Uneven Terrain

WHAT'S AT STAKE?

Uneven ground can introduce several avoidable hazards, such as sloping slippery surfaces, ruts and furrows, and the risk of penetrating into voids hidden below the ground.

Each year, health and safety statistics continue to rank slips, trips and falls as being among the main causes of injury in workplaces

WHAT'S THE DANGER?

Slips, trips, and falls account for the majority of general industry incidents each year, including accidental deaths. The cost is significant, running businesses billion per year in workers' compensation and medical costs.

These accidents are attributed to a wide variety of causes, from ice and wet spots to loose flooring, clutter, and electrical cords. But one slip, trip, and fall hazard is too often overlooked: **uneven ground conditions.**

The workers most at risk for slips, trips, and falls due to uneven ground surfaces might be those who are often around unpaved ground, which can be unpredictable, or concrete, which is prone to cracking and holes.

Construction workers, highway maintenance workers, landscapers, and even postal workers all fall into this category. But, of course, many other workers must deal with uneven terrain and walking surfaces at some point throughout their shifts.

Workers face other dangers that are aligned with uneven terrain:

- **Curbs**

- **Milled edges**
- **Tools on the ground**
- **Raised manholes**
- **Dismounting Equipment** – Quickly jumping off a pick-up truck, or even spinning when you only have one ladder rung remaining on a roller can be enough to twist or roll your ankle.
- **Excavations** – Beware of climbing in and out of excavations, in particular, where the excavation is only 1-3’ deep.
- **String-line** – Tripping hazard
- **Concrete structures**

HOW TO PROTECT YOURSELF

Experts suggest that variation in a walking surface of as little as a quarter of an inch is enough to cause a trip and fall. That’s about the thickness of a pencil. And while it’s not always an easy issue to correct, there are a few key things employers can do to mitigate the safety risk that uneven surfaces pose.

1. **Conduct Regular Inspections to Identify (and Fix) Uneven Surfaces**

Whether indoors or outdoors, it’s important to regularly inspect and assess the ground conditions of your worksite. Identify any and all places where there is an uneven walking surface – even if it’s only a quarter or half an inch – and decide whether each one is fixable.

2. **Well Lit Work Areas**

Trip and fall risks are amplified when workers aren’t able to see well. Keeping work areas lit is critical for ensuring that any safety hazards are visible. Indoors, this means changing burnt out lightbulbs as soon as you notice them and using lamps in areas where overhead lighting is insufficient.

Outdoors

Outdoor surfaces can pose unique challenges that require creative

solutions. One fix might be as simple as using a shovel to clear or pack down a raised pile of dirt or snow, or to fill a hole. In muddy spots where ground is both uneven and unpredictable, covering the area with sheets of plywood can help provide a sturdy, even walking surface to avoid trips.

Early morning and later evening outdoor work often requires additional lighting, since the sun isn't up. There are many different options when it comes to portable work lights, including strings of lights and those that are on tripods. Some require electricity and others run on rechargeable batteries, so it's important to prepare properly for the environment you'll be in.

3. **Slow Down**

The majority of trips and falls are preventable by simply slowing down and keeping an eye on the ground conditions in front of you. Tread carefully, and bring any concerns about the ground condition to the attention of a supervisor immediately.

4. **Use Signs (When Appropriate)**

Whenever possible, you should aim to eliminate a hazard. However, when that isn't an option, clearly marked signs can help draw employees' attention to a particularly risky area, ensuring they use more caution when walking and working.

5. **Delay Work When Necessary**

If you spot uneven (and unsafe) terrain and there is no fix available, it's perfectly acceptable to delay work. Mud, ice, and snow in particular are difficult to address on the spot and it's not always possible to work around them in a safe manner. A better option is to amend the work schedule and either return with a game plan to deal with the specific hazard or wait until it's resolved (e.g., the mud hardens, snow melts).

FINAL WORD

When you encounter an uneven ground surface, the best course of action is to be proactive and address it as best as possible.

Don’t leave it for someone else to deal with – or for someone else to get injured by. Many uneven surfaces are made safer through simple fixes, and it’s always worth it in the end.

Chain and Sling Safety

WHAT’S AT STAKE?

The slings that cranes use to hold suspended loads are a key element in this kind of material handling.

The size and type of load and the environmental conditions in the work area determines the type of sling to use.

WHAT’S THE DANGER?

For cranes and slings to perform properly, they have to be in top condition. So, good inspection and maintenance are especially important. A substandard or faulty chain or sling can injure or kill. It is critical that chains and slings conform to specifications at all times.

GENERAL HAZARDS

There are two main hazards when we use cranes and slings:

1. Dropping the load.
2. Hitting someone with the load or the equipment.

Avoid damaging the load or the equipment itself. That can be very costly both in terms of equipment repair and replacement and in ability to meet our productivity and quality goals.

These hazards are present any time you skip a step or ignore a problem at any point in the inspection, maintenance and use of this equipment. To avoid danger to the operator and others in the crane’s vicinity, understand the safety procedures and follow them closely.

Identify Hazards

The best way to identify a crane and sling hazard is to keep your eyes open. Anyone who works around an operating crane has to be constantly aware of its movements. Stay out of the way of the machine and its moving parts. If the operator sounds the crane’s warning signal, get out of the way fast. It’s also a good idea to become familiar with the crane signalman’s hand signals. They’re much like the ones used by traffic cops and can alert you to the crane’s movement.

HOW TO PROTECT YOURSELF

All slings (new, altered, modified, or repaired) should be inspected by a competent person before they are used in the workplace to make sure they are built to specifications, not damaged, and will be appropriate for the work being performed. For record keeping purposes it is useful if each chain has a metal tag with an identification number and load limit information. Information about the chain length and other characteristics and an inspection schedule should be recorded in a log book.

A competent person must also inspect chain slings periodically, and at least once a year. Inspection frequency is based on how often the sling is used, the types of lifts being performed, the conditions in which the sling is being used, and past experience with service life of similar slings and usage. If the sling is used in more severe conditions, then the inspection should be performed every 3 months. Inspections must be recorded.

Use chain slings safely

- Always know how to properly use the equipment, slinging procedures before attempting the lift operation.

- Inspect the slings and accessories before use for any defects.
- Replace broken safety latches.
- Find out load weight before lifting. Do not exceed rated load of the sling.
- Check whether chain slings fit freely. Do not force, hammer or wedge chain slings or fittings into position.
- Keep hands and fingers from between load and chain when tensioning slings and when landing loads.
- Ensure the load is free to be lifted.
- Make a trial lift and trial lower to ensure the load is balanced, stable and secure.
- Balance the load to avoid overstress on one sling arm or the load slipping free.
- Lower the working load limit if severe impact may occur.
- Pad sharp corners to prevent bending links and to protect the load.
- Position hooks of multi-leg slings facing outward from the load.
- Cordon off the area.
- Reduce the load limit when using chain in temperatures above 425°C (800°F).
- Store chain sling arms on racks in assigned areas and not lying on the ground. The storage area should be dry, clean and free of any contaminants which may harm the sling.

Care

- Chain requires careful storage and regular maintenance.
- Store chain slings by hanging.
- Oil chains to avoid corrosion before prolonged storage.
- Do not heat alloy chain as this will alter its molecular structure and strength.

USE

To protect both operators and materials, observe these precautions when using chain slings:

- Before each use, inspect chain and attachments for damage.
- Do not exceed working load limit. Any of the following factors can reduce the working load limit of the sling:
- Shock loading can produce dangerous overloading.
- Angle of inclination of sling in relation to the load will affect the working load limit of the sling. As the angle decreases the force exerted by the load increases.
- Twisting, knots or kinks subject links to unusual stress decreasing the strength of the sling.
- Using slings for purposes other than that which they are designed for can reduce the strength of the sling.
- Free chain of all twists, knots and kinks
- Properly load hooks so that point loading of hook does not occur.
- Hook latches must never support load.
- Avoid sudden jerks when lifting or lowering loads
- Balance all loads: avoid off center loading that could cause load to shift during lift.
- Pad around sharp and square corners.
- Do not drop loads on chain or attachments.
- Block under all loads to avoid crushing chain.
- Match all attachments (hooks, rings, etc.) to working load limit of chain.
- Never force or hammer hooks or chain into position.
- Do not use in acid solutions
- Clean chain slings regularly as dirt and grit can cause wear at link bearing points
- For overhead lifting use only grade 80 or higher alloy chain.

CHAIN AND SLING OVERVIEW

The following is a point key point **“Hand Book”** that users toil and personnel who toil in the chain and sling workplace.

DO’s. These are preventative and precautionary guidelines that must be strictly adhered to.

DO´s

- Always fasten the sling or chain to a rigid, fixed point on the load. In some cases, temporary eye hooks may be fastened to the load.
- While hoisting and carrying a load, always try to ensure it is centered. This will help minimize an awkward center of gravity or shift of the load which could increase strain on the chain or sling.
- Always ensure hooks have a clasp to avoid inadvertent slipping of the hook.
- Inspect the condition of the chains and slings for link damage, cracking, separation, fraying, etc. Some slings are designed so that any exposed red material means the sling should be replaced.
- Understand the rated load for the chain, sling, or hook. Hooks are usually stamped accordingly.
- If you cannot read the rated tag on a sling, take the sling out of service.
- If the chain does not have an affixed tag, remove it from service to be inspected and tagged.
- Make sure there is a routine inspection for preventative maintenance for the chains and slings.

2 Critical DONT’s

- NEVER stand directly underneath a load- You cannot always trust that the sling or chain will support a load.
- NEVER modify or improperly use chains, slings, or hooks; use them only for their intended purpose.

FINAL WORD

Apart from a careful and competent inspection process of the chain and sling infrastructure, the working load weight limit must be not be exceeded in any circumstances.

Cut-off Saw Meeting Kit

WHAT’S AT STAKE?

It is important to read fully to understand the contents of the owner’s manual about cut-off saws which are dangerous high-speed cutting tools.

WHAT’S THE DANGER?

An abrasive saw, also known as a cut-off saw or metal chop saw, is a power tool which is typically used to cut hard materials, such as metals. The cutting action is performed by an abrasive disc, similar to a thin grinding wheel. The saw generally has a built-in vise or other clamping arrangement, and has the cutting wheel and motor mounted on a pivoting arm attached to a fixed base plate.

Risks

- Inhalation
- Eye Injury
- Trauma (Impact & Cutting)
- Hand/Foot Injury
- Fire
- Electrical Shock

Before starting to cut with a blade, carefully look that it’s not damaged. Damaged blades can break during cutting, ejecting hot steel pieces. Check that the blade isn’t missing segments, that it isn’t cracked, and that it doesn’t appear to have been overheated. One way to tell if a blade is cracked is to bang it with a piece of wood to see if it rings. Inspect the blade regularly to guarantee it remains in good condition.

HOW TO PROTECT YOURSELF

Before using your cut-off saw, make a quick inspection.

- Check the machine for loose or missing fasteners.
- Make sure to replace and/or tighten all screws and bolts.
- Check the throttle trigger, trigger interlock, and stop switch to make sure they are functioning properly.
- Inspect the wheel guard to make sure it is properly mounter and doesn’t have any cracks or other damage.
- Never alter your cutoff machine’s blade guard.
- Inspect the wheel that you are using.
- Make sure it is the proper wheel for the work you are doing.
- Look for: missing segments, cracks in the blade’s core, water saturation of abrasive wheels.
- Make sure that your blade flanges are in good condition, and make sure the blade is properly mounted on the saw.
- Make sure that your belt has been properly tensioned.

While Operating:

- Hold the cut-off machine firmly with both hands.
- Maintain good balance and stable footing.
- Do not stand directly behind the plane of the blade.
- Allow the blade to do the grinding, do not force the blade into the material.
- Do not attempt to change the direction of the cut while the blade is in the cut, this can cause the blade to pinch and kick back.
- Avoid cutting with the upper quadrant of the blade, this will result in higher chance of kickback.
- Do not cut above your head.

WARNING

Never cut any material containing asbestos without using a respirator specifically approved for that purpose.

- Some materials throw off dangerous sparks when cut. You

should wear non-flammable clothing free of fuel, oil, or grease under these conditions.
- Check the saw for broken, loose, or damaged parts. Repair or replace before using.
- Use only cutting wheels approved by the manufacturer. Unapproved, cracked, or warped wheels may shatter or break, exposing the operator to serious injury or death.
- Adjust the wheel guard to deflect sparks, dust, and material away from the operator and flammable materials.
- Be sure the wheel does not turn while the engine is idling. Adjust the carburetor if necessary.
- Fuel the engine in a well-ventilated outdoor area. Engine must be shut off and cool. Do not smoke while fueling and wipe off spilled fuel immediately.

AFTER USING THE SAW:

- Remove the cutting wheel when transporting the saw.
- Secure the saw to prevent fuel spillage and damage to the unit.
- Store the saw, with cutting wheel removed, safely away from children.

THE DON'T'S

1. Don't allow bystanders to stand in the work area while using a cut-off saw.
2. Don't cut in the vicinity of anything that is flammable. Most cutting produces sparks.
3. Don't operate the cut-off saw without the wheel guard in place.
4. Don't exceed the maximum operating speed marked on the wheel.
5. Don't cock, jam or wedge the wheel into a cut.
6. Don't grind on the side of the wheel.
7. Don't operate a cut-off saw that is damaged, improperly adjusted or improperly assembled.
8. Don't use water on a dry cutting wheel, or sprinkle the blade periodically with water. (Sudden temperature changes

will weaken the wheel)
9. Never cut with the top or front of the blade
10. Never cut above shoulder height.
11. Make sure you can contact people in the event of an incident.

FINAL WORD

Do not underestimate the power and potential damage powered tools and machines can wreck on people by respecting the power, much work, progress and positive results will occur.

Roller Safety

WHAT'S AT STAKE?

Workers who operate or work around roller/compactors are at risk of injury from a machine rollover or being struck by the machine or its components. Injuries and deaths can be prevented through wider use of rollover protective structures (ROPS) and seat belts on roller/compactors, training, establishing and adhering to safe work practices and procedures, and using appropriate personal protective equipment.

No cost is greater than the loss of human life, especially considering these accidents are preventable. The following reminders about **compaction roller safety** are just as applicable to any other construction equipment.

Newer compaction rollers are designed to be more stable. They have a lower center of gravity, wider base and low speed options. But when your jobsite terrain is hilly or you're working an embankment, every machine is at risk of rolling over.

WHAT’S THE DANGER?

The two common causes of injury are machine rollovers and being stuck by the moving machine.

Compaction rollers should have two critical safety features

ROPS. Do not operate a machine that isn’t equipped with a rollover protection structure. This is the only thing that will keep the operator from getting crushed if the equipment does roll over.

Reliable seat belts. Always wear your seat belt – it’s the only thing that will keep the operator in place within the ROPS in the event of a rollover. Do not operate a machine with damaged or worn seat belts – replace them first. Make sure seat belts are adequately sized, too, because if they don’t fit properly they won’t work.

HOW TO PROTECT YOURSELF

Safety while in motion

Always wear your hard hat, when inside an enclosed cab. Even when you’re wearing your seat belt, it’s easy to hit your head on some hard surface in an accident.

If you’re working near a slope, operate the machine so your seat is parallel to the edge. With the end constantly in sight, you can stay far enough away to prevent the roller or wheels from slipping onto the slope.

If you get too close for some reason, immediately stop the machine and set the parking brake. Dismount so you can assess whether it will be safer to move forward or backward to get back onto the flat surface.

If you’re working on a slope, always drive the machine up or down, never along the side of the hill. Angled operation makes the machine more vulnerable to sliding or tipping.

When traveling on a grade, use a low speed and do not change gears.

Never park the machine on sloping ground unless you have no choice. If you must park near a slope, at least be sure the footing is firm so the equipment won’t slide.

Never exit the machine without first setting the parking brake.

What to do if machine tips over

There are several things you can do to reduce your risk of injury. Most important is to stay in place – trying to jump out of the cab is the riskiest thing Roller Safety you can do because it increases the chance you will get caught under the ROPS. **Instead, prepare for the impact by:**

- Pull your elbows and knees in close to your body.
- Holding on tightly.
- Leaning uphill (away from the impact).

Employers, manufacturers, and rental establishments should take the following protective steps for workers from injury while working with ride-on roller/compactors.

1. **Site Set-Up**

- Develop site-specific safety plans for all aspects and stages of the job. Have plans analyzed by a qualified person to determine the safest possible methods to perform the work.
- Minimize the presence of workers on foot near machinery.
- Provide all workers on-site with training in sitespecific safety procedures and in hazards they may encounter at the site.
- Use barriers to separate workers, pedestrians, and vehicles from moving equipment.
- Use visual aids to identify edges.
- Continually evaluate safety plans to address changing conditions at the worksite.
- Provide appropriate personal protective equipment (PPE) such

as high-visibility reflective vests and hard hats, and ensure that workers use and maintain them.
- Use machinery equipped with ROPS and seatbelts, and ensure their use. Replace seatbelts if they are damaged, worn, or too small.
- Contact equipment manufacturers or equipment dealers to determine whether approved retrofit ROPS and seatbelts are available for machinery without these safety features.
- Ensure that machines are not operated on grades steeper than those specified by the manufacturer.
- Establish a documented maintenance program for all machinery.
- Replace worn or damaged warning labels on machinery.
- Ensure that operators' manuals are present on all machinery or available to the operator.
- Make sure that all the manufacturers' safety features are operational.
- Ensure that all site workers comply with all applicable requirements of machine warning labels and operator manuals.

2. **Equipment Operator**

- Take training in safety procedures at the site and in the proper use of the equipment. Follow manufacturers' specifications and recommendations.
- Check work areas for workers on foot in the machine's path before moving the machine or changing the direction of travel.
- Use spotters or barriers where necessary. Be aware of equipment blind spots.
- Be aware of the hazards associated with operating machinery on non-level surfaces. A competent person should continuously evaluate grades on which machinery is being operated to prevent rollover.
- Do not operate machinery without the ROPS and seat belts supplied by the manufacturer. Do not remove the ROPS or seatbelts.
- When capable, ensure that when rolling edges, the seat is positioned parallel to the edge to ensure visibility when

working in close proximity to leading edges.

- Wear the seat belt and do not jump from the equipment in the event of a rollover. Keep knees and elbows close to the body, hold on firmly, and lean away from the impact to avoid being crushed by the ROPS.
- Conduct daily or pre-shift visual and operational checks on all equipment systems and operating controls before working the machine.
- Make sure that all the manufacturers' safety features are operational.
- Comply with all warning labels.

3. **Other Site Workers**

- Take training to recognize and avoid unsafe conditions and follow required safe work practices that apply to the work environment.
- Be aware of the hazards and blind spots associated with working near moving equipment.
- Before each work shift begins, review and con- firm communications signals to be used between equipment operators and workers on foot.
- Do not approach machinery without first signaling the operator to shut down the equipment and receiving acknowledgment from the operator.
- Do not ride as a passenger on rollers or similar mobile equipment.
- Do not rest or lean against any equipment.
- Wear PPE that is provided, such as high visibility reflective vests and hard hats, to increase visibility. Equipment Manufacturers
- Ensure that ROPS and seatbelts installed on a ride-on roller/compactor meet specific Society of Automotive Engineers (SAE) minimum levels of performance [SAE 1994, SAE 1997].
- Consider equipping machinery such as rollers that must change direction frequently with sensors to detect the presence of persons in the machine's path. This would provide site workers with an additional safety control.

- Clearly identify and label all machine controls.
- Consider providing multilingual warning labels and operator manuals.

4. **Equipment Rental Establishments**

- Include only ROPS- and seatbelt-equipped machines in fleet selection.
- Establish a documented preventive maintenance program for machinery.
- Provide training for customers upon delivery.
- Provide customers with machine-specific safety brochures.
- Ensure that operators' manuals are located on machines or are available to operators.

FINAL WORD

Operators simply must be more vigilant and more careful in order to protect themselves. Here's how you – and they – can remain productive while focusing on jobsite safety.

Avoiding Heat Stress

WHAT'S AT STAKE?

Any worker exposed to hot and humid conditions is at risk of heat illness, especially those doing heavy work tasks or using bulky protective clothing and equipment. Some workers might be at greater risk than others if they have not built up a tolerance to hot conditions, including new workers, temporary workers, or those returning to work after a week or more off. All workers are at risk during a heat wave.

WHAT'S THE DANGER?

Workers at risk of heat stress include outdoor workers and workers in hot environments such as firefighters, bakery workers, farmers, construction workers, miners, boiler room workers, factory workers, and others. Workers at greater risk of heat stress include those who are 65 years of age or older, are overweight, have heart disease or high blood pressure, or take medications that may be affected by extreme heat.

The main heat related illnesses are heat rash, heat stroke, heat exhaustion, and heat cramps.

Heat Rash. Heat rash is generally misunderstood to be an affliction for babies, but heat rash can affect adults, too, especially during hot, humid weather. Heat rash develops when blocked pores, or sweat ducts, trap perspiration under your skin.

Symptoms. Adults usually develop heat rash in skin folds where clothing causes friction. Symptoms include superficial blisters and can even present as deep, red lumps. Some forms of heat rash can feel extremely itchy.

Heat Cramps. Heat cramps are painful, brief muscle cramps where the muscles may spasm or jerk involuntarily. These cramps can begin during the activity in the heat, or may start several hours later. Muscles that are most susceptible to heat cramps are those that are usually fatigued by heavy work such as calves, thighs and shoulders.

The exact cause of heat cramps is unknown, but medical professionals are able to boil it down to a chemical imbalance in the muscles—usually related to electrolytes. Electrolytes include various essential minerals, such as sodium, potassium, calcium and magnesium. They are involved in the chemical reactions of your muscles, and an imbalance can cause issues.

Symptoms. Someone who is experiencing heat cramps will feel muscle spasms that are painful, involuntary, brief, intermittent and self-limited (meaning, they go away on their own).

Heat Exhaustion. Heat exhaustion is a result of your body overheating and can cause heavy sweating, rapid pulse, dizziness and low blood pressure upon standing. Causes of heat exhaustion include exposure to high temperatures, particularly when combined with high humidity and vigorous physical activity.

Symptoms. Without prompt treatment, heat exhaustion can quickly lead to heat stroke, a life-threatening condition, so it is important to know the signs of someone who is likely suffering from heat exhaustion. Signs and symptoms may develop suddenly or over time and include cool, moist skin with goose bumps in the heat, heavy sweating, faintness, dizziness, fatigue, weak and rapid pulse, low blood pressure upon standing, headache, nausea and muscle cramps.

Heat Stroke. Heat stroke is the most serious form of heat injury and can occur if your body temperature rises to 104 Fahrenheit or higher. Heat stroke requires emergency treatment, and if left untreated, can quickly damage the brain, heart, kidneys and muscles. Damage to internal organs worsens the longer treatment is delayed, increasing your risk of serious complications or death.

While anyone can develop heat stroke, there are several factors that can increase the risk of illness such as age, exertion in hot weather, a lack of cool air or air conditioning, certain medications and certain health conditions.

Symptoms. Heat stroke symptoms include high body temperature, altered mental state or behavior, alteration in sweating, nausea and vomiting, flushed skin, rapid breathing, racing heart rate and headache.

Causes of Heat-Related illnesses

Dehydration – to keep healthy, our body temperature needs to stay around 37°C. The body cools itself by sweating, which normally accounts for 70 to 80 per cent of the body’s heat loss. If a person becomes dehydrated, they don’t sweat as much and their body temperature keeps rising. Dehydration may happen after strenuous exercise (especially in hot weather), severe diarrhea or vomiting,

drinking too much alcohol, taking certain medications (for example, diuretics) and not drinking enough water.

Lack of airflow – working in hot, poorly ventilated or confined areas.

Sun exposure – especially on hot days, between 11am and 3pm.

Hot and crowded conditions – people attending large events (concerts, dance parties or sporting events) in hot or crowded conditions may also experience heat stress that can result in illness.

Bushfires – exposure to radiant heat from bushfires can cause rapid dehydration and heat-related illness. Bushfires usually occur when the temperature is high, which adds to the risk.

Some drugs, such as ecstasy and speed, also raise the body's temperature, which can lead to heat stress.

HOW TO PROTECT YOURSELF

TREATMENT

Heat Rash

- Heat rash will usually clear on its own by cooling the skin and avoiding exposure to the heat that caused it. If symptoms such as increased pain, swelling, redness, or warmth extend for longer than a few days reach out to a doctor for specialized treatment.

Heat Cramps

- To treat heat cramps, begin with rest and a sports drink that includes electrolytes and salt or drink cool water. You can make your own salt solution by mixing a quarter to a half teaspoon of salt into a quart of water.

Usually, heat cramps will dissipate on their own, but if you begin to see conditions worsen and the patient becomes dizzy, nauseous,

experiences shortness of breath and a fast heartbeat, you should see a doctor. Heat cramps often accompany a more serious heat-related illness: heat exhaustion.

Heat Exhaustion

- If you see someone who might be experiencing heat exhaustion, instruct them to halt all activity and rest, move to a cooler place and drink cool water or a sports drink.

A doctor should be contacted if signs and symptoms worsen or if they don’t improve within one hour. A patient will need immediate cooling and urgent medical attention if their core body temperature reaches 104 Fahrenheit or higher. Those who exhibit confusion, agitation, loses consciousness or is unable to drink must also be taken to see a medical professional as soon as possible.

Heat Stroke

- Someone who is suffering from a heat stroke must take immediate action to cool down their body while waiting for emergency treatment. To do this, move to shade or indoors, remove excess clothing and cool with whatever means available (put in a cool tub of water or a cool shower, spray with a garden hose, sponge with cool water, fan while misting with cool water, or place ice packs or cold, wet towels on the person’s head, neck, armpits and groin).

Employer Responsibility

Prevention of heat stress in workers is important. Employers should provide training to workers so they understand what heat stress is, how it affects their health and safety, and how it can be prevented.

Heat can cause more than just discomfort. Exposure to high heat and high humidity can be life threatening. Employers should make sure workers know the signs, symptoms and appropriate first-aid procedures for serious heat illnesses.

Preventing Heat Illness: What employers should do?

Provide adequate amount of drinking water. – As much as one quart per worker per hour. Provide **EASY** access to this water!! Providing liquids like Gatorade, with electrolytes in it, is also important to replace what is lost through sweat.

Provide regular rest breaks or rest periods. Rest breaks should be taken in a cool area. Employers should provide rest breaks in accordance with how hot the work environment is, and how heavy the work load. Workers in hotter work environments and with heavier workloads should be provided with more frequent rest breaks.

Increase the air circulation. Use air conditioning, fans and general ventilation to cool down the work area and cool off workers.

Alert workers to the early signs of heat-related illness. Allow workers who experience these early signs to take a break. Heat-related illnesses can come on very rapidly and can be fatal.

New, or acclimatized workers should not be allowed to work full-time, right away, in a high heat area. It takes about one week for the body to adjust to working in the heat.

OSHA has the following recommendations to prevent the ill – effects of heat stress.

- Protect new workers during the first two weeks on the job. Make sure they take plenty of rest breaks and drink enough fluids.
- Never leave workers alone when they complain of heat-related symptoms. Their conditions can worsen quickly! Take them to a cool location and provide first aid. Even a brief delay in first aid can make the difference between life and death.
- Temperatures do not have to be extremely hot to cause heat stroke in workers. Remember, total heat stress is a combination of environmental heat and workload. Air

temperatures in the 80s (°F) are high enough to result in a Heat Index value of 90°F. They are also high enough to kill some workers.

- Even experienced workers are vulnerable to heat-related illness when the weather becomes warmer. Throughout the first week of warmer conditions, treat all workers as if they need to adapt to working in the heat. Take extra precautions to protect them from heat-related illnesses.
- Make sure workers drink enough fluids during warm or hot weather.
- Heat-related illness can occur indoors. The risk is not limited to outdoor workers.
- Some types of work clothing prevent the release of heat from the body. Environmental heat measurements underestimate the risk of heat-related illness in these situations.
- Workers are at risk of heat-related illness when they are reassigned to warmer job tasks.

Overview – Specific Steps for Employers to reduce Heat Hazards

- Let workers drink as much water as they want whenever they want while working in hot conditions;
- Schedule short shifts and frequent breaks to limit how long workers exert themselves in the heat; and
- Develop a heat stress program that includes specific procedures to be followed for heat-related emergency situations.
- Conduct heat stress assessments to determine workers' risk of hazardous exposure.
- Implement engineering and administrative controls.

FINAL WORD

Every minute's delay in cooling a person with heatstroke increases the likelihood of permanent injury or death. Apply first aid and seek medical assistance immediately if you, or someone you are with, shows any sign of heat exhaustion or heatstroke.

Cold Weather Machines

WHAT’S AT STAKE?

Before you get caught in the winter cold, winterize your equipment to protect it from damage. Any equipment being stored for the season should be prepared and protected, or it may not start up again in the spring.

WHAT’S THE DANGER?

When Temperatures Drop

Freezing air can fundamentally alter the efficiency of lubricants and how machinery operates. However, winter does not need to unnecessarily slow or delay operations – or compromise the safety of your operators. Take necessary precautions to prevent the negative effects of cold temperature protect your machines and equipment. Check the owner’s manual for each of your machines and contact your local dealer before making any modifications to a machine’s regular maintenance practices.

Maintain in Optimal Condition

Engine

- Take extra care when fuelling machines and equipment to prevent water and other particles from getting into the tank.
- Check the fuel, air, and hydraulic filters regularly so equipment can start easily.

Battery

- Be cautious when using jumper cables, especially during the

winter. Incorrect use (reverse polarization hookup) could potentially result in extensive damage to an electrical system.
- Avoid charging a frozen battery to prevent battery explosion.

Starter

- Handling, using, and storing highly volatile ether starting aids in pressurized cans is a major safety concern. If handled improperly, the engine may seize, or crank/bend the valve stems.
- Safety measures are crucial, especially when two or more workers are involved when starting a machine. Before proceeding to jump-start any machinery, assign each person a specific role and discuss the entire process in detail beforehand.

Machine Warm-Up

- Freezing temperatures can make hoses and wires brittle. Take time to warm up machines before operating.
- Warm hydraulics quickly by holding the control valve to open the relief valve.

Operation

- Before winter arrives, inspect atmospheric systems (defrosting devices and operator compartment heaters) to ensure they are in good working condition. This practice helps prevent unexpected problems that can cause operational delays.
- Cab or machine windows can easily fog up and reduce visibility. Clean windows thoroughly so the driver can spot nearby obstacles, machines, and other workers.
- Frozen ground makes work difficult and sometimes impossible. Wheels can easily slip on ice and snow, causing collisions with other equipment and structures – and endangering anyone in the vicinity.
- Maintain control of each machine by reducing ground speed and lessening the shock of impact on brittle ground contact

surfaces.

Winter puts more strain on every machine. Batteries work harder to start and provide power. Preseason maintenance is imperative for optimal performance. Make sure to regularly inspect your machinery to detect damage, leaks, and other problems. Fix them immediately and avoid downtime. Also, check the auxiliary hydraulic connections, hoses, belts, attachment connections, and fluid levels for any signs of damage.

HOW TO PROTECT YOURSELF

Daily Inspections

Cold weather can take a toll on even the toughest equipment. It is essential to perform daily inspections of all equipment on your site before use, so you can catch any problems quickly before they turn into something more serious. Check all parts of your equipment including:

- Battery
- Tire pressure and tread
- Fluid levels and flow
- Fuel levels
- Build-up on filters
- Lubrication of engine parts, joints and hinges
- Headlights
- Windshield wipers
- Heaters and defrosters
- Brakes
- Body surface and glass
- Undercarriage

1. **Battery Health**

In cold weather, batteries do not perform as efficiently as they normally do. Batteries will have less pulling voltage in winter, meaning more pressure on the engine during start-up. In weather below freezing, the pressure on the engine can increase by 50 percent. When batteries are weakened by cold conditions, machines

may have issues starting or maintaining power. Before each use, be sure that the battery is fully charged. If you need to charge or jump a battery, never do so when the battery is frozen. Allow it to warm up to at least 40 degrees Fahrenheit before charging it. Charging a battery when it is frozen may cause the battery to explode.

Batteries will also charge more slowly in the winter and may die more quickly. Before use, check that there are no signs of corrosion on the cables or connectors of the battery. You should also look out for signs that your machine's battery may be dying, such as:

- Slow engine crank
- Corrosion on battery posts or cables
- Issues with other electrical components in the machine
- Battery not holding a charge

2. **Tire Inflation**

Check your tire pressure before using a machine to ensure that tires stay fully inflated. Cold weather also makes it more difficult for tires to maintain pressure. Under-inflated tires lead to worse fuel efficiency which means higher operating costs. If tires have low pressure, they will also wear more easily and may be more likely to burst due to brittleness in the winter. When inflating tires, do so in a heated area. Using dry nitrogen in tires can also help eliminate ice crystals. When ice crystals occur, they cause the valve stem to stay open which further increases the deflation rate of the tires.

3. **Tire Tread**

Equipment and ice It is extremely important for safe operation of machines in winter that tires have good tread. Even large equipment can slide on ice or snow, which can lead to accidents or injury. Make sure tire tread is appropriate and replace tires if they become too worn down for safe operation in slippery conditions.

4. **Fluids**

Even when you are using the proper winter fluids in your equipment, extremely cold weather can cause fluids to thicken which increases the pressure on seals and hoses. If fluids freeze or become too thick, they can cause hoses, which are already more brittle in cold weather, to burst. When inspecting fluids, check fluid levels and viscosity by checking the dipstick. If the fluid drips, it is fluid enough. You should also look for signs of leaks that could indicate cracks in seals or hoses.

As part of the winterizing process, you should change the oil in your machine to a synthetic base multi-grade oil so that it will flow better in colder temperatures, posing less risk of solidifying and clogging filters.

5. **Filter Replacement**

Be sure to check all filters as dirty or clogged filters can impact a machine's ability to start or cause it to lose power in the middle of a job. If a machine loses power during operation in the winter, it may be stuck in ice and snow that would lead to further damage to the machine.

6. **Fuel Filters And Fuel Gelling**

Diesel particulate filters are extremely important to check carefully in the winter as colder temperatures will affect the emissions system of your machines. If there is any free water in your fuel tank, it can freeze and create ice crystals. These crystals can cause wear on your fuel systems or clog filters and pipes. To reduce the potential for free water to collect in your fuel tank, top off the fuel tank daily to prevent condensation from building in the tank.

- Fuel Gelling

Another major cause of clogged filters in the winter is fuel gelling. Gelling occurs when compounds in the fuel reach their freezing point then turn into thick, waxy solids. These soft solids can coat and block filters. Diesel fuel is a mixture of around 250 chemicals, most of which are hydrocarbons. Each hydrocarbon has a different freezing point, but a good winter

diesel will contain a mixture of hydrocarbons with lower freezing points. Be sure your winter diesel is number 1 diesel (1–D) or a mixture of 1-D and 2-D.

- Cold Filter Plugging Point (CFPP)

You should also be aware of the Cold Filter Plugging Point, or CFPP, of your fuel. The CFPP is the temperature at which wax will form crystals that drop out of the diesel and clog fuel filters. If operating your machines in temperatures lower than the CFPP, be sure to allow proper warm-up time and avoid storing your equipment overnight in cold conditions.

- Biodiesel

If you are using biodiesel in your machines, you face an additional risk of glycerin solids forming in your fuel tanks. Glycerin is a byproduct created in biodiesel production that is removed from the fuel before use. However, even a small amount of glycerin left in biodiesel can cause major issues for your equipment operation in winter. When glycerin freezes, it clogs fuel filters just as gelled fuel does, however, glycerin will not become liquid again once the temperature rises above its freezing point. Instead, the glycerin will remain solid in your fuel tank, preventing fuel from flowing even after it warms up.

- Build-Up

When gelling or glycerin build-up occurs on a fuel filter, it can be difficult to notice if you are not looking for it. Soft solids will form a waxy coating over the filter and can sometimes collect in the filter can, but the filter itself may appear clean. Be sure to look out for waxy build-up on your diesel fuel filters and change filters before clogged fuel flow causes your machines to break down or be unable to start in the morning.

7. **Fuel Levels**

It is best practice to top off your fuel every night so moisture will not collect in the tank. This will prevent the formation of ice crystals inside of your machine. It is also best to empty the

water separator daily so it does not have a chance to freeze. Your fuel rating should be 40 Cetane or higher in the winter and 50 Cetane or higher when temperatures go below zero.

8. **Lubrication**

Any moving parts of your vehicle should remain properly lubricated as cold weather can cause parts to freeze or stick. This can halt processes and cause damage to the machine if parts jam during operation. Check all joints and hinges daily for proper lubrication.

9. **Lights and Wipers**

Checking that all lights and wipers on equipment are functional becomes even more important in the winter. Winter months tend to bring lower light levels, more condensation and more precipitation. In these poor-visibility conditions, it is essential that lights are kept clean and bad headlights are replaced immediately.

10. **Heaters and Defrosters**

For the comfort and safety of your employees, the defrosters and heaters in all machine cabs must be functional. Defrosters ensure that visibility can be maintained even in poor winter weather. Maintaining a comfortable temperature inside machines allows operators to move properly as extreme cold temperatures can cause muscles to stiffen which impairs proper operating.

11. **Check Brakes**

In winter weather, equipment is more likely to slip or skid so it is essential that brakes are working in top condition.

12. **Surface Damage or Cracks in Glass**

If there are any cracks in the glass of a windshield or window, these can become a serious issue in the winter when moisture seeps into cracks and freezes. The expansion of the ice will cause even small cracks to spread and could lead to the glass shattering. Small paint chips on equipment surfaces can lead to the machine

rusting if it is left out in the snow or ice. Be sure to identify and repair any surface damage to machines before it becomes a bigger issue.

ADDITIONAL COLD WEATHER

REMINDERS/RECOMMENDATIONS

- Always read and understand the Operation and Maintenance manual
- To better prepare your machines for cold weather try the following:
- Use block heaters
- Use enclosed storage facilities when machines are not being used
- Be sure to install the correct lubricants
- Provide the correct cooling system protection for the conditions you are working
- Inspect all rubber parts weekly
- Keep all batteries fully charged
- Always fill the fuel tank at the end of the shift
- Check the air filters on a regular basis when snow is present
- Before your shift, run the engine until it reaches operating temperatures
- If your machine is shut down for more than 16 hours, the engine will cool to the external temperature
- Always maintain your machine per the Operation and Maintenance Manual during cold weather

FINAL WORD

Cold weather affects motorized equipment – not only the engine, but the hydraulic systems as well. Equipment that does not operate smoothly or predictably is a safety hazard to operators and other workers near it.

Confined Space Entry

WHAT'S AT STAKE?

Confined spaces can be below or above ground. Confined spaces can be found in almost any workplace. A confined space, despite its name, is not necessarily small. Examples of confined spaces include silos, vats, hoppers, utility vaults, tanks, water supply towers, sewers, pipes, access shafts, truck or rail tank cars, aircraft wings, boilers, manholes, pump stations, digesters, manure pits and storage bins. Ditches and trenches may also be a confined space when access or egress is limited. Barges, shipping containers and fish holds are also considered as possible confined spaces.

Context is important to understand the danger of entering a confined space. One must be, careful to follow the very special precautions and procedures before entering. Even if you just are able to put your head through the opening of a confined space, you are entering. Confined spaces are not designed for someone to work in regularly, but workers may need to enter the confined space for tasks such as inspection, cleaning, maintenance, and repair.

Many confined spaces have small openings, which can make entry and exit difficult and can complicate rescue procedures.

WHAT'S THE DANGER?

Hazards in Confined Spaces can include:

- **Poor air quality**: – There may be an insufficient amount of oxygen for the worker to breathe. The atmosphere might contain a poisonous substance that could make the worker ill or even cause the worker to lose consciousness. Natural

ventilation alone will often not be sufficient to maintain breathable quality air.

- **Hazards from asphyxiants** – Simple asphyxiants are gases which can become so concentrated that they displace oxygen in the air (normally about 21 percent). Low oxygen levels (19.5 percent or less) can cause symptoms such as rapid breathing, rapid heart rate, clumsiness, emotional upset, and fatigue. As less oxygen becomes available, nausea and vomiting, collapse, convulsions, coma and death can occur. Unconsciousness or death could result within minutes following exposure to a simple asphyxiant. Asphyxiants include argon, nitrogen, or carbon monoxide.
- **Chemical exposures** – Skin contact or ingestion as well as inhalation of 'bad' air.
- **Fire hazard:** – Explosive/flammable atmosphere due to flammable liquids and gases and combustible dusts which if ignited would lead to fire or explosion.
- **Process-related hazards** – Residual chemicals, release of contents of a supply line.
- **Physical hazards –** noise, heat/cold, radiation, vibration, electrical, and inadequate lighting.
- **Safety hazards –** Moving parts of equipment, structural hazards, engulfment, entanglement, slips, falls.
- **Explosion**
- You can't smell or see some explosive gases so you might not know they are in the air. A spark or other ignition source might result in an explosion. Many dusts and chemicals can also explode.
- **Trapped, Crushed, Or Buried**
- Loose or unstable materials might fall on you and trap or bury you. A liquid, a hazardous gas, or steam might flow into the space. You might get caught in a piece of equipment that starts moving.

HOW TO PROTECT YOURSELF

The first rule is that one should never enter s confined space without proper training. You are in the "control position if you

are equipped with proper training and personal protective equipment. In addition, written procedures and an entry permit system are essential.

Guidelines

- **Take atmospheric precautions.** The atmosphere should be tested before you enter – by trained people using the right equipment. The confined space should be ventilated until it tests safe, and possibly afterwards. If this is not possible, the right respiratory protection should be worn
- **Lock out energy sources.** Lines carrying gases, liquids or solids should be disconnected or blocked off before you enter. Valves and electrical circuits should be locked out and tagged.
- **Remove possible sources of ignition**. Use non-sparking tools and lighting devices in a potentially flammable atmosphere.
- **Be fully prepared before entry.** Make sure you are wearing the required personal protective equipment (PPE) including a hardhat, safety-toed footwear, gloves and your breathing apparatus
- **Wear a lifeline.** The lifeline should be connected from your body harness to a winch outside the confined entrance so you can be pulled out in case of emergency.
- Have **trained and equipped personnel** standing by outside the confined space, for communication and rescue if necessary

Overview of Prevention/Controls

The traditional hazard control methods found in regular worksites can be effective in a confined space. **These include engineering controls, administrative controls and personal protective equipment.** Engineering controls are designed to remove the hazard while administrative controls and personal protective equipment try to minimize the contact with the hazard.

However, often because of the nature of the confined space and depending on the hazard, special precautions not normally required in a regular worksite may also need to be taken. The engineering

control commonly used in confined spaces is mechanical ventilation. The **Entry Permit** system is an example of an administrative control used in confined spaces. Personal protective equipment (respirators, gloves, ear plugs) is commonly used in confined spaces as well. However, wearing of PPE sometimes may increase heat and loss of mobility. Those situations should be carefully evaluated. When using PPE, always use as part of a PPE program and be sure to evaluate all possible hazards and risks associated with PPE use.

FINAL WORD

Many workers are injured and killed each year while working in confined spaces. An estimated 60% of the fatalities have been among the would-be rescuers. A confined space can be more hazardous than regular workspaces for many reasons. To effectively control the risks associated with working in a confined space, a confined space hazard assessment and control program should be implemented for your workplace. Before putting together this program, make sure to review the specific regulations that apply to your workplace.

Emergency Preparedness Safety Talk

WHAT'S AT STAKE?

Emergencies can create a variety of hazards for workers in the impacted area. Preparing before an emergency incident plays a vital role in ensuring that employers and workers have the necessary equipment, know where to go, and know how to keep themselves safe when an emergency occurs.

The more you are prepared for them, the better you will be able to act, minimizing panic and confusion when an emergency occurs.

WHAT'S THE DANGER?

Emergencies occur every day in many facilities, including laboratories, offices, and residential buildings. It might be a fire, flood, earthquake, shooting, tornado, or hazardous chemical spill. If you don't know what to do during an emergency the odds increase that you or others around you will be injured or killed.

EMERGENCIES

- Severe weather, such as heavy wind, flooding, tornados, or hurricanes
- Utility outages
- Fires
- Explosions
- Widespread infection
- Hazardous materials
- Earthquakes
- Workplace violence
- Terrorism

HOW TO PROTECT YOURSELF

An emergency plan needs to be well-thought out. It needs to be easily accessible. Though logic says it has to be through and well vetted, it is more important for workers to know about is in it, does it really describe the methods to respond to the emergency event!!! A better fit is to have a appendix or supplement to enable workers to know the emergency and what to do in emergency. Small "flipcharts" or spiral-bound, hand-size, notepad-type inserts that outline each potential risk or emergency, and then show who to call, with numbers and what occupants should do for their own safety and safety of others.

Confusion and uncertainty reign in an emergency. This happens from not knowing **how** to react or not **recognizing** the potential for

danger.

Knowing and **practicing** what to do before an emergency occurs is a key step to protecting yourself and others around you. In addition to participating in emergency drills held by your employer, take time to see how the following questions are answered.

WHO

- Who are the qualified first aid personnel for your facility?
- Who on your crew knows CPR?
- Who in your area is trained to clean up a chemical spill?

WHAT

- What factors determine when you evacuate and when you shelter-in-place? Fire and explosions are examples of when to evacuate. You may be told to shelter-in-place during an earthquake, severe weather, or radiological, biological, or chemical release.
- What are the emergency exit routes from your work area? There must be at least two – and more than two are required if the number of employees, size of the building, or how the workplace is arranged will not allow for safe evacuation.
- What phone numbers do you call for various emergency agencies?
- What is the physical address of your work location?
- What are your duties in an emergency?
- What should an emergency kit contain? Do you have one in your car or at work?

WHERE

- Where should you assemble outdoors if you must evacuate?
- Where should you shelter-in-place if necessary?
- Where is the first aid equipment located?
- Where are the nearest telephones in your work area?
- Where is the fire extinguisher located? Do you know how to use it? If not, where and how will you get training?
- Where are the safety showers and eyewash stations in this work area? Do you know how to operate them?

- Where are the SDSs (Safety Data Sheets) for the chemicals used in your work area?

HOW

- How do you activate the alarm for a fire? For any other kind of emergency?
- How do you contact the fire department or a facility fire brigade?
- How would you give directions to an ambulance or other emergency service to reach your area?

OVERVIEW

The **WHO, WHAT, WHERE, AND HOW** answer will enable people to get a firm grasp of knowing and what to do in the event of an emergency in the workplace.

It is seemingly simplistic but it answers all the questions that likely will arise in an emergency situation

FINAL WORD

Remember, if you wait for an emergency to learn how to protect yourself, it’s likely already too late. Talk to your supervisor or floor warden to clear up any questions you have with respect to an evacuation due to an emergency of any kind.

Fire Hydrants

WHAT’S AT STAKE?

A fire hydrant is simply a point where people are able to tap into

a water supply. The most common use for them is to assist firefighters in putting out fires. By connecting a hose to a hydrant, they gain access to all the water they need to douse a burning building!

How Hydrants Work

Fire hydrants are connected to a large water supply through underground pipes. When firefighters arrive on the scene, they connect a hose to the side of the hydrant. Once the hose is connected, a special wrench with a pentagon-shaped socket is used to turn the nut on the top of the hydrant. This unique tool is not widely available, so only authorized people, like firefighters, can use hydrants.

WHAT'S THE DANGER?

1. **Missing, Damaged Or Covered Fire Hydrant Marker Plates**

Hydrant marker plates are rectangular yellow signs, with a large black H and a pair of numbers, usually attached to a wall, lamp post or a short concrete post. The two numbers on the plate show the size of the water main and the approximate distance of the hydrant from the plate.

As well as marker plates, all hydrants are also shown on the digital maps available in fire engines, so that the nearest one can be found while firefighters are on their way to an incident. This also means that even if marker plates are missing or broken, the fire service will still be able to find them in most cases, and once reported they will be repaired in due course.

2. **Dangerous, Missing or Cracked Hydrant Covers And Frames**

When a fire hydrant cover is missing or cracked, it can expose the hydrant to the elements, which can cause it to freeze and get blocked with mud or silt. This can stop it working when firefighters need it.

3. **Leaks From Fire Hydrants**

Most leaks are below ground and not visible, but even leaks on the surface are often not reported due to people assuming someone else will have already reported a problem. Leaks affect water flow and pressure from a fire hydrant, making it less effective if firefighters need to use it. Please report any leaks as soon as they are discovered.

4. **Leaks From Water Supply Pipes Or Mains**

Leaks from water supply pipes or mains are the responsibility of the water company but can affect the availability of water from a fire hydrant. The sooner leaks are reported to the water company, the sooner they can fix the problem.

5. **Illegal Use Of Fire Hydrants**

Many problems with fire hydrants are caused by illegal use. It is illegal to use a fire hydrant to obtain water for purposes other than firefighting “unless authorized by the water authority or another person to whom the hydrant belongs” (source: Fire and Rescue Services Act 2004, section 42, subsection 6).

The public can tell the local water companies or the fire service when they suspect illegal use. Key pieces of information such as the registration number and any company names on a vehicle, along with the date, time and location of the activity will be very helpful, but please avoid confrontation with suspected offenders.

6. **Parking On or Preventing Access To A Fire Hydrant**

It is an offence to be parked over or to prevent access to a fire hydrant when it is required for firefighting (source: Fire and Rescue Services Act 2004, section 42, subsection 7). Parking for a short time on a hydrant can occur occasionally, but if this happens repeatedly with the same vehicle it should be reported to the water services team at Kent Fire and Rescue Service.

Please be considerate when parking near a fire hydrant marker post and ask friends, relatives and neighbours to be aware, as this could save time in an emergency.

7. **Alternative Emergency Water Supplies**

As well as fire hydrants, we can use open water sources at incidents, including ponds and swimming pools. Please report these sources – if they are on private land owned or occupied by an individual or company – to the water services team, giving key information including the location and capacity if known.

In the event of a fire, every available water source will be used. After the incident, any water that has been used will be replenished free of charge, at a time agreed by the local water company and the fire service.

HOW TO PROTECT YOURSELF

Fire Proactive Prevention Measures

1. **Reduce Clutter**

Any fire needs fuel, and a cluttered desk or office is full of the type of fuel that helps a raging fire spread. Make sure to reduce the amount of clutter in your office. One simple way to do this is to emphasize electronic communications and the reduction of printed pages.

2. **Know Capacities**

How many people are supposed to be in your office or on a particular floor at a given time? These capacities are assigned for several reasons, one being so that a building can be safely and effectively evacuated in the event of a fire.

3. **Mind Your Heat**

Make sure to keep heat-creating equipment away from walls and any flammable materials. Also, discourage or restrict the use of space heaters in your office.

4. **Regularly Test**

Regularly test your fire alarms and smoke detectors. In the case of an emergency, it will be vital that these tools are working at their best if you are to keep everyone in your office safe.

5. **Label Exits**

Most people in your office most likely use an elevator if it has multiple floors, but it is essential that they know where to find the stairs in case of an emergency. Make sure to clearly label your exits to avoid confusion about the quickest path out of your office in the case of a fire.

6. **Drill Your Team**

When was the last time your office conducted a fire drill? If you cannot remember, it has probably been too long. These are the times when you and your office mates can practice getting to the stairs and quickly getting out of the building in case of fire. It can also be a chance for your office to recognize – and fix – any deficiencies in the evacuation process.

7. **Easy on the Outlets**

No one in your office should overload an electrical outlet. Make sure you are using surge protectors and generally limiting how many plugs you are engaging in one outlet at a time.

8. **Check Wiring and Cords**

Frayed wiring and electrical cords can be a significant source of fire. Examine your wires and cords regularly to make sure there are no issues. If you notice fraying or similar damage, replace the cords as quickly as possible.

9. **Assign Smoking Areas**

You never want anyone smoking near your office. Provide designated smoking areas, and make sure those areas are as far away from the building as possible. Make sure these smoking areas have proper receptacles for disposing of cigarette butts.

Overview

Fire safety in the workplace also depends on your having the right fire safety procedures in place and ready to go in case of an emergency. These procedures don’t necessarily need to be complex.

First, sound an alarm that everyone can hear. Second, call 9-1-1. Follow the escape route that has been tested through regular drills, and then stay out of the building until it is deemed safe by the fire department. The overall safety of your workplace depends on workplace fire safety plans and procedures.

FINAL WORD

Protecting areas without water supplies or hydrants is multifaceted, especially in a large fire district. There’s a need to plan for firefighting resources, determine where to get water for fighting fires, and work to make buildings as fire-safe as possible.

Hearing Protection

This section addresses noise-induced hearing loss and protection in the workplace.

Overview

Any workplace that’s operations produce a harmful noise level must institute several safety programs, including (but not limited too) a hearing conservation program, monitoring, audiometric testing program, and training program. To comply with OSHA and federal regulations, employers must establish certain engineering and managerial controls (prior to the use of PPE).

Under the hearing conservation program, monitoring noise levels (decimals) determines an employee’s exposure then hearing evaluation is conducted through an audiometric testing program.

Noise Exposure

Following OSHA’s table G-16 (see below); an employer must provide

accommodations to protect employee’s hearing when noise exposure exceeds the given levels.

Duration per day, in hours	Sound level decibels (dB) A slow response
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

If levels exceed those listed, an employer, by law must implement reasonable hearing conservation controls (i.e.; noise reduction tools, noise canceling devices, barriers, etc). An employer failing to reduce to acceptable sound levels must then implement a hearing conservation program.

Hearing Conservation Program

Minimum Requirements for a Hearing Conservation Program:

- Noise monitoring requirements
- Audiometric testing
- Engineering and administrative noise exposure control
- Personal hearing protection
- Recordkeeping
- Training

Common Safety Mistakes

WHAT'S AT STAKE?

Common mistakes can lead to dangerous situations in the workplace that could have been easily avoided.

Accidents can happen anywhere and anytime in spite of the best of intentions and the best safety programs. The test comes down to take certain strategic measures that prevent workplace injuries, accidents and illnesses.

WHAT'S THE DANGER?

1. **No Process or Plan**

Most workplace injuries occur when work being done is not part of a normal process. It is important to have a work plan for non-process work. No matter how it is done, planning the work and asking 'What if…?" questions will help identify hazards and implement controls to prevent injuries. Complete daily hazard assessments and review with your crew before commencing work.

2. **Failure to Communicate**

One of the easiest things to prevent unsafe conditions is to discuss what hazards or unsafe acts have been noticed. Communicating the hazards and failures in processes is an essential element of protecting ourselves and our co-workers from the hazards that potentially exist in our workplace.

3. **Visual Connection Problems**

The noise in many workplaces can be quite deafening at times, which can make it difficult to communicate. When it comes to safety, communication is essential. This is why it is so important to have visual communication options in any loud workplace.

Visual communication can come in many forms including signs,

labels, floor markings, lights, and more. Taking the time to find ways to effectively communicate without relying on voices will take some effort, but it can dramatically increase the overall safety of a facility.

4. **Overcomplicating Safety Instructions**

When making a policy to improve the safety of one particular area in a facility, it is important not to overcomplicate things. Keep in mind that the safety efforts made will need to be followed by everyone in the facility, and making them too complex will only result in people bending or breaking the rules.

To the extent possible, all safety instructions given out in a facility should be short and to the point. In addition, these instructions should be in line with common sense so people won't have difficulty understanding what they are doing and why.

5. **Lack of Housekeeping**

One of the simplest yet most effective things that you can do to improve facility safety is keep it clean and organized. Sadly, this is also one of the most common workplace safety mistakes people make. Rather than taking the time to clean and organize an area, many companies see this type of activity as a waste of time.

A clean and organized workplace, however, helps keep tools and equipment in good condition (and keeps them from being lost). A messy work area also presents an increased risk of tripping and other accidents.

6. **Fail to Use Proper Personal Protective Equipment**

The widespread use of personal protective equipment is one of the most important ways companies have improved safety over the years. Unfortunately, many employees either fail to use the PPE at all or they don't use it properly. This leaves them exposed to the dangers they are supposed to be protected from.

Not only that, but when one person is not wearing the right personal protective equipment, it increases the risk for everyone around them. This type of compounding hazard can lead to very

serious safety issues that could have otherwise been avoided.

7. **The Wrong Tool for the Job Used**

Just about every task that needs to be done in a facility will require some type of tool. Using the right tool for the job is not only the most efficient way to get it done, but it is also the safest. When employees try to take a shortcut by just using whatever tool they have with them at the time, they are dramatically increasing the risk of an accident occurring.

Investing the time and money into making sure the right tools are available for a given job will help keep people safe and will also ensure a job is done quickly and correctly.

8. **Maintenance & Inspection of Machinery Neglect**

For many companies, keeping machines up and operating at all times is the most important thing. When machines are running, they are making money. This is why many facilities postpone or ignore many types of machine inspections and maintenance.

This can, however, cause machines to breakdown unexpectedly. Machine breakdowns are a big problem for productivity, but they can also cause many safety issues. Any machine that has issues will have unpredictable performance, which can put all the people who work with or around the machine at risk. Performing regularly scheduled maintenance and inspections is absolutely critical for workplace safety.

9. **Fail to Track “Near Misses”**

Just about everyone who has worked in any type of work environment has had a “near miss” at some point in their career. These are those instances when if something had happened just a little differently, it would have resulted in a serious injury or even fatality.

While it is certainly a relief when nobody is hurt, it does not mean that a safety incident did not occur! Keeping track of all near miss events and learning from them is an important part of any workplace safety strategy. Identifying the cause of a near

miss so it can be fixed will help prevent the same thing from happening again in the future, but possibly with much worse results.

10. **Education Treated as Optional**

One of the biggest workplace safety mistakes a facility can make is treating safety education as optional. While safety education doesn’t provide any immediate return on investment, the long-term benefits are really incalculable. Making this type of training a priority may be the single best thing a company can do to avoid accidents and other safety mistakes in the future.

11. **Improper Handling of Hazardous Materials**

Facilities often have hazardous materials used for different tasks. These materials need to be stored properly at all times to avoid the risk of a spill or other accident. In addition to keeping them in safe containers, those containers need to be properly labeled so everyone knows what they contain.

A properly labeled hazardous material container will make an accident much less likely. If there is an accident, however, everyone will know what to do based on the information provided on those labels.

HOW TO PROTECT YOURSELF

When thinking about safety mistakes, the things that come to mind are usually dangerous accidents or exposure to hazards. The following five areas illustrate problems and prevention.

Safety Mistake #1: Inadequate or rushed training

It makes sense that employers would want to onboard new employees as efficiently as possible. From a financial standpoint, hiring and training is a costly process. The more efficient the training, the sooner the employee can become a productive contributor to the company. While expedited training might seem appealing, taking the

time to train and onboard properly can have numerous health and safety benefits.

In matters of workplace health and safety, detailed and thorough training can set a strong standard and example from an employees' very first day on the job. Not only does it help arm employees with the knowhow to prevent workplace safety mistakes, but it also communicates that safety is a priority.

Although employees and employers commonly agree that training is important, most people don't enjoy sitting through lengthy training sessions, whether in a classroom or in front of a computer. All of this can harm the quantity and quality of information that employees absorb. A strong health and safety system maximizes employee time and attention to deliver training that is timely, hands-on, and relevant. Lower load – To lower the load downward, the signal person will extend their arm horizontally, pointing their index finger towards the ground, once in this position they will make a circle motion with their finger.

Safety Mistake #2: Near-Misses/Close Calls

A near-miss incident can feel like a relief, and it is easy to move on and forget what happened once the threat has passed. However, neglecting to follow up on a near-miss is a major risk factor, because it increases the chances that the issue will come up again. How do you ensure that a near-miss doesn't snowball into a serious incident?

Near-miss reporting requires clear and seamless communication throughout the organization. When employees and management are not sure whether or how to report near-misses, it affects not just that single case, but the overall quality of incident reporting data. In a near-miss scenario, it might be tempting to sigh with relief and move on, thankful that the worst outcome was avoided. However, follow-through should never stop here.

Over time, proper near-miss reporting results in a trove of accurate and potentially life-saving data. To achieve this level of reporting, it's important to communicate a clear,

straightforward policy on the reporting process. One of the first and simplest steps is to define exactly what is meant by a near-miss. For example, The National Safety Council defines a near miss as “an unplanned event that did not result in injury, illness, or damage – but had the potential to do so”. The definition can be tailored to make it relevant to the organization and industry, and it should be made known to all personnel involved in safety reporting.

Most importantly, regular discussion of near-misses normalizes reporting and creates a clear line of communication between workers and management. For example, asking about near-misses in daily meetings or through reporting dashboards can turn attention to recurring issues that need to be addressed. The organization should establish a clear chain of command and protocol for addressing near-misses, including reporting, analysis, prioritization, and finding solutions.

Safety Mistake #3: Missing Regular Maintenance and Inspection

Equipment maintenance is extremely important, but doesn’t it always seem to come up at the most inconvenient time? If maintenance and upkeep are done on the spur of the moment, it’s easy to think of all of the reasons why the equipment is needed and cannot be turned off, even briefly. Putting it off longer or adding “equipment maintenance” to a mental to-do list might make us feel better in the moment. Unfortunately, the delay only increases the chances of a completely preventable cause of equipment failure and poses a major safety hazard to employees.

The best answer to this vicious cycle of scheduling and rescheduling is regularly scheduled maintenance checks. This can be simplified by building this into your workplace health and safety software, like Donesafe. This can help address one of the biggest reasons for putting off maintenance, which is a loss of productivity. Scheduling maintenance regularly can help prepare and account for a temporary dip in productivity. The alternative, doing maintenance only when the equipment malfunctions, is a

surefire way to lose productivity. Planning maintenance ahead of time—and abiding by the plan—helps accommodate any downtime resulting from the inspection. Regular maintenance is also crucial for preventing safety incidents resulting from faulty equipment.

Safety Mistake #4: Failure to use proper tools and protective equipment

Improvisation and creative thinking are valuable skills in any workplace. In the interest of time and efficiency, a worker might choose to improvise or use the available tools to complete a task, especially if the task is urgent. Unfortunately, taking shortcuts to get the job done can result in entirely preventable workplace safety mistakes. Substituting an imperfect tool for the correct tool might get the job done, but it's also likely to pose a higher risk of injury. Likewise, completing a task "on the fly" might mean that proper safety equipment, such as hard hats or reflective clothing, is inaccessible.

Avoiding this issue is a matter of preparation as well as communication. Employees should have the right tools to do their job, and they should also be instructed on the proper handling of these tools. The issue also needs to be addressed through communication that centers teamwork. Why? It's as simple as the fact that a fall from an improperly placed ladder will injure both the person on the ladder as well as those beneath it. Misusing equipment and failing to protect oneself pose risks not just to the individual, but anyone working alongside them. Team-oriented communication promotes a shared responsibility towards oneself and others. Workers who engage in risky behavior may change their behavior if they realize that their actions endanger others as well as themselves.

Safety Mistake #5: Fail to prioritize a health and safety system

A robust health and safety system is made up of so many moving parts: incident reporting, standards, hazard management, regulatory compliance, training, just to name a few things. Many

of these areas are subject to continuous updates and changes and require ongoing monitoring and maintenance. Luckily, these tasks can be managed in one place by investing in comprehensive health and safety management software. By choosing to bring the entire health and safety system under a single umbrella also sends a clear message that “health and safety” is more than just a slogan, but rather an organizational priority.

FINAL WORD

Knowing the rules and following them is one piece of the puzzle: think recordkeeping, incident tracking, and regulatory compliance. Just as important, though, is avoiding major safety mistakes. Although this sounds obvious, some of the biggest workplace safety mistakes can be difficult to recognize and prevent.

General Safety Rules

Download Instructor-Led Material

	
Meeting Kit	**PowerPoint**

WHAT’S AT STAKE?

General Safety is a multi-disciplinary approach to developing and ensuring compliance with regulatory agencies, safe working

practices, and maintaining the health and well-being of those employed in a particular occupation or workplace. Strategies to accomplish these goals maintain a strong focus on injury prevention through hazard identification, prevention and controls; education & training; audits & inspections; engineering modifications, and enforcement.

WHAT'S THE DANGER?

Machine Shop facilities must be kept in properly working status and maintained in safe working and handling environment by every personnel. Self-discipline and good working manner is the key to success for laboratory and the workshop. Any accident or mishap may damage equipment, cause injury or death. There are general rules and guidelines for the people working with mechanical devices to follow. There are also operational manuals and specific rules for every item of mechanical equipment to be followed by users. When you are operating a machine or a mechanical apparatus, you should always adopt a defensive attitude and be aware of the source of danger.

HOW TO PROTECT YOURSELF

There are general safety rules for people who work with mechanical devices and in potentially dangerous situations in their jobsite.

General Safety Rules

1. All accidents, injuries and near misses must be reported to your supervisor, immediately.
2. Immediately correct, or report any unsafe acts or conditions to your Supervisor, and warn any employees who may become involved.
3. If you have any doubt regarding the safety of a job procedure, consult with your immediate supervisor before proceeding with the task.
4. If an item of protective equipment is required by the job-site, or for the job you are doing, consider the use of that

equipment as a condition of employment.

The following PPE must be worn:

- **Steel-Toed Boots –** Must be worn at all times on the job-site. Safety Boots must meet CSA standards, have penetration protection and have above the ankle support.
- **Safety Vests –** Conforming to WorkSafeBC Standards must be worn at all times on the job-site. “Spaghetti Strap Vests” are not acceptable.
- **Hard-Hats –** Must be worn at all times on all job sites/plants/yards.
- **Hearing Protection –** Must be worn when exposed to noise levels over 85 dBs. (e.g. Shouting instructions at 4’)
- **Eye Protection –** Must be worn when required by the job being performed: Grinding, welding, drilling, saw-cutting, jack-hammering, pressure washing…etc.
- **Gloves –** Must be worn when handling material likely to cut, puncture, burn or irritate hands.
- **Life Jackets –** Must be worn when working on barges without walls, within 10’ of an open dock, or in conditions that present the risk of drowning.
- **Respirators –** Must be worn when exposed to workplace atmospheric conditions that could result in injury: Saw-cutting/grinding concrete, painting, or handling chemicals.
- **Fall Protection –** Must be worn when working at heights of 10’ or greater.
- **Clothing –** Every employee must wear clothing appropriate for work, long pants and over-the-shoulder shirts must be worn at all times. Loose apparel and jewelry must be secured or removed, and long hair must be tied back.

5. Inspect tools and equipment daily, ensure all guards and safety devices are in place and functional. Misuse or willful damage of company tools and equipment is strictly prohibited.
6. Maintain good housekeeping in the workplace. Do not allow materials to gather on floors, platforms, ramps, stairs or walkways as to become a tripping hazard.

7. Hazardous materials must be identified, stored and handled in accordance with the Workplace Hazardous Materials Information System (WHMIS) regulations in Canada or Globally Harmonized System (GHS) in the US.
8. Never work alone in isolated areas unless arrangements have been made for periodic checks with another person.
9. Underground utilities must be located with the use of utility maps and hand-digging procedures, prior to digging mechanically.
10. Entry into excavations greater than 4 ft. deep is strictly prohibited, unless it is sloped or shored.
11. Confined space entry procedures must be followed when entering a confined space.
12. Fighting, scuffling, horseplay, practical jokes and theft are prohibited.
13. The use of alcoholic beverages and drugs (including prescription or over the counter medications which may cause impairment) is strictly forbidden on the job or job-site. No person shall enter a job site while his or her ability to work is impaired.
14. Smoking in non-smoking areas (offices, plant offices, shops, vehicles, flammable areas) is strictly forbidden. The only exception to this rule is if a worker is riding in a vehicle alone and there is adequate ventilation available.
15. No worker shall ride on the outside of equipment unless the vehicle has been designed or modified for this purpose. All workers are to ride in the cabs of vehicles.
16. Seatbelts must be worn when operating ROPS equipped machinery, and company vehicles.
17. Never do maintenance or work under, on, or around a piece of running equipment. Shut it off and lock it out until your work is completed.
18. No worker shall operate damaged tools, equipment or machinery. If it is not operating correctly, or needs maintenance, “tag it” out of service, fill out an equipment repair form, and return it to the Equipment Manager.
19. No worker shall operate or use any equipment in a manner that endangers themselves or other workers. Only persons

properly trained and authorized by their Supervisor shall operate any equipment or machinery.

20. Workshop machinery fitted with safety devices must not be removed except under the direct supervision of the LS of the Workshop. Control of the safety equipment and its positions is under responsibility of the operators before using machinery.
21. Tools are not to be stored on machine beds while the machine is running.
22. Compressed air must never be used for blowing dust or swarf off clothing, skin or machinery. Incorrect utilization of compressed air may cause embolism, blindness or deafness to personnel and damage to nearby machinery.
23. People who will use the machinery in mechanical laboratories must have training in machine tool operation.
24. No person should work alone. In certain situations people may establish a buddy system where people located in other parts of the building are responsible for checking to see that the shop user is safe at all times.
25. Comply with all the requirements of the Safety Program, WorkSafeBC and other applicable regulations.

FINAL WORD

The most important concept to remember is that you are responsible for your own safety and the safety of others. Most safety practices are common sense. Unfortunately, they can be forgotten or overlooked unless you make safe practices a habit or an instinct.

Job Hazard Assessment Vs. Safe Work Procedures Meeting Kit

WHAT'S AT STAKE?

A Safe Work Procedure (SWP) is a document that is used to capture all of the information related to the safe execution of the task. The SWP includes information such as the name of the task, hazards associated with the task, personal protective equipment required, training required, references to regulatory requirements, and identifies the person (typically a Chairperson or manager) who has approved the procedure. They are an excellent tool for training and refreshing workers on the proper way to carry out the task. SWPs must be current within three years, accessible to workers at all times, and amended when necessary.

The Job Safety Analysis is the act of getting a group of qualified individuals (supervisors, senior employees, safety personnel) together to:

1. Observe a task being performed.
2. Identify the potential hazards for each step in the task.
3. Assess the risk potential and severity of each hazard.
4. Brainstorm appropriate controls according to the risk levels identified.

The JHA development team should then take the information gathered from conducting the Job Hazard Analysis (or Analyses), and write an official Safe Work Procedure. This Safe Work Procedure will in all likelihood be an exact copy of the latest iteration of the JHA. It is the document that should be approved by senior management and circulated among the workers. It is the roadmap for performing a task safely. It remains unchanged until a subsequent JHA (which should be conducted regularly) identifies a new hazard or comes up with a better control.

Overview:

The Difference between Job Hazard Assessment & Safe Work Procedures

They are the same thing, but represent different stages on a timeline. JHA is the Process, and the Safe Work Procedure is the outcome.

WHAT'S THE DANGER?

Safe work procedures are based on a task analysis which breaks down the job into specific steps and the conduct of a risk assessment on each of the steps to identify hazards, assess the level of risk and determine suitable control strategies. This information is then included in the operating instructions provided to the employee and utilised both in training and competency assessments.

Where to start?

1. Identify tasks that require safe work procedures
2. Develop safe work procedures for tasks that are likely to harm your workers if any risks are not addressed. Many tasks are unlikely to expose your workers to risks, so documented safe work procedures are unnecessary.
3. Do a thorough inspection of the workplace and a complete review of all work tasks? Perhaps you have overlooked risks associated with:

   - handling chemicals
   - lifting and moving objects
   - working at heights
   - slips, trips and falls
   - housekeeping
   - electrical equipment.

4. Speak with your workers about the tasks they perform and identify those tasks that could place them at risk. Consider the aspects of each task that expose them to risk and

determine the likely consequences if the risks are not managed. **This is known as risk assessment.**

5. Prioritize the tasks that require safe work procedures
6. Develop safe work procedures for the tasks that present the greatest risk and pose the most serious consequences, and gradually work through those that present less risk.

HOW TO PROTECT YOURSELF

Four basic stages in conducting a JSA are:

- selecting the job to be analyzed
- breaking the job down into a sequence of steps
- identifying potential hazards
- determining preventive measures to overcome these hazards

Develop safe work procedures as follows:

- **Involve your workers** – they are more likely to follow a safe work procedure if they have been involved in its development, and they will often know the best and safest way to perform a task. Involve those workers who are experienced in performing the tasks.
- **Identify the elements of each task and the associated risks –** grocery shopping involves preparing shopping list, driving to shop and parking, obtaining trolley and pushing to shelves, lifting items from shelves, placing shopping on checkout, placing bags back in trolley, loading boot, driving back to house, unloading boot and carrying to house and packing shelves.
- **Identify the hazards and risks that each of these activities pose to those performing the task.** Are there any risks of manual handling injuries from lifting and stacking? Is there the potential for vehicle accident, slips and trips etc?
- **Control the risks –** once the hazards and their associated risks have been identified and assessed, decide how to control them. Consider the most effective way of minimizing the risk of harm. Can the shopping be done in smaller loads,

is an assistant required, can a trolley be used to carry the shopping from the car to the house?

- **Document your safe work procedures –** the easier your safe work procedures are to understand, the more likely your workers will follow them. List all the control measures you have identified, as a series of steps set out in the sequence they need to be used.
- **Distribute the safe work procedures for review –** have your experienced workers review the safe work procedures and make amendments as appropriate.
- Proper implementation of safe work procedures involves training and supervision.
- Your workers must be trained to do their work tasks safely and must demonstrate an ability to follow the safe work procedures. Simply reading the documented procedure is not enough and you must ensure that the safe work procedures are followed at all times. Discipline your workers when safe work procedures are not followed.
- Review your safe work procedures when there is a change to your workplace, or after an injury or near miss associated with the task. As a general rule, do a periodic review of all your safe work procedures to ensure they are current and effective. Involve your workers in this review.

Procedures:

- Safety Office will coordinate with the manager/supervisor to complete a job hazard analysis and risk assessment.
- Manager/supervisor will provide necessary resources (manager’s/employee’s time and space) to complete the analysis/assessment.
- Safety Office will retain record of the safe work procedures and the safe work procedures are reviewed with the manager/supervisor/employee.
- Manager/supervisor will provide training to employees in the safe work procedures and document the training. The Safety Office will be available for assistance if required.
- Manager/supervisor will ensure that the completed safe work procedures are followed, and are added to the job inventory

for training new employees.

Record Keeping:

The Safety Office and manager/supervisor will keep all records for 5 years from date of implementation/training the following:

- Completed Job / Task / Hazard Analysis / Assessment Forms
- Completed Safe Work Procedures
- Training documentation

FINAL WORD

Ideally, all jobs should be subjected to a JSA. In some cases there are practical constraints posed by the amount of time and effort required to do a JSA. Another consideration is that each JSA will require revision whenever equipment, raw materials, processes, or the environment change.

Practices Vs. Procedures Meeting Kit

WHAT'S AT STAKE?

A Safe Work Practice is more of a guideline helpful in performing non-standard activities in as safe a way as possible, such as using a portable grinder or ladder. They are commonly found in owner's manuals, industry guides, sample manuals, etc.

Safe Work Procedures are detailed step-by-step descriptions of how specific work-related activities (usually ones with associated high risk hazards) are safely performed from start to finish, (operating a fork lift, manhole entry, battery boosting, working

alone). The procedure may be simply a series of steps, or a checklist where each step is checked off when completed. Standardized written work procedures can ensure that work is done safely.

Development

Safe work practices should be developed as a result of completing a job safety analysis (JSA) or a hazard risk assessment (HRA).

Safe job procedures are usually developed by management and workers as a result of a JSA/HRA, accident or incident investigation, and/or as a supplement to a safe work practice.

WHAT'S THE DANGER?

Every employee, whether they are full-time, part-time, and casual, contractors or agency staff has the right to work in a safe environment. Although your employer is mainly responsible for maintaining a safe environment, it is also the responsibility of employees to act responsibly and stick to the workplace health and safety rules and regulations.

Not all workplaces are safe, and millions of workers are put at risk every day, with some suffering serious and devastating injuries as a result of unsafe practices at work.

Risk assessment

All employers have a duty of care to their employees, but employees also have a responsibility not to put themselves in danger. Health and safety in the workplace is paramount and keeps everyone on or near the premises safe. Before you step foot in the workplace, your employer should have already carried out a risk assessment of the area in which you will be working as well as a risk assessment for the type of work you are going to do.

Types of accidents at work

There are a number of different dangerous practices and procedures

that can lead to accidents happening in the workplace.

- Pedestrian and forklift traffic areas have not been separated resulting in injury.
- Failure to have ladders and stepladders footed or stabilized.
- Using ladders instead of scaffolding.
- Workers using inappropriate or poorly maintained tools for the job at hand.
- Workers operating machinery for which they have had no training.
- Workers carrying heavy objects without the appropriate training.
- Employers failing to illuminate working areas correctly, including walkways.
- Employers failing to fix potholes or unsafe floors.
- Employers not providing their workers with the appropriate safety gear to do their job.
- Workers being exposed to dangerous chemicals.
- Workers using tables and chairs when stepladders would be more appropriate.
- Employers not providing their workers with suitable Personal Protective Equipment (PPE).
- Workplaces without cleaning procedures resulting in slipping and tripping hazards for employees.

HOW TO PROTECT YOURSELF

The best way to prevent injuries or illness in your workplace is to find the hazards that could injure people and fix them. You can do this by following four key steps.

Step 1 – Identify the hazard by looking around your workplace, talking to your workers, reviewing incident reports, researching particular tasks and issues, or using the Hazard identification checklist

Step 2 – Assess the risk by considering how severe the harm could be and how likely it is to happen.

Step 3 – Control the risk by eliminating the hazard if possible, or otherwise minimizing the risk as far as possible.

Step 4 – Review the controls regularly to make sure they're working as planned.

FINAL WORD

Employees should know, understand and follow all SWP and SJP that pertain to the specific work tasks being completed. Training should be provided to ensure competency. Training should include a theoretical and practical component as outlined in the "Safety Orientation and Training" element and documented in the employee's safety training plan.

COVID-19

This course will help you understand what COVID-19 is, who is at risk, how it can spread, what the symptoms are, what to do if you have symptoms, how you can prevent it, what to do at work and myths and facts about COVID-19.

Tree Trimmer Safety Pre-Check

Use this checklist to help you determine if you have safe work practices in place.



General Assessment			
Visual tree assessment conducted assessing the condition of the tree.			
Site specific hazards identified: ☐ ground & weather conditions ☐power lines ☐traffic ☐insects ☐ slips & trips ☐drop zones ☐felling zones ☐chain saws ☐chipper ☐ Others_____			
Control measures implemented to address risks that may arise from all the identified hazards including: ☐ exclusion zones ☐ rigging system ☐ specific plant ☐ traffic controls ☐ elevated work platform (EWP) ☐crane ☐ Other (list below) _____			
Appropriate equipment and system of work identified and communicated to crew.			
Worksite communication methods identified and communicated to crew: ☐ two way radios ☐blue tooth helmet headsets ☐hand signals ☐whistles ☐mobile telephones ☐ Other: _____			
Exclusion and drop zones identified and made visible where practical to do so. ☐warning signs ☐witches hats ☐barrier tape ☐safety flags ☐plastic Barriers ☐Other: _____			
Site specific information relating to hazards, potential risks and the control measures are communicated to workers in site specific induction or toolbox talk.			
Workers are trained and competent to perform all the tasks required of them such as ground work, climbing, chipping, stump grinding, use of chemicals, etc.			
Emergency procedures are in place, including aerial rescue procedures, and all			

Combustible Dust

WHO HAS A COMBUSTIBLE DUST PROBLEM?

Many employers are unaware of a potential explosive dust hazard in their workplace. By identifying and controlling dust explosion hazards, injuries, deaths, and costly damage can be prevented. Some of the industries that could have a combustible dust hazard include:

- Agriculture
- Chemical
- Forest and furniture products
- Metal processing (e.g. aluminum, magnesium, zinc)
- Organic dust producers or users (e.g. working with fine dusts of candy, dried blood, paper, pulp, soap, spices, starch, sugar, flour, and feed)
- Paper products manufacturers
- Pharmaceuticals
- Plastics
- Producers or users of coal or other carbon dusts

- Recycling operations (e.g. metal, paper, and plastic recycling operations)
- Tire and rubber
- Textile
- Wastewater treatment (biosolids)
- Wood dust producers

What Makes Combustible Dust an Explosion Hazard?

Combustible dusts become an explosion hazard when they are suspended in the air in the proper concentration in a confined space or semi-confined vessel, area or building.

With the oxygen present in the air, all that is needed is an ignition source for an explosion to occur.

Many variables can affect the explosibility of a dust. To fully assess the risk of a dust explosion, it may be necessary to have the materials involved tested by a specialized lab.

PRIMARY AND SECONDARY DUST EXPLOSIONS

An initial or primary dust explosion can lead to one or more secondary dust explosions within a facility. This can occur when the initial dust explosion in the processing equipment or vessel ruptures the enclosure and ignites settled dust in a nearby area. Such explosions have destroyed buildings, killed 119 workers and injured 718 workers since 1980.1 In many of these cases, the employers involved were unaware of the hazard.

OSHA NATIONAL EMPHASIS PROGRAM

The Occupational Safety and Health Administration (OSHA) issued a directive (CPL 03-00-008) effective 3/11/08 initiating a Combustible Dust National Emphasis Program (NEP). This program requires OSHA offices to specifically target businesses with dust explosion hazards.

Catastrophic Fires have Occurred with the Following Kinds of Dusts

- Coal dust
- Nylon fiber
- Phenolic resin dust
- Plastic (polyethylene) dust
- Resin for fiberglass
- Rubber dust

The National Fire Protection Association (NFPA) states, “Any industrial process that produces a combustible material and some normally noncombustible materials in a finely divided state present a potential for a serious fire or explosion.”

CONDUCT A HAZARD ANALYSIS

You may have to seek professional help with the following:

- Recognize that you may have a combustible dust hazard.
- Look for processes that use, consume, or produce fine dusts.
- Look for accumulations of fine dust, including in hidden areas (such as inside ductwork or over suspended ceilings).
- Look for ways dusts can become dispersed in the air.
- Consider dust collectors, hoppers, and other equipment that can confine a dust cloud.
- Investigate the thermal stability of stored products.

CONTROL – THE MAIN CONTROL METHODS

- Prevent dust accumulations.
- Install special electrical equipment in areas with potential for explosive concentrations of combustible dust (Class II locations).
- Select and use industrial trucks properly.
- Implement proper procedures for the maintenance of ovens and process equipment.
- Select and install equipment safety devices.
- Install explosion relief venting devices.
- Design buildings, equipment, and ventilation systems properly (including bonding and grounding).

SAFETY MANAGEMENT

- Investigate fires and incidents.
- Train employees on Hazard Communication (including combustible dust hazards).
- Implement Process Safety Management.

Combustible Dust – Spanish

¿QUIÉN TIENE PROBLEMAS CON LOS POLVOS COMBUSTIBLES?

Muchos empleadores no están conscientes de los peligros potenciales de los polvos combustibles en sus sitios de trabajo. Se pueden prevenir lesiones, muertes y daños cos- tosos identificando y controlando los peligros de explosio- nes de polvos combustibles. Algunas de las industrias que pueden tener peligros de polvos combustibles incluyen:

- Agricultura
- Productos químicos
- Productos forestales y muebles
- Procesamiento de metales (por ejemplo, aluminio, magnesio, zinc)
- Productores y usuarios de polvos orgánicos (por ejemplo, quiénes trabajan con polvos de dulces, sangre seca, papel, pulpa, jabón, especias, almidón, azúcar, harina y piensos)
- Fabricantes de productos de papel
- Industrias farmacéuticas
- Plásticos
- Productores o usuarios de carbón u otros polvos de carbón
- Operaciones de reciclado (por ejemplo, operaciones de reciclado de metal, papel y plástico)
- Llantas y hule

- Textiles
- Tratamiento de aguas negras (sólidos biológicos)
- Productores de aserrín de madera

¿QUÉ HACE QUE LOS POLVOS COMBUSTIBLES SEAN UN PELIGRO DE EXPLOSIÓN?

Los polvos combustibles se convierten en un peligro de explosión cuando están suspendidos en el aire en una concentración apropiada en un recipiente, área o edificio confinado o semi-confinado. Con el oxígeno presente en el aire, sólo se requiere una fuente de ignición para que ocurra una explosión.

Muchas variables pueden afectar la explosividad de un pol- vo. Para evaluar por completo el riesgo de una explosión de polvo, quizá sea necesario hacer pruebas de los materiales involucrados en un laboratorio especializado.

EXPLOSIONES PRIMARIAS Y SECUNDARIAS DE POLVOS

Una explosión inicial o primaria de polvos puede desencadenar una o más explosiones secundarias en el sitio. Esto puede ocurrir cuando la explosión inicial de polvo en el equipo de proceso o el recipiente hace romper la estructura e incendia el polvo depositado en los alrededores. Dichas explosiones han destruido edificios, han causado la muerte de 119 trabajadores y lesionado a 718 más desde 1980.1

En muchos de estos casos, los empleadores involucrados no estaban conscientes de los peligros.

PROGRAMA DE OSHA DE ÉNFASIS A NIVEL NACIONAL

La Administración de la Seguridad y Salud Ocupacionales (OSHA, por sus siglas en inglés) emitió una directiva (CPL 03-00-008) que entró en vigor el 11 de marzo de 2008 iniciando un Programa de Énfasis en Polvos Combustibles a Nivel Nacional (NEP, por sus siglas en inglés). Este programa exige que las oficinas de OSHA se

dirijan específicamente a las empresas con peligros de explosión por polvos combustibles.

HAN OCURRIDO INCENDIOS CATASTRÓFICOS CON LOS SIGUIENTES TIPOS DE POLVOS

- Polvo de carbón
- Fibra de Nylon
- Polvo de resina fenólica
- Polvo de plástico (polietileno)
- Resinas para fibra de vidrio
- Polvo de hule

La Asociación Nacional para la Prevención de Incendios (NFPA, por sus siglas en inglés) indica, “Cualquier proceso industrial que reduzca un material combustible, y algu- nos materiales que normalmente no son combustibles,a partículas finas, presenta un peligro potencial de una explosión o incendio grave.”

LLEVE A CABO UN ANÁLISIS DE LOS PELIGROS

Quizá sea necesario recurrir a la ayuda de profesionales para llevar a cabo lo siguiente:

- Reconocer que puede existir un peligro por polvos combustibles.
- Identificar los procesos que usan, consumen o producen polvos finos.
- Identificar las acumulaciones de polvos finos, incluyendo en áreas no visibles (tales como dentro de ductos o sobre cielos rasos suspendidos).
- Investigar las maneras en que los polvos pueden dispersarse en el aire.
- Identificar las fuentes de ignición.
- Considerar recolectores de polvos, tolvas y otros equipos que puedan confinar una nube de polvo.
- Investigar la estabilidad térmica de los productos almacenados.

CONTROL – LOS PRINCIPALES MÉTODOS DE CONTROL

- Prevenir la acumulación de polvos.
- Instalar equipos eléctricos especiales en áreas con el potencial de tener concentraciones explosivas de polvos combustibles (ubicaciones de Clase II).
- Seleccionar y usar los vehículos industriales correctamente.
- Implementar los procedimientos apropiados para el mantenimiento de hornos y equipos de proceso.
- Seleccionar e instalar dispositivos de seguridad en los equipos.
- Instalar dispositivos de venteo de explosiones.
- Diseñar los edificios, equipos y sistemas de ventilación correctamente (incluidas las conexiones a tierra).

ADMINISTRACIÓN DE LA SEGURIDAD

- Investigar los incendios y los incidentes.
- Capacitar a los empleados en la comunicación de los peligros (Hazard Communication), incluyendo los peligros por polvos combustibles.
- Implementar la Administración de la Seguridad en los Procesos.

Do You Know This Plant?

IT'S TRIPLE LEAF…POISON OAK

Recognize it at a glance—by its triple leaf pattern with prominent veins and shiny surfaces.

Learn to recognize poison oak, avoid contacting it, and get rid of it when possible. Poison oak is a very hardy plant which has spread throughout most parts of the state up to altitudes of five thousand (5,000) feet. This plant has another peculiarity—it takes

the form of a vine, a bush or a spindly plant. In some regions the leaves remain green during the entire time they are on the stem. In other areas the leaves change to various colors with the changing seasons. Learn to know it on sight—the plant with the triple leaf—because it is a very common plant in California.

IMMUNITY?

Some people are less susceptible than others.

CAUSES

Poisoning is caused by irritating oil found in all parts of the plant, including the roots and fruit.

How do you get “poisoned”?

- from contact with the plant.
- from tools and animals that have touched it.
- from smoke while burning poison oak.
- from your hands which touched the plant.

TREATMENT?

Much of the irritating oil of poison oak can be removed by washing with soap and water at the first opportunity. Several new medications and well-established remedies such as calamine lotion benefit some people but have little effect on others. Severe inflammation or bleeding should be treated by a physician.

IS THERE PROTECTION?

Several protective creams are available which form a barrier against the irritating substance in poison oak. These may be used before entering a poison oak area. Also there are injections or tablets, which provide protection to some people.

WHAT IS THE BEST ANSWER?

Learn to recognize poison oak, avoid contacting it, and get rid of it when possible. Use protective creams and protective clothing,

such as long pants, long sleeves, gauntlets, and neckerchiefs. Wash contaminated clothing before it is worn.

Destroy the plants before entering an area to be worked. One to four applications of a poison oak eradicating chemical should kill the plants depending upon the one you select.

Apply the chemical with caution—it can be dangerous.

New Growth may sprout during a warm winter or anytime during spring. The first leaves are usually small, round, and deep red.

Spring leaves are light, bright green with whitish-green flowers clustered on the stems.

Summer brings yellow-green, pink or reddish colors to some of the leaves with small white or tan berries following the flowers.

Fall fruit becomes darker, dried and wrinkled, and leaves turn bright red or russet brown.

Winter leaves and seeds fall, leaving stick or whip like stems or climbing vines.

All Seasons may bring many color changes such as yellow, pink, brown, or combinations with those shades previously mentioned.

Do You Know This Plant? – Spanish

LA HIEDRA VENENOSA TIENE UNA HOJA TRIPLE

Reconózcala a la vista—la hoja triple es brillante con venas prominentes.

Aprenda usted a reconocer la hiedra venenosa.

Evite Contacto Con La Mata Y Destrúyala Cuando Sea Posible. La hiedra venenosa es una mata resistente que se ha desarrollado por casi todas partes del estado hasta alturas de cinco mil (5,000) pies. Esta mata tiene otra peculiaridad—toma forma de enredadera, de arbusto y de mata largucha. En algunas regiones las hojas se quedan verdes durante todo el tiempo que están en el tallo. En otras regiones las hojas cambian a varios colores con las estaciones del año. Aprenda a conocerla de vista—la mata con la hoja triple—porque es una mata bastante común en California.

¿HAY INMUNIDAD?

Algunas personas son menos susceptibles que otras.

¿QUÉ ES LO QUE PRODUCE EL VENENO?

La hiedra venenosa tiene un aceite irritante que se halla en todas partes de la mata—hasta en la raíz y en la fruta pequeña.

Esto es el veneno.

¿Cómo se envenena una persona?

- **con ponerse en contacto con la mata.**
- **con manejar herramientas y animales que han tocado la mata.**
- **con el humo de la hiedra venenosa que se ha quemado.**
- **con tocar el cuerpo después de haber tocado la mata.**

¿QUÉ TRATMIENTO HAY?

Mucho del veneno se puede quitar de la piel si se lavan bien inmediatamente con agua y jabón. Hay muchas medicinas y remedios conocidos como loción calamina que ayudan a muchos pero tienen poco efecto en otros. Si ocurre inflamación o empieza a sangrar, es necesario ver a su médico.

¿HAY ALGUNA PROTECCIÓN?

Se encuentran varias cremas que protejen la piel. Se pueden usar estas cremas antes de entrar a lugares donde se halla la mata. También hay inyecciones y pastillas que protejen a muchas personas.

¿CUÁL ES LA MEJOR SOLUCIÓN?

Aprenda usted a conocer la hiedra venenosa. Evite tocarla. Use cremas que protejan la piel. También use ropa que le proteja su persona. Es una buena idea ponerse pantalones largos, camisa con mangas largas, usar guantes y un pañuelo de cuello. Lave su ropa contaminada antes de usarla otra vez.

Destruya las matas cuando sea posible antes de entrar a trabajar a un lugar donde se encuentra la mata. Hay productos químicos para eliminar las matas; de uno a cuatro aplicaciones serán suficientes, depende en el producto que use. Aplique los químicos con cuidado porque pueden ser peligrosos.

Las primeras Hojas retoñan durante un invierno caliente y durante la primavera. Casi siempre las hojas son pequeñas, redondas y de color rojo oscuro.

En La Primavera las hojas son de un verde vivo y las flores son entre blancas y verdes.

En El Verano las hojas son entre amarillas y verdes y otras son rosas con bayas o fruto blanco o café claro.

En El Otoño la fruta pequeña se hace mas oscura, se seca y se arruga. Las hojas cambian a rojo o rojizo.

En El Invierno las hojas y semillas se caen dejando las ramas lizas.

Todas Las Estaciones tienen muchos cambios de colores como amarillo.

First Aid for Eye Injuries

The chance or severity of an eye injury can be reduced when workers recognize possible eye hazards, are trained to correctly

use and care for eye protection equipment, and if they know what first aid to administer in the event of an eye injury.

Warning signs should be posted near any work area, machine, equipment or process area that requires industrial-quality eye protection. To assure optimum eye protection, the appropriate protective equipment should be selected – safety glasses, goggles, face shield, or helmet – and must meet Occupational Safety and

Health Administration (OSHA) and the American National Standards Institute (ANSI) requirements. Personal prescription eyeglasses should only be worn in conjunction with OSHA/ANSI-approved eye protection equipment.

Below are basic first aid instructions for common eye injuries.

Foreign Particles such as dust, dirt, metal or wood chips, and even an eyelash can cause eye abrasion and damage.

Lift upper eyelid outward and down over the lower lid to remove the particle or let tears wash the particle out. If neither action removes the particle, keep the eye bandaged loosely to stop eye movement then seek professional medical treatment.

DO NOT RUB THE EYE

Chemical Contact from solvents, paints, hot liquids, or other hazardous solutions can cause serious eye pain and damage.

Go immediately to the nearest emergency shower or water source. Hold the eye open as wide as possible with fingers and look directly into the stream of water. If a contact lens is in the eye, begin flushing over the lens immediately.

This may wash away the lens. Flush the eye continuously and gently for at least 15 minutes then seek professional medical treatment.

DO NOT BANDAGE THE EYE.

DO NOT USE AN EYE CUP.

CUTS AND PUNCTURES TO THE EYE OR EYELID

Cover the eye with a rigid shield without applying pressure to stop eye movement (the bottom half of a paper cup can be used), then seek professional medical treatment.

DO NOT WASH THE EYE WITH WATER OR OTHER LIQUID.

DO NOT RUB/PRESS/REMOVE THE EMBEDDED OBJECT.

Bumps and Blows can result in eye pain and swelling. Apply a cold compress for at least 15 minutes without putting pressure on the eye. Crushed ice in a plastic bag can be taped to the forehead to rest gently on the injured eye. If experiencing continued pain, reduced vision, or discoloration (black eye) which could indicate internal eye damage, seek professional medical treatment.

Light Burns from exposure to welding, laser, or other radiant light may not be felt until hours later when the eyes begin to feel gritty or become red, swollen, and sensitive to light. Keep eyes closed and seek professional medical treatment.

Nothing can replace the loss of sight. Workers can protect their eyes and preserve their eyesight by wearing and caring for appropriate, approved protective eyewear and following proper first aid procedures when an eye injury occurs.

First Aid for Eye Injuries – Spanish

La probabilidad o la gravedad de una lesión de la vista puede reducirse cuando los trabajadores reconocen los posibles peligros para la vista, están capacitados para usar y cuidar correctamente

los equipos de protección para la vista, y si saben qué primeros auxilios administrar en caso de una lesión de la vista.

Los avisos de advertencia deben colocarse cerca de cualquier lugar de trabajo, máquina, equipo o área de proceso que requiera una protección de la vista de tipo industrial. Para asegurar una protección óptima de la vista, se deben elegir los equipos protectores apropiados – anteojos de seguridad, gafas (goggles), máscara facial o casco – y esos equipos deben cumplir con los requisitos de la Occupational Safety and Health Administration (OSHA) y del American National Standards Institute (ANSI). Los anteojos personales con receta solamente deben llevarse puestos junto con los equipos de protección de la vista aprobados por OSHA/ANSI.

A continuación figuran las instrucciones básicas de primeros auxilios para lesiones comunes de la vista.

Las partículas extrañas como el polvo, tierra, metal o astillas de madera, e incluso una pestaña, pueden causar raspaduras y daños a la vista.

Levante el párpado superior hacia fuera y hacia abajo sobre el párpado inferior para eliminar la partícula o deje que las lágrimas eliminen la partícula. Si ninguna de las acciones elimina la partícula, mantenga el ojo cerrado y vendado sin apretarlo, a fin de detener el movimiento del ojo, y después obtenga asistencia médica profesional.

NO SE FROTE EL OJO.

El contacto químico con solventes, pinturas, líquidos calientes u otras soluciones peligrosas puede causar serio dolor y graves daños a los ojos.

Vaya de inmediato a la ducha de emergencia o fuente de agua más cercana. Mantenga el ojo lo más abierto posible con los dedos, y mire directamente a la corriente de agua. Si hay un lente de contacto en el ojo, empiece a enjuagar por encima del lente de inmediato. Esto puede arrastrar el lente. Enjuague el ojo continua

y suavemente durante por lo menos 15 minutos, y después busque tratamiento médico profesional.

NO VENDE EL OJO.

NO USE UN LAVAOJOS.

CORTES O PERFORACIONES EN EL OJO O EL PÁRPADO

Cubra el ojo con un escudo rígido sin aplicar presión, a fin de detener el movimiento del ojo (se puede usar la mitad inferior de un vaso de papel), y después busque tratamiento médico profesional.

NO LAVE EL OJO CON AGUA O CON OTRO LÍQUIDO.

NO FROTE/PRESIONE/RETIRE EL OBJETO INCRUSTADO.

LOS SACUDONES Y GOLPES PUEDEN CAUSAR DOLOR E HINCHAZÓN EN LOS OJOS.

Aplique una compresa fría durante por lo menos 15 minutos sin aplicar presión al ojo. Se puede pegar con cinta hielo triturado en una bolsa de plástico a la frente para que descanse suavemente sobre el ojo lastimado. Si hay dolor continuado, reducción de la visión o decoloración (ojo morado) que pudieran indicar daños internos al ojo, obtenga tratamiento médico profesional.

Las quemaduras ligeras debido a la exposición a la luz de soldeo, láser u otra luz radiante pueden no sentirse hasta horas después cuando los ojos empiezan a sentirse “arenosos” o enrojecen, se hinchan o se vuelven sensibles a la luz.

Mantenga los ojos cerrados y busque tratamiento médico profesional.

La pérdida de la vista no tiene sustituto. Los trabajadores pueden protegerse los ojos y conservar la vista si se colocan y cuidan los equipos protectores para la vista que sean apropiados y estén aprobados, y si siguen los procedimientos adecuados de primeros auxilios cuando ocurre una lesión de la vista.

Forklift Safety Manual

INTRODUCTION

Forklifts, also known as powered industrial trucks, are an important part of material handling in many industries. Forklifts are also a source of serious accidents in the workplace. Injuries and/or fatalities indicate that many workers and employers are not using or may be unaware of the correct forklift safety procedures.

The goal of this guide is to assist workplace instructors with forklift safety-training programs. This guide does not presume to cover every forklift safety hazard or situation and should be used as a supplement to the manufacturer's provided forklift-operating manual. Cal/OSHA regulations state that the employer is responsible for ensuring that each forklift operator is competent to operate a forklift safely. The employer is also responsible for certifying that each forklift operator is trained and evaluated, in accordance with Cal/OSHA regulations, before operating a forklift.

Training the Trainer

Cal/OSHA regulations require forklift safety instructors to possess a certain level of competency, experience, and forklift knowledge. Cal/OSHA's General Industry Safety Order (GISO), Section 3668 states, that:

"All operator training and evaluation shall be conducted by

persons who have the knowledge, training, and experience to train powered industrial truck operators and evaluate their competence.”

Some things to consider when deciding who will conduct training include having a forklift safety instructor who:

1. Communicates effectively.
2. Has completely reviewed and understands all of the applicable forklift safety regulations.
3. Is knowledgeable about different forklift designs, their uses in the workplace and experienced in operating them.
4. Is familiar with the conditions and hazards that are inherent in the workplace.
5. Is familiar with the safe operational procedures and activities that are associated with operating a forklift in the workplace. These procedures and activities include:
    - Battery-charging practices.
    - Fueling the forklift.
    - Lifting and transporting cargo.
    - Working in enclosed spaces.
    - Operating forklifts in loading dock areas.
6. Is able to objectively evaluate a forklift operator’s performance in the workplace.

SECTION 1: FORKLIFT SAFETY TRAINING PROGRAM

An effective, compliant forklift safety training program must consist of a combination of formal instruction, practical instruction, and an evaluation of the forklift operator’s performance in the workplace.

Formal Instruction (Classroom)

The formal instruction portion of the safety training should include a combination of various training methods—lectures, question and answer sessions, videos, and written materials. All training, written and spoken, must be presented in a language

understood by all trainees. Formal instruction should also include a complete review of the Cal/OSHA forklift regulations that apply to the worksite. Classroom instruction includes:

1. Reviewing the applicable forklift regulations.
2. Presenting an appropriate forklift safety video or another type of training medium (computer program, audio/visual program, written material).
3. Conducting a question and answer session regarding forklift safety.
4. Administering a written forklift safety test.

Practical Instruction (Hands-On)

Practical or “hands-on” training is required by Cal/OSHA to certify forklift operators. This component, according to Cal/OSHA GISO Section 3668, must consist of “demonstrations performed by the trainer and practical exercises performed by the trainee.” Not all situations or procedures are covered in this guide. The instructor should modify the training program to address the conditions found in the workplace, including the types of forklifts the trainee will be operating. The instructor must perform demonstrations for the trainees on all of the topics listed below. A verbal review neither conforms nor complies with the regulations. Hands-on instruction includes:

1. Training on the forklift safety check process. Each trainee should conduct a forklift safety check.
2. Erecting a forklift driving course. The instructor should observe each trainee completing the course, take observation notes, and review the notes with each trainee.
3. Training that covers the specific hazards and conditions present in the workplace. Examples include lockout/tagout, battery charging, fueling, operating forklifts in enclosed spaces, carrying loads, and elevating employees using a forklift.

Workplace Performance Evaluation

After the formal and hands-on instruction, the instructor must evaluate the operator’s performance in the workplace.

The instructor must observe each trainee performing normal workplace forklift duties, write down notes during the observation, and then review the notes with the employee.

Several sample training forms are included in this guide to assist with documentation and record keeping efforts. The employer must maintain the documents for at least three years after the date of the training.

Each forklift operator’s performance must be evaluated at least once every three years. Under certain conditions, refresher training must be provided more frequently.

Requirements are detailed in Cal/OSHA’s GISO Section 3668.

The effective forklift safety instructor combines different training activities into the formal and practical components of the program as well as the workplace performance evaluation. Listed below is information regarding various safety-training activities that should be used to supplement the Cal/OSHA forklift regulations. This portion of the training guide is not comprehensive and not all situations or procedures are covered.

Video Training

People learn by different methods of instruction, including discussion, written materials, videos, and hands-on activities. Videos are versatile in that they include both audio and visual formats—some are even interactive. Showing a video about forklift safety helps maintain interest and capture attention.

If possible, the instructor should select a video that uses a setting similar to the workplace.

Written Forklift Safety Test

A forklift instructor needs to know if the trainees understand the information and can apply it to their work duties. One way to assess this is to administer a written test. A sample forklift safety test is included in this guide. When the trainees have completed the test, the instructor should review the answers with the group then keep the completed test for training documentation.

Conducting a Forklift Safety Check

Cal/OSHA regulations mandate that before each shift, the forklift operator must check the forklift for safety deficiencies. The instructor must give “hands-on” instruction to trainees on how to conduct a proper and thorough forklift safety check.

Forklift Driving Test

Forklift trainees must demonstrate a basic understanding of forklift operation as well as competent forklift driving skills. By observing a forklift operator navigating a planned driving course, the instructor can verify that the operator has the skills necessary to safely operate a forklift. The instructor should then record the trainee’s performance on the enclosed sample Forklift Operator Performance Test form, or a similar form.

Forklift Driving Course

The forklift driving test must be conducted on a forklift driving course, as required by Cal/OSHA regulations. A sample forklift driving course, which provides a variety of forklift operation activities, is included in this guide. The instructor should modify the course to simulate conditions the forklift operator may encounter in the workplace. Trainees should only attempt a forklift driving course after they have completed the formal and hands-on training segments. The employer is responsible for ensuring that each trainee is certified to operate every type of assigned forklift.

SECTION 2: FORKLIFT OPERATION AND SAFETY

In this section, various safety rules and operating procedures are reviewed. These rules and procedures, if applicable to the workplace, should be included in the forklift safety training program and are intended to supplement the Cal/OSHA forklift regulations. This section is not comprehensive and not all situations or procedures are covered. When preparing to conduct the forklift safety training, the instructor should consider additional hazards and safety rules that apply to the workplace.

Types of Forklifts

There are many different types of forklifts, which can vary in size, shape, and method of power. A forklift can be powered by an internal combustion engine using gasoline, diesel or propane gas (LPG) for fuel, or run on electricity from batteries. A forklift can have different attachments, depending on its specific use, such as fork extensions, drum clamps, lifting hooks, or a platform.

Forklift Stability

Forklifts are normally tall and narrow and may tip over easily, so operators must drive cautiously. Stopping a forklift is different from stopping a car. The two small wheels are the braking wheels, so forklifts do not stop quickly. The forklift is based on the concept of two weights being balanced on opposite sides of a pivot point with the forward wheels being the pivot point. This is the same concept as a teeter-totter.

The load on the forks must be balanced by the weight of the forklift. Every time a forklift picks up a load; the truck and load have a new combined center of gravity. The stability of the forklift is determined by the location of its center of gravity, or if the forklift is loaded, the combined center of gravity.

Forklift Limitations

Before driving a forklift, the operator must be aware of the load capacity the vehicle can safely accommodate and that the load center may change due to characteristics of the freight. This knowledge is critical because as the distance increases from the load center, the weight carrying load capacity of the forklift decreases. Before use, the forklift operator must also know the location of the forklift name plate, which lists its model number, load capacity marking, and type designation. The employer is responsible for maintaining these plates and ensuring that the information is legible.

Fueling

To prevent fire or explosion hazards, trainees must be instructed to:

- Not fuel tanks while the forklift engine is hot, running or smoking.
- Keep fuels away from ignition sources.
- Never smoke when near a fuel source or while fueling the forklift.
- Always wear the proper personal protective equipment while fueling a forklift.
- Fuel forklifts in a location that has been designated as safe for fueling.

When changing a liquid petroleum gas (LPG) tank, operators must relieve pressure in the line before disconnecting it by shutting off the tank and running the engine to empty the line.

Forklift Use in Enclosed Areas

Using gasoline or liquid propane gas forklifts in enclosed areas may lead to a build up of dangerous, potentially fatal, carbon monoxide gas. Carbon monoxide is a toxic gas, emitted in the forklift’s exhaust. An individual who is exposed to unacceptable levels of carbon monoxide may become ill due to a lack of oxygen. Carbon monoxide gas is odorless, tasteless, and colorless, and is

often not detected until the individual becomes sick. To avoid the possibility of carbon monoxide poisoning, the use of electric forklifts is recommended in enclosed work areas.

High Rack Storage

Freight stored on high racks can be 20 feet or more above the ground which presents special hazards. The lighting in high rack storage areas must be adequate, the floor surface must be smooth and free of cracks, and the forklift operator must have ample space in which to maneuver the forklift. The loads must be balanced, stacked safely, and not tiered too high. The forklift operator must take extra care to maneuver the forklift safely and slowly while stacking or un-stacking freight stored on high racks. All forklifts that are used in high rack storage operations must be equipped with overhead protection.

Transporting Loads

Forklift operators should never move a loaded forklift if he or she cannot see in the direction of travel. Travel with the load trailing, if the load blocks the operator's front view. When traveling with a load, the forks should always be carried as low as possible. Operators must be aware of the height of the forklift mast and should watch for low-hanging lights, pipes, ducts, and doorways that could present a hazard.

When ascending or descending inclines or ramps, operators should be instructed to drive the forklift slowly with the load upgrade. All employees should be reminded to never pass or stand under the elevated part of a forklift, even when it is unloaded.

Lockout, Tagout, and Blockout

Many workers are injured or killed by failing to lockout, tagout, and blockout the equipment they are operating. Forklift trainees should be given lockout/tagout safety training for cleaning, inspecting and repairing forklifts or when clearing it of obstructions. They should be taught to disconnect the battery during repairs to the primary electrical system and, if the

forklift can store residual energy, to discharge the energy before beginning work on the electrical system. Trainees could be pinned or entangled in the equipment if the proper precautions are not taken.

Starting and Dismounting

Before starting the forklift engine, the operator should be seated in the forklift, with the seatbelt fastened. Operators should never start their forklift while standing to the side. Before dismounting, the forklift should be completely stopped with the controls in neutral, the parking brake engaged, and the forks fully lowered. When the operator travels more than 25 feet away from the forklift or if the forklift is out of the operator's sight, it is considered by Cal/OSHA to be "unattended." The power must be shut off with the controls in neutral, the parking brake set, and the forks fully lowered to the ground.

Elevating Employees Using a Forklift

Extra caution should be exercised when elevating other individuals with a forklift. A personnel platform, which is secured to the forks or the mast of the lift, must be used. This platform must have proper guardrails, a toe board, and be of a sufficient size to accommodate the individual and the material being raised. The floor of the platform must be slip-resistant and free of holes that are larger than one inch in size. While the individual is elevated, the forklift operator must be at the controls and the forklift may only be moved to make minor positioning adjustments.

Workplace Conditions

Keep work environment as clean and hazard-free as possible. One way to help endure safe workplace conditions is to conduct safety inspections. An employee who has the authority to make corrections should conduct a safety inspection regularly. All floor-to-ground surfaces should be free of cracks, crumbling edges, and other defects. All workplaces should be well lit and free of clutter. If a blind corner is present, it should be eliminated if possible.

When operating a forklift outdoors, operators should keep the forklift away from ditches, embankments, and holes.

Pedestrian Safety

Pedestrians and forklifts are a dangerous combination. If possible, forklift traffic areas should be separated from pedestrian traffic areas by a barrier. All employees should receive training about the dangers of working near forklifts. Forklift operators should use their horns to alert others when they are in the proximity of pedestrians. If the workplace noise level is high, forklifts should be equipped with flashing lights to alert others of their presence.

Battery Charging

Before charging batteries, check the forklift manufacturer’s recommended charging instructions and wear the recommended personal protective equipment. Keep the battery charging area free from ignition sources that could present a fire hazard and well-ventilated so dangerous gases, fumes, and vapors do not build up.

Recordkeeping Infographic

Download this printable Infographic on Recordkeeping



Africanized Honey Bees

You will not be able to identify if a bee is "Africanized" by its color, shape, or size. The Africanized honey bee looks and sounds

like a European honey bee. Both types of bees sting once, and the effect of the sting is similar.

Bees in white commercial bee boxes (hives) are brought to fields and orchards for pollination. They are not likely to sting when gathering nectar and pollen. Commercial

beekeepers take special precautions to make sure their bees are European honey bees. Additionally, bee keeping and bee transportation are regulated by the government. In spite of these precautions, Africanized honey bees can still be found in fields with European honey bees.

Africanized honey bees are different from the European honey bees in several important ways. Here are some major differences to remember:

Africanized honey bees build nests any place that provides some protection from the weather. They are more likely than European honey bees to nest in open trees, old cars, buildings, pipes, and even underground.

Another key difference is how Africanized honey bees behave when their nest is disturbed. They are very protective of

their young and respond quickly by stinging any intruder in the nest area. They may react to a person merely walking

within 50 feet or more from the nest. Vibrations coming from motorized equipment may disturb the bees at distances of 100 feet or more.

Also, Africanized honey bees may continue their defense of the nest for a ¼ mile or more. In some cases, their active defense of the nest has lasted for several hours.

WHAT TO DO (If a Bee Nest is Disturbed)

GET OUT OF THE AREA AS FAST AS POSSIBLE.

Stingers remain in the skin leaving an odor that will attract more bees to sting in the same spot.

PROTECT HEAD, EYES, NOSE, AND MOUTH.

Pull your jacket or shirt up over your head to protect your face without slowing your progress.

RUN TO SHELTER (VEHICLE OR BUILDING).

Get to shelter if available. Some bees may follow you in, but you will be protected from the vast majority outside.

SEEK PROFESSIONAL MEDICAL CARE IF NEEDED.

Although the toxicity of the Africanized bee is no greater than a normal honey bee, seek attention if breathing is troubled,

if stung numerous times or if allergic to bee stings.

BEE AWARE OF YOUR ENVIRONMENT. PROTECT YOURSELF FROM STINGING INSECTS.

AFRICANIZED HONEY BEE POTENTIAL HIVE LOCATIONS

- storage shed
- bird house
- wood pile
- cinder blocks
- empty containers
- flower pots
- chimney
- roof vents
- eaves
- rain gutter
- wheel barrow
- air conditioner
- barbeque grill
- weed eaters / lawnmowers

BEE AWARE OF:

- mailboxes
- culverts

- meter boxes
- attics