparking tools, hot equipment, exposed electrical wires, and so forth.
- Never smoke when using or dispensing solvents—or anywhere near areas where solvents are stored.
- Keep solvent containers tightly closed when not in use to prevent the buildup of vapors in the area and to protect the solvent from any sparks or other ignition sources.
- Be careful with empty solvent containers. Although empty, they're still hazardous because they contain air that is saturated with solvent vapors, which means the vapors are concentrated and can burn easily. Never weld on an empty solvent drum. And before reusing a container that once held solvents, be sure it is thoroughly cleaned and ventilated.

## Spill prevention

Because a sizable spill of some of the more hazardous solvents could be detrimental to your health, start

a fire, or contaminate the environment, we must take proper precautions to prevent spills. So:

- Keep solvent containers closed when not in use.
- Inspect containers regularly for corrosion, dents, and other damage, as well as for small leaks.
- Clean up small solvent spills quickly and thoroughly. Large spills should be handled by the emergency response team.
- Be sure all containers—including waste containers—are properly labeled.

## Solvent waste disposal

Waste solvents and materials, such as rags contaminated with solvents, must be disposed of properly. Waste solvents should only be put into designated containers for recycling or disposal. Never empty them into storm drains, in sanitary sewers, down sink drains, or in the trash. Soaked rags and other cleanup materials should be put in designated closed containers to prevent fires.

If you follow safe practices for storing, handling, and working with solvents, as well as dispose of waste solvents properly, you'll help prevent dangerous spills and fires.

# SOLVENTS—SAFE HANDLING AND STORING



This talk informs employees about the hazards of using solvents and the best management practices to safely handle and store them.

## Materials to have on hand:

- The solvents used at your facility, such as acetones, methylene chloride, toluene, trichloroethylene, and isobutyl alcohol
- A safety data sheet for each solvent you use
- Examples of personal protective equipment needed when handling solvents

## Items for attendees to consider during the talk:

- Do you know how improperly handled solvents can affect your health?
- Are you aware of how to determine the hazards of the solvents used at the facility?
- Are you familiar with how to protect yourself from coming into dangerous contact with solvents?

## TALK

*[Present the toolbox talk “Solvents—Fire and Spill Prevention” in addition to this toolbox talk.]*

Today, we’re going to talk about how to safely handle solvents. Solvents are extremely useful substances that help us perform many important tasks. But solvents can also be hazardous to your health and

safety. Exposure to both solvent liquids and solvent vapors can detrimentally affect eyes, skin, lungs, and internal organs.

## Health hazards

So, here are health issues that can occur if solvents are mismanaged:

- Solvents absorbed into skin can cause itching, rashes, or swelling, and if strong solvents penetrate your skin and get into your bloodstream, they can damage your internal organs.
- For eyes, symptoms can range from irritation and a burning sensation to permanent eye damage and blindness.
- If you have solvents on your hands and eat or drink without washing first, you could accidentally swallow some of the solvent, resulting in nausea, fatigue, and drowsiness.
- Inhaling harmful solvent vapors can result in difficulty breathing and blurred vision. Exposure to high concentrations of solvent vapors for a long period can lead to unconsciousness and possibly death.

## Hazard information

Before first working with a solvent, read the labels and signs on the solvent container, and review the solvent’s safety data sheet, or SDS, as it provides

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# SOLVENTS—SAFE HANDLING AND STORING

lots of information about the dangers of a solvent and how to avoid them. Information you can learn from the SDS includes:

- The identity of the solvent, including product name, trade name, and chemical formula, as well as an emergency phone number;
- The permissible exposure limit, or PEL, that tells you how much solvent you can safely be exposed to, averaged over an 8-hour workday;
- Health hazards and symptoms of exposure; *and*
- The personal protective equipment, or PPE, needed to prevent harmful exposures, as well as first aid in case of exposure.

## Work practices

When working with solvents, follow these safe work practices to prevent accidents and illness:

- Don't consume or keep food and beverages in solvent areas, as this increases your chances of accidentally ingesting solvents.
- Don't wash your hands with solvents. Exposing your skin to solvents could result in a rash, dryness, or other skin problems, and dangerous solvents could be absorbed through your skin into your bloodstream.
- Always wear required PPE to prevent hazardous exposures to solvents. PPE includes safety glasses or goggles, chemical-resistant gloves, chemical-resistant protective clothing, and respirators, if required, in addition to the ventilation system. Remove PPE carefully when you're done to prevent getting solvents on your skin.
- Wash thoroughly after working with solvents—and before eating, drinking, or using the restroom. Also, wash before leaving your work area so you don't spread chemical contamination to other parts of the facility and put other employees at risk.

## Safe handling

Follow these tips to handle solvents safely:

- Keep small supplies of solvents to be used during the workday in Underwriters Laboratories, or UL-listed and/or FM-approved fire-resistant safety containers that have self-closing lids.
- Make sure that containers are properly labeled with the solvent's name and hazards.
- Take only the amount of solvent you need for the job to minimize spills.
- Dispose of solvent-soaked rags in designated closed containers.
- Never weld or torch cut a drum that once contained a solvent. Vapors remaining in the drum could ignite and cause an explosion.

## Storing solvents

Store solvents safely by following these guidelines:

- Don't smoke in a solvent storage area.
- Keep storage areas free of combustible materials, such as chips, leaves, rags, pallets, and paper.
- Avoid stacking containers to prevent a tipover and spill. If you must stack containers, stack no higher than two drums, with a pallet between to prevent excess stress on the walls of the drums.
- Don't store solvents with incompatible materials such as oxidizers.
- Make sure storage areas are cool and out of direct sunlight to prevent high temperatures from increasing the amount of vapor in the air.
- Don't store or dispense solvents near electrical panels, furnaces, or other ignition sources.

Following these safe practices for storing, handling, and working with solvents will help keep you and your fellow employees safe from solvent hazards.



# SPILL CONTAINMENT



This talk will cover some of the basic steps you can take to contain chemical spills in the workplace.

## Materials to have on hand:

- Chemical safety data sheets (SDSs)
- Spill containment materials (dike-building materials, absorbents, etc.)
- Personal protective equipment

## Items for attendees to consider during the talk:

- Do you know what steps to follow in case of a spill?
- Can you locate the spill containment equipment for your facility?
- Do you know what to use for different chemical spills?

## TALK

When you work with hazardous and flammable substances, leaks and spills are always a concern. We take many steps to prevent leaks and spills, such as using the proper containers, inspecting them regularly to make sure they're in good condition, and following proper procedures when using and transferring substances.

Spills present a number of hazards; the specific hazards depend, of course, on the substance or substances involved. Among the possibilities are:

- Fire
- Explosion
- Hazardous substances released in the air
- Hazardous substances entering the water supply

Of course, the best thing you can do is take steps to prevent a spill in the first place. However, if a spill does occur, the next best thing you can do is contain it. Follow these steps in the event of a spill:

***[Do a mock spill response, with the following steps. Make sure to have spill response procedures, safety data sheets (SDSs), personal protective equipment (PPE), and spill response equipment on hand. Show attendees where spill response equipment is located in the facility.]***

- Follow your facility's emergency response procedure immediately if you see a spill. Report what is leaking and where, as well as the size of the spill and rate of flow, if you can safely do so.
- Evacuate the area if you're not trained for and assigned to spill containment. Alert other workers in the area to get out, too.

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# SPILL CONTAINMENT

- Contain the spill if you have been trained and authorized to do so.
  - Stop the source of the leak. Close the valves, pumps, or whatever may be allowing the material out.
  - Cover drains or other possible escape routes.
  - Contain the spill by the best method. That might be:
    - » Building a dike to keep spilled liquid from getting into water.
    - » Repairing the container or putting it in a container that won't leak.
    - » Channeling the spill to a place where it won't spread by diking or pumping or opening a trench to a secure spot.
    - » Placing an empty container under the leak.
    - » Rotating or shifting the container's position to stop the leak.
    - » Use absorbent materials to soak up the spill or solidify it.
- Put any disposable spill containment materials into an Environmental Protection Agency, or EPA-approved container for proper disposal.
- If you or anything you're wearing or using was contaminated, remove it according to company decontamination procedures before you go into a clean area. Some items will have to be disposed of, not cleaned. But be sure to dispose of them properly. Just throwing them in the trash will spread the problem far and wide.

***[Keep the group engaged by asking questions about spills and containment techniques students have used in the past or by telling stories of mistakes and accidents.]***

# STOP OVEREXERTION



This talk discusses the types of workplace injuries caused by overexertion and describes best practices all workers can use to prevent overexertion and avoid injuries.

## Materials to have on hand:

- Material-handling aides, such as hand trucks and other lifting devices

## Items for attendees to consider during the talk:

- What is an example of overexertion that can cause or has caused you pain or injury?
- How can you avoid an injury from overexertion?

## TALK

Have you ever tried to lift or carry a weight that's too heavy for you and felt pain or stiffness after you put it down? Or felt sudden pain or weakness after you strained to push or pull a load that's hard to move? How about bending, reaching, and stretching all at the same time to grab something that's heavy? These are examples of overexertion that can lead to swelling, numbness, stiffness, chronic pain, and sometimes the permanent loss of mobility in muscles, tendons, ligaments, and joints. A collective name for these types of symptoms and injuries is "musculoskeletal disorder."

Here are some examples of ways to prevent overexertion and related injuries. They take only a few

minutes to do but can prevent hours, weeks, or even a lifetime of physical pain and medical bills:

- Use correct lifting techniques when lifting a heavy object. For example, when you lift, face the load with your feet shoulder-width apart and your back straight, squat by bending at the hips and knees, then use your leg and stomach muscles to power the lift.
- Use material-handling aides, like a cart or hand truck, to lift and carry heavy or awkward objects.
- Ask for help instead of trying to "muscle" your way through a job alone.
- Resist the urge to add an extra package or box to an already full load; instead, make an extra trip or ask someone to help.
- Don't overextend or reach to grab that item on a shelf or paint that one last spot; climb down the ladder, reposition it, and climb again.
- Arrange your work and your workstation to minimize reaching, bending, twisting, and awkward postures.
- Take minibreaks when doing strenuous tasks so that you can stretch and relax tense muscles and give them a chance to recover.

You might think asking for help lifting something heavy or awkward is a sign of weakness or wasting someone else's time. But doing it yourself can be a painful mistake with long-term consequences, and it's

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# STOP OVEREXERTION

not worth the risk. But when the result is a slip, fall, or strain, time isn't saved; coworkers may have to work longer or harder to fill in when you are out on leave; and you won't be able to do these things you want at home or at play.

It's not only knowing the safest way to get things done without overexertion but also knowing your own limitations and when it is sensible to ask for help. We're all ready and willing to give help when it's asked for; so, don't hesitate to ask for help to "lighten the load."

# SUBSTANCE ABUSE IN THE WORKPLACE



This talk discusses the consequences of substance abuse in the workplace and resources available for help, including the company’s employee assistance program (EAP).

## Materials to have on hand:

- Drug and alcohol use company policy/program
- Company’s EAP

## Items for attendees to consider during talk:

- Is substance abuse a topic your employer should address?
- Are you familiar with our EAP?

## TALK

When an employee’s drinking or illicit drug habits result in deteriorated job performance, he or she is in trouble—and his coworkers and the company share that trouble. More and more workplaces are also feeling the direct impact of prescription drug misuse.

Consider some facts about drug and alcohol use provided by the federal Substance Abuse and Mental Health Services Administration:

- After years of declines, the percentage of employees in the U.S. workforce testing positive for drug use has steadily increased in recent

years—specifically for amphetamines, marijuana, and heroin.

- Positive postaccident drug and alcohol testing is higher than random testing.
- The increase in positive marijuana drug tests is likely a result of the legalization of recreational marijuana.
- Most binge and heavy alcohol users are employed full-time and/or part-time.
- Family members have to bear the consequences, as well. It brings in negativity and impacts everyone’s personal and professional lives.

These are pretty grim facts, and a clear indication of why substance abuse cannot be permitted in the workplace, for the sake of everyone’s safety. But, it is important also to remember that alcohol addiction and other drug addictions are treatable.

We strive for a drug-free workplace, which involves having a substance abuse program that includes:

### *[Adjust the following list to your facility.]*

- A written drug-free workplace policy
- This talk and other workplace substance abuse educational materials
- Confidential screening by an employee assistance program, or EAP, professional

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# SUBSTANCE ABUSE IN THE WORKPLACE

- Treatment referrals to addiction services
- Confidential follow-up care to help workers in recovery

The EAP is a great resource to help anyone who is experiencing many different types of personal problems. EAPs are intended to help you make wise choices if you, a coworker, or a family member has a problem with alcohol, prescription, or illicit drugs. And, let me repeat that EAP services are confidential and are intended to help you remain productive.

Workers who receive treatment for substance abuse or addiction have:

- Better long-term outcomes;
- Improved long-term health;
- Reduced relapse; *and*
- Improved relationships with family and others.

We care about your well-being, so understand that we want to help you if you, a coworker, or a family member is having addiction problems. We are not here to judge anybody. The company wants you to know that we believe in effective substance abuse treatment that can point our struggling workers in the right direction so they continue to be productive workers.

# TABLE SAW SAFETY

## PREVENTING CUTS AND AMPUTATIONS



This talk discusses the hazards and safe work practices for preventing cuts and amputations when using table saws.

### Materials to have on hand:

- Table saws and blades in use at the facility
- Personal protective equipment (PPE) intended to be worn while using a table saw

### Items for attendees to consider during the talk:

- Should you wear gloves while using a table saw?
- What kind of guard should a table saw have?

## TALK

Table saws are a familiar piece of equipment—as well as a common cause of injuries.

Consider this: The blade on a table saw typically operates at over 3,000 revolutions per minute, or RPM. A typical general-purpose saw blade might have 40 teeth. That means that every second, at least 2,000 sharp teeth are passing through the wood. That power is useful, but it's also dangerous.

If your finger were to contact the table saw blade while the machine was running, it would take only one one-hundredth of a second for 20 of those sharp teeth to pass through your finger. That's all it takes to suffer a very serious laceration—or even an

amputation. But it's possible to use table saws safely and prevent these injuries if you take precautions.

First, always make sure your table saw is equipped with a self-adjusting guard. The guard should cover the portion of the blade that extends above the table and will automatically adjust itself to the thickness of the material you are cutting. If the guard on a table saw is damaged or missing, tell your supervisor, and don't use the table saw until the guard is repaired.

Always choose the correct type of blade for the work you are doing. You will use a different type of blade for making rip cuts (cuts with the grain of the wood) than you use for making crosscuts (cuts against the grain of the wood). If you are unsure which blade to use, ask your supervisor. Regardless of which blade you are using, make sure it is clean, sharp, and in good condition. Never try to cut with a dull blade. A dull blade can cause kickback, which is when the wood flies back toward you.

Before you begin, put on safety glasses and hearing protection. Set the blade height so that it does not extend more than about  $\frac{1}{8}$  of an inch above the height of the piece you are cutting. Never adjust the blade height or angle while the saw is running.

Also inspect the wood you plan to cut. Make sure it is not knotted, warped, or twisted and that it has at least one straight edge. Never cut any wood that has screws, nails, or other metal objects embedded in it.

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# TABLE SAW SAFETY

Never saw freehand. For rip cuts, use the fence, which is a straight edge parallel to the blade, to guide the wood. For crosscuts, use the miter gauge, which is an adjustable device that helps you position your wood at the correct angle. Never use the fence and miter gauge at the same time.

Keep your hands out of the line of the cut; never reach over a moving blade. Do not wear gloves, dangling jewelry, or loose clothing; they could become

caught on the blade. Use a push stick rather than your hands to feed in small pieces of wood, clear away scrap, and push stock past the blade. Don't release the wood until it has cleared the blade.

When you have completed your cut, make sure the saw comes to a complete stop before you walk away. Turn off the power, and lower the blade completely below the table.

# TABLE SAW SAFETY

## PREVENTING KICKBACK



This talk discusses the hazards and safe work practices for preventing kickback when using table saws.

### Materials to have on hand:

- Table saws in use at the facility
- Personal protective equipment (PPE) intended to be worn while using a table saw

### Items for attendees to consider during talk:

- Do you know what kickback is?
- What can you do to prevent kickback?

## TALK

Table saws are familiar equipment—as well as a common cause of injuries. In addition to the risk of cuts and amputations, kickback is a serious hazard that can lead to severe injuries.

Kickback happens when a piece of wood becomes caught on the back teeth of the table saw blade. Instead of moving through the saw blade as it should, the wood is launched upward and back toward the operator at high speed.

Unless you have seen a kickback, you might not realize how vicious one can be. The teeth on a table saw are moving at no less than 10,000 feet per minute—perhaps nearly double that. The teeth at the top of the saw blade are running toward you. If they get caught

in the wood, they'll shoot it right back the way it came. If you're in the way, you could be seriously injured.

Saws don't kick back if they're treated right. A properly mounted saw blade in good condition, if used correctly, will cut its way cleanly through the wood. When you set up the table saw, make sure the blade is parallel to the miter slot and the rip fence is parallel to the blade.

Don't feed green or twisty wood through a saw without a spreader behind the teeth to keep the stock from binding. The antikickback device should also be in place because the wood may run against the teeth before it reaches the spreader.

Before you begin, inspect the saw. If the saw has a guard that rides on the top of the work, as it should for all ordinary sawing and ripping, see that it moves up and down freely without side play. If the guard has antikickback devices, make sure they move freely and are sharp so they'll dig into the stock if it starts to kick back. If there's a spreader, verify that it's close to the saw teeth, stiff, and well secured. Check the guide to make sure it lines up perfectly with the saw blade, and set it for the cut you want.

Take the right position at the table—far enough out of line with the saw blade for a kickback to miss you but not so far that it's awkward to feed the wood through. In some shops, an extension is added to the saw table so the operator can't stand directly in line with

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# TABLE SAW SAFETY

the saw blade and so long stock can be controlled more easily.

When feeding the lumber into the saw, place the front end of the piece on the saw table against the guide. Being careful to hold it straight, slide it smoothly ahead along the guide to and through the saw. Be sure to keep it against the guide all the way through.

Always keep your hands a safe distance away from the saw blade—at least 6 inches but preferably 12 inches.

You can do so by using a push stick. If the stick is made to fit the lumber and has a good handle, you can do a better job with it at the finish of the cut than you can do with your hand.

Finally, don't crowd the saw. A saw blade that is in good condition will take the wood easily. It will almost feed itself. If it doesn't, there's something wrong, and you shouldn't use the saw until the blade is repaired or replaced.

# THE VALUE OF SAFETY AND HEALTH AUDITS



The objective of this talk is to help employees realize the purpose and value of safety and health audits and their role in improving individual and workplace safety.

## Material to have on hand:

- A sample audit checklist

## Items for attendees to consider during the talk:

- Are there any safety issues that I should report?
- What is your role in a health and safety audit?

## TALK

People often have a negative reaction to the term “audit,” believing that it is an exercise to uncover mistakes or wrongdoing. But the real purpose of safety and health audits is to measure and improve our safety performance and reduce the risks of injuries and illnesses—to determine what we are doing well and what we can do better. When analyzing the information collected during an audit, we’re able to:

- See the positive results of our safety and health programs and policies, and identify things that are being done well that may serve as a model for other areas of the operation.

- Identify and correct safety and health hazards before they cause accidents or illnesses.
- Make sure we are in compliance with Occupational Safety and Health Administration, or OSHA, regulations so we can avoid any type of agency citation or fine.

Audits are not intended to point fingers or fix blame. We certainly want people to stop unsafe acts, such as leaving flammable scrap around or failing to use personal protective equipment, or PPE. But our approach to fixing that problem will most often be to review our rules and policies with the whole group rather than singling people out. If rules aren’t being followed, it probably means that we haven’t done training recently enough or haven’t made the reasons for following particular rules clear.

## Identifying what to audit

You can audit anything that has a standard with which performance can be compared. So how do we determine what to audit? There are a number of indicators that we use to determine audit priorities, including:

***[The speaker may modify this list, as appropriate.]***

- The OSHA 300 log and the first-aid log. These logs highlight safety and health problems that

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# THE VALUE OF SAFETY AND HEALTH AUDITS

need attention. The logs may reveal that audits are needed for particular:

- Departments, work areas, or processes;
  - Employee categories—for example, new or inexperienced employees; people in a specific job, like machine operators; or warehouse workers; *or*
  - Parts of the body that seem injury-prone, such as eyes, back, etc.
- We also review workers' compensation information for injury trends and work areas that seem to have the most injuries or illnesses.
  - Another good tipoff that an audit is needed is the "near-miss" incident. Things like electrical shorts or slips and falls should be followed up on, even if no one was hurt.
  - Employee complaints are another indicator of an area that may need to be audited, so it's important to report any safety problems.

Once the subject of the audit is identified, a checklist is developed to ensure we are addressing all of the appropriate hazards. The best way to ensure we don't miss any hazards is to involve people on all levels of the company in the process. When you get input from, for instance, company management, plant management, engineers, supervisors, and employee safety committee members, you get an audit program that really reflects and reveals the company's safety and health performance.

## Conducting the Audit

The individuals selected to conduct the audit are trained and have in-depth knowledge of the operations being audited and the applicable safety regulations and standards. Auditors may be supervisors or employees or a team made up of both. Sometimes plant managers get involved, and if we're auditing a highly technical operation, we make sure to have people with the right expertise.

In order for audits to be useful, everyone—from top management to the newest employee—has to cooperate in conducting the audit and following up on what it finds. Therefore, auditors must be able to explain what they're doing and why in order to encourage employees in audited areas to cooperate.

## Addressing Audit Results

No matter how much time and effort go into planning and preparing for audits, they're only as good as our follow-up on the problems identified. Once the audit is completed and reviewed, problems are addressed and corrected in their order of importance, meaning those most likely to cause injury or illness are addressed first, but all the issues will be addressed. Someone is made responsible for ensuring that happens.

Often, a general audit may lead to one or more specific audits. It may uncover a number of hazards in one particular department or operation or a single hazard that needs to be better addressed facilitywide. In such cases, a more specific audit on a particular area or hazard will provide more focus and help us figure out whether we need better equipment maintenance, additional training, or some other remedy to eliminate the hazards.

Safety and health audits have the greatest benefits when they're conducted on a regular basis by people who understand their purpose and procedures. It's not only the company that benefits. Audits benefit all of us and need all our cooperation to be effective. If you're asked to help contribute to an audit checklist or act as an auditor, you have an opportunity to make an important contribution to our workplace safety. And if our department or your operation is audited, your cooperation and honesty can help make sure that no hazards are missed and that anything that could put us at risk is corrected.

# TREE WORKER SAFETY IN CALIFORNIA



This talk informs employees who perform tree work in California about the hazards they may face on the job and the safe practices that can help prevent injuries or death.

## Materials to have on hand:

- Examples of personal protective equipment (PPE)

## Items for attendees to consider during the talk:

- What is the drop zone?
- How do I protect myself from electrical hazards while performing tree work?
- How do changing weather conditions pose a safety risk to tree workers?

## TALK

Performing tree work, including trimming, pruning, felling, and removing trees and bushes, presents many different hazards that can lead to injury or death. Some of the most common hazards include:

- Falls from a ladder or tree;
- Getting struck by falling objects, such as tree limbs or equipment;
- Electric shock, arc flash burns, and electrocutions from working around high-voltage power lines or downed power lines; *and*

- Caught-in hazards in a brush chipper.

Being able to recognize these hazards and control them can keep you safe.

## Falls

Before climbing, a qualified tree worker should determine a safe method of entry into the tree. The parts of the tree should be inspected to determine their stability and strength to be able to withstand climbing. If a tree is unsafe to climb, alternative means such as an aerial lift or a bucket truck may be used instead.

When working at height, you must use a tree worker's saddle and have at least two means of securing yourself, such as a climbing line and work positioning lanyard. Inspect all safety equipment before each use to be sure it is in good working condition. If you are working with a chain saw, be careful not to cut safety lines or a tree limb that any safety equipment is tied to.

## Falling objects

Before starting work, the drop zone area should be established by a qualified tree worker. In the drop zone, you may be struck by a falling object that is dropped or lowered from above. Therefore, always maintain a safe distance from the drop zone, and never enter the drop zone until it is determined to be safe to enter. If working from height, before dropping

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# TREE WORKER SAFETY IN CALIFORNIA

branches that have been cut, get clearance from the ground crew.

Never toss tools to another worker when working at height. Also, don't carry tools and equipment in your hands when climbing, unless the purpose of the tools is to assist you in climbing.

## Electrical hazards

Always assume that power lines are energized—and never touch one. Even if you are not touching the line directly, you can still be electrocuted. For instance, if you are holding a pruning pole too close, the electricity may jump from the line to the tool and pass through your body. If you are not a qualified line-clearance tree trimmer, keep yourself, tools, and equipment at least 10 feet from the power line at all times.

Always use insulated tools and equipment so that electricity cannot be conducted through them.

## Caught-in hazards

The moving parts and fast rotating blades of a brush chipper present a caught-in hazard because you or your clothing could easily become caught. Don't use a brush chipper unless you are trained to do so. Also, always wear the proper personal protective equipment, or PPE, which may include safety goggles,

hearing protection, snug-fitting gloves, and steel-toe footwear with nonslip soles. Don't wear climbing equipment, ropes, body belts, harnesses, or lanyards when operating a chipper. Keep a safe distance away from rotating parts and the feed table when the chipper is running.

Inspect the chipper for damage and the presence of machine guards before each use. Before turning the wood chipper on, ensure that you have good footing, that the area is clear of any tripping hazards, and that the discharge chute is positioned away from anyone in the vicinity.

## Working outdoors

There are also particular challenges when working outdoors for many reasons, including the presence of poisonous plants and harmful animals, which you should be able to identify. In addition, adverse weather can quickly create a dangerous situation, especially if there is rain, thunder, lightning, and fog. High winds can knock branches and trees onto power lines.

Keep current with weather updates and storm warnings. If there are high winds, heavy rains, or lightning strikes, the job may need to be stopped. Extreme temperatures can also lead to heat-related illness, so make sure you drink enough water to remain well hydrated.



# USING HAND TRUCKS SAFELY



This talk discusses safe work practices for using manual hand trucks to transport loads.

## Materials to have on hand:

- Hand trucks in use at the facility
- Boxes and other sample items to demonstrate proper loading of a hand truck

## Items for attendees to consider during the talk:

- How should objects be stacked on a hand truck?
- What parts of a hand truck should you inspect before you use it?

## TALK

Hand trucks are simple pieces of equipment that can be extremely helpful when moving boxes and other heavy objects. Proper use of a hand truck can help prevent strains, sprains, and other lifting-related injuries. However, hand trucks are not without hazards of their own; so use them carefully and follow safe work practices.

## Inspecting

Before you use a hand truck, inspect it. If it has air-filled tires, check that the air pressure is correct; if it has hard rubber tires, make sure they are in good condition. Examine the frame for broken or bent areas, and check for any loose or damaged bolts or

other parts. Wheels should turn easily; if the hand truck is equipped with brakes, make sure they work.

## Loading

When you load the hand truck, always place heavier objects or boxes on the bottom of the stack, with lighter objects on top. Check the rated weight capacity of the hand truck, and don't go over it. Don't load the hand truck with more weight than you can safely manage, even if the equipment can handle it. Never stack items so high that you cannot see over the top. If the load is not stable, secure it to the hand truck with a strap.

## Safe use

Follow these safe practices for using a hand truck:

- Get a firm grip on the handle. Wear work gloves with slip-resistant coatings. Do not operate hand trucks when your hands or the handles are wet or greasy.
- Maintain good back posture by keeping your back straight and bending your knees. Push the hand truck rather than pulling it whenever possible, and do not walk backward.
- Allow the hand truck to carry the weight so that you only need to push and steer. Two-wheeled hand trucks should be tilted back just enough so that the weight is balanced on the wheels. Tilting

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# USING HAND TRUCKS SAFELY

back too far will require you to support too much of the load.

- Travel at a safe speed to avoid obstacles such as debris, wet floors, or uneven floors. Maintain the speed required to keep the hand truck under control. Keep an eye out for other vehicles, equipment or structures, edges of docks, trip hazards, pedestrians, etc.
- When operating on a ramp or inclined surface, keep the load downhill if possible. This will prevent the load from rolling over or falling on top of you if you lose control. However, avoid using hand trucks on very steep inclines.
- Keep your feet clear of the wheels when using hand trucks.
- Do not ride on a hand truck, and never carry a passenger.
- Protect your hands from being crushed against solid objects. Watch for pinch points when you go through doorways or other tight areas.
- Park hand trucks in appropriate places. Keep them out of main walkways, and do not block emergency equipment such as fire extinguishers or exits.

# USING INDUSTRIAL CLEANING AGENTS SAFELY IN THE WORKPLACE



This talk is for maintenance workers who handle industrial cleaning agents. This talk provides information on the types of hazards to look for in cleaning agents and the precautions to take in order to prevent exposure or dangerous reactions.

## Materials to have on hand:

- A type of cleaning agent used at your facility
- A safety data sheet (SDS) for one of the cleaning agents used at your facility
- Personal protective equipment (PPE)

## Items for attendees to consider during the talk:

- What types of hazards should you look out for in a cleaning agent?
- What kinds of precautions should you take before handling a cleaning agent?

## TALK

Your job requires you to work with various cleaning agents, including cleaners, sanitizers, and disinfectants, which may contain hazardous chemicals. To ensure a safe work environment, you need to be familiar with the hazards associated with

the cleaning agents used in your work area, as well as take the proper precautions before and while using the cleaning agents.

## Types of hazards

Before using the cleaning agent, you must read the label on the product’s container, along with the product’s safety data sheet, or SDS, to find out what personal protective equipment, or PPE, you need and the procedures to follow to prevent exposure or dangerous reactions.

***[Pass out an SDS for one of the cleaning agents used at the facility to each employee attending this discussion. If attendees are unfamiliar with the standard 16-section SDS required by the Hazard Communication, or HazCom, standard, present the “HazCom: What is a safety data sheet” toolbox talk.]***

An important piece of information on the cleaning agent’s label and in the SDS is the hazard pictogram, which appears as a white diamond with red borders and a black image. There are nine different pictograms to help you quickly identify the different hazards associated with a cleaning agent, and you may see one or more on a label. We’ll discuss the ones you may see on our cleaning agent’s label.

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# USING INDUSTRIAL CLEANING AGENTS SAFELY

**[If attendees are unfamiliar with hazard communication pictograms, present the “Hazard Communication Labels: Pictograms” toolbox talk series.]**

Cleaning agents can be irritants. Contact with irritants, such as ammonia, can cause respiratory irritation or a sore throat, and other irritants can cause skin rashes and itchy eyes.

**[Irritants are represented by the Exclamation Mark pictogram. You may show attendees the image below.]**

Corrosivity is another common hazard associated with cleaning agents. Contact with corrosives, such as bleach and ammonia, can be dangerous and cause severe burns to the skin and eyes.

**[You may show attendees the Corrosion pictogram image below.]**

Finally, some cleaning agent ingredients, such as chlorine, can be acutely toxic. Acute toxicity describes the harmful effects of a cleaning agent that result either from a single exposure or from multiple exposures in a short period of time (usually less than 24 hours).

**[Acute toxicity is represented by the Skull and Crossbones pictogram. You may show attendees the image below.]**

## Precautions

To protect yourself from these hazards:

- Wear appropriate PPE, such as gloves, safety goggles, a face shield, and/or protective clothing.
- Don't use a cleaning agent that does not have a clear, readable label.

- Never mix cleaning agents with other substances. In particular, *never* mix a cleaning agent containing bleach with a cleaning agent containing ammonia.
- Use cleaning agents only in well-ventilated areas.
- Use only the concentration listed on the label instructions.
- Only take out the amount you need from the container, and keep the container closed when not in use. Avoid touching the product itself.
- Properly dispose of any portable containers, such as buckets, or clean them carefully.
- Wash your hands thoroughly with soap after using any cleaning agent.
- If the cleaning agent splashes in your eyes, flush them with water for at least 15 minutes.
- If the cleaning agent is ingested, seek medical assistance immediately.



Exclamation Mark



Corrosion



Skull & Crossbones

# VALLEY FEVER

## WHAT CONSTRUCTION WORKERS NEED TO KNOW



This talk provides awareness training for construction workers who work in counties in California where Valley fever is prevalent and where work activities disturb the soil. The counties include Fresno, Kern, Kings, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, Santa Barbara, Tulare, and Ventura. Employers must provide this training to workers who construct, alter, paint, repair, maintain, renovate, remove, or demolish fixed structures or their parts.

### Material to have on hand:

- An example of a respirator used at your worksite

### Items for attendees to consider during the talk:

- What types of jobs can increase your risk of Valley fever?
- What work practices can be used to minimize the amount of dust and spores we breathe in?

## TALK

You may have heard about the recent concerns regarding Valley fever in this area. Because of the type of work we do, we are especially at risk of exposure to this disease.

Valley fever is a respiratory infection that is caused by a microscopic fungus. This fungus lives in the top

2 to 12 inches of soil in our part of the state. When we disturb the soil through digging, grading, or driving on dirt roads or when the soil is disturbed by high winds, these fungal spores can become airborne and can potentially be inhaled.

If you inhale these spores and become infected with Valley fever, you will develop symptoms within 7 to 21 days. Some people have mild symptoms, but others might experience tiredness, cough, fever, shortness of breath, headache, muscle aches or joint pain, chest pain, rash on your upper body or legs, and symptoms similar to the flu that linger longer than usual. In many cases, a serious disease can develop that causes you to be hospitalized, miss more than a month of work, or even die.

### Increased risk factors

Though the severe form of Valley fever may develop in anyone, there are some groups of people who are at an increased risk. Those with weakened immune systems, such as people who have the human immunodeficiency virus, or HIV; who are receiving chemotherapy; or who have received an organ transplant, are at an increased risk of developing a serious case of Valley fever. You are also at an increased risk of illness if you are elderly, diabetic, of African or Filipino descent, or pregnant. You are also more likely to become infected with Valley fever in the late summer and fall than at other times of year.

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# VALLEY FEVER

If you or a family member falls into one of these categories or you are working at these times of year, make sure you take extra precautions to protect yourself.

## Prevention

Fortunately, there are steps we can all take to avoid exposure to this disease.

- When soil will be disturbed by digging, heavy equipment, or vehicles, continuously wet the soil before disturbing the earth if a source of water is available. Areas where bulldozers operate and roadways near the construction site are good examples of locations where dust should be reduced by wetting the soil.
- Stay upwind of the area where dirt is being disturbed if possible.
- When exposure to dust is unavoidable, reduce dust exposure by wearing a half-mask respirator with N95, N100, or P100 filters. Your employer will provide you with the appropriate respirator and will teach you how to use it.
- If you are operating a bulldozer, stay inside the enclosed, air-conditioned cab with the windows closed.
- Clean tools, equipment, and vehicles with water to remove soil before transporting them off-site so that any spores present won't be resuspended in the air and inhaled at a later time.

- Remove dusty clothing and shoes after work and before entering your home to avoid bringing dust into sleeping areas.

## Experiencing symptoms

If you begin experiencing symptoms of Valley fever despite taking these precautions, contact your supervisor, and arrange to see a healthcare provider as soon as possible. Treatment may be more effective if it is received early. Be sure to tell your healthcare provider that you worked in an area where Valley fever is known to occur and ask to be tested. When Valley fever is suspected, healthcare providers can order a blood test, culture, or chest X-ray to determine whether you have Valley fever.

Valley fever is treatable with a variety of oral and injectable antifungal drugs. If you develop a severe or chronic infection, you may require hospitalization. Treatment may not be needed for mild infections, which can sometimes get better on their own, but anyone with symptoms should see a healthcare provider who can determine if treatment is needed. There are no over-the-counter medications to treat Valley fever.

If you keep these tips in mind, you can help protect yourself and others from exposure to this increasingly common disease.

# WASTE AND RECYCLING INDUSTRY SAFETY

## BALING AND COMPACTING EQUIPMENT

Safety  
ToolBox  
Talks 

This talk discusses the safe work practices for employees in the waste or recycling industries who operate stationary compacting or baling equipment.

### Materials to have on hand:

- Copy of the permit-required confined space entry plan and procedures

### Items for attendees to consider during the talk:

- How can I clear a jam safely?
- When should I follow lockout/tagout procedures?

## TALK

Because it is cheaper to store and haul, cardboard boxes and other recyclable materials are commonly baled, and trash is often compacted. Balers and compactors are machines that compress materials with great pressure, reducing their volume. This pressure is dangerous—if you operate baling or trash compaction equipment, you are at risk for injuries, including cuts, bone fractures, and amputations. In a recent incident, a worker was killed while he was pushing trash inside a trash compactor using a polyvinyl chloride, or PVC, stick, and he fell inside the hopper while it was cycling. You can avoid a similar incident if you utilize safe work practices while working with this equipment.

Before working with baling and compacting equipment, you should be properly trained to be able to perform your assigned tasks such as operating, cleaning, servicing, maintaining, or repairing the equipment.

When operating baling or compacting equipment:

- Before starting up, ensure that all other personnel are clear of the area.
- Verify that equipment is inspected before operation to ensure that all machine guards and safety interlocks are in working order. Keep all equipment guards in place—never disable them. Contact your supervisor if a safeguard is missing or damaged.
- Don't bypass or disable interlocks or control switches. Don't operate equipment with the loading chamber door open.
- Watch out for pinch points when opening and shutting doors or other movable parts.
- Don't overload the equipment.
- When manually feeding and tying off baling wire, wear well-fitting gloves and safety glasses.
- When ejecting a bale onto a pallet, stand clear. If transporting a pallet using a forklift, you must be trained to use the forklift.

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# WASTE AND RECYCLING INDUSTRY SAFETY

Jams are common in baling and compacting equipment, and you must follow the proper procedures to clear one. Never cut corners—even if it is just to pull out or adjust something quickly. It is not worth the risk.

- If there is a jam, ram motion may pause—but the machine is still operational, and the ram could reactivate at any time. Every time there is a jam, you must follow proper lockout/tagout procedures before attempting to clear it.
- If the machine has a conveyor belt feeding a chute—you should know that turning off the conveyor belt doesn't prevent the baler or compacter from operating. You must follow lockout/tagout procedures before dislodging any material from the conveyor.
- Do not climb on the equipment—use a platform with stairs and railings to safely access the chute

or hopper to clear a jam. Leaning over the railing increases your likelihood of falling in, so, wear fall protection.

When performing maintenance or repair activities:

- Be sure you have been properly trained.
- Ensure that all lockout/tagout procedures are followed. Some machines operate automatically with sensors indicating that the chamber is full, which starts a cycle. If you fall inside and the machine is energized, it can trip the sensor and begin a cycle.
- In some fatal incidents, coworkers activated the machine without knowing someone was inside the compression chamber. You must follow the permit-required confined spaces procedures and know your responsibilities as an entrant or attendant. At all times, an attendant must remain outside the confined space during entry operations.

# WELDING AND CUTTING

## HOT WORK HAZARDS AND BEST PRACTICES



This talk discusses the common hazards where hot work with welding and cutting equipment is performed and best practices to implement in order to prevent injuries, fires, and explosions.

### Materials to have on hand:

- Hazardous materials that may be present during hot work (for example, flammable liquids, trash cans, rags)
- Example of a hot work permit, if available
- Personal protective equipment (PPE) used for hot work

### Items for attendees to consider during talk:

- What type of protective clothing should you wear when performing hot work?
- What steps can you take to prevent fires when performing hot work?

## TALK

Hot work operations can generate several different types of hazards that require their own unique set of precautions and safe practices to prevent injuries or damage to equipment. In almost all cases, the hazards can be either eliminated or controlled in a way that prevents injuries or damage.

### Hazards of hot work

There are hazards to your health if you breathe in the toxic fumes created by welding or cutting work. Fumes come from the base or filler material, shielding gases, coatings, paints, cleaners, and degreasers. Inhaling welding smoke can cause damage to your nose, throat, lungs, and digestive system.

You can get burns from slag or other hot objects.

Fires start when the welding area has combustible materials or when a fire watch isn't on station for at least a half hour after the welding job is completed. Sparks can travel more than 30 feet from the hot work operation and can smolder and build into a fire after work is finished.

Explosions can happen when doing welding work on drums or tanks that had fuels or solvents in them, and the remaining fumes ignite. Even though a tank may be empty, it often still contains flammable vapors.

Gas cylinders used in gas welding can explode if mishandled or exposed to heat or flames. Improper grounding when arc welding could result in static electrical charges, which could cause fires and explosions.

### Safe practices

Before you start a cutting or welding operation, make sure the area is inspected by the person responsible for authorizing the operation. That person

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# WELDING AND CUTTING

will explain or show you the precautions to follow as part of giving you authorization to start work. If a written hot work permit is issued, it will list the mandatory safety precautions.

Make sure there is a fully charged fire extinguisher within 30 feet of the hot work operation.

Weld or cut only in areas with fire-resistant floors, or use protective shields. Catch slag in containers of water or sand. Protect open doorways or windows with a fireproof curtain.

Move combustible items like trash cans and rags at least 35 feet away from the hot work. If it's not possible to move them, cover or shield them with fire-retardant covers, shields, or curtains.

Designate a fire watch to look out for stray sparks or lingering fires, and make sure that person stays at the site at least 30 minutes after the hot work operation is done. Keep all firefighting equipment nearby.

Personally inspect any tank you will weld or cut for leftover fuel or fumes before you start work on it. Don't just take the word of someone who tells you

the tank clear of fuel and fumes—check it yourself. If there are any fuel or fumes, have the fuel removed and fumes ventilated so the tank won't catch fire or explode.

## Protective clothing and equipment

Welding and cutting operations generate heat, sparks, and slag. Remember that sparks can travel over 30 feet. Always wear flame-retardant clothing, such as aprons, leggings, and sleeves, high-top boots, and gauntlet-type gloves.

Wear all eye and face protection that is required by your training, by the authorized supervisor, and in the work permit.

Use a respirator in unventilated areas where toxic fumes accumulate from operation. Check the safety data sheets, or SDSs, for any hazardous chemicals you are using so you can protect yourself properly from exposure.

***[See the [Welding and Cutting: Personal Protective Equipment for Hot Work](#) talk for more discussion.]***

# WHEELCHAIR SAFETY FOR HEALTHCARE WORKERS



This talk informs healthcare workers, such as nurses, caregivers, and hospital volunteers, on how to safely handle manual wheelchairs in the workplace.

## Materials to have on hand:

- A list or map of elevators and/or access ramps
- A manual wheelchair
- A copy of wheelchair operating manual

## Items for attendees to consider during the talk:

- Do you know where the elevators and/or access ramps are located?
- Do you know the best way to position the castors, or front wheels, of the wheelchair?
- Do you know how to prevent a patient from falling out of the wheelchair?

## TALK

As someone who handles patients using a manual wheelchair on a day-to-day basis, it's important for you to know how to safely use the device to help prevent falls and avoid accidents. Consult the operating manual if you have any difficulty using the wheelchair.

Before we begin, the elevators and access ramps are located \_\_\_\_\_. The wheelchairs are stored in \_\_\_\_\_.

***[List location of elevators and/or access ramps. Let employees know where wheelchairs are stored.]***

First, let's talk about how to unfold and fold the wheelchair.

***[Demonstrate the following steps using the wheelchair.]***

## To unfold the wheelchair:

1. Place the wheelchair on a stable, level surface.
2. Stand in front of the wheelchair.
3. Using both hands, push down on both sides, also known as the rails, of the inside seat.
4. Continue to push down until the wheelchair is fully opened and "locks" into place.
5. Be sure to put the wheelchair locks on before a patient sits in the wheelchair.

## To fold the wheelchair:

1. Ensure the wheelchair locks are on.

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# WHEELCHAIR SAFETY FOR HEALTHCARE WORKERS

2. Stand on one side of the wheelchair.
3. Grip the seat with one hand at the back and the other at the front.
4. Carefully pull up. The wheelchair will fold.

Next, let's discuss some safe practices when handling a patient using a wheelchair at our facility.

**Putting the wheelchair locks on** is essential when transferring a patient in and out of the wheelchair. It's also good practice to lock the wheelchair any time you come to a stop or if the patient needs to bend, lean sideways, or reach out to pick up or put down an object. The locks are located along the two back wheels. Press them in the designated direction to activate.

## ***[Demonstrate how to put on the wheelchair locks.]***

**The castors are the wheelchair's front wheels**, which can rotate in all directions. It's best to position the castors away from, or parallel to, the back wheels of the wheelchair. This positioning provides the longest-possible wheelbase and increases the stability of the wheelchair. This is especially important when getting a patient in and out of the wheelchair.

## ***[Point out the wheels and the correct positioning of castors on the wheelchair.]***

**Communication with your patients is key while using a wheelchair.** To prevent your patients from falling out of the wheelchair, be sure to remind them to never:

- Attempt to reach an object if they need to move forward in their seat.
- Bend to pick up an object if they have to pick it up by reaching between their knees.
- Lean entirely to one side of the wheelchair.
- Try to grab something from behind them if they can't comfortably reach it without changing their sitting position.

Finally, here are some additional safety tips when using the wheelchair:

- Do lift up or adjust the footrests and armrests, if needed, before getting a patient in or out of the wheelchair.
- Do avoid having a heavy bag or item on the back of the wheelchair.
- Don't force the wheelchair down or up staircases.

By following these safe practices while handling the wheelchair, you can keep yourself, your patient, and your coworkers safe.

# WILDFIRE SMOKE PROTECTION



This talk describes the negative health effects of wildfire smoke and practices that can help protect employees from wildfire smoke exposure. It includes guidance from California Standard 8 CCR 5141.1.

**[Note: This Toolbox Talk is designed to comply with California Standard 8 CCR 5141.1 but may also be used by employers in other states where the hazard of wildfire smoke exists.]**

**[Note: Firefighters engaged in wildland firefighting and certain other workplace conditions are exempt from 8 CCR 5141.1. Refer to the Wildfire Smoke Protection Plan for details surrounding applicability.]**

## Material to have on hand:

- A sample respirator of the type to be worn by employees

## Items for attendees to consider during the talk:

- Do you know the easiest way to check the current and forecasted Air Quality Index (AQI)?
- Do you know the action level for PM2.5?
- Are you familiar with your company's Respiratory Protection Plan?

## TALK

Although there are many hazardous chemicals in wildfire smoke, the main harmful pollutant for people who are not very close to the fire is “particulate matter,” or PM, which are tiny particles suspended in the air.

### Health Effects of Wildfire Smoke

Particulate matter can irritate the lungs and cause persistent coughing, phlegm, wheezing, or difficulty breathing. Particulate matter can also cause more serious problems, such as reduced lung function, bronchitis, worsening of asthma, heart failure, and early death. People over the age of 65 and people who already have heart and lung problems are the most likely to suffer from serious health effects after exposure to wildfire smoke.

The smallest and usually most harmful form of particulate matter is called PM2.5 because each particle has a diameter of 2.5 micrometers or smaller. Their very small size allows the particles to become trapped deep in the lungs and even enter the bloodstream.

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# WILDFIRE SMOKE PROTECTION

## Air Quality Index

Various government agencies throughout California and other states monitor the air at various locations and report the current Air Quality Index, or AQI, for those places. The AQI is a measurement of how polluted the air is. An AQI over 150 is considered unhealthy.

The easiest way to find the current and forecasted AQI for PM2.5 is to go to [AirNow.gov](http://AirNow.gov) and enter the ZIP code, town, or city where you will be working. You will be informed of the current and forecasted AQI for your work area before the start of each shift, and if the AQI for PM2.5 is 151 or greater, appropriate safety measures will be implemented.

## Employee Exposure Controls

Your employer will take action to protect you from PM2.5 when the current AQI for PM2.5 is 151 or greater. Examples of protective methods include:

***[Modify this list as applicable to your organization.]***

- Locating work in enclosed structures or vehicles where the air is filtered;
- Changing procedures, such as moving workers to a place with a lower current AQI for PM2.5;
- Reducing work time in areas with unfiltered air;
- Increasing rest time and frequency and providing a rest area with filtered air; *and*
- Reducing the physical intensity of the work to help lower the breathing and heart rates.

## Respiratory Protection

Respirators can reduce employee exposure to wildfire smoke when they are properly selected and worn. Respirator use can be beneficial even when the AQI for PM2.5 is less than 151 to provide additional protection.

***[Modify the following paragraph as applicable to your state or facility requirements.]***

When the current AQI for PM2.5 is 151 or greater, employees will be given appropriate respirators for voluntary use. If the current AQI is greater than 500, respirator use is required.

***[Modify the following paragraph depending on what type of respirator(s) will be used.]***

You must use and care for your respirator(s) properly. Filtering facepiece respirators (such as N95s) cannot be cleaned or disinfected, and you must dispose of them at the end of each shift or more frequently, if necessary. Make sure you clean and maintain your reusable respirator properly. Respirator filters must be replaced if they become damaged, deformed, dirty, or difficult to breathe through.

***[See the Toolbox Talk “Respirator Maintenance: Cleaning and Storage” for specific information on caring for reusable respirators.]***

***[Demonstrate how to wear a respirator using a sample of the type to be used by employees.]***

If you have symptoms such as difficulty breathing, dizziness, or nausea or have any reason to suspect overexposure to wildfire smoke, contact your supervisor immediately to get medical help.



# WORKING ALONE

## SAFETY AT REMOTE JOBSITES



This talk discusses some of the unique hazards of working alone at a remote jobsite and provides information that lone workers can use to stay safe.

**Materials to have on hand:** N/A

### Items for attendees to consider during talk:

What are some of the unique hazards of working alone?

What steps can you take as a lone worker to stay safe?

## TALK

Working alone means that you don't have a supervisor looking over your shoulder to make sure you're working safely—but it also means that if you get hurt, there's no one around to assist you. Therefore, it is very important that you take safety seriously and take some steps to minimize the hazards of working alone.

Follow all company safety rules and safe work practices just like you would if your supervisor was watching. This means not taking shortcuts and means wearing all your required personal protective equipment (PPE).

When you're working alone at a remote jobsite, there are many more variables to consider than if you're working at a company facility, and you may have only limited control over the work environment. Before you begin working, perform a basic assessment of the site. Are there potential hazards in the environment, like excessive heat or cold, electrical hazards, or chemical exposure? For each hazard

you identify, make a plan for how you will address it to reduce the risk.

You also need to pay particular attention to your personal safety and security when you're working alone. Take extra precautions. For example, when traveling to a remote worksite, keep your vehicle locked at all times, and secure all valuables. Remain aware of your surroundings at all times, and be alert for any suspicious or threatening behavior. If you're working at night, stay in well-lighted areas or provide your own lighting source if necessary.

It's a good idea to have a procedure in place for checking in with your employer. One way to do this is to have a buddy system with a colleague where you check in with each other at specified times. If your colleague doesn't hear from you at the agreed-on time, he or she can contact your employer to send someone to check on you, and vice versa.

There are some types of work you should never attempt while working alone. For example, you should never enter a permit-required confined space without an attendant. If a jobsite requires this type of work, wait to perform it until you can return with another worker to assist you.

Have an emergency plan in place, and practice it, if possible, so you know whom to contact and what to do. Carry a first-aid kit, and make sure you know how to use the items it contains. It's also a good idea to have bottled water, some nonperishable food, blankets, a flashlight, batteries, and a dry change of

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# WORKING ALONE

clothes in case you encounter bad weather or get stranded at a remote location.

Finally, make sure you always have a way to call for help if you get injured or experience an emergency, either by carrying a cell phone, having access to an

emergency alarm system, or some other method. If your employer has an emergency phone number, program it into your cell phone, along with any other emergency numbers you might need. *[Provide any applicable company-specific emergency instructions here.]*

# WORKING IN COLD CONDITIONS

## PREVENTING FROSTBITE



This talk discusses the causes and symptoms of frostbite and provides tips for workers to prevent and respond to frostbite when working in cold conditions.

### Points to consider:

- What conditions put you at risk of frostbite?
- What are the symptoms of frostbite?
- What first-aid measures should you take to treat frostbite?

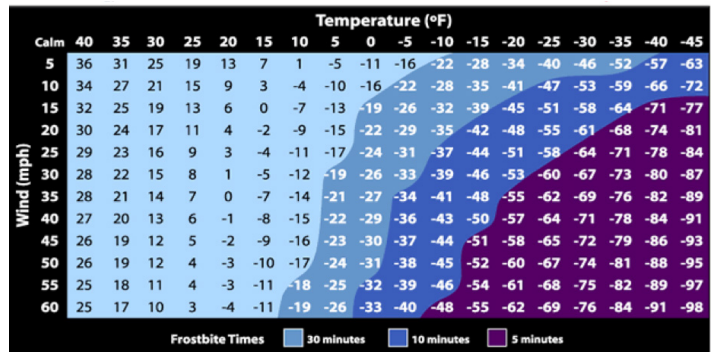
## TALK

Working in cold conditions exposes you to the risk of frostbite. Frostbite can be very serious, but it is easily preventable if you take some simple precautions.

Frostbite happens when your skin freezes from exposure to severe cold or contact with very cold objects, damaging cells and blood vessels. The freezing point for skin is about 30 degrees Fahrenheit (°F). Usually, frostbite affects the fingers, toes, cheeks, nose, and ears. In severe cases, frostbite causes tissue death, which can require amputation or lead to a loss of function in that body part.

You are more likely to get frostbite when conditions are windy as well as cold. The “wind chill” is a number that represents the combined effects of temperature and wind. The chart seen here shows how long a person’s skin can be exposed to various wind chill

temperatures before frostbite develops. *[Show or discuss chart below.]*



If you experience frostbite, first, the affected body part will feel cold and numb. Then, you might feel a tingling, stinging, or aching sensation. At first, your skin will be waxy and will look almost white. In severe cases, these symptoms will be followed by heat, redness, swelling, blistering, and a color change in your skin to red and then black.

To treat frostbite, follow these do’s and don’ts:

- **DO** warm the frostbitten body parts gradually with body heat.
- **DON’T** heat the skin suddenly using extremely hot water, a fireplace, or other high-heat sources.
- **DON’T** rub the frostbitten area. This can cause more damage.

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# WORKING IN COLD CONDITIONS

- **DO** use warm (not hot) water between 102°F and 110°F to warm the frostbitten body part.
  - **DO** apply a sterile dressing to blisters.
  - **DON'T** thaw severely frostbitten skin if there is a risk of refreezing.
  - **DO** get medical attention for severe cases of frostbite.
- Prevent frostbite with the following precautions:
- In cold conditions, especially if it is also windy, cover as much of your skin as possible by wearing gloves, a hat or hood, a scarf, and other clothing if necessary. Make sure to protect your ears, face, hands, and feet.
  - Wear waterproof, insulated boots and warm socks.
  - If you can, wear mittens rather than gloves because they keep your hands warmer. If you must wear gloves to do your job, they should be insulated and waterproof.
  - Dress in several layers of loose, warm clothing. Choose synthetic materials that wick moisture away from your skin over cotton, and make sure your clothing is not cutting off circulation to any of your body parts.
  - If your clothing becomes wet, remove it and change into dry clothing as soon as possible.
  - Avoid touching cold metal surfaces with bare skin.

# WORKING IN COLD CONDITIONS

## PREVENTING HYPOTHERMIA



This talk discusses the causes and symptoms of hypothermia and provides tips for workers to prevent and respond to hypothermia when working in cold conditions.

### Points to consider:

- What are the symptoms of severe hypothermia?
- What should you NOT do to help a person suffering from hypothermia?
- What can you do to prevent hypothermia when working in cold conditions?

## TALK

Working in the cold exposes you to the risk of hypothermia. Hypothermia can be very serious, but it is easily preventable if you take some simple precautions.

Hypothermia is the loss of body heat from exposure to cold conditions. If you are wet because of sweat, high humidity, or working in a damp environment, or if your clothing becomes wet, hypothermia can happen more quickly. It doesn't need to be very cold for you to experience hypothermia; most cases happen in air temperatures between 30 degrees Fahrenheit (°F) and 50°F, and hypothermia can happen in air temperatures as high as 65°F or water temperatures as warm as 72°F.

If you have mild hypothermia, you will shiver uncontrollably, and your lips and fingers may turn blue. You may also have poor coordination. If mild

hypothermia isn't treated, you may become confused and disoriented. Your heart rate and breathing will slow down, and your speech may be slurred. Severe hypothermia is very serious. You may lose consciousness, your heart rate may be so slow that it is difficult to find a pulse, you will stop shivering, and you may seem not to be breathing. If this happens to you or a coworker, immediate medical help is necessary.

You should seek medical help for all cases of hypothermia, even mild ones. While you wait for medical help to arrive, give the following first aid:

- **DO** remove the affected person from the cold environment to a warm shelter.
- **DO** remove wet and cold clothing.
- **DO** wrap the affected person in dry, nonheated blankets.
- **DO** warm the internal areas (neck, chest, abdomen, groin) first. Arms and legs should be warmed last.
- **DO NOT** place the affected person in front of a hot fire or apply heated blankets or pads.

Prevent hypothermia with these practices:

- Dress in several layers of loose, warm clothing. Choose synthetic materials that wick moisture away from your skin over cotton, and make sure your clothing is not cutting off circulation to any of your body parts.

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# WORKING IN COLD CONDITIONS

- If your clothing becomes wet, remove it and change into dry clothing as soon as possible.
- Consume warm, high-calorie foods, including warm soups and sweet drinks, while working in cold conditions.
- Avoid alcohol and caffeine when working in the cold.
- Stay in good shape through regular exercise, plenty of sleep, and a healthy diet.
- If you have a medical issue such as diabetes, a heart condition, or another serious medical problem, get a medical exam before working in the cold to make sure you can safely do so.
- If possible, avoid activities that lead to heavy sweating.
- Avoid long periods of sitting and standing still. Keep moving.
- In very cold weather, take periodic breaks in a warm, sheltered area.

# WORKING SAFELY AROUND ASBESTOS



This talk discusses some of the hazards associated with working in a building or facility where asbestos is present, and it provides information that maintenance and custodial personnel and other employees can use to avoid asbestos exposure. This talk does not cover demolition, renovation, or abatement of asbestos-containing material (ACM).

### Materials to have on hand:

- Asbestos Operation and Maintenance Plan for the facility/building, if one exists
- Asbestos survey for the facility/building, if one exists

### Items for attendees to consider during talk:

- Where is asbestos located in this facility?
- When is asbestos a risk to your health?

## TALK

Asbestos is a microscopic fiber that can stay in the air for hours and even days. Once you inhale the fibers, they can damage your lungs and cause asbestosis and various forms of cancer.

There is no “safe” level of asbestos exposure, so it is important to know where asbestos is and to avoid being exposed to it.

It’s not uncommon for buildings to contain asbestos, especially older buildings, because many of the materials used in construction contain asbestos

because of its resistance to heat and corrosion. Materials containing asbestos might include (*select those that apply to your facility—add if needed—and describe their locations within the facility*):

- Vinyl floor tiles and adhesives;
- Ceiling tiles;
- Caulk and spackle;
- Insulation, especially on pipes and ductwork;
- Wallboard, joint compounds, and plasters;
- Roofing and siding materials;
- Fireproofing materials, including fire doors; *and*
- Sprayed on acoustical or soundproofing material.

However, if these or other asbestos-containing materials are intact, in good condition, and undisturbed, there is no health risk from asbestos exposure. The risk arises when these materials are damaged and the fibers are released into the air.

So it is important to avoid actions that may disturb or damage asbestos-containing materials. Avoid:

- Sawing
- Cutting
- Drilling
- Grinding

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# WORKING SAFELY AROUND ASBESTOS

- Sanding
- Impacting any material that may contain asbestos

If you are unsure if something contains asbestos, ask your supervisor before disturbing it.

In addition, keep your eyes open for any rips, cracking, flaking, blistering, or peeling of asbestos-containing material that might signal the deterioration of the material due to age, water damage, or continuous vibration.

If you notice any damaged or deteriorating asbestos-containing material, you should:

- Immediately warn people in the area to leave.
- Block access to the area.

- If there are no electrical hazards, wet the asbestos material with a water spray.
- Notify your supervisor.
- Shut down the ventilation system for the area.

Do not attempt to remove, repair, or clean up the material unless you are trained and certified to do so. Such activities require that specific work practices be followed in order to ensure the safety of you and your coworkers.

So to avoid the risk of asbestos exposure, know where it is, be careful around it, and speak up if you see any damage.

# WORKING SAFELY AROUND CONVEYORS



This talk discusses the hazards of conveyors and provides employees with safe work practices to follow when using or working near conveyors.

## Material to have on hand:

- Examples of conveyor safeguards

## Items for attendees to consider during the talk:

- How can conveyors cause injuries?
- Is it ever OK to ride on a conveyor?

*[If possible, hold this toolbox talk near the conveyors in your facility.]*

## TALK

Conveyors are used in our workplace as an efficient way to move objects from one place to another without lifting. When we use them correctly, they are quite safe, but it's important to be cautious. When used unsafely, conveyors can be hazardous, just like any other piece of equipment.

Conveyors can even cause fatal injuries. In one recent example, a worker in Texas who was loading material onto a conveyor stepped onto the running conveyor belt and was pulled into a nearby machine. He was crushed and killed. In another case, a worker was killed when a lanyard she was wearing got caught and pulled her into the conveyor, strangling

her. Examples like these show why conveyor safety is so important.

Conveyors have several safety features that help to protect you. These include:

- Warning sounds before the conveyor starts
- Emergency stop controls that are within easy reach
- Guards on moving parts
- Protective plates over in-running nip points
- Rollers that disengage if something gets wedged between the drive belt and the conveyor
- Protective caps on rotating shafts and pinch points
- Automatic power shutoffs when the conveyor is overloaded

Never try to disable or bypass any of these safety features. They are there to keep you safe.

Always follow these do's and don'ts when using or working near a conveyor:

- **Don't** climb, step, walk, or ride on a conveyor.
- **Don't** overload a conveyor.
- **Don't** load a conveyor while it's stopped.
- **Don't** touch the belt of a conveyor while it's moving.

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# WORKING SAFELY AROUND CONVEYORS

- **Don't** clean the conveyor while it's running.
- **Don't** operate the conveyor if any guards or safety devices are missing or aren't working properly.
- **Don't** reach into conveyor mechanisms if something gets stuck or jammed. Turn off the power and find someone who is authorized to fix the problem.
- **Don't** try to repair or perform maintenance on a conveyor unless you have been specifically trained and authorized to do so.
- **Don't** wear loose clothing or jewelry when working near a conveyor.
- **Do** tie back long hair when working near a conveyor.
- **Do** position yourself so that you won't be hit by objects moving down the conveyor.
- **Do** make sure emergency shutoff switches are always within reach.
- **Do** watch your hands when you're loading materials onto a conveyor.
- **Do** ensure that all employees are clear of the conveyor before starting it up.
- **Do** wear a hard hat if you're working underneath an overhead conveyor.

When authorized employees perform repairs or maintenance on conveyors, the equipment should always be turned off and locked or tagged out. So, if you see a conveyor with a lock or tag on the power switch or other controls, **don't remove it**. That means someone is servicing the equipment. If you think a lock was left on the machine accidentally, tell your supervisor.

Finally, never engage in any kind of horseplay around a conveyor. It only takes one wrong move for an accident to happen.

If you follow these safe practices, you'll stay safe around conveyors, and you'll help to keep the equipment in good working order.

# WORKING SAFELY IN TRENCHES



This talk discusses the hazards of working in a trench and describes safe practices to prevent injury.

**Material to have on hand:** N/A

## Items for attendees to consider during the talk:

- What is the safest way to enter a trench?
- How far from the edge of a trench should you place tools and other materials?

## TALK

Working in a trench may not seem particularly dangerous, but trenching accidents kill and injure many workers every year. The most serious hazard is collapse, or cave-in. One cubic yard of soil can weigh as much as a car. If that soil falls on workers inside a trench, the results can be fatal.

The risks of cave-in depend on the type of soil, the shape of the trench, the depth of the excavation, the protective structures used, and a number of other factors. Before you enter a trench on the job, a person with knowledge about assessing trench conditions for safety will inspect the trench. Never enter a trench unless your supervisor has told you it is safe to do so.

Trenches that are 5 feet or deeper must have protective systems to prevent cave-ins, unless the entire excavation is made in stable rock. There are multiple ways to accomplish this. The sides of the trench may be sloped at an angle that is shallow enough to prevent collapse; the sides of the trench may be supported; or a shield may be placed between the side of the excavation and the work area. Your employer is responsible for choosing the protective method, but you should be aware of what it is, and never enter a trench that is missing it.

When you enter and exit a trench, always use a designated entry or exit point. This might be a ladder, a ramp, or a stairway. The only exception to this is for trenches shallower than 4 feet. A special entrance is not required for these trenches, although it is still a good idea, and if there is one, you should use it.

When working in a trench, always place all debris, materials, and soil you remove from the trench at least 2 feet from the edge of the excavation. This will keep the materials from falling or rolling into the trench and causing an injury.

Always follow these practices:

- Stand away from vehicles being loaded or unloaded to avoid being struck by falling materials.

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# WORKING SAFELY IN TRENCHES

- Keep heavy equipment away from trench edges.
- If the trench is located near a roadway with vehicle traffic, wear high-visibility clothing.
- Never stand or work under a load being lifted by lifting or digging equipment.
- Never enter a trench where water has accumulated unless your employer has provided protective measures such as water removal equipment or a safety harness and lifeline. Always double-check for water after a rainstorm.

Above all, when working in a trench, if you notice a hazard or you think something doesn't look right, get out immediately and contact your supervisor. It's better to be extra careful than to risk injury or death.

# WORKING SAFELY ON SUPPORTED SCAFFOLDS



This talk describes the dangers of working on supported scaffolds and safe practices for avoiding injuries from falls, falling objects, and other hazards.

## Material to have on hand:

- Personal protective equipment (PPE) intended to be worn when working on scaffolding

## Items for attendees to consider during the talk:

- Is it safe to work on a scaffold during windy conditions?
- Is it safe to climb the cross braces of a scaffold?

## TALK

Imagine for a moment that you are required to work on scaffolding set 25 feet above the ground. Suddenly, the wooden plank you are standing on gives way, and you find yourself free-falling to the rock-hard pavement below. For too many workers each year, this nightmare becomes an unfortunate reality. You need some basic safety knowledge to work on scaffolding successfully.

Let's review a couple of actual scaffolding incidents that unfortunately resulted in fatalities. In one case, a masonry worker was standing on an elevated

platform. The guardrail had been temporarily removed in order to speed the transfer of material to the platform. During the transfer, the employee lost his footing and plunged 50 feet, sustaining fatal injuries upon impact. In another incident, two bricklayers were working on a scaffold. The unapproved plywood flooring they were standing on gave way, causing them to plunge 47 feet to their deaths.

These two incidents are similar in that they would have been entirely preventable with proper scaffolding practices.

In order to ensure that it is safe, a designated qualified person will design the scaffold, and it must be constructed and loaded in a way that is consistent with that design. This will not generally be your responsibility to verify, but it should serve as a reminder never to attempt to improvise a scaffold with a ladder or other available materials or modify a scaffold in any way.

If you are working on a scaffold platform that is 10 feet or more above a lower level, you must be provided with effective means of fall protection, such as a guardrail system or a personal fall arrest system. Always follow all fall protection procedures in place at the worksite, and report any damaged or missing fall protection equipment to a supervisor.

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# WORKING SAFELY ON SUPPORTED SCAFFOLDS

Always follow these safe work practices:

- **Do** wear a hard hat to protect yourself from falling hand tools, debris, and other objects. Your employer should also provide additional protection from falling objects such as a canopy structure, a debris net, or toeboards along the edge of scaffold platforms.
- **Do** keep tools and materials away from the edge of the platform to prevent them from falling to lower levels.
- **Do** keep walkways free of tools, debris, and other clutter to prevent trip and fall hazards.
- **Don't** climb the cross braces of a scaffold; always use designated ramps, ladders, and walkways to move about on the scaffold.
- **Don't** work from a scaffold that has not been properly erected under the supervision of a qualified person.
- **Don't** engage in horseplay on a scaffold.
- **Don't** stand on boxes, barrels, or other items to reach a higher working height.
- **Don't** work on a scaffold that is covered with snow, ice, or other slippery materials unless you are removing these materials.
- **Don't** work from a scaffold during a storm or in high wind conditions unless a competent person has determined that it is safe and you are protected with a personal fall arrest system or a wind screen.



# WORKING SAFELY OUTDOORS

## PREVENTING HEAT STRESS



This talk discusses the hazards of heat stress and provides tips for outdoor workers to stay safe when working in hot conditions.

**Material to have on hand:** Local weather forecast and/or current heat index

### Points to consider:

- What are the symptoms of heat stress?
- What can you do to prevent heat stress?
- What first-aid measures should you take if you or a coworker shows signs of heat stress?

## TALK

Working outdoors in hot weather can be uncomfortable. But did you know it can also be hazardous? If you don't take the right precautions when working in hot conditions, you can develop heat-related illnesses. These can range from mild annoyances, such as heat rash, to life-threatening heatstroke.

Heat Index	Risk Level
Less than 91°F	Lower
91°F to 103°F	Moderate
103°F to 115°F	High
Greater than 115°F	Very high to extreme

Heat illness occurs when your body can't adequately cool itself through sweating. This is most likely to

happen during high-temperature, high-humidity weather, especially when you perform hard physical work under these conditions. You can be at risk of the following heat-related illnesses:

- **Heat rash.** Heat rash consists of a red, bumpy rash that can be itchy. It is usually not dangerous, but it can be uncomfortable, and it is a sign that hot conditions are affecting your body.
- **Heat syncope (fainting).** Sometimes heat can cause you to faint. This is called heat syncope and usually occurs when a person is not used to working in a hot environment. It is usually not dangerous, and you can prevent it by moving around a little rather than standing still for long periods of time in the heat.
- **Heat cramps** are painful muscle cramps caused by a loss of salt when sweating. Drinking electrolyte fluids to replace your body's salt can relieve heat cramps, but severe cramps may require a visit to a medical professional.
- **Heat exhaustion** is more serious. It results from the loss of fluid or salt, or both, through sweating. You might feel weak, dizzy, and nauseous; your skin might become clammy; and your body temperature may be above normal. To treat heat exhaustion, rest in a cool place, drink sports drinks, and remove any heavy clothing. If this doesn't help, and you or a coworker start vomiting or lose consciousness, call for emergency assistance immediately.

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# WORKING SAFELY OUTDOORS

- **Heatstroke** is the most dangerous type of heat illness. It occurs when the body's natural cooling processes stop working and the ill person stops sweating. Symptoms include very hot and dry skin, confusion, convulsions, seizures, and loss of consciousness. Heatstroke can cause death, so call an ambulance immediately if you or a coworker shows symptoms. While you're waiting for the ambulance, try to keep the victim cool and provide fluids if he or she is conscious.
- All of these heat-related illnesses can be prevented by taking some very simple steps when working in hot conditions:
- Drink plenty of water throughout the day. In hot conditions, you should aim for about 1 cup every 15 to 20 minutes.
  - Wear a hat and light-colored clothing.
  - Drink sports drinks to help replace the salt you lose when you sweat.
  - Avoid caffeine and alcohol, which can both cause dehydration.
  - Take frequent breaks in a cool, shady place.
  - If the temperature spikes suddenly or you are new to working in hot conditions, take more frequent breaks and gradually build up your workload while your body adapts.
  - If you notice yourself experiencing symptoms of heat illness, tell your supervisor, and take a break in a cool, shaded area.

# WORKING SAFELY OUTDOORS

## INSECT BITES AND STINGS



This talk provides an overview of the hazards of insect and animal bites and stings and shares tips for preventing them while working outdoors.

**Materials to have on hand:** Smartphone, tablet, tablet stand, detachable keyboard

### Points to consider:

- What diseases can insects, spiders, and ticks carry?
- How should you prevent bites and stings while working outdoors?
- When should you seek medical attention following a bite or sting?

## TALK

When working outdoors, you may encounter a variety of insects and arachnids that can bite or sting. These bites and stings can transmit diseases, cause infection, and trigger allergic reactions. Some are also poisonous. Therefore, it is important that you know how to prevent and respond to these encounters while working outdoors.

In most cases, insect, tick, and spider bites will not lead to serious outcomes, but they can be uncomfortable. If you are bitten or stung, remove the stinger if there is one, treat itching with calamine lotion or hydrocortisone cream, and apply ice to reduce swelling. Monitor yourself for any more serious symptoms, but in most cases, this simple first aid will be sufficient.

Follow these tips for preventing bites and stings when working outdoors:

- **DO** wear an EPA-approved insect repellent, and always follow the label directions for safe use. DEET and picaridin are two common, effective repellents.
- **DO** wear clothing treated with permethrin for extra protection. You can use permethrin spray and treat clothing yourself following the package directions or purchase pretreated clothing. Don't apply permethrin directly to your skin.
- **DO** wear long sleeves, long pants, socks, gloves, and outdoor shoes to cover your skin.
- **DO** tuck your shirt into your pants, and tuck your pant legs into your socks.
- **DO** wear light-colored clothing because it makes insects easier to see.
- **DON'T** wear perfume or cologne when working outdoors because it may attract insects.

### Ticks

Ticks can transmit Lyme disease, anaplasmosis, Rocky Mountain spotted fever, and other illnesses. Only deer ticks, also known as black-legged ticks, carry Lyme disease. Deer ticks are very small and hard to spot. If you work in known tick-infested areas, check your body for ticks after every shift. They often attach near the hairline, behind the ears, and behind the knees.

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# WORKING SAFELY OUTDOORS

If you find a tick attached to you, remove it using tweezers, and monitor your health for the next several weeks. Seek medical attention if you develop a rash, flu-like symptoms, or any other unusual symptoms.

## Spiders

Most spider bites are harmless. However, if you are bitten by a black widow or brown recluse spider, seek immediate medical attention. Symptoms of a bite can include stomach pain and cramps, difficulty breathing, nausea, sweating, twitching, shaking, and tingling in the hands.

Black widows are less than half an inch in diameter with a red hourglass on the underside of the abdomen. Brown recluse spiders are even smaller than black widows, with a white violin-shaped marking on the back.

## Mosquitoes

Mosquitoes transmit a variety of diseases depending on where you live. Zika virus may be a concern in

tropical locations. In other climates, mosquitoes can carry West Nile virus and other diseases. Familiarize yourself with the symptoms of the mosquito-borne illnesses common in your region, and monitor yourself for these symptoms following a mosquito bite. Be especially aware of mosquitoes during warm weather months; when working around standing water; and in hot, humid climates.

## Bees and wasps

Bee, hornet, and wasp stings are painful; however, unless you have an allergy, they are generally harmless. An allergic reaction can cause hives, dizziness, nausea, trouble breathing and swallowing, loss of consciousness and, in some cases, can be fatal. If you are allergic to bees and wasps, carry an EpiPen® when working outdoors, and make sure you know how to use it. If your allergy is severe, it may be a good idea to avoid outdoor work altogether.

# WORKING SAFELY OUTDOORS

## POISONOUS PLANTS

### Safety ToolBox Talks



This talk discusses the hazards of poisonous plants and teaches the audience how to recognize them and what first-aid measures to take following contact.

**Materials to have on hand:** Pictures of poisonous plants common in the area (if different from examples discussed below)

#### Points to consider:

- What poisonous plants should you watch out for when working outdoors?
- What first-aid measures should you take following contact with a poisonous plant?
- What symptoms can contact with poisonous plants cause?

### TALK

As an outdoor worker, it is very likely that you will encounter poisonous plants at some point, because they are common throughout the United States. Contact with these plants can cause an itchy rash, swelling, blisters and, in some cases, more severe allergic reactions. Therefore, it is important that you know what they look like in order to avoid them and what to do following contact.

The following are the poisonous plants you are most likely to encounter:

[Also discuss and show pictures of any additional poisonous plants common in your region.]



**Poison ivy** is common throughout the United States with the exception of Alaska and Hawaii. The plants grow as a bush or a vine with clusters of three glossy, pointed leaves. In the fall, the leaves can turn yellow, orange, and red.



**Poison oak** grows as a low shrub in the eastern and southern United States, and in tall clumps or long vines on the Pacific coast. It has fuzzy green leaves in clusters of three and may have yellow-white berries.



**Poison sumac** is a woody shrub with stems containing 7 to 13 leaves arranged in pairs. It grows primarily in bogs and swampy areas in the Northeast, Midwest, and parts of the Southeast. Its leaves are green in spring and summer and yellow, orange, or red in fall.

Poison ivy, poison oak, and poison sumac all cause an itchy rash because of an oil they contain called urushiol. This oil can remain on the skin for a long

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# WORKING SAFELY OUTDOORS

time and transfers very easily from the plants to clothing, skin, and other surfaces. It only takes one-billionth of 1 gram of urushiol to cause an allergic reaction, and it can stay active on surfaces for up to 5 years.

Keeping your skin covered is the best way to protect yourself against these plants. Follow these tips:

- Wear a long-sleeved shirt and gloves to protect your arms and hands.
- Wear long pants, not shorts, and wear socks to cover your ankles.
- Wear outdoor shoes that completely cover your feet, not sandals. If you're working in areas with a lot of poisonous plants, it's best to wear high work boots.
- Wear safety glasses to protect your eyes.
- Avoid touching your face, skin, and clothing while you work in order to keep from spreading oils.

Never burn brush containing poison ivy, poison oak, or poison sumac. The toxins they contain can be vaporized and inhaled, which can cause severe respiratory problems.

After being exposed to any poisonous plants, take the following steps:

- Carefully remove your work clothes with gloves on, and put clothes and gloves in a plastic bag for laundering later.
- Wash contaminated clothing in hot water, separate from other clothing, and with detergent.
- Wash any tools or other items that may have made contact with these plants using a bleach solution or rubbing alcohol.
- Wash your skin thoroughly with soap and water. There are also commercial products specifically formulated to work against poisonous plant oils. If you use one of these, make sure to follow package directions.
- After washing, use rubbing alcohol to clean areas that contacted poisonous plants.
- If you get an itchy rash, you can apply a hydrocortisone cream or calamine lotion to relieve the itching. Antihistamines can also be effective but may cause drowsiness, so use them with caution.
- Try not to scratch the rash, because it slows healing.
- If you develop a serious reaction, such as swelling, fever, or trouble breathing, or if the rash develops on your eyes, mouth, or genitals, seek medical attention.



# WORKPLACE STRESS



This talk discusses the causes and symptoms of workplace stress and provides tips on how to manage stress.

## Items for attendees to consider during the talk:

- Have you recently taken a personal inventory about how you've been feeling emotionally and physically?
- Are there any work-related issues that may be causing you stress?
- What are some ways you can manage stress?

## TALK

Do you dread going to work each day? Have you felt so miserable that you want to isolate yourself from your coworkers? Do you often get headaches with no apparent cause? Do you feel burnt out when you come home from work? If so, you may be suffering from workplace stress.

Stress isn't always bad—it even has some benefits! A little bit of stress provides you with energy and motivation; it's what helps you rise to a challenge and meet your goals, such as deadlines, production targets, or finding new clients. It makes you alert, which helps prevent accidents or costly mistakes. However, excessive stress can interfere with your

productivity and performance, impact your physical and emotional health, and affect your relationships and home life.

Unfortunately, workplace stress is a very common—yet not often addressed or managed—issue. Some major causes of workplace stress include:

- Large workload,
- Too much responsibility with too little authority,
- Unpleasant or unsafe work environment,
- Conflict or lack of support between supervisors and coworkers, *and*
- Fear of being laid off.

When you feel overwhelmed at work, you lose confidence and may become angry, irritable, or withdrawn. Other signs and symptoms of extreme stress at work include:

- Fatigue,
- Muscle tension or pain,
- Mood swings,
- Trouble concentrating, *and*
- Forgetfulness.

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# WORKPLACE STRESS

## Stress management

If stress on the job is negatively affecting your work performance, health, or personal life, it's time to take action. Here are some things you can do to reduce and manage your overall stress levels:

- **Reach out.** Just sharing your stress with others can be relieving. Turn to coworkers for support, confide in friends and family, and build new meaningful friendships.
- **Practice self-care.** Exercise is a great way to let off some steam and get your endorphins going! It's also important to nourish your body by eating healthy foods, staying hydrated with lots of water, and getting enough quality sleep each night (aim for 8 hours).

*[You may want to present the toolbox talk "Exercise for Health and Safety" in addition to this toolbox talk.]*

- **Organize.** When life starts to get hectic, you can manage stress by setting priorities, developing routines, and maintaining an accurate calendar of commitments.
- **Break bad habits.** Jobs can become more stressful with negative thoughts and behavior. You can make stress easier to handle by setting realistic goals, thinking positively about your work, and focusing on things you can control.
- **Be mindful.** Mindfulness or maintaining a moment-by-moment awareness of your thoughts can be an effective tool for reducing stress. When you practice mindfulness, you're trying to be fully present, aware of where you are and what you're doing, and not overly reactive or overwhelmed by what's going on around you.

# WORKPLACE VIOLENCE

## AVOIDING AND PREVENTING WORKPLACE VIOLENCE

This talk discusses how employees and employers can prevent situations that can result in violence by recognizing the circumstances and people most likely to pose a danger and by being alert to personal safety precautions.

### Materials to have on hand:

- Examples of real-life workplace violence incidents
- Company workplace violence policy

### Items for attendees to consider during talk:

- Is there a specific profile of a person capable of workplace violence?
- Do you know how to respond if you are faced with an attacker or someone who frightens you?
- Do you know how to help prevent or minimize violence in our workplace?

## TALK

It's a sad fact that violence in the workplace has become a serious issue for all kinds of businesses.

Although dramatic, multiple homicide incidents are highly publicized, they represent a very small number of workplace violence incidents. The majority of incidents that employers and workers deal with on a daily basis are cases of assaults, domestic violence, stalking, threats, harassment, and physical and/or emotional abuse that make no headlines.



We can prevent situations that can result in violence by recognizing the circumstances and people most likely to pose a danger and by being alert to personal safety precautions.

Workplace violence can have work-related or personal causes—and attackers can be anybody, such as co-workers, former workers, customers, or a complete stranger. Sometimes job stress can make people desperate to get even because of:

- Job loss or fear of losing a job
- A warning or reprimand from a supervisor
- Not receiving a raise or promotion
- Acts or words considered unfair or hostile
- Tension with coworkers or supervisors that has not been resolved

But there is no profile of a person who will commit violence in the workplace. It has to do with behaviors.

Don't ignore signs and behaviors of violence in others, such as:

- Vowing revenge,
- Intimidating others,
- Talking about weapons,
- Holding grudges,

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Presenter:** \_\_\_\_\_

**Comments:** \_\_\_\_\_

# WORKPLACE VIOLENCE

- Blaming others for problems, *and*
- Having angry outbursts.

Sometimes personal problems can spill over into the workplace. For example:

- An abusive partner or one unable to accept the breakup of a romance or marriage may track an employee to work and trigger a physical attack.
- If there is a grudge or romantic obsession, the employee may be stalked or threatened at work.
- Also, alcohol or drug abuse can make a person who is upset become violent.

So it's important that if you are dealing with domestic violence, please let us know about it.

One of the most important ways to avoid violence is to know how to respond if you are faced with an attacker or someone who frightens you. If you are confronted by an angry coworker, customer, or a stranger:

- Do not argue.
- Do not respond with a threat.
- Do not do anything to increase the person's anger.
- Do remain calm!
- Do decide on a warning signal with members of your department for this purpose.
- Do scream to alert someone if you have to.

- Do anything you can to avoid going somewhere with the attacker.

You must report any violence no matter who is involved—even if it's someone you like. Don't protect an attacker you know; it will leave the opportunity for future violence or implicate you in a crime.

Be responsible for your own safety by taking sensible, everyday precautions to help prevent or minimize any violence.

- Do not let anyone into your workplace.
- Alert security to strangers or anyone who should not be in the workplace, such as a former employee. If there is a particular person you do not want let in to see you at work, tell your supervisor.
- Cooperate with security guards, and know how to contact them. Our security guard's extension number is \_\_\_\_\_.
- Pay attention to the emergency training we provide. Be familiar with ways to exit the building.
- Take any personal or work-related threatening or violent behavior seriously and report it. Don't wait for things to get out of hand.
- Let someone know when you are working overtime, and try not to work alone.
- And finally, if at all possible, don't leave the workplace alone.

# WORKPLACE VIOLENCE:

## WHAT TO DO IN AN ACTIVE SHOOTER SITUATION



This talk discusses how employees should respond during an active shooter situation in the workplace to protect themselves from harm and escape the situation safely.

### Materials to have on hand:

- Map of the facility’s exit routes
- Company workplace violence policy

### Items for attendees to consider during the talk:

- What should you do first during an active shooter situation?
- When is it appropriate to confront an attacker in an active shooter situation?

## TALK

Active shooter events are rare, but they can happen anywhere, including here at work. They happen when someone shoots as many people as possible in a confined and populated area. It happens quickly, often over in less than 15 minutes. That’s sometimes faster than emergency responders or police can get there, so your best chance for survival is to know what to do to keep yourself safe until help arrives.

### Run

Many people think the first action to take during any emergency is to call 911. But during an active shoot-

er event, this should not be your first priority. Rather, your first and best option is to escape to safety.

If you can safely evacuate the area where an active shooter event is occurring, do so quickly and calmly. Do not pause to retrieve your belongings. Encourage others to come with you, but if they are reluctant, do not wait for them. Don’t try to move anyone who has been injured. When you have reached a safe place, that is the time to call 911.

To make sure you can evacuate quickly during an emergency, always be aware of the two closest exits and the routes to reach them. Familiarize yourself with this information in any facility you frequent, both on and off the job.

### Hide

If it is not possible to evacuate during an active shooter situation, the next best option is to find a safe place to hide. A room with a lockable door is usually the best option. Lock the door and blockade it with heavy furniture to prevent an attacker from forcing it open. If there is no such room available, consider hiding in a closet or behind a large object such as a cabinet or desk—any place that offers concealment and protection.

Regardless of where you hide, silence your cell phone and any other possible sources of noise, such as a radio or television. Turn off the lights, and remain quiet. Do not leave your hiding place until you are sure that it is safe to do so.

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# WORKPLACE VIOLENCE

## Fight

If you cannot escape or hide, try to stay calm. If you can access a phone, dial 911 to inform police of the active shooter's location. If you cannot speak, simply leave the line open and allow the dispatcher to listen to the situation.

As a last resort, if your life is in immediate danger, take action and try to disable the active shooter by throwing items, improvising weapons, yelling, and acting as aggressively as possible. Commit to your actions, and defend yourself as well as you can. Remember—your goal is to disrupt or incapacitate the attacker.

## When help arrives

When law enforcement arrives, their primary goal is to stop the active shooter. They will likely not stop to give first aid or help people evacuate until the shooter has been stopped.

Once the threat has been eliminated, police and other emergency responders will be able to help the injured. The faster they can do this, the more lives can be saved, so cooperate with any instructions they give. Remain calm, avoid sudden movements, and keep your hands visible at all times. If you can, provide law enforcement personnel with useful information such as how many shooters are on the premises, where they are located, and the type of weapons they have.

Active shooter events are frightening, but knowing how to respond and having a plan of action are the most important steps you can take to protect yourself.

# WORKPLACE VIOLENCE PREVENTION

## HEALTHCARE AND SOCIAL SERVICES WORKERS



This talk discusses how healthcare workers and facilities can prevent situations that can result in violence by recognizing the circumstances and people most likely to pose a danger and by being alert to personal safety precautions. *Healthcare facilities include home healthcare programs, home-based hospice, drug treatment programs, medical transport services, outpatient medical services, emergency medical services, and correctional and detention treatment centers.*

### Materials to have on hand:

- Examples of real-life workplace violence incidents in healthcare environments
- Your organization’s workplace violence policy

### Items for attendees to consider during the talk:

- Do you know what workplace violence is?
- Are you aware of the risk factors in our industry for work-related assaults?
- Do you know how to help prevent or minimize violence in our facility?

## TALK

**[Modify to your specific facility.]**

Workplace violence is any physical assault, threatening behavior, or verbal abuse that happens in the work setting. That setting can be any location where we are working, including the facility and surrounding buildings, the parking lots, clients’ homes, and traveling to and from work assignments.

Some examples of workplace violence and signals you should watch for include:

- Verbal threats;
- Aggressive behavior, like pushing or shoving;
- Abusive or offensive language or gestures, or other discourteous conduct;
- Disorderly conduct, such as shouting, throwing objects, punching walls, and slamming doors;
- Making false, malicious, or unfounded statements to damage someone’s reputation; *or*
- Bringing weapons into the workplace.

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# WORKPLACE VIOLENCE PREVENTION

These are all forms of workplace violence that must be reported and addressed. Unfortunately, many of us in our field often take the abuse, thinking it's part of our job. Well, it is not!

We face an increased risk of work-related assaults primarily because of violent behavior of our patients, clients, and/or residents. Pain, devastating prognoses, unfamiliar surroundings, mind- and mood-altering medications and drugs, and disease progression can cause agitation and violent behaviors.

While the individual risk factors will vary, some of the risk factors include:

## **[Modify risk factors to your facility.]**

- Working directly with people who have a history of violence, abuse drugs or alcohol, are gang members, and relatives of patients or clients;
- Transporting patients and clients;
- Working alone in a facility or in patients' homes;
- Poor environmental design of the facility that may block your vision or interfere with your escape from a violent incident;
- Poorly lit corridors, rooms, parking lots, and other areas;
- Lack of means of emergency communication;
- Prevalence of firearms, knives, and other weapons among patients and their families and friends;
- Working in neighborhoods with high crime rates;
- Working when understaffed—especially during mealtimes and visiting hours;

- Availability of drugs and money;
- Inadequate security and mental health personnel on-site;
- Long waits for patients or clients and overcrowded, uncomfortable waiting rooms;
- Unrestricted movement of the public in clinics and hospitals; *and*
- The perception many of us have that this type of violence is tolerated and we don't want to report the incident and/or press charges.

If you recognize one of the signals of potential violence that I mentioned earlier, you must maintain behavior that helps diffuse anger:

- Present a calm, caring attitude.
- Don't match the threats.
- Don't give orders.
- Acknowledge the person's feelings (for example, "I know you are frustrated").
- Avoid any behavior that may be interpreted as aggressive (for example, moving rapidly, getting too close, touching, or speaking loudly).

Be alert in every situation and in every room you enter, and don't isolate yourself with a potentially violent person. Always keep an open path for exiting. If you can't defuse the situation, quickly remove yourself from the situation.

And, most importantly, report any violent incidents to your supervisor.



# YOUR RIGHT TO A SAFE WORKPLACE



This talk informs employees of their rights related to safety and health in the workplace.

## Materials to have on hand:

- U.S. Occupational Safety and Health Administration (OSHA) poster
- Copies of written safety programs

## Items for attendees to consider during talk:

- Do you understand your rights relating to workplace safety and health?
- If you notice a hazard in the workplace, what should you do?
- Can the company punish you for reporting unsafe working conditions?

## Talk

No matter where you work or what job you do, you have the right to a safe and healthy workplace. OSHA sets rules and standards that we as an employer must follow to keep you safe. We also have a more general duty to provide a workplace that is free from hazards that could seriously harm you.

These are some of your specific rights related to safety in the workplace:

- You have the right to speak up if you think something is hazardous. If you are asked to do something that seems unsafe or for which you don't have proper training, tell a supervisor or manager. By law, we can't retaliate or punish you for reporting a hazard. Instead, we will work to fix the dangerous conditions and put measures in place to keep you safe.
- You have the right to report injuries and illnesses that you experience on the job. Just like we cannot punish you for reporting a hazard, we can't punish you for reporting an injury. Report work-related injuries and illnesses to *[job title or name]*.
- You have the right to report unsafe working conditions to OSHA. We encourage you to report hazards to us first so that we can fix them, but if you feel that your safety concerns are not being addressed, you can file a complaint with OSHA.
- If we are ever inspected by OSHA, you have the right to talk privately with OSHA inspectors before and after the inspection and participate or have your representative participate in the inspection.
- If we receive citations resulting from an OSHA inspection, you have the right to see copies of the citations.

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**Comments:** \_\_\_\_\_

# YOUR RIGHT TO A SAFE WORKPLACE

- You have the right to be provided with any personal protective equipment (PPE) necessary for your job at no cost to you and to be trained to use it properly.
- You have the right to be trained on how to do your job safely in a language and vocabulary that you can understand. If you have difficulty understanding the training you receive, tell a supervisor.
- You also have the right to know about the chemicals and other hazardous substances you could be exposed to while at work. If you are assigned to a job that could expose you to a hazardous chemical, you will receive training on the hazards of the chemical, how to handle it safely, and any precautions to take while working with it, such as wearing PPE. Safety data sheets (SDSs), which provide detailed information about all the chemicals in use in our workplace, can be found *[location]*. You can review them at any time.
- You have the right to review our company's injury and illness records. A summary of all the injuries and illnesses that our facility experienced over the course of the previous calendar year will be posted *[location]* from February 1 to April 30 each year. You can also review our full logs of workplace injuries and illnesses at any time. If you wish to do so, ask a supervisor.
- You have the right to review the written safety and health programs that we have developed to comply with specific OSHA standards. Examples of these programs include our hazard communication program, emergency action plan, and bloodborne pathogens program. ***[Notice to presenter: Choose examples relevant to your facility if the above do not apply.]***
- You have the right to know the results of any workplace monitoring we conduct and get copies of your medical records. For example, if we test your hearing, you have the right to know the results of those tests. If we test the facility for the presence of substances, such as lead or asbestos, you have the right to know the results of those tests, as well.
- If you believe you have been retaliated against for exercising any of these rights, you have the right to file a complaint with OSHA within 30 days.

A poster covering these basic safety rights is posted in our facility at *[location]* for your reference.

So remember, if you see something hazardous at work or want to know more about our safety programs, speak up! By doing so, you will protect yourself and help make the workplace safer for everyone.