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TAB 3:

## HAZARD AWARENESS

## 3.1 EXTREME WEATHER CONDITIONS – HEAT & COLD

### Heat Related Weather Conditions

When the body is unable to cool itself by sweating, several heat-induced illnesses can occur, and can result in death. High temperature and humidity, direct sun or heat, limited air movement, physical exertion, poor physical condition, certain medications, inadequate tolerance for hot workplaces, and insufficient water intake can all lead to heat stress.

**Heat stroke** is the most serious heat related disorder and occurs when the body's temperature regulation fails and body temperature rises to critical levels. It is a medical emergency that may result in death. If a person shows signs of possible heat stroke, professional medical treatment should be obtained immediately.

The primary signs and symptoms of heat stroke are:

- Dry, hot skin with no sweating.
- Mental confusion or losing consciousness.
- Seizures or convulsions

**Heat Exhaustion** is a result of the combination of excessive heat and dehydration. Signs and symptoms of heat exhaustion include:

- Headaches, dizziness, lightheadedness or fainting.
- Weakness and moist skin.
- Mood changes such as irritability or confusion.
- Upset stomach or vomiting

**Heat Cramps** are usually caused by performing hard physical labor in a hot environment

- Thirst cannot be relied on as a guide for the need for water, drink water every 15-20 minutes
- Studies have shown that drinking carbohydrate-electrolyte replacement liquids is effective in recovery

**Heat Rashes** are the most common problem in hot environments where the skin is persistently wetted by un-evaporated sweat.

- Heat rash looks like a red cluster of bumps or small blisters.
- It is more likely to occur on the neck and upper chest, in the groin, under the breasts, and in elbow creases.
- The best treatment is to provide a cooler, less humid environment and keep the affected area dry.

### **PREVENTION**

Water coolers are provided for drinking water only and shall be periodically cleaned and sanitized to eliminate any build-up, prevent growth of bacteria and keep the water safe to drink. Water coolers shall be periodically cleaned with a simple solution of soap and water. Use a sponge to wash it, getting into all of the crevices. After washing, rinse and dry the cooler.

Do not store sodas, drinking bottles, or anything else in the water cooler. Your hands carry germs and bacteria that will be transferred into the drinking water when retrieving bottles and cans from inside the water cooler.

**Caution:** Employees under doctor orders limiting their intake of fluids and employees on low-salt diets should consult with their doctor before drinking a sports beverage or taking salt tablets.

Tips for preventing heat illness include:

- Adjust work schedules to provide workers with a rest from the heat
- Postpone nonessential tasks
- Provide cool rest areas as well as shade and water for workers
- Wear proper protective clothing
- Ensure workers are drinking enough water to stay hydrated
- Allow workers time to acclimate to the hot environment
- Educate workers and supervisors to recognize heat illness and how to prevent it
- Know signs/symptoms of heat-related illnesses; monitor yourself and coworkers.
- Allow yourself to become acclimatized to hot weather
- Block out direct sun or other heat sources.
- Use cooling fans/air-conditioning and rest regularly
- Drink lots of water;  $\frac{1}{2}$  your body weight in oz (i.e. – if you weight 150 lbs drink 75 oz of water.)
- Wear lightweight, light colored, loose-fitting clothes (do not remove your shirt).
- Avoid alcohol, caffeinated drinks, or heavy meals

#### **FIRST AID FOR HEAT ILLNESS:**

- Call 911 (or local emergency number) at once.
- While waiting for help to arrive:
  - Move the worker to a cool, shaded area.
  - Loosen or remove heavy clothing.
  - Provide cool drinking water.
  - Fan and mist the person with water.

#### **Cold Related Weather Conditions**

More people are dying from hypothermia in the United States, a new government report shows, raising fresh worries for a nation that has been pounded by a steady succession of winter storms this year.

Workers who are exposed to extreme cold while working in harsh environments can be at risk of cold stress or other occupational illness and injuries such as:

- Hypothermia
- Frostbite
- Trench Foot

**Hypothermia** is a condition in which the body uses up its stored energy and can no longer produce heat. A core temperature of the body is less than 95 degrees Fahrenheit.

It often occurs after prolonged exposure to cold temperature or if the person becomes chilled from rain, sweat, or submersion in cold water.

The primary signs and symptoms of hypothermia are:

- Early symptoms include: shivering, fatigue, loss of coordination, confusion & disorientation.
- Late symptoms include: no shivering, blue skin, dilated pupils, and loss of consciousness

**Frost bite** is an injury to the body caused by freezing of the skin and underlying tissues.

The primary signs and symptoms of frostbite are:

- Reddened skin develops gray/white patches
- Numbness in the affected part
- Feels firm or hard
- Blisters may occur in the affect part.

**What NOT To Do for Frostbite:**

- Do not rub the affected area to warm it because this action can cause more damage.
- Do not apply snow/water.
- Do not break blisters.
- Do not try to rewarm the frostbitten area before getting medical help; for example, do not place in warm water. If a frostbitten area is rewarmed and gets frozen again, more tissue damage will occur. It is safer for the frostbitten area to be rewarmed by medical professionals.

**Immersion/Trench Foot** is caused by prolonged exposure to wet and cold temperatures, and may occur at temperatures as high as 60 degrees Fahrenheit if the feet are constantly wet. Injury occurs because wet feet lose heat 25-times faster than dry feet.

The primary signs and symptoms of hypothermia:

- Redness of the skin, swelling, numbness, & blisters.

## **PREVENTION**

1. Listen to the weather forecast
2. Plan ahead
3. Dress for cold related environments.
4. Seek shelter
5. Stay dry.
6. Keep active
7. Be aware.

## **EFFECTS ON THE WORKSITE**

- Take time throughout the day, every day, to walk through the jobsite and look for hazards created by snow and ice.
- Ensure to take time snow-clearing equipment, de-icing equipment, heating systems, winterized vehicles and cold-weather clothing
- Carefully remove icicles, especially if temperatures are beginning to warm. If this isn't possible, rope off the area under the icicles until they are no longer a hazard.

## **FIRST AID FOR COLD RELATED INJURIES**

- Call 911 immediately in an emergency; otherwise seek medical assistance as soon as possible.
- Move the person to a warm, dry area.
- Remove wet clothes and replace with dry clothes, cover the body (including the head and neck) with layers of blankets; and with a vapor barrier (e.g. tarp, garbage bag). Do not cover the face.
- If medical help is more than 30 minutes away:
- Give warm sweetened drinks if alert (no alcohol), to help increase the body temperature. Never try to give a drink to an unconscious person.
- Place warm bottles or hot packs in armpits, sides of chest, and groin. Call 911 for additional rewarming instructions.
- Give CPR if the worker is found unconscious.

## 3.2 OUTDOOR SAFETY

### INTRODUCTION

Outdoor workers are exposed to many types of hazards that depend on their type of work, geographic region, season and duration of time that they are outside. Employees who are exposed to outdoor hazards will be trained about the hazards, including hazard identification and recommendations for preventing and controlling their exposure.

Potential outdoor hazards may include: snake bites, mosquitoes, fire ants, bees, ticks, spiders, and poisonous plants

#### Personal Protective Equipment

Selecting the proper personal protective equipment is a crucial part of protecting yourself against potential hazards. PPE should be selected based off of what you could be exposed to. Some suggestions include: Heat Protection, Gloves, Leather boots, & Light colored, long sleeve pants and shirt.

Depending on the types of conditions that you're working in, also remember to follow these tips:

- Keep clothing tucked in
- Avoid wearing colognes or perfumes
- Wear insect repellent containing DEET
- Expose as little skin as possible
- Conduct an all-over body check when you leave the area.

#### **ILLNESSES FROM MOSQUITO BITES:**

- Encephalitis
  - Inflammation of the brain
  - Can cause flu-like symptoms such as fever and severe headache
- West Nile Virus
- Zika Virus

#### **STINGING INSECTS**

##### **FIRE ANTS**

Fire ant venom is toxic and can be life threatening. If a swarm is disturbed, a person can be stung as many as 5,000 times within a few seconds. Nests can be found under buildings, utility boxes, field mounds and piles of dirt. DO NOT attempt to remove a colony yourself. Call an exterminator.

##### **BEE STINGS**

The most common bees are the yellow jacket and the honey bee. Yellow jackets sting repeatedly while honey bee stings remain in your skin. If you are stung while on the jobsite, it is important to notify an employee of the company. Seek shelter immediately if there is a swarm of bees. The following tips should be utilized for prevention and response:

- Look out for swarms
- Keep food and drinks in vehicles
- Avoid hollow trees and branches
- If attacked, seek shelter immediately
- Notify a co-workers and call 911

## TICKS

Ticks are mostly active in the months of May-July. In order to protect yourself from coming into contact with ticks, high grass areas should be avoided and clothes should be treated with permethrin. Further protection should include using repellent with at least 20% DEET and conducting a full body check when returning from infested areas. Coming in contact with ticks can cause:

### Lyme Disease

- Red bulls-eye skin rash
- Flu-like symptoms: headache, fatigue
- Can result in a heart abnormalities, nervous system damage and joint disorders
- Can last years after exposure
- Also carried by deer, mice, black bears, raccoons, squirrels and foxes
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### Rocky Mountain Spotted Fever

- Flu-like symptoms
- Mental confusion
- Potentially fatal
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## **SPIDERS**

The two most dangerous types of spiders are the Black Widow and Brown Recluse. Black Widow bites are 15 times more poisonous than that of a rattlesnake. Symptoms of this bite include heavy abdominal pain which can last up to 48 hours. A bite from a Brown Recluse can result in body tissue damage.

## **VENOMOUS SNAKES:**

- Northern Copperheads
- Timber Rattlesnake
- Eastern Massasauga

## **RODENTS AND VIRUSES:**

### HANTAVIRUSES

Hantavirus is the result from exposure to rodent droppings which can result in respiratory failure. If droppings or nesting material are swept into the air, the virus is able to be breathed in. Farm workers, Animal Lab workers and Construction workers are the most frequently exposed. Symptoms of Hantavirus include flu-like fever, chills and aches. If droppings are found:

- Drench droppings with a 1:10 water to bleach ratio and pick up with a damp towel
- Use latex/vinyl gloves and a HEPA filter air purifying respirator

## **POISONOUS PLANTS:**

POISON IVY is the most commonly found urushiol plant and has many different species ranging in a variety of habitats. It typically has three shiny green leaves; however, leaves may be red in the fall.

POISON OAK can be found in a variety of soils and contains three leaves, similar to that of poison ivy.

POISON SUMAC is most commonly found in swamps and bogs where soil is acidic and wet. It contains 7-13 leaves arranged in pairs.



Poison Ivy



Poison Oak



Poison Sumac

**Additional Facts:**

- Urushiol poisonings are the single most common Worker’s Comp. Claim in the US
- The most common way to avoid is the folk saying “Leaflets three, let it be.”
- Poison Sumac is the only plant without three leaves. It can have up to 13 leaflets, usually in an odd number.
- Wearing long sleeves and pants can usually help avoid the common rash symptoms. Tools and clothing can remain contaminated for years.
- Wash rigorously with cold water and soap

**FIRST AID PROCEDURES:**

The following first aid procedures shall be followed if employees are to come in contact with any of the following hazards:

<p><b>Mosquito Bites</b></p> <ul style="list-style-type: none"> <li>• Watch for flu-like symptoms</li> <li>• If symptoms persist, seek medical attention</li> </ul>	<p><b>Bee Stings</b></p> <ul style="list-style-type: none"> <li>• Watch for reactions such as Anaphylactic Shock</li> <li>• Never squeeze stingers</li> <li>• Remove stingers horizontally with a knife</li> <li>• Wash with soap and water</li> <li>• Apply ice</li> <li>•</li> </ul>	<p><b>Fire Ants</b></p> <ul style="list-style-type: none"> <li>• Watch for blisters. If breathing becomes difficult, call 911</li> </ul>
<p><b>Ticks</b></p> <ul style="list-style-type: none"> <li>• If a tick is found, remove it with tweezers; not your fingers</li> <li>• Do not twist the ticks body, pull straight out</li> <li>• Do not use a match</li> <li>• Watch for symptoms of Lyme Disease</li> </ul>	<p><b>Spiders</b></p> <ul style="list-style-type: none"> <li>• Watch for symptoms such as red swollen areas</li> <li>• If you experience high blood pressure, seek medical attention</li> </ul>	<p><b>Snake Bites</b></p> <ul style="list-style-type: none"> <li>• Use a belt/rope to constrict the poison</li> <li>• Do not raise the wound - keep below your heart</li> <li>• Get to a hospital immediately</li> </ul>

### 3.3 DRIVING SAFETY

According to the Bureau of Labor Statistics' *National Census of Fatal Occupational Injuries*, roadway incidents accounted for 57% of the fatal work injury total for 2014. That number is 57 percent of the annual number of fatalities from occupational injuries. The following Driving Safety rules and procedures have been established.

#### SAFETY RULES:

- Only authorized employees may drive a motor vehicle in the course and scope of work or operate a company-owned vehicle.
- Drivers must have a valid and current license to operate the vehicle.
- Operating a vehicle while under the influence of alcohol, illegal drugs, or certain medications that may impair driving skills is prohibited.
- Seatbelts must be worn by all vehicle occupants at all times whenever a vehicle is in motion.
- Authorized drivers must follow safe driving practices including, but not limited to:
  - Practice defensive driving techniques
  - Do not use any electronic equipment that may cause distraction
  - Obey all posted traffic and speed limit signs
  - Maintain a safe distance between vehicles at all times
  - Report all traffic violations and accidents to supervisors
- All collisions and traffic violations that have occurred while driving on company duties must be reported.
- All vehicles used for company business must be fit for purpose and maintained in a safe working order.
- Loads must be secure and shall not exceed the manufacturer's specifications and legal limits for the vehicle.

#### DEFENSIVE DRIVING TECHNIQUES

Following the rules of the road can help you concentrate on what you should be doing...driving. Stay out of the other vehicle's blind spot and avoid tailgating. Instead, keep a safe distance from other drivers by maintaining a safety cushion of driving space between your vehicle and those around you. As an extra precaution, know the condition of the weather and road and drive only as fast as those conditions allow.

Be cautious by staying alert and expecting the unexpected. Watch out for and anticipate other drivers, pedestrians or children on or near the road. Safe drivers scan constantly for hazards, predicting how they may be affected by a hazard and pre-determining how to avoid or reduce them.

The ever-changing variable of the road and other vehicles can make drivers instantly vulnerable to accidents. If drivers don't practice these safe practices on the road, they might personally discover why vehicle deaths and serious injuries now total more than all the wartime wounded and fatalities since 1776. Be aware of the following items while driving:

- Know and observe all traffic rules and regulations
- Constantly be alert for the illegal acts and driving errors of other drivers. Make timely adjustments in your own driving so that these illegal acts and errors will not involve you in an accident.

- Know your vehicle and be aware of special hazards presented by abnormal, unusual, or changing conditions.
- Be aware of the rules of right of way and be willing to yield to the right of way to the other driver whenever necessary

The following outlines general principles of defensive driving:

- **See the hazard**—when driving, think about what is going to happen or what might happen as far ahead of encountering a situation as possible. You should never assume everything will be "all right."
- **Understand the defense**—specific situations require specific ways of handling. Become familiar with the unusual conditions which you may face and learn them well so that you can apply them when the need arises.
- **Act in time**—once you've noted a hazard and understand the defense against it, act! Never take a "wait and see" attitude.

Taking these three steps and keeping good driving techniques in mind, you'll learn to "give in" a little; to tailor your driving behavior to the unexpected actions of other drivers and pedestrians; the unpredictable and ever changing factors of light, weather, road, and traffic conditions; and the mechanical condition of your vehicle.

## 3.4 TOOLS AND EQUIPMENT

Hand and power tools are a common part of our everyday lives and are present in nearly every industry. These tools help us to easily perform tasks that otherwise would be difficult or impossible. However, these simple tools can be hazardous and have the potential for causing severe injuries when used or maintained improperly. Special attention toward hand and power tool safety is necessary in order to reduce or eliminate these hazards.

Hand and power tools are addressed in specific standards for the construction industry. General OSHA requirements state that all hand and power tools and similar equipment, whether furnished by the employer or the employee, be maintained in a safe condition. They establish standards for guarding, personal protective equipment, and switches. Specific standards apply to hand tools; power-operated hand tools; abrasive wheels and tools; woodworking tools; jacks; air receivers; and mechanical power-transmission apparatus. The items below summarize safe practices for use of hand and power tools.

- Maintain all hand tools and equipment in a safe condition and check them regularly for defects. Identify broken or damaged tools and equipment by tagging or locking the controls until they can be repaired or disposed of.
- Follow the manufacturer's requirements for safe use of all tools.
- Use double insulated tools, or ensure that the tools are grounded.
- Equip all power saws (circular, skill, table, etc.) with blade guards.
- Make sure guards are in place before using power saws. Don't use power saws with the guard tied or wedged open.
- Turn off saws before leaving them unattended.
- Raise or lower tools by their handles, not by their cords.
- Don't use wrenches when the jaws are sprung to the point of slippage. Replace them.
- Don't use impact tools with mushroomed heads. Replace them.
- Keep wooden handles free of splinters or cracks and be sure the handles stay tight in the tool.
- Workers using powder-activated tools must receive proper training prior to using the tools.
- Always be sure that hose connections are secure when using pneumatic tools.
- Never leave cartridges for pneumatic or powder-actuated tools unattended. Keep equipment in a safe place, according to the manufacturer's instructions.
- Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dust, fumes, mists vapors, or gases will be provided with particular PPE necessary to protect them from the hazard.

### HAND TOOLS

Hand tools are non-powered. They include anything from axes to wrenches. The greatest hazards posed by hand tools result from misuse and improper maintenance.

Some examples of misused hand tools:

- Using a screwdriver as a chisel may cause the tip of the screwdriver to break and fly, hitting the user or other employees.
- If a wooden handle on a tool such as a hammer or an axe is loose, splintered, or cracked, the head of the tool may fly off and strike the user or another worker.

- A wrench must not be used if its jaws are sprung, because it might slip.
- Impact tools such as chisels, wedges, or drift pins are unsafe if they have mushroomed heads. The heads might shatter on impact, sending sharp fragments flying.

Saw blades, knives, or other tools are to be directed away from aisle areas and other employees working in close proximity. Knives and scissors must be kept sharp. Dull tools can be more hazardous than sharp ones.

Around flammable substances, sparks produced by iron and steel hand tools can be a dangerous ignition source. Where this hazard exists, spark-resistant tools made from brass, plastic, aluminum, or wood will be provided for safety.

## **PNEUMATIC POWER TOOLS**

Pneumatic tools are powered by compressed air; they include chippers, drills, hammers, and sanders. There are several dangers encountered in the use of pneumatic tools. The main hazard is the danger of getting hit by one of the tool's attachments, or some kind of fastener the worker is using with the tool. Noise is another hazard associated with pneumatic tools. Refer to the Penn Fencing Hearing Conservation Program for more information regarding hearing protection.

Pneumatic tools that shoot nails, rivets, or staples, and operate at more than 100 pounds per square inch (psi), must be equipped with a special device to keep fasteners from being ejected unless the muzzle is pressed against the work surface. Eye protection is required and face protection is recommended for employees working with pneumatic tools. Noise is another hazard. Working with noisy tools such as jackhammers requires proper, effective use of ear protection.

When using pneumatic tools, employees must check to see that they are fastened securely to the hose by a positive means to prevent them from becoming disconnected. A short wire or positive locking device attaching the air hose to the tool will serve as an added safeguard.

Airless spray guns which atomize paints and fluids at high pressures (1,000 psi or more) must be equipped with automatic or visual manual safety devices which will prevent pulling the trigger until the safety device is manually released.

If an air hose is more than one-half inch in diameter, a safety excess flow valve must be installed at the source of the air supply to shut off the air automatically in case the hose breaks. In general, the same precautions should be taken with an air hose that are recommended for electric cords, since the hose is subject to the same kind of damage or accidental striking and presents tripping hazards. The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded. In addition, the use of hoses for hoisting or lowering is not permitted.

A safety clip or retainer must be installed to prevent attachments, such as chisels on a chipping hammer, from being unintentionally shot from the barrel. Screens must be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers, or air drills.

Compressed air guns should never be pointed toward anyone. The user should never "dead-end" it against him or herself or anyone else. Compressed air shall not be used to blow dirt, debris, or similar material off of your clothing, unless reduced to less than 30 psi. If using less than 30 psi for cleaning

purposes, effective chip guarding and personal protective equipment meeting the requirements of 29 CFR 1926, Subpart E must be used.

Heavy jackhammers can cause fatigue and strains; heavy rubber grips reduce these effects by providing a secure handhold. Workers operating a jackhammer must wear safety glasses and safety shoes, which protect against injury if the hammer slips or falls. A face shield should also be used.

## **ELECTRIC TOOLS**

Employees using electric tools must be aware of several dangers; the most serious is the possibility of electrocution. Among the chief hazards of electric-powered tools are burns and slight shocks which can lead to injuries or even heart failure. Under certain conditions, even a small amount of current can result in fibrillation of the heart and eventual death. A shock also can cause the user to fall off a ladder or another elevated work surface.

To protect the user from shock, tools must either have a three-wire cord and be grounded, be double insulated, or be powered by a low-voltage isolation transformer. Three-wire cords contain two current-carrying conductors and a grounding conductor. One end of the grounding conductor connects to the tool's metal housing. The other end is grounded through a prong on the plug. Anytime an adapter is used to accommodate a two-hole receptacle, the adapter wire must be attached to a known ground. The third prong should never be removed from the plug.

Double insulation is more convenient. The user and the tools are protected in two ways: by normal insulation on the wires inside, and by a housing that cannot conduct electricity to the operator in the event of a malfunction.

The following general practices should be followed when using electric tools:

- Electric tools should be operated within their design limitations.
- Gloves and safety footwear are recommended during use of electric tools.
- When not in use tools should be stored in a dry place.
- Electric tools should not be used in damp or wet locations.
- Work areas should be well lighted.

## **GUARDING**

Hazardous moving parts of a power tool need to be safeguarded. For example, belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or moving parts of equipment must be guarded if such parts are exposed to contact by employees.

Guards, as necessary, should be provided to protect the operator and others from the following:

- Point of operation
- In-running nip points
- Rotating parts, and
- Flying chips and sparks.

Safety guards must never be removed when a tool is being used. For example, portable circular saws must be equipped with guards. An upper guard must cover the entire blade of the saw. A retractable

lower guard must cover the teeth of the saw, except when it makes contact with the work material. The lower guard must automatically return to the covering position when the tool is withdrawn from the work.

When power tools are designed to accommodate guards, they will be equipped with such guards at all times when in use. All power saws (circular, skill, table, etc.) will be equipped with blade guards. Ensure that guards are in place before using a piece of equipment that is equipped with guards. Do not use power saws with the guard tied or wedged open.

Portable grinding tools need to be equipped with safety guards to protect workers, not only from the moving wheel surface, but also from flying fragments in case of breakage.

Guarding shall meet the requirements set forth in ANSI B15.1. Guards may not be manipulated in such a way that will compromise its integrity or the protection in which intended.

## 3.5 CRYSTALLINE SILICA

Silica is a term which refers broadly to the mineral compound silicon dioxide (SiO<sub>2</sub>) and can be in the form of crystalline silica or amorphous silica. Crystalline silica is significantly more hazardous to employees than amorphous silica, and the term “silica” refers specifically to crystalline silica.

Crystalline silica is the basic component of sand, quartz, and granite rock. In addition to causing the disabling and irreversible lung disease known as silicosis, crystalline silica has been classified as a human carcinogen by the International Agency for Research on Cancer (IARC). Crystalline silica is an important industrial material and occupational exposure occurs across a broad range of industries.

More than two million U.S. workers are exposed to crystalline silica. OSHA estimates that more than 840,000 of these workers are exposed to silica levels that exceed the new permissible exposure limit (PEL). Processes associated historically with high rates of silicosis include sandblasting, sand-casting foundry operations, mining, tunneling, and granite cutting. Workers may be exposed to crystalline silica in a variety of industries, including, but not limited to: construction, mining, foundry work, stone cutting, ceramics or pottery work, glass manufacturing, shipyards, or manufacturing.

### Health Effects

Occupational exposure to crystalline silica dust has long been known to produce pulmonary silicosis, a disabling, nonreversible, incurable lung disease caused by the inhalation of respirable crystalline silica particles. Additionally, there is evidence that exposure to crystalline silica-containing dusts causes or is associated with the following conditions: lung cancer, tuberculosis, chronic obstructive pulmonary disease (including emphysema and bronchitis), autoimmune diseases or immunologic disorders, chronic renal disease, and subclinical renal changes. Smoking adds to the damage. Silicosis was considered to be the most serious occupational hazard during the 1930's when federal, state, and professional efforts started to focus attention on prevention strategies.

Once the microscopic particles are deposited in the lungs, they cause tissue damage and lead to the formation of fibrosis (scar tissue). This scarring decreases the lungs' ability to extract oxygen from the air. Smoking adds to the damage. There are three types of silicosis:

- **Chronic silicosis:** Usually occurs after 10 or more years of exposure to crystalline silica at low levels. This is the most common type of silicosis. Symptoms may not appear in the early stages of chronic silicosis. In fact, chronic silicosis may go undetected for 15 to 20 years after exposure. Eventually, silicosis can result in respiratory failure and death.
- **Accelerated silicosis:** Results from exposure to higher levels of crystalline silica and occurs 5 to 10 years after exposure. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in chronic silicosis.
- **Acute silicosis:** Can occur after only weeks or months of exposure to very high levels of crystalline silica. Death occurs within months. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Acute silicosis may develop after short periods of overexposure

As silicosis progresses, symptoms may include: shortness of breath, severe cough, weakness, occasional bluish skin at the ear lobes or lips, fatigue, or loss of appetite. Due to the presence of silica in the lungs, the body's ability to fight infections may be weakened and other illnesses (such as tuberculosis) may result and can cause fever, weight loss, night sweats, chest pains, or respiratory failure. These symptoms can become worse over time, leading to death.

## General Requirements

Penn Fencing has made a commitment to prevent silicosis at the worksite by taking the necessary steps to reduce employee exposure. It is our goal to comply with OSHA's Crystalline Silica standard, 29 CFR 1926.1153, and to ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of OSHA's permissible exposure limit (PEL) of 50 µg/m<sup>3</sup> calculated as an 8-hour TWA.

This plan will be available for examination and copying, upon request, to each employee covered by 29 CFR 1926.1153, their designated representatives, the Assistant Secretary and the Director. The plan will be reviewed and evaluated for effectiveness at least annually and updated as necessary.

## Control Methods

In order to reduce our workers' exposure to silica, tools will be operated and maintained in accordance with the manufacturer's instructions in order to minimize dust emissions. The following tasks involve exposure to respirable crystalline silica. \$Company\_Name plans to utilize the control methods outlined below in order to reduce exposure:

- **Walk-behind saws** – Integrated water delivery systems with continuously fed water to the blades. Respiratory protection with an APF 10 is required when used indoors, in an enclosed area, or outdoors for more than 4 hours.
- **Handheld and stand-mounted drills (including impact and rotary hammer drills)** – A commercially available shroud or cowl with dust collection system that provides the air flow recommended by the tool manufacture, or greater, and having a filter with 99% or greater efficiency and filter-cleaning mechanism. A HEPA filtered vacuum will be used when cleaning holes.
- **Jackhammers and handheld powered chipping tools** - Water delivery system with continuously stream or spray at the point of impact. Respiratory protection with an APF 10 is required when used indoors, in an enclosed area, or outdoors for more than 4 hours. OR a tool equipped with a shroud and dust collection system will be used along with a filter with 99% or greater efficiency and a filter cleaning mechanism. Respiratory protection with an APF 10 is required when used indoors, in an enclosed area, or outdoors for more than 4 hours.

When control methods are not feasible or practical, Penn Fencing will conduct an exposure assessment for each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level of 25 in accordance with OSHA's prescribed methods, detailed at 29 CFR 1926.1153(d).

When it is not feasible to fully and properly comply with the engineering controls, work practice controls, and respiratory protection described in OSHA's exposure Methods table outlined in 29 CFR 1926.1153(c)(1), the following measures will be implemented:

- Ensure that no employee is exposed to an airborne concentration of respirable silica in excess of 50 µg/m<sup>3</sup> (micrograms of silica per cubic meter of air), calculated as an 8-hour TWA
- Assess the exposure of each employee who is or may be expected to be exposed to respirable silica at or above the action level of 25 µg/m<sup>3</sup>
- Use engineering and work practice controls to reduce and maintain employee exposure to respirable silica to or below the PEL, unless such controls are not feasible.

- Reduce employee exposure to the lowest feasible level and shall supplement them with the use of respiratory protection.

### Housekeeping

Housekeeping practices that have the potential to expose workers to silica such as dry sweeping, dry brushing and use of compressed air on surfaces that could contribute to employee exposure of respirable silica shall be replaced with methods that minimize the likelihood of exposure where feasible. Some alternative measures consist of wet sweeping HEPA-filtered vacuuming and ventilation systems that effectively capture the dust clouds.

### Medical Surveillance

If employees will be required to use a respirator for 30 or more days per year due to silica exposure as outlined in 29 CFR 1926.1153, medical surveillance will be offered at no cost to the employee.

Penn Fencing will ensure that medical surveillance complies with the following:

- All medical examinations and procedures required are performed by a PLHCP
- An initial (baseline) medical examination is made available within 30 days of initial assignment unless the employee has received a medical examination in the last three years that meet OSHA's exam requirements.
- Medical examinations shall be available at least every three years.

Exams will include at least the following items:

- A medical & occupational history to collect data on worker exposure
- Physical examination with special emphasis on the respiratory system
- Chest X-rays
- Pulmonary function testing
- Testing for latent tuberculosis

A form that may be used to document if an employee declines participation in the medical surveillance program is located at the end of the Crystalline Silica section in the Hazard Communication program.

### Worker Responsibilities

Signs warning workers of hazardous work areas will be posted. These signs will contain the hazards and specify any personal protective equipment that is required. Workers are responsible for the following:

- Using engineering controls properly
- following safe work practices
- Participating in air monitoring and training programs
- Using the appropriate type of respirator when necessary
- Washing hands and face before eating, drinking, etc.
- Eating, drinking, etc. Only in areas where there is no crystalline silica dust;
- If possible, wearing disposable or washable work clothes and change into clean clothing before leaving the worksite.

## Training

Workers will be trained about the jobs that present a silica hazard, crystalline silica's health effects, engineering and work practice controls to reduce exposures, the importance of maintenance and good housekeeping, the proper type and fitting of respirators (according to the facility's written respiratory protection program), Hazcom, and the proper use and care of personal protective equipment at least annually.

Employees required to handle or use poisons, caustics, and other harmful substances shall be instructed regarding the safe handling and use, and be made aware of the potential hazards, personal hygiene, and personal measures required.

Training for employees who operate sandblasting, abrasive blasting, and hydroblasting equipment; and employees who work in close proximity to these operations will be trained before performing these operations, and at least annually.

## 3.6 VEHICLES AND MOBILE EQUIPMENT

If vehicle safety practices are not observed, employees risk being pinned between construction vehicles and walls, struck by swinging backhoes, crushed beneath overturned vehicles, or other similar accidents. In addition, work near public roadways present the risk being struck by trucks or cars.

Provided below are suggested practices for operations involving vehicles and mobile equipment. For further details, refer to the OSHA standards covering motor vehicles and mechanized equipment.

- Only authorized employees are allowed to operate mobile equipment.
- Employees must be instructed to stay clear of backing and turning vehicles and equipment with rotating cabs.
- All off-road equipment used on site must be equipped with rollover protection (ROPS) (Figure 21).
- Back-up alarms for equipment with limited rear view or use someone to help guide them back must be maintained.
- Conduct pre-shift inspections on the assigned equipment to verify that the equipment is in working order.
- Be sure that all vehicles have fully operational braking systems, brake lights, and a working backup alarm.
- Use seat belts when transporting workers in motor and construction vehicles.
- Maintain at least a 10-foot clearance from overhead power lines when operating equipment.
- Block up the raised bed when inspecting or repairing dump trucks.
- Know the rated capacity of the crane and use accordingly.
- Ensure the stability of the crane.
- Use a tag line to control materials moved by a crane.
- Verify experience or provide training to crane and heavy equipment operators.
- Passengers are not permitted to ride on equipment unless the equipped to accommodate passengers.
- The equipment operator shall use access provided to get on and off equipment.
- If the mobile equipment does not have an enclosed cab, eye protection must be used when in operation.
- Vehicles and mobile equipment must only be used in the manner in which it was designated and intended for.
- Before fueling, the operator of a gasoline or diesel vehicle must shut off the engine and shall see that the nozzle of the filling hose makes contact with the filling neck of the tank. No one shall be on the vehicle during fueling operations except as specifically required by design. There shall be no smoking or open flames in the immediate area during fueling operation.

## **3.7 HAND-SIGNALING CONTROL**

The primary function of traffic control procedures is to move vehicles and pedestrians safely and expeditiously through or around temporary traffic control zones while protecting on-site workers and equipment.

### **QUALIFICATIONS FOR FLAGGERS**

Because flaggers are responsible for public safety and make the greatest number of public contacts of all highway workers, they should have the following minimum qualifications:

- Sense of responsibility for the safety of the public and workers
- Training in safe traffic control practices
- Average intelligence
- Good physical condition, including sight and hearing
- Mental alertness and the ability to react in an emergency
- Courteous but firm manner
- Neat appearance

### **HIGH-VISIBILITY CLOTHING**

For daytime work, the flagger's vest, shirt, or jacket shall be orange, yellow, strong yellow green or fluorescent versions of these colors. For nighttime work, similar outside garments shall be retro-reflective. The retro-reflective material shall be orange, yellow, white, silver, strong yellow-green, or a fluorescent version of one of these colors and shall be visible at a minimum distance of 1,000 feet. The retro-reflective clothing shall be designed to identify clearly the wearer as a person and be visible through the full range of body motions.

Uniformed law enforcement officers may be used as flaggers in some locations, such as an urban intersection, where enforcement of traffic movements is important. Uniformed law enforcement officers may also be used on freeways where traffic is channeled around work sites and it is necessary to assure that advisory and regulatory speeds are being enforced. For nighttime work and in low-visibility situations, a retro-reflective garment as described above should be worn.

### **HAND-SIGNALING DEVICES**

Hand-signaling devices, such as STOP/SLOW paddles, lights, and red flags are used to control traffic through temporary traffic control zones. The STOP/SLOW paddle, which gives drivers more positive guidance than red flags, should be the primary hand-signaling device. The standard STOP/SLOW sign paddle shall be 18 inches, square with letters at least 6 inches high. A rigid handle should be provided. This combination sign should be fabricated from light semi-rigid material, and shall have an octagonal shape. The background of the STOP face shall be red with white letters and border. To improve conspicuity, the STOP/SLOW paddles may be supplemented by one or two symmetrically positioned alternately flashing white high-intensity lamps on each side. The background of the SLOW face shall be orange with black letters and border. When used at night, the STOP/SLOW paddle shall be retro-reflectORIZED in the same manner as signs.

Flag use should be limited to emergency situations and at low-speed and/or low-volume locations which can best be controlled by a single flagger. Flags used for signaling shall be a minimum of 24 inches square, made of a good grade of red material, and securely fastened to a staff about 3 feet long. The free edge should be weighted so the flag will hang vertically, even in heavy winds. When used at night, flags shall be retro-reflective red.

### **HAND-SIGNALING PROCEDURES**

STOP/SLOW paddle and flag use are illustrated in the figure on the next page. The following methods of signaling with STOP/SLOW paddles should be used:

- To Stop Traffic-The flagger shall face traffic and extend the STOP sign paddle in a stationary position with the arm extended horizontally away from the body. The free arm should be raised with the palm toward approaching traffic.
- To Direct Stopped Traffic to Proceed-The flagger shall face traffic with the SLOW paddle held in a stationary position with the arm extended horizontally away from the body. The flagger should motion with the free hand for traffic to proceed.
- To Alert or Slow Traffic-The flagger shall face traffic with the SLOW sign paddle held in a stationary position with the arm extended horizontally away from the body. The flagger may motion up and down with the free hand, palm down, indicating that the vehicle should slow down.

The following methods of signaling with a flag should be used:

- To Stop Traffic-The flagger shall face traffic and extend the flag staff horizontally across the traffic lane in a stationary position, so that the full area of the flag is visible hanging below the staff. The free arm should be raised with the palm toward approaching traffic.
- To Direct Stopped Traffic to Proceed. The flagger shall face traffic with the flag and arm lowered from view of the driver. With the free hand, the flagger should motion traffic to proceed. Flags shall not be used to signal traffic to proceed.
- To Alert or Slow Traffic. The flagger shall face traffic and slowly wave the flag in a sweeping motion of the extended arm from shoulder level to straight down, without raising the arm above a horizontal position.

### **FLAGGER STATIONS**

Flagger stations shall be located far enough ahead of the work space so that approaching traffic has sufficient distance to stop before entering the work space. Table VI-1 in the Manual on Universal Traffic Control Devices (Guidelines for Length of Longitudinal Buffer Space), may be used for locating flagger stations in advance of the work space. This distance is related to approach speeds, friction factors, and pavement and tire conditions. These distances may be increased for downgrades.

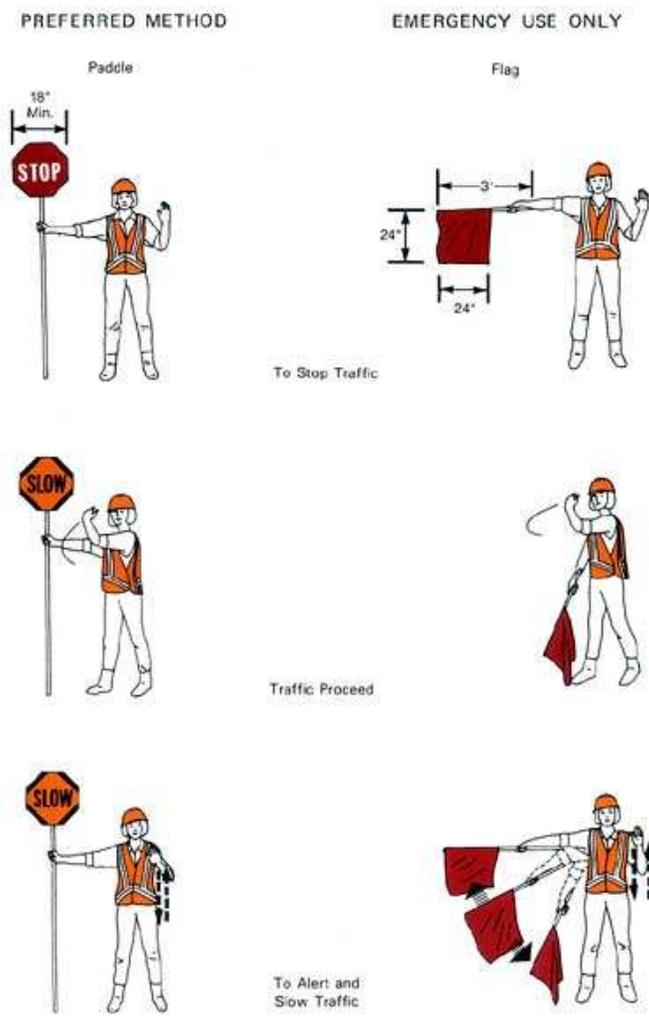
The flagger should stand either on the shoulder adjacent to the traffic being controlled or in the barricaded lane. At a "spot" obstruction, a position may have to be taken on the shoulder opposite the barricaded section to operate effectively. A flagger should stand only in the lane being used by moving traffic after traffic has stopped, and the flagger needs to be visible to other traffic or to communicate

with drivers. Because of the various roadway geometrics, flaggers should be clearly visible to approaching traffic at all times. For this reason, the flagger should stand alone.

Other workers should not be permitted to congregate around the flagger station. The flagger should be stationed far enough ahead of the work force to warn them (for example with horns, whistles etc.) of approaching danger, such as vehicles out of control.

Flagger stations should be visible far enough ahead to permit all vehicles to stop. Table VI-1 in the Manual on Universal Traffic Control Devices (Guidelines for Length of Longitudinal Buffer Space), may be used in selecting the location of flaggers. This distance is related to approach speeds, friction factors, and pavement and tire conditions. These distances may be increased for downgrades. These distances are calculated in a manner similar to those calculated in the first paragraph of 6E-6. Flagger stations should be preceded by proper advance warning signs. Under certain geometric and traffic situations, more than one flagger station may be required for each direction of traffic. At night, flagger stations should be illuminated.

At two-way, unusually low-volume and/or unusually low- speed short lane closings where adequate sight distance is available for the safe handling of traffic, the use of one flagger may be sufficient.



**USE OF HAND SIGNALING DEVICES BY FLAGGER**

## 3.8 ELECTRICAL SAFETY

Electrical current exposes workers to a serious, widespread occupational hazard; practically all members of the workforce are exposed to electrical energy during the performance of their daily duties, and electrocutions occur to workers in various job categories. Many workers are unaware of the potential electrical hazards present in their work environment, which makes them more vulnerable to the danger of electrocution.

Electrical injuries consist of four main types: electrocution (fatal), electric shock, burns, and falls caused as a result of contact with electrical energy.

Safety and health programs must address electrical incidents and the variety of ways electricity becomes a hazard. In general, OSHA requires that employees not work near any part of an electrical power circuit unless protected. The following hazards are the most frequent cause of electrical injuries:

- Contact with power lines
- Lack of Ground-Fault Protection
- Path to Ground Missing or Discontinuous
- Equipment Not Used in Manner Prescribed
- Improper Use of Extension and Flexible Cords

Provided below is a summary of jobsite safety practices that will help guide Penn Fencing in avoiding common electrical hazards. For exact language and specific details Occupational Safety and Health Administration's (OSHA) Electrical Safety Standards for the Construction Industry refer to 29 CFR 1926 Subpart K.

- Prohibit work on new and existing energized (hot) electrical circuits until all power is shut off and a positive Lockout/Tagout System is in place.
- Don't use frayed or worn electrical cords or cables.
- Use only 3-wire type extension cords designed for hard or junior hard service. (Look for any of the following letters imprinted on the casing: S, ST, SO, STO, SJ, SJT, SJO, SJTO.)
- Maintain all electrical tools and equipment in safe condition and check regularly for defects.
- Remove broken or damaged tools and equipment from the jobsite.
- Protect all temporary power (including extension cords) with ground fault circuit interrupters (GFCIs). Plug into a GFCI-protected temporary power pole, a GFCI protected generator, or use a GFCI extension cord to protect against shocks (Figure 22).
- Don't bypass any protective system or device designed to protect employees from contact with electrical current.
- Locate and identify overhead electrical power lines. Make sure that ladders, scaffolds, equipment or materials never come within 10 feet of electrical power lines.

### 3.9 GROUND-FAULT CIRCUIT INTERRUPTERS (GFCI)

Penn Fencing uses Ground Fault Circuit Interrupters whenever feasible. A ground-fault occurs when there is a break in the low-resistance grounding path from a tool or electrical system. The electrical current may then take an alternative path to the ground through the user, resulting in serious injuries or death. The ground-fault circuit interrupter, or GFCI, is a fast-acting circuit breaker designed to shut off electric power in the event of a ground-fault within as little as 1/40 of a second. It works by comparing the amount of current going to and returning from equipment along the circuit conductors. When the amount going differs from the amount returning by approximately 5milliamperes, the GFCI interrupts the current.

The GFCI is rated to trip quickly enough to prevent an electrical incident. If it is properly installed and maintained, this will happen as soon as the faulty tool is plugged in. If the grounding conductor is not intact or of low-impedance, the GFCI may not trip until a person provides a path. In this case, the person will receive a shock, but the GFCI should trip so quickly that the shock will not be harmful.

The GFCI will not protect you from line contact hazards (i.e. a person holding two "hot" wires, a hot and a neutral wire in each hand, or contacting an overhead power line). However, it protects against the most common form of electrical shock hazard, the ground-fault. It also protects against fires, overheating, and destruction of wire insulation.

Because GFCIs are so complex, they require testing on a regular basis. Test permanently wired devices monthly, and portable-type GFCIs before each use. All GFCIs have a built-in test circuit, with test and reset buttons, that triggers an artificial ground-fault to verify protection. Ground-fault protection, such as GFCIs provide, is required by OSHA in *addition* to (not as a substitute for) general grounding requirements.

**RECEPTACLE TYPE:** The Receptacle Type incorporates a GFCI device within one or more receptacle outlets. Such devices are becoming popular because of their low cost.



**PORTABLE:** Portable Type GFCIs come in several styles, all designed for easy transport. Some are designed to plug into existing non-GFCI outlets, or connect with a cord and plug arrangement. The portable type also incorporates a no-voltage release device that will disconnect power to the outlets if any supply conductor is open. Units approved for outdoor use will be in enclosures suitable for the environment. If exposed to rain, they must be listed as waterproof.



**CORD-CONNECTED:** The Cord-Connected Type of GFCI is an attachment plug incorporating the GFCI module. It protects the cord and any equipment attached to the cord. The attachment plug has a non-standard appearance with test and reset buttons. Like the portable type, it incorporates a no-voltage release device that will disconnect power to the load if any supply conductor is open.



## 3.11 ERGONOMICS & MANUAL LIFTING

Ergonomic injury risk factors include forceful movements, repetitive motions, awkward postures, and lack of rest. Rest periods give the body time to recover from work; break time exercises and stretches strengthen the body. Workers should think of themselves as Industrial Athletes; athletes wouldn't participate in a sport without proper rest and warm-up, so use the same preparation on the job.

**Breaks** - Pay attention to signs of discomfort and fatigue on the job; these are warning signs from your body. As muscles tire during a work task, slouching can lead to poor posture, sloppy, uncontrolled movements, and injuries. Rest breaks mean recovery for the body. During a job task, take micro-breaks lasting 10-15 seconds every ten minutes. Take periodic mini-breaks lasting 3-5 minutes. These short breaks give the body a rest, reduce discomfort, and improve your performance.

**Rest Periods** - Alternate your work activities and postures throughout the day. Rotating tasks may seem inefficient, but the rest and use of different muscle groups increases energy and maintains productivity. For example, if you are a landscaper, don't trim all of the shrubs, sweep up the trimmings, and then leaf-blow the whole area; work in sections and trim, sweep, and leaf-blow in alternating tasks. If you work at a single workstation and job task all day, move into different postures while you work: first standing, then standing with one foot resting on a stool, then sitting.

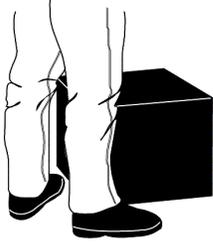
**Stretches** - Stretches help you to warm-up before work and relax during breaks; they increase flexibility and boost blood flow and oxygen to muscles. Perform stretches slowly and gently; avoid extreme postures and stop stretching if you feel pain or discomfort. Physical and Occupational Therapists are the most qualified individuals to generate a specific stretching and warm-up program.

**Proper Lifting Techniques** - There are a wide variety of injuries that can happen to the back. Some injuries are serious enough to require surgery. Some injuries lead to permanent disability. Any back injury can limit all of your activities, both on and off of the job. By using the correct lifting posture, you can avoid back injury.

The basic rules of good lifting are:

- Size up the load before you lift. Test by lifting one of the corners or pushing. If it's heavy or feels too clumsy, get a mechanical aid or help from another worker. When in doubt, don't lift alone.
- Bend the knees. Note that this item is the single, most important aspect of lifting.
- Place your feet close to the object and center yourself over the load.
- Get a good handhold.
- Lift straight up, smoothly, and let your legs do the work, not your back.
- Do not twist or turn your body once you have made the lift.
- Make sure beforehand that you have a clear path to carry the load.
- Set the load down properly.
- Always push, not pull, the object when it's on a cart or dolly.
- If it's a long load, get some help.
- Split the load into several smaller ones when you can.

## Safe Lifting Techniques



1. Stand close to the load with feet spread apart about shoulder width, with one foot slightly in front of the other for balance.



2. Squat down bending at the knees (not your waist). Tuck your chin while keeping your back as vertical as possible.



3. Get a firm grasp of the object before beginning the lift.



4. Begin slowly lifting with your LEGS by straightening them. Never twist your body during this step.



5. Once the lift is complete, keep the object as close to the body as possible. As the load's center of gravity moves away from the body, there is a dramatic increase in stress to the lumbar region of the back.

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TAB 4:

## SAFETY MEETINGS & TRAININGS

## 4.1 SAFETY MEETINGS

Safety meetings are an important part of jobsite safety. They are an opportunity for employees and their supervisor to discuss specific hazards encountered at the jobsite and how best to address them.

Meetings will focus on situations faced by the workers in the current work environment. Prior to each shift, supervisors should address the hazards that will face the workers on the particular jobsite. Individual workers should be encouraged to provide input on their observations of hazards that exist or will be encountered during the shift that is about to begin.

Effective safety meetings should incorporate the following:

- Discuss safety policies and procedures with management and making recommendations for improvements.
- Review accident investigation reports on all accidents and “near-misses”.
- Identify unsafe conditions and work practices and making recommendations for corrections.
- Discuss problems that have arisen or that are anticipated shall be discussed along with any other safety and health topics.

The meeting should be kept a valuable educational experience by:

- Keep the discussion flowing and on-topic
- Start and stop the meetings on time
- Use illustrated material and demonstrations to make the point
- Discuss each topic thoroughly
- Review accidents, injuries, property losses, and near misses
- Evaluate accidents, injuries, property losses, and near misses for trends and similar causes to initiate corrective actions.

Safety meetings may also incorporate various training topics in the form of toolbox talks which are brief discussions regarding areas of safety applicable to a particular task or jobsite. Tool box talks that include subject matter applicable to construction are included in the training section of this document.

Each safety meeting will be documented on the form on the following page.



## 4.2 TRAINING & EDUCATION

Training is an essential component of an effective safety and health program addressing the responsibilities of both management and employees at the site. Training is most effective when incorporated into other education on performance requirements and job practices.

Training programs should be provided as follows:

- Initially when the safety and health plan is developed
- For all new employees before beginning work
- When new equipment, materials, or processes are introduced
- When procedures have been updated or revised
- When experiences/operations show that employee performance must be improved
- At least annually

Besides the standard training, employees should also be trained in the recognition of hazards – be able to look at an operation and identify unsafe acts and conditions. A list of typical hazards employees should be able to recognize may include:

- **Fall hazards** - falls from- floors, roofs and roof openings, ladders (straight and step), scaffolds, wall openings, tripping, trenches, steel erection, stairs, chairs
- **Electrical hazards** - appliances, damaged cords, outlets, overloads, overhead high voltage, extension cords, portable tools (broken casing or damaged wiring), grounding, metal boxes, switches, ground fault circuit interrupters(gfci)
- **Caught between** – cave-ins, unguarded machinery, equipment, confined spaces
- **Struck by** – vehicles, machinery, flying/falling objects, concrete/masonry walls
- **Housekeeping issues** - exits, walkways, floors, trash, storage of materials (hazardous and non-hazardous), protruding nails, exits (blocked), trips/slips, stairs, un-even flooring, electrical cords, icy walkways, etc.
- **Fire hazards** - oily-dirty rags, combustibles, fuel gas cylinders, exits (blocked)
- **Health hazards** - silicosis, asbestos, loss of hearing, eye injury due to flying objects, chemical exposures, poison ivy, stagnant water

Employees trained in the recognition and reporting of hazards and supervisors trained in the correction of hazards will substantially reduce the likelihood of a serious injury.

### **4.3 NEW HIRE ORIENTATION**

Whenever a new employee comes on board, there is a period of training and learning in which the new employee learns about the company's safety and health programs, emergency action plans, fire protection policy, and any other safety-related issues that the employee must know. This is also an opportunity to influence the new employee on the safety culture of the company, and positively influence that employee to keep safety always in mind.

The employee orientation will be started during the employee's first day on the job. A qualified company representative will conduct the new hire orientation. The entire orientation program may be broken up over a period of a few days, but when it is complete, employees should know the following safety information:

- The organization's safety objectives and goals.
- The function of the corporate safety committee.
- What employees should do if they are injured on the job.
- The procedures for reporting accidents, near-miss incidents, hazards, injuries, and illness.
- What to do in case of an emergency.
- The facility's use of warning signs and tags.
- OSHA's recordkeeping requirements and employee access to exposure and medical records.
- The safety rules and safe procedures that apply to their jobs (especially for tasks with OSHA-required training).

As part of the new hire orientation process, the following topics, at minimum, will be covered:

- OSHA's Employee Responsibilities
- Personal Protective Equipment
- Hazard Communication
- Emergency Evacuation & Fire Safety
- Bloodborne Pathogens