Making Safe Work Zones

WHAT'S AT STAKE?

Each year, many construction workers are killed in work zones. Their deaths could have been prevented. They were run over by motorists, backed over by construction vehicles and electrocuted by overhead power lines.

Roadway work zones are some of the busiest, and potentially most hazardous, work environments you can find, as workers perform tasks in close proximity to vehicles that are often traveling at high speeds.

WHAT'S THE DANGER?

According to the Federal Highway Administration, 799 work zone fatalities took place in the U.S. in 2017, a two percent increase over 2016.

According to ASSE, transportation accidents have been the leading cause of on-the-job deaths in the United States every year since 1992. In 2007 alone, 835 deaths resulted from motor vehicle crashes in U.S. road construction work zones.

From distracted driving to a lack of awareness of the work being performed, to motorists traveling at excessive speeds, work zone incidents are caused by a variety of reasons. With all of this in mind, contractors, safety professionals, workers and others can take several steps to help prevent work zone incidents. In addition, emerging technologies can notify workers when a workplace intrusion has occurred.

HOW TO PROTECT YOURSELF

Work Zone Safety Tips

Designate team leaders. Hold a pre-job team meeting with the entire team, and use this time to determine who will lead communication on behalf of the traffic control team, the contractor and the controlling agency. This will ensure that all teams are on the same page before the project begins.

Establish good relationships with the controlling public agency. A strong relationship means you're communicating and everything works better, which makes it safer. You would want to get on the road to set up as soon as you can, and the flexibility to start early begins with a good agency relationship. Set up "pre-warning signs" or "advanced warning signs" without breaking any regulations.

Pre-marking the work zone. This is especially valuable when setting up highway work zones. Have a job supervisor visit the work zone ahead of time and mark where signs and devices should be placed. This will make the setup process quicker and safer, leaving less room for error.

Manage time – before, during and after the project. Allow enough time to safely deploy and remove required lane closure equipment. Traffic control setup can, unfortunately, sometimes be an afterthought, and work is typically being done under a tight deadline. Setting up traffic control equipment takes time and planning, and while pre-marking the work zone will increase efficiency, this is still a time-intensive task that workers should not rush through. Mistakes can put workers and drivers in high risk for injury or death.

Use communication devices. Having the proper communication devices is critical because most work zones are noisy and workers may be setting up closures for several miles. Use radio devices that allow supervisors to provide the full traffic control team with instructions at the same time, despite outside noise and distance. Project managers can dial into the channel as well, and this will allow them to stay apprised of progress.

There are THREE WAYS to help prevent workplace intrusions in the context of making a safe work zone.

1. Traffic Control Plan

Protecting workers and motorists on roadways of any size requires an understanding of the regular traffic flow on a particular roadway and how construction activities will disrupt that flow. This forms the basis of the plan for how you will control traffic over the course of a construction project.

The project constructor should establish a traffic control plan for the entire work zone that addresses four key areas:

- **The advance warning area:** This is the section of the highway where road users are informed about the upcoming work zone or incident area.
- **The transition area:** In this section, road users are directed out of their normal path.
- **The activity area:** This area is where work activity occurs. It is made up of the work space, the traffic space and the buffer space.
- **The termination area:** In this area, users return to their normal path.

2. Implement Protective Safety Measures

Creating a protective barrier between motorists and workers is an essential step. This enables workers to perform their tasks safely while motorists move about the roadway. Based on the established traffic control plan, decision-makers must determine which barriers will best protect motorists and workers.

Positive protection measures need to be considered for each of these working conditions:

- Working zones that provide no means of escape (e.g., tunnels, bridges) from external motorized traffic intruding into the workspace
- Long duration work zones (e.g., two weeks or more) resulting in substantial employee exposure to motorized traffic

- Projects with high anticipated operating speeds (e.g., at least 45 mph or 72 km/h), especially when combined with high traffic volumes (more than 20,000 vehicles per day)
- Work operations that place employees within one-lane-width of travel lanes open to traffic
- Roadside hazards, such as drop-offs or unfinished bridge decks, that will remain in place overnight or longer

Protective measures take many forms, from electronic signage and arrow panels to rumble strips and pavement markings. Depending on the project, one or a combination of these methods may help improve safety. Safety professionals working with these hazards and exposures should determine the most appropriate controls for a particular project based on site-specific circumstances.

3. Improve Worker Visibility

For motorists to operate safely around workers on the roadway, they must be aware of their presence. A10.47 states that all workers, including emergency responders, within the right-of-way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to work vehicles and construction equipment within the work zone wear high-visibility safety apparel that meets the Performance Class 2 or 3 performance requirements of ANSI/ISEA 207.

This type of apparel takes on added importance in any nighttime construction work when overall visibility is diminished. A10.47 also explains illumination requirements to develop an illumination plan for night work so that workers are clearly visible, and to help control glare in such working situations.

Along with PPE, flaggers often play a major role in alerting motorists to the presence of workers, as well as controlling traffic flow through the use of hand signals, signs or automated devices. A10.47 provides guidance on how to best employ and position flaggers as well as how to ensure they are visible and have an escape path should an intrusion occur.

FINAL WORD

Most states have instituted new laws regarding work zones; penalties for speeding in these areas are double that of the normal penalties for speeding in a non-work zone stretch of road.

Operator Visibility Around Heavy Equipment

WHAT'S AT STAKE?

In some cases, it is nearly impossible for an operator to see a person standing next to the equipment. An operator must always remain patient and cautious. Never proceed or use reverse to back into an area without knowing what is there.

The heavy equipment workplace is fraught with danger without the implementation and execution of well-thought out safety protocols and practices.

WHAT'S THE DANGER?

HAZARDS WHEN WORKING WITH CONSTRUCTION EQUIPMENT

There are three potential hazards on a construction site: **access, mechanical and non-mechanical.** When operators, ground workers and project managers are situationally aware, it can decrease the effects of the fatal four from reaching your sites.

Access Dangers

An access hazard is when there is unsafe entry to machinery on a job site. Workers can become trapped or exposed to hazards that

are both mechanical and non-mechanical. If you conduct proper planning, put safeguards in place and boost your workers' awareness, you can help them avoid getting stuck between objects or caught in other severe situations.

The best way to diminish access hazards is to communicate information regarding each type of danger around heavy machines and where particular people have access.

Mechanical Dangers

Because construction equipment can harbor enormous amounts of power, capable of destroying buildings and uprooting the Earth, imagine its effects on a human being. While it may not be the best picture to imagine, it's a concern you must think about as a manager.

Mechanical hazards that can affect workers include colliding surfaces, sharp edges, rotating shafts, scissor actions, crushing, cutting, severing and puncturing. Slips and falls can even occur if someone is attempting to dodge a moving part.

Non-Mechanical Dangers

Hazards can also result from non-moving components. Machines have stored energy in the form of pressurized gasses and fluids, along with hot surfaces and electrical charges. A non-mechanical danger can involve harmful substances like chemicals and emissions. Engines also put off loud noises that can damage hearing. Operators and mechanics should assess their machines for non-mechanical hazards before and after each usage.

Common non-mechanical dangers on a construction site include:

- High-intensity lights like welding flashes and lasers
- Flammable substances
- Lead, cadmium and mercury
- Steam
- Conducted or radiated heat
- Radiation like X-rays and microwaves
- Dust

From these various hazards, people can suffer from lung damage, burns, blindness, hearing impairments and even an increased risk of cancer-related illnesses.

HOW TO PROTECT YOURSELF

SPOTTERS

Blind spots can be a significant operator issue. A spotter, trained in hand signals, can help provide safety guidance and communication between the operator, workers and nearby pedestrians to compensate for blind spots.

Spotters should wear high-visibility clothing and stand clear of equipment at all times.

GROUND-WORKER AWARENESS AND SAFE WORK PRACTICES

Ground workers also play an important role to help minimize the risk of heavy equipment-related injury.

- Wear high-visibility clothing when working around heavy mobile equipment.
- Avoid positioning themselves in a blind spot or riding on moving equipment.
- Avoid setting up their work area near heavy mobile equipment. The operator may not see them if they are bending over to work or grab a tool.
- Avoid walking or working under a suspended load.
- Make eye contact with and alert the operator—and ensure the operator sees you—before approaching a vehicle.
- Ride only in approved seats and wear a seat belt.

Construction workers are around heavy equipment every day, and they can become accustomed to the presence of heavy equipment, not giving much thought to the risks. Taking some time to understand and follow safety rules—and staying alert while on the job—can help construction workers stay safe.

OPERATOR SAFE WORK PRACTICES

In addition to being trained and familiar with the equipment being operated, operators can help reduce the risk of injury or fatality associated with heavy equipment through safe practices.

- Be familiar with the equipment and the operator’s manual.
- Inspect the equipment at the start of each shift, including the brake system, headlights, taillights, brake lights, windshield wipers and audible warning devices, such as the horn and the back-up alarm.
- Adjust all side and back mirrors to help compensate for blind spots.
- Ensure workers are clear of equipment before operating.
- Acknowledge and allow safe passage to workers who alert you that they are approaching.
- Avoid operating equipment parallel to slopes or embankments.
- Turn off the engine and engage brakes before leaving equipment.
- Face the equipment, maintaining three points of contact, while getting on and off the equipment.
- Always wear the seat belt.
- Avoid overloading vehicles.
- Top loading vehicles must have cab shields and canopy protection.
- NO RIDERS! Only equipment that is designed to carry multiple persons shall have more than one occupant!
- Wear high visibility clothing and Personal Protective Equipment
- Never work under a suspended or overhead load
- Watch for shifting or unstable loads and working surfaces
- The use of cell phones is prohibited except for job-related or emergency situations
- Always stay alert

Many times, when workers think the can be seen by the operators of heavy equipment they can’t. You may be in a blind spot or the operator has been driving in a designated travel path for a period of time and the only thing that has changed is you! Make eye

contact with operators!

FINAL WORD

One of the best things a manager/supervisor can do is to introduce a culture that puts worker safety first. When the company does not give a full throated commitment to worker safety, the entire crew is at risk.

Shiftwork Safety Talk

WHAT'S AT STAKE?

A lot of people think of "work hours" as the daylight hours from 8 or so in the morning until 5 or so in the afternoon. But For many people, their workday either starts in the afternoon and ends late at night, or begins around midnight and ends in the early morning. Be aware that your safety is just as critical as the day crew, but that conditions and hazards may be different.

WHAT'S THE DANGER?

CIRCADIAN CLOCK

For employees who work rotating or night shifts, remaining alert can be especially challenging when the body's clock is compromised – that is, the body is active when it believes it should be resting.

The Impact of Shiftwork on Safety & Company Performance

Shiftworkers face considerable challenges. Their morale is often low. Their family and social lives may suffer because of their

irregular hours, which contributes to their stress. The quantity and quality of shift workers' sleep is also typically low. So it's no surprise that sleep disorders, such as obstructive sleep apnea, are commonplace among shiftworkers. Shiftwork has also been associated with an increased risk of:

- Cardiovascular disease;
- Gastrointestinal disorders;
- Obesity; and
- Diabetes.

The increased prevalence of such health problems often results in shiftworkers' increased use of medication, which can adversely affect their job performance.

CHALLENGES / DANGERS ASSOCIATED WITH SHIFTWORK

The potential for accidents and injuries tends to be significantly higher on night shifts than during the day.

- The type of work may be different. Some companies schedule inherently heavy or more hazardous work at night when fewer people are around. This reduces the risk for the many, but not necessarily for those on a graveyard or swing shift.
- It's more difficult to see in the dark. Artificial light can't illuminate every surface, which can result in more trips and falls. This also makes night driving more hazardous.
- Shift work may result in psychological problems for shift workers who fail to eat, rest and sleep adequately. Research indicates that shift workers may suffer depression, increased alcohol use, and even symptoms of physical illness.
- The potential for criminal behavior may increase the need for security by both the company and employees, since the cover of darkness is often used to help people commit crimes.
- Night workers who lack seniority for day shift assignments may be less experienced and less aware of safe work practices. This can make them more hazardous to themselves

and others.

HOW TO PROTECT YOURSELF

FATIGUE PREVENTION

Shiftwork and shift workers are necessary and instrumental in keeping so many vital operations goings 24 hours a day, seven days a week. This could mean working nights or alternating days, nights and afternoons, or other irregular shifts.

Shift work comes with inherent risks/dangers. The following are safety practices to assist in mitigating the dangers of shift work.

Require Daytime Managers to Periodically Work at Night

Managers who’ve experienced the challenges of working at 4 A.M. are more likely to think of practical ways to improve the safety and wellness of their shift workers than managers who’ve never experienced a night shift.

Evaluate your Work Environment

Conduct a comprehensive review of your workplace to identify factors that contribute to fatigue – such as dim lighting, poor airflow, and warm temperatures (i.e. over 70 degrees).

Put Shiftwork Safety on the Agenda

Make sure that overnight safety is a mandated discussion point at safety committee meetings and that night workers have a seat at the table.

Teach Workers about Sleep and Napping

Getting enough off-duty sleep is the most effective way to maintain alertness. You can’t force workers to sleep, but you can ensure that they are given sufficient shiftwork lifestyle training to educate them on the fundamental importance of sleep, getting quality daytime sleep, and making the most of pre-work naps.

Permit Several Short Breaks

Many shiftwork jobs involve doing the same task for long stretches of time. This monotony can induce microsleeps and other lapses in alertness – especially on the night shift. In addition to a 25- to 35-minute break per shift, workers on the night shift benefit from a 10- to 15-minute break every two or three hours.

Assess your Schedule

No shiftwork schedule is perfect, but some are particularly difficult. Schedules that require workers to rotate backward (i.e., to go from nights to evenings to days) or work five or more consecutive 12-hour shifts can exacerbate fatigue levels.

Monitor Overtime

People are more likely to make mistakes when they've accumulated a sleep debt from several days of insufficient sleep – which may result from excess overtime. Keep an eye on overall overtime levels (including a breakdown of day vs. night OT hours) and identify individual "overtime hogs" who accrue large amounts of extra work hours.

Standardize Shift Change Procedures

A large proportion of accidents occur during shift changes because of the additional movement around the plant and the increased need for communication among workers. Make sure you have procedures in place that ensure a smooth transition between shifts.

Watch Out For "The Wall"

Due to the dip in circadian rhythms, the hours between 4 and 6 A.M. are generally the hardest – and riskiest – hours of the night shift to work. Exercise has been shown to boost alertness, making an exercise bike or treadmill available for interested workers may minimize the risk of "hitting the wall".

Don't Forget the Drive Home

Due to the increased risk of falling asleep at the wheel, the

post-shift commute home is often a dangerous part of a shift worker's day. Provide workers with a quiet room to nap in before heading home.

Provide Shiftwork Lifestyle Training

Whether it's handing out relevant literature, providing training online, or holding in-person seminars – it's always a wise idea to educate workers on the health and safety challenges of shiftwork. Providing shiftwork lifestyle training is also a great way to show workers that you recognize the unique challenges they face – which can improve employee morale.

FINAL WORD

Studies show that if a company can improve the quality of life of its shiftworkers and help them better manage the challenges posed by shiftwork, it can reduce absenteeism, turnover, safety incidents and workers' compensation claims. Management that invests in a lifestyle training program for shiftwork will pay off in big dividends for all in the future.

Silica – The Dangers of Silica

WHAT'S AT STAKE?

Many common construction work tasks generate harmful levels of crystalline silica dust if proper controls are not followed. When silica dust builds up in your lungs, you are at risk of developing a serious lung disease called silicosis, which can lead to death. Silicosis is not curable, but it is preventable.

WHAT’S THE DANGER?

What is Silica?

Silica is the basic component of sand and rock. Some common silica-containing materials include:

- Concrete, concrete block, cement and mortar
- Masonry and tiles
- Brick, refractory brick
- Composite products such as Hardiplank
- Granite, sand, fill dirt, top soil
- Asphalt containing rock or stone
- Abrasive used for blasting

You may be exposed to silica when working with or around these materials.

EXPOSURE RISKS

The cutting, breaking, crushing, drilling, grinding, or abrasive blasting of these materials without proper controls will produce fine silica dust. You can’t see dust particles but that does not mean there isn’t silica in the air. Silica particles can hang around for an entire work shift without being visible to the naked eye.

If you do one of the following activities, you are at risk of breathing silica dust:

- Chipping, sawing, grinding, hammering, and drilling of rock, concrete, or masonry
- Crushing, loading, hauling, and dumping of rock
- Sawing, hammering, drilling, grinding, and chipping of concrete or masonry
- structures
- Demolition of concrete or masonry structures
- Power cutting or dressing stone
- Abrasive blasting and hydro blasting of concrete
- Clean-up activities such as dry sweeping or pressurized air blowing of

- concrete or sand dust
- Tunneling, excavation, and earth moving of soils with high silica content

What Happens When Someone Breathes in Silica Dust?

Silicosis is a type of lung disease that occurs when silica dust is inhaled. The dust contains tiny shrapnel like particles of crystallized silica that cause tiny tears in your lung tissue, resulting in patches of scar tissue when the tear is repaired by your body. Some who have been exposed to silica in high concentrations experience symptoms in a few weeks, or gradually get symptoms with smaller exposures over 4-10 years.

HOW TO PROTECT YOURSELF

The employer has the fundamental obligation to provide a safe work environment.

Identify Materials That May Contain Silica

For some materials, the employer can look at a Safety Data Sheet (SDS) or contact the manufacturer to determine if a product contains silica. For other materials such as rock, soil and concrete there may not be an SDS. When that’s the case assume that the material contains silica unless testing shows otherwise.

Identify Activities That Create Dust

Review your operation to determine where employee exposures to silica dust may be occurring. Be sure to include cleaning and maintenance activities. These tasks, even if they take less time or are done less frequently, often expose employees to large amounts of dust.

Provide Protective Clothing and Hygiene Facilities

Protective clothing and proper hygiene not only protects employees on the job, they also prevent workers from bringing home toxic materials. To protect workers and their families, employers should:

- Provide washing facilities at the worksite
- Ensure workers wash before eating, drinking, or smoking and before leaving the workplace.
- Prohibit food, drink, and tobacco products in areas where silica dust is present.
- Provide disposable or washable work clothes.
- Ensure that workers change into clean clothes before leaving the worksite.

Ensure Proper Housekeeping

Proper housekeeping practices include the following:

- Use HEPA-filtered vacuum cleaners or water for cleaning up equipment or surfaces.
- Prohibit the use of compressed air for cleaning equipment, surfaces, and clothing.
- Prohibit dry sweeping and shoveling.

Control Exposures

Exposures to silica dust can be eliminated or reduced using one or more of the following methods:

Substitution: The best way to eliminate exposure to silica is to use an alternative, less toxic substance.

Engineering and Work Practice Controls: In many cases, it is impossible to eliminate or find a substitute for silica. The next best solution is the use of engineering and work practice controls. Examples of these control methods include:

- Enclose the process
- Enclose the worker
- Use wet methods
- Use local exhaust ventilation
- Institute procedures and work practices that minimize the amount of dust produced

Respiratory Protection

Occupational health and safety professionals (and Cal/OSHA)

consider respirators a control method of last resort, rather than a preferred means of protecting employees. However, sometimes respiratory protection is appropriate, as in the following circumstances:

- During the time needed to implement engineering and work practice controls.
- If engineering and work practice controls do not reduce exposures sufficiently.
- For operations where engineering and work practice controls are not feasible, such as some maintenance and repair activities.

Written Respiratory Protection Program

When respirators are used to prevent overexposures, a written Respiratory Protection Program is needed. The elements of this program include:

    - Appropriate respirator selection
    - Medical evaluation to determine the ability of a worker to use a respirator
    - Annual face seal fit-testing
    - Procedures for routine and emergency use
    - Respirator inspection, cleaning, disinfecting, maintenance, storage, and repair
- Air quality for supplied-air devices
- Annual employee training
- Periodic program evaluation

Monitor the Air Employees Breathe

How do you know if your workers are breathing too much silica dust? Air monitoring by a trained professional, such as an industrial hygienist, can determine the level of silica exposure in your workplace. By knowing if and where employees are overexposed, you can allocate your resources wisely and put control measures in place where they are needed.

FINAL WORD

Common methods and best practices for eliminating or reducing exposure are a combination of dust suppression, erecting barriers, and PPE. Some of the controls come in forms of continuous water spray, HEPA vacuums, dust caps, tape barriers, and full enclosure systems sometimes including negative air units. PPE could include tyvek suits, eye and hand protection and respirators. PPE should be your last line of defense in protecting yourself.

Silica Exposure Safety Talk

WHAT'S AT STAKE?

RESPIRABLE CRYSTALLINE SILICA (SILICA DUST)

Millions of U.S. workers are exposed to respirable crystalline silica in a variety of industries and occupations, including construction, sandblasting, and mining. Silicosis, an irreversible but preventable disease, is the illness most closely associated with occupational exposure to the material, which also is known as silica dust. Occupational exposures to respirable crystalline silica are associated with the development of silicosis, lung cancer, pulmonary tuberculosis, and airways diseases. These exposures may also be related to the development of autoimmune disorders, chronic renal disease, and other adverse health effects.

WHAT'S THE DANGER?

KNOW THE HAZARD

Workers may be exposed to dangerous levels of silica dust when

cutting, drilling, grinding, or otherwise disturbing materials that contain silica. These materials and tasks are common on construction and oil and gas jobs. Breathing that dust can lead to serious, often fatal illnesses. Workers – and contractors – need to recognize the hazard, understand the risk factors, and work safely with silica.

Silica is the basic component in sand and rock construction materials:

- Concrete, concrete block, cement, and mortar
- Masonry, tiles, brick, and refractory brick
- Granite, sand, fill dirt, and top soil
- Asphalt-containing rock or stone
- Abrasive used for blasting

THE RISKS / POTENTIAL HEALTH EFFECTS OF SILICA

Inhaling silica dust can cause silicosis, a serious and irreversible lung disease. It can be lethal. Silica damages the lung and causes scar tissue to form. This causes the lung tissue to become thicker. Silica exposure can also cause lung cancer.

It is possible to have silicosis without showing any symptoms at first. The longer workers have been exposed to silica dust, the worse the symptoms will become. As the disease progresses workers may show noticeable symptoms such as:

- Shortness of breath
- Severe coughing
- Body weakness

Silicosis is classified into three types: chronic/classic, accelerated, and acute.

Chronic/classic silicosis, the most common, occurs after 15–20 years of moderate to low exposures to respirable crystalline silica. Symptoms associated with chronic silicosis may or may not be obvious; therefore, workers need to have a chest x-ray to determine if there is lung damage. As the disease progresses, the worker may experience shortness of breath upon exercising and have

clinical signs of poor oxygen/carbon dioxide exchange. In the later stages, the worker may experience fatigue, extreme shortness of breath, chest pain, or respiratory failure.

Accelerated silicosis can occur after 5-10 years of high exposures to respirable crystalline silica. Symptoms include severe shortness of breath, weakness, and weight loss. The onset of symptoms takes longer than in acute silicosis.

Acute silicosis occurs after a few months or as long as 2 years following exposures to extremely high concentrations of respirable crystalline silica. Symptoms of acute silicosis include severe disabling shortness of breath, weakness, and weight loss, which often leads to death.

MAIN ROUTES OF EXPOSURE OF SILICA

- **Inhalation:** At high concentrations: can irritate the nose and throat.
- **Skin Contact:** Not irritating.
- **Eye Contact:** May cause slight irritation as a “foreign object”. Tearing, blinking and mild temporary pain may occur as particles are rinsed from the eye by tears.
- **Ingestion:** Not harmful.
- **Effects of Long-Term (Chronic) Exposure:** VERY TOXIC. Can cause lung damage if the dust is breathed in. Symptoms may include shortness of breath, chronic cough and weight loss. There may be a decrease in lung function and ability to do some physical activities. In severe cases, there can be effects on the heart and death from heart failure.
- **Carcinogenicity:** Known to cause: lung cancer.

Health impacts of exposure

When very small (respirable) silica dust particles are inhaled they can penetrate deep into the lungs and cause disabling and sometimes fatal diseases of the lung and kidney. When a person inhales crystalline silica, the lungs react and develop scarring and hardening around the trapped silica particles, resulting in a disease called silicosis. Silicosis is a disabling, irreversible,

and sometimes fatal lung disease for which there is no cure. Since silicosis affects lung function, it makes you susceptible to lung infections such as tuberculosis. For smokers this is more hazardous, as smoking damages the lungs and adds to the damage caused by breathing silica dust. The other bad news is that crystalline silica is also a known carcinogen which means it can cause lung cancer.

HOW TO PROTECT YOURSELF

Elimination or substitution

Eliminating the hazard by substituting a safer process or material, where possible, is the most effective control.

Engineering controls

Making physical modifications to facilities, equipment, and processes can reduce exposure.

Administrative controls

These involve changing work practices and work policies. Providing awareness tools and training also count as administrative controls. All can limit the risk of silica dust exposure.

Personal protective equipment

This is the least effective control. When used, there must always be at least one other control in place as well.

FIRST AID MEASURES FOR SILICA

Inhalation: Take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). Move victim to fresh air.

Skin Contact: Quickly and gently blot or brush away excess chemical. Wash gently and thoroughly with lukewarm, gently flowing water and non-abrasive soap for 5 minutes.

Eye Contact: Quickly and gently blot or brush chemical off the

face. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes, while holding the eyelid(s) open. If irritation or pain persists, see a doctor.

Ingestion: Have victim rinse mouth with water. Call a Poison Centre or doctor if the victim feels unwell.

First Aid Comments: If exposed or concerned, see a doctor for medical advice. All first aid procedures should be periodically reviewed by a doctor familiar with the chemical and its conditions of use in the workplace.

Note to Physicians: Some jurisdictions specifically regulate an ingredient of this product and require a complete medical surveillance program. Specific information should be sought from the appropriate government agency in your jurisdiction.

FINAL WORD

The industrial barons and titans for most of this century took a devastating toll on workers due to their reckless disregard of safety in silica operations. The numbers of dead and seriously afflicted workers tell the tale. The tide has shifted towards other sources of material and elimination of the deadly hazards of silica in our workplaces.

Skid Steer Safety Talk

WHAT’S AT STAKE?

Skid steers are a common piece of equipment found in a variety of industries. While they are small in size, the danger these machines can pose can be large. It is critical to take time to

recognize the hazards present during the operation of skid steers so that the necessary best practices can be followed.

Skid steer loaders are one of the most useful pieces of heavy equipment in any fleet, offering power and versatility in a compact package. But just because they're smaller than many other types of heavy equipment, that doesn't mean they're any less of a potential safety risk.

WHAT'S THE DANGER?

OPERATIONAL HAZARDS

There is a magnitude of possible hazards for those individuals operating skid steers as well as those who work around these machines. Some of the major and more common hazards to consider:

- Struck-by hazards pose a serious threat for those working around skid steers. The operation of these machines often includes working in high traffic areas. Reversing is also a common necessity during work tasks. These factors paired with blind spots creates a huge risk for struck-by incidents to occur.
- Crushed-by hazards are also a major concern while operating a skid steer. Workers who are on the ground around this equipment can be pinned and crushed between a skid steer and another object if they find themselves in the line of fire. Those operating the skid steer can also fall victim to being crushed by their own machine. NIOSH looked at 37 fatalities involving skid steers from 1992 to 1997 and found that 29 (78%) of them resulted from "pinning between the bucket and frame or between a lift arm and frame".
- Tip overs or roll overs are another leading cause for fatalities of the operators of skid steers. In the same study referenced above, 6 of the 37 fatalities resulted from roll overs.
- Pinch points are common on skid steers and can easily lead to injuries to body parts.

Workers attempting to operate the machine from outside the cab is

a relatively common cause of death involving skid steers. This can and does result in being crushed by moving parts (under the attachment, between the attachment and the frame, between the lift arms and the frame or the cab, etc.).

HOW TO PROTECT YOURSELF

GENERAL

Ensure your employees understand all manufacturer’s warnings and instructions before they operate skid steer loaders.

BEST OPERATIONAL PRACTICES

The following OSHA safety practices will minimize hazardous situations associated with operating skid steer loaders:

1. Always read and understand the operator’s manual before using the piece of equipment. Always follow the manufacturer’s recommendations and specifications when operating it.
2. Always lower the bucket or attachment so that it is flat on the ground. Do not attempt to activate the skid-steer loader’s controls from outside the operator’s compartment.
3. Do not leave the operator’s seat while the engine is on. Never attempt to activate the controls unless properly seated with the seatbelt fastened and the seat bar (if equipped) lowered. Keep all body parts inside the cab while operating a skid-steer loader.
4. Never modify, bypass, disable, or override safety systems. Similarly, never operate equipment in which safety systems have been modified or are not working properly. Equipment with modified or malfunctioning safety systems should be taken out of service until repaired or replaced.
5. Never permit riders on the skid-steer loader, in the bucket or attachment, or in the operator’s compartment unless the compartment is designed to accommodate a second rider.
6. Always keep bystanders a safe distance away from the work area.

7. Establish a routine maintenance and inspection program in accordance with the manufacturer’s recommendations. Inspect the skid-steer loader to ensure that all safety systems are functioning properly prior to operating the equipment.
8. Follow the manufacturer’s instructions for maintaining the skid-steer loader. Never attempt maintenance or other work while lift arms or attachments are raised without using an approved lift arm support device. Replace protective guards and shields after repairs or service.
9. Train personnel on the proper inspection, use, maintenance, and repair of skid-steer loaders according to the manufacturer’s instructions. Train supervisory personnel to identify hazards, such as safety systems that have been bypassed, disabled, or that require maintenance.

Other Safety Tips

- Do not work under the raised arms or bucket of a skid steer, even if it is off. Always put the bucket all the way down before exiting the machine.
- Setup work areas and tasks in such a way that ground personnel are not located in the line of fire. Stop work anytime sight is lost of anyone working around the skid steer.
- Always wear your seatbelt or engage the restraint bar if one is equipped.
- operating a skid steer.
- Never operate a skip steer without proper training.
- Operate the loader from the operator’s compartment—never from the outside.
- Stay seated when operating the loader controls.
- Work with the seat belt fastened and the restraint bar in place.
- Keep your arms, legs, and head inside the cab while operating the loader.
- Load, unload, and turn on level ground when possible.
- Operate on stable surfaces only.
- Do not travel across slopes. Travel straight up or down, with the heavy end of the machine pointed uphill.

FINAL WORD

Skid-steers can be dangerous if workers do not observe certain safety precautions. Also, some employers may not fully appreciate the potential hazards associated with operating or working near skid-steers. Others may disregard the need to follow safe work procedures and bypass interlocks and other safety features.

Cellphones Safety Talk

Download Instructor-Led Material

	
Meeting Kit	**PowerPoint**

WHAT'S AT STAKE?

Cell phones are driving many of us to distraction—and taking a toll on productivity in the workplace. Nineteen percent of employers think their workers are productive for less than five hours a day, and more than half believe that cell phones are to blame.

Indeed, every beep, buzz and glow emanating from our personal devices are designed to lure us in while hijacking our time and disrupting our concentration. A short call or text message here or there may not harm productivity in a noticeable way, but excessive use can become a big problem.

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

WHAT'S THE DANGER?

HAZARDS OF CELL PHONE USE

Lost Productivity

One of the most pressing issues for employers when it comes to the use of cell phones in the work place is loss of productivity. Cell phones all users the ability to surf the internet, send text messages, take pictures as well as interact with downloaded apps and games, such distractions can lead to a huge loss of productivity on the job causing many employers to ban cell phone usage while at work.

Equipment Accidents

When employees have access to equipment such as forklifts, bulldozers, and other heavy machinery using a cell phone on the job could be disastrous and cost someone their life. An employee could be glancing down to read a text message and accidentally run over another employee or into another vehicle or building. These accidents are costly for an employer and very dangerous for other employees.

Auto Accidents

Some positions allow employee access to a company vehicle, the privilege of a company vehicle for an employee should never be taken lightly as it leaves the employer vulnerable to liability should the employee cause an accident in the vehicle. Many people have been injured in cell phone related auto accidents, if this happens on company time or within a company vehicle the employer is a risk for the serious liability issues that coincide with an employee injuring someone because of distracted driving.

Privacy Issues

Often overlooked issue regarding the use of cell phones in the workplace is a violation of privacy rights. Most cell phones are equipped with the capability of taking and sending pictures to other phones and email addresses, this put important business information and confidential operating processes at risk of being exposed. An employee could unintentionally violate another employees privacy rights by sending them picture of them or their property. This could lead to lawsuits or other forms of problems for the employer.

HOW TO PROTECT YOURSELF

CELL PHONE USE POLICY

An employer who wants to implement an effective cell phone policy should consider the following:

- Cell phone policies should be applied and enforced consistently. An employer should consider how it will monitor employee compliance with the policy, and how it will handle policy violations to ensure employees are not treated differently based on race, sex or any other protected class (even unintentionally).

Cellphone Use Is Prohibited Under the Following Circumstances

- During meetings, training sessions and conferences
- When employees are interacting with customers
- In production areas and kitchens or while operating heavy equipment as a cell phone can present a safety hazard
- While driving, except when a Bluetooth connection is available or when the driver is pulled over to the side of the road.

Cell Phone Policy Could Also Define:

- When it’s acceptable to use a cell phone during the work day, such as during breaks and lunchtime
- The frequency and length of calls permitted during working hours

- If headsets are permitted
- Where to store personal devices. Keeping phones out of sight, such as in a desk drawer, is an effective way to keep distractions to a minimum.
- Appropriate use during business hours. For example, business calls and brief conversations or texts with family members may be okay, but playing games or downloading music is not.

GENERAL RULES OF CELL PHONE USE AT WORK

1. **Put Your Phone Away**

Excessive cell phone use at work can interfere with productivity. Even if your employer doesn't ban their use, it's a good idea to limit yourself.

2. **Turn Off Your Ringer**

Silence your ringer. If family members often have to get in touch during the workday, set your phone on vibrate and put it in your pocket.

3. **Use Your Cell Phone for Important Calls Only**

Should you chitchat with your friend, mom, or significant other while at work? Save those casual conversations for your drive home (hands-free, of course) or your break. There are very few calls that can't wait.

4. **Let Voicemail Pick Up Your Calls**

Instead of answering calls immediately, set up your phone to have them all go to voicemail. Check your messages regularly and respond to them based on their urgency.

5. **Find a Private Place to Make Cell Phone Calls**

Although making personal calls during a break is fine, find a private place to do it.

6. **Don't Bring Your Cell Phone Into the Restroom**

Whether at work or anywhere else for that matter, this is an

essential rule of cell phone etiquette. Why? Well, if you must ask—it is rude to both the person on the other end of the phone and anyone using the bathroom.

7. **Don’t Look at Your Phone During Meetings Unless…**

While you are sitting at a meeting, do not text, check your social media news feeds, post your status, or play games. Don’t bury your nose in your phone. Keep your eyes up and stay engaged. Doing anything else will be a clear signal to your boss that your mind isn’t completely on the business at hand.

FINAL WORD

Business is conducted regularly through cell phones and employers benefit from their employees’ ability to access e-mail and digital remotely. On the other hand, employee access to cell phones, including text messaging and social media, during work hours might present distractions that employers want to eliminate by restricting or fully prohibiting cell phone access. The trick is the strike a balance between the former and the latter.

Communication Safety Talk

Download Instructor-Led Material

	
Meeting Kit	**PowerPoint**

WHAT’S AT STAKE?

Communication in the workplace is one of the signs of a high-performance culture. Exchanging information and ideas within an organization is called workplace communication. Effective communication occurs when a message is sent and received accurately. In every aspect of life (both professional and personal), effective communication is important to success and happiness. **Effective communication in the workplace** is central to all business goals.

WHAT’S THE DANGER?

CAUSES OF POOR COMMUNICATION IN THE WORKPLACE

Common causes of poor communications in the workplace:

1. **Objectives are not clear**

While a well-worded job description given along with a job offer is certainly welcomed, it is not enough. Make sure to have a face-to-face discussion with an employee in order to go through his or her responsibilities and the expectations that go along with his or her job. If an organization fails to do this, not only could this lead to confusion and frustration, a staff member may end up underperforming without meaning to.

Along with the expectations that go hand in hand with their positions, employees also need to be made aware of the purpose and goals of the whole company itself. By doing this, not only will communications in the workplace improve, staff members are able to align themselves with the objectives of the company so they can be contributors to its progress and success.

2. **Poor leadership**

Staff members look to business owners and their managers for direction. However, if people given managerial roles are poor leaders, it is highly likely that communication in the workplace

will deteriorate. While good leaders are able to be good examples and are able to motivate staff members, poor and incompetent leaders are indecisive and are unable to inspire their team. They may also be so bad at communication that they are unable to answer questions and clarify points so much so that their subordinates are left even more confused and frustrated than when they started.

3. **Cultural diversity in the workplace**

The world is getting smaller, and work environments are getting more and more diverse. It is not unusual to find individuals from different cultures, races, religious beliefs, genders and others working in the same workspace, for the same company. While diversity is certainly a good development, it does present a few challenges – including the potential for poor communications in the workplace.

Different people from different backgrounds will relay messages in different ways, with varied nonverbal cues. Interpretations of messages will be different as well. For example, "crossing your fingers" may mean "hoping for good luck" in America; however, it is an obscene gesture in Vietnam.

4. **Demoralized employees**

When staff members lose interest in their work and the organization, they are considered to be demoralized. An employee who is demoralized feels unvalued, unappreciated, and even disrespected and disregarded despite their capacities and talents. He or she tends to be unproductive and irritable, and are more likely to look for opportunities elsewhere instead of helping the company move forward.

5. **Personal issues and challenges of employees**

While employees should only be concentrating on work while at the workplace, some may be distracted by their own personal issues and challenges, such as a death in the family or divorce. Due to distractions and personal issues, a staff member may communicate the wrong way, and react in a negative fashion. When you notice this occurrence, make sure to give your employees time off so they

can deal with their personal issues.

CONSEQUENCES OF POOR WORKPLACE COMMUNICATION

A major report revealed that **one-half of employees** have “great” or “excellent” conversations at work. The other half deemed their conversations as “mediocre,” “poor” or “bad.”

Another survey with executives, managers and junior staff members found that communication breakdowns in the workplace have multiple downsides. When asked about **the consequences of poor communication:**

- 52% of respondents said they feel higher stress levels.
- 44% said they failed to complete their projects.
- 31% said they missed their performance goals.
- 20% said that they experience obstacles in innovation.
- 18% said that they lost new sales opportunities.
- A survey of 400 companies with 100,000 employees cited an average loss per company of $62.4 million per year because of inadequate communication to and between employees.
- Companies with effective communication practices generate **47% higher total returns to shareholders** compared to organizations with poor communication.

HOW TO PROTECT YOURSELF

STRONG COMMUNICATION

The importance of strong communication runs deep within a business. Five key reasons.

Team building – Building effective teams is really all about how those team members communicate and collaborate together. By implementing effective strategies, such as those listed below, to boost communication you will go a long way toward building effective teams. This, in turn, will improve morale and employee satisfaction.

Gives everyone a voice – As mentioned above, employee satisfaction

can rely a lot on their having a voice and being listened to, whether it be in regards to an idea they have had or about a complaint they need to make. Well established lines of communication should afford everyone, no matter their level, the ability to freely communicate with their peers, colleagues and superiors.

Innovation – Where employees are enabled to openly communicate ideas without fear of ridicule or retribution they are far more likely to bring their idea to the table. Innovation relies heavily on this and an organization which encourages communication is far more likely to be an innovative one.

Growth – Communication can be viewed both internally and externally. By being joined up internally and having strong lines of communication you are ensuring that the message you are delivering externally is consistent. Any growth project relies on strong communication and on all stakeholders, whether internal or external, being on the same wavelength.

Strong management – When managers are strong communicators, they are better able to manage their teams. The delegation of tasks, conflict management, motivation and relationship building (all key responsibilities of any manager) are all much easier when you are a strong communicator. Strong communication is not just the ability to speak to people but to empower them to speak to each other – facilitating strong communication channels is key.

SPECIFIC COMMUNICATION STRATEGIES

Effective Communication Strategies We Can Use at Work to Increase Productivity

- Use the right tools for your business
- Encourage two-way communication
- Tell people what they are doing right
- Specific and descriptive feedback
- Schedule a compulsory check-in
- Organize engaging team building activities

IMPROVE ORGANIZATION COMMUNICATION

Key Areas

- **Define goals and expectations**– Managers need to deliver clear, achievable goals to both teams and individuals, outlining exactly what is required on any given project, and ensuring that all staff are aware of the objectives of the project, the department and the organization as a whole.
- **Clearly deliver your message**– Ensure your message is clear and accessible to your intended audience. To do this it is essential that you speak plainly and politely – getting your message across clearly without causing confusion or offence.
- **Choose your medium carefully**– Once you've created your message you need to ensure it's delivered in the best possible format. While face-to-face communication is by far the best way to build trust with employees, it is not always an option. Take time to decide whether information delivered in a printed copy would work better than an email or if a general memo will suffice.
- **Keep everyone involved**– Ensure that lines of communication are kept open at all times. Actively seek and encourage progress reports and project updates. This is particularly important when dealing with remote staff.
- **Listen and show empathy**– Communication is a two-way process and no company or individual will survive long if it doesn't listen and encourage dialogue with the other party. Listening shows respect and allows you to learn about any outstanding issues you may need to address as an employer.

FINAL WORD

Communication can be formal, informal, internal or external. And within an organization, it is important to develop a healthy and beneficial communication process. Effective communication is the key to achieving long-term success, so make sure you follow the above outline strategies. No matter what stage you are in the workplace, you need to communicate ideas well in the workplace.

Company Work Rules Safety Talk

WHAT’S AT STAKE?

Rules for workers may be legally required, but various optional workplace rules should be considered as well. Carefully selected workplace rules can protect your business from legal claims and help you maintain an orderly, positive work environment.

Managing the employees in your workplace effectively necessitates that even the smallest of businesses set up work rules. Work rules protect your business and your workers and if correctly implemented and executed, create and maintain a better work environment for all.

WHAT’S THE DANGER?

VIOLATION OF WORKPLACE LAWS

Employers can break laws wittingly or unwittingly. Some examples of workplace law violations include:

1. Using Prohibited Questions on Job Applications
2. Insisting You Can’t Discuss Your Salary with Your Co-Workers
3. Failing to Pay You Overtime
4. Promising Jobs to Unpaid Interns
5. Asking or Allowing You to Work Off the Clock
6. Classifying You as an Independent Contractor, but Treating You Like an Employee
7. Disciplining You for Complaining About Work on Social Media
8. Allowing for a Hostile Workplace

HOW TO PROTECT YOURSELF

Optional Work Rules

Apart from the required rules and policies, you basically have free reign to choose additional rules to help you manage your employees. Once you've taken care of the policies that are required, you can focus on choosing from the many other rules that are optional but that are, in many cases, a good idea to have.

While the rules that govern each employee's conduct must reflect the kind of work your business does and the conditions under which it is performed, there are some basic rules that you'll see over and over again if you ask businesses about their work rules and policies.

Employers can choose to have a simple set of work rules made up of a list of generally accepted and prohibited conduct or they may decide to have very detailed work rules and policies addressing specific behavior. Instead of having a lengthy, involved set of rules, small employers are likely to opt for a simple list of rules and guidelines to make it clear to employees what kind of behavior is expected.

Goal – Keep Rules General

You should keep the rules as general as possible, to give yourself as much flexibility as possible in enforcing them. Your work rules should reflect your individualism as a businessperson and the individuality of your business. You can create a simple one or two-page handout that you give to each person as you hire them, covering such things as:

- Safety rules that must be observed
- Absence and tardiness policy (how to report the number of allowable sick days and personal days off)
- How to record time worked (for example, using a time clock or time sheet)
- Lunch period and break rules
- Overtime policy

- Dress code or personal appearance rules
- Rules covering use or damage to employer's property
- Rules about keeping employer's and customers' sensitive information confidential

BEWARE

Be sure to begin your list of rules with a statement like the following:

"It would be impractical to set forth a list of all activities that are considered to be illegal or contrary to good business practices and good employee-employer relations. This is intended only as a guideline."

All your rules should be reasonable and clearly related to the safe and efficient operation of the business. In general, it's not necessary to say that things like stealing, insubordination, or competing with your business are prohibited. Employees are expected to know these things, although you can create a written rule if you wish.

You may decide to explain why you have chosen specific rules for inclusion, and you may even assign a point system to offences (much like a system of demerits).

You may also want to explain the consequences and discipline an employee may expect for breaking the rules or for racking up too many demerits. However, once again we recommend that you build some flexibility into your system by including a general statement that "any employee found engaging in these behaviors will be subject to disciplinary actions including reprimand, warning, layoff, or dismissal."

Keep in mind that in some cases you may be required to post or distribute a written policy to employees, but in most cases the way that you communicate your work rules is your decision. There are pros and cons for both written and verbal communication methods.

Be certain to include a disclaimer saying that the list of work

rules is not intended to be an employment contract.

Work Rules That Protect You from Legal Claims

One of the most persuasive reasons for having a set of solid work rules is that they can protect your business. Many employers have rules that protect them from liability – both legal and financial – and give them more freedom in managing and disciplining employees. Having certain work rules and policies in place may be the best way to protect your business from problems such as wrongful discharge claims and discrimination claims.

CREATING SPECIFIC RULES/POLICIES

Key Questions

When you're considering the creation of a specific rule or policy, determine if it's right for your business by asking yourself the following questions:

- Will this policy disproportionately impact one employee (or group of employees) over another, even if it is applied evenly to all employees?
- Is this policy really necessary considering the work that my employees do?
- Is this policy unduly restrictive in light of working conditions?
- Is there a sound business justification for this policy?
- In what situations would this policy be used?
- Have there been situations in the past where this policy would have been applicable and useful?
- Am I willing to enforce this policy?
- What documentation will be necessary to administer and enforce this policy?
- Will the time and effort necessary to administer and enforce this policy outweigh the benefit of having it?
- What would the consequences be for someone who broke this rule or disobeyed this policy?
- Do other businesses or colleagues have similar policies? What do they think of them? Are they useful or burdensome?

Work rules can help improve quality of work life by:

- Creating an atmosphere where employees are treated with dignity and respect
- Helping to ensure that employees conduct themselves in a professional and safe manner
- Encouraging open communication between you and your employees
- Ensuring that all employees are treated fairly and that they follow the same rules

However, because the relationship between work rules and quality of work life is an important one, if work rules are unreasonable, inappropriate, or unenforced, the rules can actually damage employee morale.

Make Sure Rules Aren’t Perceived Negatively.

There are a number of things that can be done that will go a long way to help make sure that work rules aren’t perceived to be unduly restrictive, including:

- Getting input from your employees in creating work rules: if they are involved in the process, employees are more likely to accept and abide by the work rules.
- Again, having rules that have a sound business justification will not only make the seem more appropriate, but it may help you avoid creating rules that have a disparate impact on certain protected groups of employees.

FINAL WORD

Managing employees in the workplace effectively and efficiently call all businesses of all sizes to set up work rules. Thoughtful and insightful work rules protect the material interests of business and worker. If correctly implemented and executed, work rules create and maintain a better work environment for all.

Return to Work Program Safety Talk

WHAT'S AT STAKE?

A Return to Work (RTW) Program is a workers' compensation-related program allowing employees who are injured on the job to perform their usual duties in a temporary, limited, or light-duty capacity while recovering. The overall goals of a return to work program are to lower costs related to employee injuries, keep injured employees engaged, and lower the risk of injured workers seeking legal representation due to adverse feelings related to their injuries.

Stay at Work/Return to Work programs (often called just Return to Work programs) help supervisors manage employee injury, illness and disability and ensure that employees are able to return to the workplace as quickly and safely as possible.

Returning employees to work goes well beyond treating the physical nature of the injury, health condition or disability, though. It also includes psychological impact, family and workplace dynamics. By creating an effective and holistic Return to Work program based on communication and trust, employers can take positive steps to keep their employees productive, safe and valued in the workplace.

WHAT'S THE DANGER?

IMPACT OF WORKERS OFF WORK

Injuries/Illnesses

Many injuries and illnesses are work-related – there were more than 4 million nonfatal work-related injuries and illnesses in

2015 – however, a much larger share of injuries and illnesses that may prevent continued employment occur off-the-job. Estimates suggest that there were more than 15 million nonfatal, off-the-job injuries and illnesses requiring medical attention in 2015.

Culture of Absence

The longer employees are absent, the less likely they are to return to their original jobs. In some ways, this is simply a function of more complex conditions that necessitate long-duration absences, but industry experts agree there is a **Culture of Absence** that can cause employees to remain out simply due to the fact that they are not engaged in the workforce. They may realize the benefits of not working, or they may simply become detached from their prior identities and, over time, lose the drive to become productive in the workforce. This is not necessarily fraudulent behavior, as many employees are not purposefully remaining out of work, but they lack the desire to return, which can exacerbate their circumstances and translate into emotional or physical ailments.

HOW TO PROTECT YOURSELF

One way to manage time away from work is to promote – through plans, processes, and training, and communication – RTW initiatives. Establishing an RTW program, including stay-at-work (SAW) elements, demonstrates an organizational commitment to employees, while also prioritizing corporate goals and objectives.

Develop a Formal RTW Program

Any concerned supervisor and motivated employee can engage in RTW; no formal process is required. These ad hoc initiatives are beneficial for all parties involved, but they can create some inconsistencies in processes, which may be frustrating to employees and perhaps result in noncompliant interactions with employees or even legal implications. Without support, managers and supervisors cannot be expected to be aware of all federal and state requirements, and, therefore, they may innocently ask questions that may be inappropriate or forget to track cases in

line with regulatory standards (e.g., state disability, family medical leave, etc.).

By developing a more structured program with an RTW focus, an organization can better manage its features. Expectations will be communicated, and all core parties (employees, supervisors, physicians, etc.) will know what is expected of them. Also, a formal process usually includes a provision for supplying physicians with details surrounding job requirements. This may translate into a greater comfort level for returning an employee to work with modifications or in a limited capacity.

Implementing an RTW program from scratch may be challenging because many organizations have *not* rigorously analyzed their causes and costs related to absence. Absent an established baseline, predicting or demonstrating savings can be difficult. Employers should study the experiences of industry peers or competitors to appreciate that their companies can replicate successes by other organizations if they install appropriate plans and processes. It is imperative that when considering implementing an RTW program, tracking is part of the overall solution. It is only through tracking the plans, processes, and outcomes (qualitative and quantitative) that results can be monitored and changes can be made to improve on the program over time.

PROGRAM GOALS

Employers engage in an RTW program for many different reasons, including better management of the costs of benefits offered by their organization, creating a more employee-centric process, and supporting managers toward optimal productivity. The core RTW goals should be clearly defined at the outset, reassessing them on a regular basis. In some cases, they may be attained, and, therefore, more aggressive standards should be set. In other circumstances, goals may need to be modified if they no longer correspond to corporate need or if they have been set too high and require adjusting.

Although all program goals are important, the most common objective is reduced spending. Savings can be achieved through

various mechanisms and incentives to establish and maintain an RTW program.

At the outset, these may be difficult to quantify, but organizations achieve savings through:

- Reduction in cost of absence (disability, workers compensation, etc.)
- Decrease in replacement worker expenses (training, recruitment, team worker effect, etc.)
- Decline in medical claim costs
- Reduction in litigation costs
- Earlier identification of fraudulent cases
- Increased awareness of injury prevention and safety protocols
- Improved employee morale, which may contribute to decreased turnover

If thoughtfully established, processes and plans represent a mutually beneficial solution for employees and employers. For employees, participating in an RTW program may assist in their recoveries. It typically allows them to begin working as they recover, which frequently translates into a feeling of physical and emotional growth. Absent employees, depending on their circumstances, may become disengaged from the workplace. At times, physical ailments may transition into emotional deterioration, resulting in longer recovery time.

FINAL WORD

Successful return to work programs have benefits for both employees and employers, including an estimated $8-$10 dollars savings every $1 invested in such programs. Return to Work strategies and programs have traditionally been utilized to reduce workers’ compensation costs, however, these programs are more valuable now than ever for companies to save time, money and retain essential human capital.

Supervisor Responsibilities Safety Talk

WHAT'S AT STAKE?

Whether you're considering a supervisor position or are simply curious about your manager's responsibilities in relation to your role, it is important to understand the function of supervisors in the workplace. A supervisor is anyone who oversees and manages a team or individual to ensure that they are performing effectively and satisfied in their role. The term "supervisor" usually refers to lower-level managerial positions, and these professionals often communicate information from their direct reports to senior management personnel.

While being a supervisor has its challenges, it's also a rewarding position where you can help individuals achieve personal career goals.

WHAT'S THE DANGER?

SUPERVISOR ATTRIBUTES

In many cases, companies promote individuals from non-managerial roles after they have proven themselves capable to lead others well. When deciding who to advance to a supervisor role, companies often look for employees who demonstrate the following:

- Excellent communication skills
- Expertise in team or department
- Ability to remain calm under pressure
- Firm grasp of company policies
- Strong work ethic

- Punctuality and time management skills
- Professionalism and a positive attitude
- Organizational abilities
- Interest in leadership opportunities

To increase your likelihood of promotion to a supervisor role, it’s important to focus on growing the necessary skills and expertise. Consider attending relevant seminars, conferences, workshops and online classes or pursuing an advanced degree or certification.

Most importantly, be professional and set an example for others by taking the initiative on difficult tasks.

Working as a supervisor allows you to contribute to your workplace while helping employees advance in their careers. Whether you’re considering applying for a supervisor position or interested in pursuing other leadership roles in the future, you need to develop the skills to earn the respect of your employer and your team.

HOW TO PROTECT YOURSELF

BACKGROUND OF APPLICANTS

Education, Training & Certification

Being supervisor doesn’t require any particular education, but certainly needs training.

- **Education**: A high school diploma—or its equivalent—is usually required. Some college or an associate degree can be helpful in setting candidates apart from others who desire the position.
- **Experience:** A supervisor must have an excellent grasp of the work the team’s doing, as well as an understanding of the tasks and activities of a manager. Supervisors are often drawn from the working team because management appreciates their work ethic, company attitude, and commitment to quality.
- **Training:** Organizations often require that individuals

promoted to supervisory roles attend first-line or front-line management training where they learn important communication and management skills.

Supervisor Skills & Competencies

You should have several essential qualities to succeed at becoming a supervisor in any field.

- **Leadership**
- Conflict resolution
- Interpersonal skills
- Time management skills
- Problem-solving abilities

SAFETY RESPONSIBILITIES FOR SUPERVISORS

The primary responsibilities supervisors have is the occupational safety and health for all employees under their supervision.

Conduct Orientation and Training of Employees:

Train and instruct employees so they can perform their work safely. Know what personal protective equipment is needed for each task and how this equipment must be properly used, stored and maintained. When there are mandated safety training courses, ensure that your employees take them and that they are appropriately documented.

Enforce Safe Work Practices:

It’s the supervisor’s responsibility to enforce safe work practices and procedures; failure to do so is an invitation for accidents to occur. Workers must be encouraged to identify unsafe or unhealthful workplace conditions or hazards and absolutely not be disciplined for doing so!

Correct Unsafe Conditions:

Supervisors’ must take immediate steps to correct unsafe or unhealthful workplace conditions or hazards within their authority and ability to do so. When an unsafe or unhealthful workplace

condition or hazard cannot be immediately corrected, the supervisor must take temporary precautionary measures. Supervisors must follow-up to ensure that corrective measures are completed in a timely manner to address the hazard.

Prevent Lingering Unsafe or Unhealthful Workplace Conditions or Hazards:

Many near miss incidents are caused by unsafe or unhealthful workplace conditions or hazards. It’s the supervisor’s responsibility to train and periodically remind employees of what to look for and how to correct or report unsafe conditions or hazards. If a hazard is identified, the supervisor must act.

Investigate Workplace Accidents:

Supervisors are responsible for conducting accident investigations and for ensuring that all occupationally injured employees report to the Occupational Medical Service (OMS) immediately.

Promote Quick Return to Work:

Employees must be encouraged to return to work as soon as possible. The longer an employee is away from work, the less likely he or she will actually return. When possible, light or limited duties should be identified and considered, to assist in returning the employee to work.

WHAT A SUPERVISOR DOES

A supervisor oversees the day-to-day performance of employees. Depending on the company, a supervisor may manage a team, a shift or an entire department.

Successful supervisors have excellent organizational and communication skills. These skills help them transfer information from upper management to employees and communicate their teams’ performance or needs to high-level managers. In most cases, supervisors are experts in their field and can efficiently manage daily operations as a result.

RESPONSIBILITIES/SUPERVISORS

A supervisor’s responsibilities include:

- Set goals for performance and deadlines in ways that comply with company’s plans and vision and communicate them to subordinates
- Organize workflow and ensure that employees understand their duties or delegated tasks
- Monitor employee productivity and provide constructive feedback and coaching
- Receive complaints and resolve problems
- Maintain timekeeping and personnel records
- Pass on information from upper management to employees and vice versa
- Prepare and submit performance reports
- Decide on reward and promotion based on performance
- Ensure adherence to legal and company policies and procedures and undertake disciplinary actions if the need arises
- Schedule work hours and shifts
- Coordinate job rotation and cross-training
- Share company updates, financial results, and new objectives with team members
- Assist in resolving emergencies, such as a quality or customer problem that might be escalated to the team supervisor for handling
- Identify and resolving workplace problems, including tardiness or absenteeism
- Provide reports and activity updates to management
- Assist in hiring and firing activities, a supervisor often requires the managerial approval of all new hires or terminations.

FINAL WORD

Supervisors are not born to be supervisors, but became supervisors through rigorous training protocol by experts in the field and nurtured by the trials and tribulations of experience in the field.

Workers Responsibilities Safety Talk

WHAT’S AT STAKE?

Under the Occupational Health & Safety Act (OHSA) workers and employers share responsibility for occupational health and safety. This concept of an internal responsibility system is based on the principle that workplace parties are in the best position to identify health and safety problems and to develop solutions.

Keep Employees Safe

It sounds obvious to say that employers have a responsibility to keep employees safe, but that responsibility wasn’t always so important to employers. The passage of the Occupational Safety and Health Act (OSHA) in 1970 spelled out employer responsibilities. The provisions of OSHA apply to any employer with even one employee.

You must provide all workers with a safe, healthy place in which to work under the provisions of the law, which applies to all employers.

If your employees are under 18, you have responsibilities to keep them safe based on child labor laws.

WHAT’S THE DANGER?

EMPLOYERS/SUPERVISORS

Employers have the most **Responsibility** for ensuring a safe and healthy workplace and must:

- keep a safe and well-maintained workplace.
- provide hazard information, proper safety equipment, training and competent supervision.
- have worker representation for health and safety.
- follow proper procedures in case of injury.

Supervisors have **Responsibility** to provide:

- a safe workplace and assign safe work.
- training and information.

ADDITIONAL EMPLOYER RESPONSIBILITY

- Make sure that health and safety responsibilities are built into each person’s job description.
- Make sure that workers have proper safety equipment and are trained to use it safely.
- Make sure supervisors and workers are aware of any known hazards in the work and that supervisors are competent (e.g. that they understand the Occupational Health and Safety Act and are prepared to ensure the work is carried out safely).
- Take every precaution reasonable in the circumstances to protect workers.
- In a workplace with more than five workers, have a written health and safety policy and program and post the policy where everyone can read it.
- Establish a fully-functioning joint health and safety committee (or health and safety representative where required).
- Post the names and work locations of health and safety committee members or the worker representative where it can be seen.

EMPLOYEE RIGHTS AND RESPONSIBILITIES

You have a legal right as a worker to:

- A safe and healthful workplace
- Any information your employer has about any exposure you may have had to hazards such as toxic chemicals or noise. You

also have a right to any medical records your employer has concerning you.
- To ask your employer to correct dangerous conditions.
- To file a complaint about workplace hazards:
- To participate in enforcement inspections.
- To not be discriminated against for exercising your health and safety rights. Your employer may not fire you, threaten you, harass you, or treat you differently for exercising your health and safety rights.
- To refuse work that puts you in immediate danger of serious harm. Before you refuse unsafe work, request that your employer eliminate the hazard and make it clear that you will accept an alternate assignment. The OSHA regulation only protects you if the danger can be proven to exist; if you refuse to work because you believe a condition is hazardous, but are proved wrong, OSHA does not protect you.
- To information on hazards in your workplace; chemicals used in your workplace; tests your employer has done to measure chemical, noise and radiation levels; and what to do if you or other employees are involved in an incident or are exposed to other toxic substances.
- To information from your employer about OSHA standards, worker injuries and illnesses, job hazards and workers' rights.

Training from your employer:

- on chemicals you are exposed to during your work and information on how to protect yourself from harm.
- on other health and safety hazards and standards that your employer must follow.

HOW TO PROTECT YOURSELF

GENERAL

A properly functioning internal responsibility system can help your business

The internal responsibility system involves everyone in health and

safety, from the company chief executive officer to the worker. How well the system works depends upon whether there is a complete, unbroken chain of responsibility and accountability for health and safety. Safe work contributes to efficiency, profitability and lower WSIB premiums.

EMPLOYEE RESPONSIBILITIES TO EMPLOYERS

Employees have responsibilities to an employer. Most companies expect employees to recognize the following responsibilities:

- Obeying rules, policies, and work directions and commands is a basic part of what it means to be an employee.
- **Dealing honestly with the employer.** That means not lying or stealing from the employer, and honestly representing themself in an employment application.
- **Working with reasonable care and skill.** In other words, the employee gives full value of the time for which they are being paid.
- **Not disclosing information to others, confidential employer**
- **Disclosing any possible conflict of interest.** This can include work for a competitor or a relationship that could compromise the employer.
- **Caring for the employer's property, equipment, and facilities.**
- **Complying with safety rules,** including OSHA standards, rules, regulations, and orders.

Reduce the Responsibilities to Writing

You have responsibilities to employees. Include them in your employee handbook, along with other policies and procedures. Write a section of your handbook that describes these responsibilities and includes responsibilities employees have to you as their employer.

WORKER RESPONSIBILITY HI-LITES

Workers have the responsibility to:

- Read the workplace safety and health poster at the jobsite.

- Comply with all applicable OSHA safety standards.
- Follow all lawful employer safety and health rules and regulations, and wear or use required protective equipment while working.
- Report hazardous conditions to the employer.
- Report any job-related injury or illness to the employer, and seek treatment promptly.
- work safely and not take risks.
- report unsafe conditions.
- wear the right safety equipment for the job.
- ask their employers about concerns regarding health and safety.

FINAL WORD

Safety and health in the workplace is not a “one-way street”. It is compact on a deeply human level where management and labour strive to achieve the same goals of productivity, growth and safety. If there is not positive buy-in by both partners, the safety and health objectives will fail.

Asphalt Dryer Entry Talk

WHAT’S AT STAKE?

Asphalt plants can be very dangerous places. Accidents, sometimes fatal, happen far too often. Most accidents can be traced to the same root cause; the pressure for more production supersedes common sense and normal safety protocols. A lot of safeties are by-passed in the effort to reach production quotas.

WHAT’S THE DANGER?

When dealing with safety issues, one must keep in mind the fact that you need to be safe all the time– you need only be careless once for tragedy to strike.

- Asphalt plants can be very dangerous places. Accidents, sometimes fatal, happen far too often. Most can be traced to the same root cause: the need for production superseding common sense and normal safety practices.
- Under the pressure of production quotas people did things that they may not have done in ordinary circumstances, and, it ended up costing them dearly.
- Asphalt plant operators often feel tremendous pressure to produce hot mix by any means possible. Unfortunately, this shifts the focus off of safety and onto money.
- Another potentially dangerous activity around portable plants is the handling of hot asphalt oils. Each year a large number of people are burned when they are careless, equipment fails or hot oil is forced into plugged lines. A hose that fails explosively under high pressure can send a surprising amount of oil in a large radius, to the peril of anyone unfortunate enough to be standing near.

The flame used to heat stubborn pumps, lines and off-loading hoses can sometimes cause problems, especially in those area where housekeeping is lax.

Hazards Result From

- Significant traffic movements
- Conveying of raw materials
- Risk of burns from hot liquids, hot materials and hot surfaces
- Risk of fire from hot liquid ignition
- Falls from height
- Moving equipment such as skip trolleys
- Screw Conveyors, drives, motors and chains
- large quantities of fuel in tanks or pipe lines
- Confined Space Entry during maintenance operations

HOW TO PROTECT YOURSELF

6 WAYS TO KEEP EVERYONE SAFE

1. **Look out for one another**

Look out for others. Always use machine guards when you are working on or repairing equipment. If you need to step away from the machine, lock it out and tag it out.

Let a supervisor know if a co-worker does something unsafe. If you see co-workers doing something unsafe, let them know. If they continue to work unsafely, talk to your supervisor.

2. **Keep track of each other**

Owners should have a sign-in/sign-out sheet that shows plant operators and managers who is on the site and when. If someone hasn’t been seen or heard from in a while, contact him or her by radio to make sure all is well.

Carry handheld radios or install hands-free intercoms in multiple locations on the plant.

3. **Communicate with Passion**

Owners should use a plant start-up siren and/or start-up lights to signal the commencement of production. This gives plant personnel, truck drivers, and others time to move away to a safe place prior to the plant starting.

4. **Employ all the senses.**

Look around you before you do anything at an asphalt plant. Look where you are walking, standing or climbing. Be aware of your surroundings. There is constant motion of machinery and equipment at a plant site. Watch out for trucks and loaders; they generally have the right of way.

5. **Always use PPE**

With most surfaces at the plant storing heat, personnel should

wear the long sleeves, thick gloves, safety glasses, etc. Something every source agreed upon was the use of personal protective equipment (PPE). Original equipment manufacturers (OEMs) also want to see plant personnel wearing safety vests, hard hats, highly visible clothing and the gear typically reserved for the paving crew.

6. **The Plan**

If the unthinkable occurs, a well-practiced emergency plan can keep a situation from going from bad to worse. Owners should institute a clearly defined emergency plan. Make sure personnel know the phone numbers for police, ambulance, hospital, etc. Owners should add evacuation routes and an assembly area to that plan. You want to meet in an agreed-upon area where all personnel can be counted, and accounted for, if a serious accident takes place.

SPECIFIC SAFETY MEASURES

Asphalt Fires

Asphalt oil fires are difficult to extinguish, once they get going. The best way to prevent these fires is to deny them a chance to get started in the first place. Oil messes should be cleaned up immediately. Any leaking fittings, hoses or shaft seals should be repaired or replaced at once. In addition, a liberal sprinkling of five and ten pound fire extinguishers around the off-loading area will go a long way toward minimizing the damage should an incident occur. A shovel and a modest pile of sand can also provide some insurance, and are useful in cleaning up oil spills. If a person is consistently careless and puts themselves and others at risk, perhaps it’s time to replace that person.

Truck Traffic and the Loader

One area of safety that is routinely compromised at many asphalt plants is the conflict between truck traffic and the needs of the loader operator to access his stockpiles. Small pits, filled with the aggregate for coming jobs, sometimes offer precious little

space to set-up a plant.

It seems obvious that the utmost care must be exercised during the time the trucks are vulnerable, yet each year trucks are wrecked and their drivers hurt from loader/truck encounters. One method of combating this problem is to have weekly safety meetings prior to the start-up of operations each Monday. The loader man and all truck drivers should discuss the ways to keep their respective activities safe for the others and work out a plan that is acceptable to everyone involved. A common C.B. (citizen band) radio in the loader and one in each of the trucks can go a long way toward eliminating conflicts.

Climbing

People routinely climb around on asphalt plants when they are being torn down, and surprisingly, few of them are even aware that OSHA regulations require the use of an approved safety restraint belt whenever a person is over 6 ft from the ground. Other people shy away from their use because the devices are awkward and uncomfortable.

Common Sense/Rigid Safety Program

Two things can work together at your asphalt plant to increase safety: common sense and a rigid safety program that includes mandatory meetings to discuss safety protocols. Effort should be made to discuss other issues in addition to the basic things like the need for hard hats, eye protection and proper clothing. Everyone should have a voice, from the top down. Even the truck drivers, who spend a lot of time around plants. And if anyone has a concern, it needs to be recognized and addressed.

FINAL WORD

Asphalt plant operators often feel tremendous pressure to produce hot mix by any means possible. Unfortunately, this shifts the focus off of safety and onto money. Perhaps a clear-cut set of guidelines dealing with company policy on safety issues should be drawn up and distributed to everyone involved with the plant. Be

sure to include the Paving Superintendent. This individual can exert enormous pressure on the plant operator without even realizing that he is doing it.

Liquid Asphalt Burn Safety Talk

WHAT’S AT STAKE?

Asphalt is widely recognized as one of the most recyclable construction materials in use on the planet today. Lafarge North America typically incorporates up to 30 percent of reclaimed asphalt pavement (RAP) back into new asphalt production, reducing total life-cycle greenhouse gases by 10 percent. Hot Mix Asphalt (HMA) pavement is the most recycled material in the United States; each year more than 100 million tonnes of asphalt pavement is reused or recycled into new pavements.

Sustainable construction is a growing concern for all stakeholders, from state governments with major highway projects to parking lots for grocery chains that also want to demonstrate a commitment to the green agenda.

WHAT’S THE DANGER?

HARMFUL EFFECTS

Over a half-million workers are exposed to fumes from asphalt, a petroleum product used extensively in road paving, roofing, siding, and concrete work. Health effects from exposure to asphalt fumes include headache, skin rash, sensitization, fatigue, reduced appetite, throat and eye irritation, cough, and skin cancer.

STORING, HANDLING, HEATING / SPRAYING

All asphalt products, when heated enough, are flammable. That means that if you heat any asphalt hot enough, whether it is a cut back, an asphalt cement, or an emulsion, hazardous vapors will be produced.

What Happens?

When these vapors are mixed in proper proportion with oxygen in the air, and come in contact with a source of ignition, a flash fire can occur. The flash may be quite violent, and if enough vapors are present a raging fire may develop. These types of fire can and have burned people very badly, and have killed some.

FLASH POINTS

Many of the asphalt products we use every day are used at temperatures above their flash points. The flash point is the product temperature where a source of ignition will cause the vapors produced to catch on fire. RC and MC cut back asphalts are commonly used at temperatures above their flash points, where flammable vapors are produced. The flash points of asphalt cements may be above the temperatures at which they are used, but they are not far away. You may be using an asphalt cement (AC) at a temperature which is only 20 to 25°F below its flash point. If that AC is overheated in a small area, flammable vapors may be produced. If the water is boiled off of a bit of emulsion, the remains may be asphalt cement or there may be solvents in the asphalt which can produce flammable vapors. In either case the remains are dangerous if overheated. You may overheat a small amount of emulsion, boil off the water, overheat the remaining asphalt, and be producing flammable vapors without even realizing it. If the vapors mix with oxygen and reach a source of ignition, a fire will develop.

ASPHALT POISONING

Workers can and do suffer from asphalt poisoning to different parts of the body.

Symptoms

- Loss of vision
- Severe pain in the throat
- Severe pain or burning in the nose, eyes, ears, lips, or tongue
- Collapse
- Low blood pressure that develops rapidly (shock)
- Breathing difficulty (from breathing in asphalt)
- Throat swelling (which may also cause breathing difficulty)
- Burns
- Holes (ulcers) in the skin or tissues under the skin
- Blockage in the intestines
- Blood in the stool
- Burns of the food pipe (esophagus)
- Severe abdominal pain
- Vomiting (may contain blood)

Home Care

Seek medical help right away. DO NOT make the person throw up unless poison control or a health care provider tells you to.

If the person swallowed asphalt, give them water or milk right away, unless a provider tells you not to. DO NOT give anything to drink if the person has symptoms that make it hard to swallow. These include vomiting, convulsions, or a decreased level of alertness.

Before Calling Emergency

Have this information ready:

- Person’s age, weight, and condition
- Name of the product (ingredients, if known)
- Time it was swallowed
- Amount swallowed

PROGNOSIS

How well someone does depends on how much asphalt they swallowed and how quickly they receive treatment. The faster medical help is given, the better the chance for recovery. Hot asphalt cools very

quickly and is difficult to get off the skin. Serious burns can easily occur from the extreme heat. Construction workers who work with asphalt should wear protective clothing.

ASPHALT TAKEAWAY

Poisonous Ingredient

The substances in asphalt that can be harmful are:

- Hydrocarbons
- Industrial glues
- Industrial solvents
- Tar

Where Found

Asphalt is found in:

- Road paving materials
- Roofing materials
- Tile cements

HOW TO PROTECT YOURSELF

The flammable nature of asphalt vapors, and the quick, violent fires which develop lead to the following safety precautions:

- When heating asphalt in a transport tank, distributor, or tack truck, position the tank broadside to the wind.
- Always be sure that the heating flues are covered by at least six inches of asphalt before lighting the burners
- Never spray asphalt while the burners are running
- Keep all sources of ignition away from manholes and tank vents
- Keep vent pipes clear and open
- Do not operate or weld on a tank which is leaking

CONTACT/HOT LIQUID ASPHALT

Personal Protective Equipment Must Be Worn At All Times

On those occasions when contact with hot liquid asphalt does occur, be prepared. The asphalt Institute has done studies and has prepared a video, posters and wallet cards to train and inform personnel on what to do when someone is burned by hot liquid asphalt. Initially, remain calm, do not panic and do not delay treatment. Treatment steps are as follows:

1. Make certain the victim can breathe, check their airways and make certain blood circulation has not been disrupted.
2. Start cooling the asphalt immediately with cool water; hot asphalt will continue to burn if not cooled as soon as possible.
3. Do NOT remove the asphalt from the skin, it could also remove the skin causing a greater problem later.
4. Place affected areas under running water, ice or cold packs to cool the asphalt. Running/flowing water should last a minimum of 20 minutes and longer if necessary to get the asphalt to room temperature.
5. Do Not cover the burned area.
6. Notify others in the area.
7. Call for Help! It is urgent get emergency medical attention to properly address the burned areas.

FINAL WORD

Friend or FOE? Asphalt can be both at the same time. The better read is to place workers and industry in the friend category. Asphalt used properly and constructively far outweighs the deleterious effects of asphalt properties. Example: 100% of the asphalt supplied can be recycled.

Assured Grounding Program

WHAT’S AT STAKE?

The assured equipment grounding conductor program covers all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use or used by employees. The requirements which the program must meet are stated in 29 CFR 1926.404(b)(1)(iii), but employers may provide additional tests or procedures.

WHAT’S THE DANGER?

EQUIPMENT HAZARDS

Construction Sites

With the wide use of portable tools on construction sites, the use of flexible cords often becomes necessary. Hazards are created when cords, cord connectors, receptacles, and cord- and plug-connected equipment are improperly used and maintained. Generally, flexible cords are more vulnerable to damage than is fixed wiring. Flexible cords must be connected to devices and to fittings so as to prevent tension at joints and terminal screws.

A flexible cord may be damaged by activities on the job, by door or window edges, by staples or fastenings, by abrasion from adjacent materials, or simply by aging.

When a cord connector is wet, hazardous leakage can occur to the equipment grounding conductor and to humans who pick up that connector if they also provide a path to ground.

When the leakage current of tools is below 1 ampere, and the grounding conductor has a low resistance, no shock should be perceived. However, should the resistance of the equipment grounding conductor increase, the current through the body also

will increase. Thus, if the resistance of the equipment grounding conductor is significantly greater than 1 ohm, tools with even small leakages become Hazardous.

HOW TO PROTECT YOURSELF

Responsibility / Electrical Equipment Protection

The goal is to help employers and employees responsible for electrical equipment provide protection against 120-volt electrical hazards on the construction site—the most common being ground fault electrical shock—through the **use of GFCIs or through the assured equipment grounding conductor program.**

INSULATION AND GROUNDING

Insulation and grounding are two recognized means of preventing injury during electrical equipment operation.

- Conductor insulation may be provided by placing nonconductive material such as plastic around the conductor.
- Grounding may be achieved through the use of a direct connection to a known ground such as a metal, cold water pipe.

Electrical Shock Hazard

Consider, the metal housing or enclosure around a motor or the metal box in which electrical switches, circuit breakers, and controls are placed. Such enclosures protect the equipment from dirt and moisture and prevent accidental contact with exposed wiring, however, there is a hazard associated with housings and enclosures. A malfunction within the equipment—such as deteriorated insulation—may create an electrical shock hazard. Many metal enclosures are connected to a ground to eliminate the hazard.

“Hot” Wire

If a “hot” wire contacts a grounded enclosure, a ground fault results which normally will trip a circuit breaker or blow a fuse.

Metal enclosures and containers are usually grounded by connecting them with a wire going to ground. This wire is called an equipment grounding conductor. Most portable electric tools and appliances are grounded by this means. There is one disadvantage to grounding: a break in the grounding system may occur without the user’s knowledge.

RECOGNIZED REQUIREMENTS

Insulation

Insulation may be damaged by hard usage on the job or simply by aging. If this damage causes the conductors to become exposed, the hazards of shocks, burns, and fire will exist. Double insulation may be used as additional protection on the live parts of a tool, but double insulation does not provide protection against defective cords and plugs or against heavy moisture conditions.

Ground

OSHA ground-fault protection rules and regulations have been determined necessary and appropriate for employee safety and health. Therefore, it is the employer’s responsibility to provide either: (a) GFCIs on construction sites for receptacle outlets in use and not part of the permanent wiring of the building or structure; or (b) a scheduled and recorded assured equipment grounding conductor program on construction sites, covering all cord sets, receptacles which are not part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use or used by employees.

Employer Responsibility

The employer is required to provide approved GFCIs for all 120-volt, single-phase, 15- and 20-ampere receptacle outlets on construction sites that are not a part of the permanent wiring of the building or structure and that are in use by employees. If a receptacle or receptacles are installed as part of the permanent wiring of the building or structure and they are used for temporary electric power, GFCI protection shall be provided. Receptacles on the ends of extension cords are not part of the

permanent wiring and, therefore the cord’s receptacle, must be of the GFCI type whether or not the extension cord is plugged into permanent wiring. These GFCIs monitor the current-to-the-load for leakage to ground.

ASSURED EQUIPMENT GROUNDING CONDUCTOR PROGRAM (AEGCP)

Minimum Requirements

If an Assured Equipment Grounding Conductor Program (AEGCP) is used in place of ground-fault circuit interrupters (GFCIs) for ground-fault protection, the following **minimum requirements** apply, though additional tests or procedures are encouraged:

1. **Written Description**

Keep a written description of the program at the jobsite. Outline specific procedures for the required equipment inspections, tests, and test schedule, and make them available to OSHA and to affected persons upon demand.

2. **Competent Person**

Designate one or more competent persons to implement the program. OSHA defines a competent person as someone who is a) qualified to identify hazards, and b) authorized to take prompt corrective measures.

3. **Visually Inspect**

Visually inspect all cord sets, attachment caps, plugs and receptacles, and any equipment connected by cord and plug, before use each day. If you see any external damage, such as deformed or missing pins, damaged insulation, etc., or discover internal damage, take the equipment out of use until it is repaired.

4. **Perform Tests**

Perform two OSHA-required tests on all electrical equipment: a continuity test, and a terminal connection test. Tests are required:

- Before first use.

- After any repairs, and before placing back in service.
- After suspected damage, and before returning to use.
- Every 3 months

Maintain a written record of the required tests, identifying all equipment that passed the test and the last date it was tested (or the testing interval). Like the program description, make it available to OSHA inspectors and affected persons upon demand.

Caveat – Beware

Even if these steps are fully implemented, the result is a level of protection inferior to that provided by GFCI. In the end, electrical contractors can meet both NEC and OSHA requirements. By using GFCI protection for their employees, they can provide a superior level of protection from electrical shock, and they can do so in a manner that is less costly than the AEGCP.

FINAL WORD

Daily vigilance of assured grounding equipment is the key to secure the safety and wellbeing of employees working in those sectors. Anything less, most certainly result in injuries and in some cases, fatalities.

Excavating and Shoring Guidelines Safety Talk

WHAT'S AT STAKE?

Excavation work generally means work involving the removal of soil or rock from a site to form an open face, hole or cavity, using tools, machinery or explosives.

It is mandatory that any trench or excavation more than 1.2 m (4 feet) is properly sloped or shored to comply with the occupational health and safety regulations. No employee shall enter any trench or excavation that is not properly sloped or shored.

WHAT'S THE DANGER?

EXCAVATION HAZARDS

The main hazards associated with excavation work include:

- Surface encumbrances.
- Excavation collapse.
- Loose rock or soil.
- Contact with underground services and/or overhead power lines.
- Falling loads – Materials falling onto people working in the excavation.
- Mobile equipment – People and vehicles falling into the excavation.
- Vehicular traffic – People being struck by plant machines.
- Undermining of nearby structures.
- Access/egress to/from excavation.
- Hazardous atmospheres.
- Ground water.
- Accidents to members of the public.

TRENCHING / SHORING

One of the most dangerous forms of construction work is the excavation labor involved with trenching and shoring.

Thousands of employees are injured each year performing this type of work, and hundreds are killed. In fact, the fatality rate for trenching is twice that of deaths incurred from other forms of construction.

Cave-ins can result from many shifts in the earth that occur during the trenching and shoring process. For example:

- The addition or removal of water

- Vibrations from the excavation
- Added or reduced weight of soil or adjacent structures
- Reduction in frictional forces
- Any amount of freezing or thawing

Once these cave-ins occur, death can result instantly, or workers can become trapped and be severely injured or suffer from asphyxiation.

HOW TO PROTECT YOURSELF

PROCEDURE BEFORE EXCAVATION WORK

- Investigate if a dangerous atmosphere is present or liable to be present?
- See if the space is adequately ventilated to maintain adequate oxygen content and prevent the accumulation of harmful substances?
- Find out what the use and history of the location of work is when carrying out risk assessment. Buried underground pipe work or a leakage in sewage system may present a hidden hazard.
- Investigate if a dangerous atmosphere is potentially present; the excavation must be treated as a confined space.
- A safe system of work must be developed and put in place, including the making of appropriate emergency arrangements. The safe system of work may involve the provision of adequate ventilation, testing of atmosphere, or other precautions, as devised by a competent person.

Shoring Types

Shoring is the provision of a support system for trench faces used to prevent movement of soil, underground utilities, roadways, and foundations. Shoring or shielding is used when the location or depth of the cut makes sloping back to the maximum allowable slope impractical. Shoring systems consist of posts, wales, struts, and sheeting.

Hydraulic Shoring

The trend today is toward the use of hydraulic shoring, a prefabricated strut and/or wale system manufactured of aluminum or steel. Hydraulic shoring provides a critical safety advantage over timber shoring because workers do not have to enter the trench to install or remove hydraulic shoring.

Pneumatic Shoring

Works in a manner similar to hydraulic shoring. The primary difference is that pneumatic shoring uses air pressure in place of hydraulic pressure. A disadvantage to the use of pneumatic shoring is that an air compressor must be on site.

Screw Jacks

Screw jack systems differ from hydraulic and pneumatic systems in that the struts of a screw jack system must be adjusted manually. This creates a hazard because the worker is required to be in the trench in order to adjust the strut. In addition, uniform "preloading" cannot be achieved with screw jacks, and their weight creates handling difficulties.

EXCAVATION PRECAUTIONS

According to the Construction Regulations, precautions must be taken that are adequate to:

- Guard against danger to persons at work from a fall or dislodgement of earth, rock or other material by suitable shoring or otherwise
- Guard against dangers arising from the fall of materials or objects or the inrush of water into the excavation, shaft, earthworks, underground works or tunnel
- Secure adequate ventilation at all workplaces so as to maintain an atmosphere fit for respiration and to limit any fumes, gases, vapours, dust or other impurities to levels which are not dangerous or injurious to health
- Enable persons at work to reach safety in the event of fire or an inrush of water or materials
- Avoid risk to persons at work arising from possible underground dangers such as underground cables or other

distribution systems, the circulation of fluids or the presence of pockets of gas, by undertaking appropriate investigations to locate them before excavation begins
- Ensure that a safe means of access to and egress from each excavation

CAVE – INS

Employers can help reduce injuries and fatalities caused by cave-ins. 10 safety tips that will allow crews to work safer.

1. Never enter an unprotected trench.
2. Park heavy equipment as far from trench edges as possible. Keep soil or other materials at least two feet away from the sides of the trench. If the job site does not allow for two feet of distance, soil removed from the trench may need to be moved to another location until work is completed.
3. Find out where utilities are located underground before crews start digging.
4. Inspect trenches daily before work begins and after storms or other events that may cause changes to the trench. OSHA requires that these inspections are completed by a 'competent person,' someone with the knowledge to identify hazards in and around the excavation and who has the authority to promptly correct those hazards.
5. When exposed to traffic, workers can prevent accidents by wearing highly visible clothing such as **traffic safety vests**.
6. Educate workers on the dangers involved in excavation and on proper safety precautions. An affordable way to ensure workers receive thorough information is to use **training videos and DVDs**.
7. Never work beneath suspended loads of materials.
8. When the trench is more than four feet deep, test atmospheric conditions before work begins. If tests reveal low oxygen, toxic gases, or hazardous fumes, no one should enter the trench.
9. Create systems to protect workers and prevent collapses. Some of the most common and effective protective systems

include:

- Benching – Building steps into the sides of an excavation
- Sloping – Angling the trench wall away from the excavation
- Shoring – Installing supports such as aluminum hydraulics to prevent soil movement
- Shielding – Protecting workers with trench boxes or other protective equipment

10. Provide safe entrances and exits to the trench. OSHA requires that ladders, steps, or ramps be used whenever a trench or excavation is more than four feet deep and that all employees work within 25 feet of these provisions at all times. When using ladders, they must extend a minimum of 3 feet above the surface of the trench.

FINAL WORD

Employers can help prevent injuries and deaths by frequently reminding workers of these guidelines and posting signs that stress the dangers of excavation. These warnings could be the difference between good and bad decision-making on the job site.

Excavation Safety Tips

WHAT'S AT STAKE?

One of the most dangerous forms of construction work is excavation labour involved with trenching and shoring.

Excavation is defined as ground breaking or making trench in ground.

Cave-in is defined as the separation of mass of soil or rock

material from the side of excavation, or the loss of soil from under a trench shield.

WHAT’S THE DANGER?

Excavation Labour

Thousands of employees are injured each year performing this type of work, and hundreds are killed. In fact, the fatality rate for trenching is twice that of deaths incurred from other forms of construction.

Cave-Ins

The reason for this high mortality rate is the danger involved with cave-ins while on the job. Cave-ins can result from many shifts in the earth that occur during the trenching and shoring process.

- The addition or removal of water
- Vibrations from the excavation
- Added or reduced weight of soil or adjacent structures
- Reduction in frictional forces
- Any amount of freezing or thawing

Once these cave-ins occur, death can result instantly or workers can become trapped and be severely injured or suffer from asphyxiation.

Excavation Safety Hazards

1. **Cave-ins**

Trench collapses kill an average of two workers every month, making this a serious threat to worker safety. To prevent cave-ins, OSHA requires a professional engineer or a qualified professional to analyze soil composition, and then design and implement a system that:

- Slopes
- Shields

- Supports

Hiring a professional engineer or a qualified professional to design a system that prevents cave-ins is critical for preventing injury and jobsite fatalities.

2. **Falls and falling loads**

Workers and work equipment can fall into an excavated area. When possible, install a barrier and safety signage around the perimeter of the excavation to clearly mark the fall hazard. Falling loads, such as jobsite equipment or excavated dirt, can also fall into a trenched area and crush anybody who is working below. This is why OSHA requires jobsite materials to be stored at least two feet away from the edge of an excavation. Additionally, OSHA recommends that employers do not allow work to be conducted beneath suspended or raised loads.

3. **Hazardous atmospheres**

Trenched areas sometimes have depleted oxygen levels, which is safety hazard that must be taken into consideration on excavation sites. The atmosphere in trenched areas can also be contaminated by toxic gases and chemicals. For these reasons, OSHA requires atmospheric testing to be performed by a qualified professional in excavations that exceed four feet. If atmospheric hazards are present, then workers must wear the appropriate respiratory protection equipment depending on the hazard in the excavated area.

4. **Mobile equipment**

Mobile equipment operators might have an obstructed view and therefore not be able to detect when they are approaching the perimeter of the trench. OSHA suggests that a spotter or a flagger be designated to direct the mobile equipment operator and prevent the vehicle from falling in the trench. When material is being loaded or unloaded from the construction vehicle, workers should be required to stand back in order to prevent being hit by flying debris.

Make sure to wear a reflective vest to make yourself more visible to mobile equipment operators, and wear a hard hat to protect your head from construction debris.

5. **Hitting utility lines**

In addition to causing expensive damage to municipal infrastructure, hitting utility lines when digging can also cause electrocution and natural gas leaks, which can lead to worker fatalities. Fortunately, you can easily avoid hitting utility lines by contacting your local utility companies before you dig.

HOW TO PROTECT YOURSELF

Before You Begin

To start with, the work site must be evaluated for potential hazards, known hazards must be reduced or removed, and utility locations must be properly marked. Furthermore, the leads on the project should set times for periodic inspection intervals and establish emergency procedures.

PRECAUTIONS

OSHA EXCAVATION SAFETY MEASURES

- Inspect trenches daily before work begins. Don’t go near an unprotected trench.
- Check weather conditions before work, be mindful of rain and storms.
- Keep heavy equipment away from trench edges.
- Be mindful of the location of utilities underground.
- Always wear proper protective equipment.
- Don’t work beneath raised loads.
- Conduct atmosphere tests. If low oxygen and toxic gases were detected, workers must not enter the trench.
- Protective systems like benching, sloping, shoring and shielding must be created.
- Planning and implementation of safety measures must be done by a competent person.

- Use a checklist to perform regular self-inspections – download free excavation safety checklists here.

NIOSH TOP EXCAVATION SAFETY TIPS

- Train a specific individual to oversee each excavation job and properly enforce specific safety regulations.
- Have an expert examine soil stability before the dig.
- Trenches over 20 feet in depth need a site-specific, professionally engineered protective system.
- Develop and have employees practice a trench collapse emergency plan.
- Before work begins and throughout each workday, the job foreman or the safety enforcement employee should recheck the excavation site for soil and safety apparatus stability, especially after a storm.
- Trench exit ladders should never be over 25 feet away from the workers inside.
- Notify subcontractors of the trench location and make sure they keep vehicles and other heavy equipment at a safe distance from the trench.
- Closely monitor the trench for hazards other than cave-ins such as noxious gases, unstable edges, or rigging hazards.
- Teach employees about trench collapse warning signs, but also that these signs may not present themselves before an incident.

FINAL WORD

No worker’s life should end in a trench, Cave-ins during excavations are some of the most common and grisliest causes of worker fatalities in construction, yet they are entirely preventable. With proper training, procedures, and supplies, employers can help to prevent these accidents.

Environmental – Spill Kits

WHAT'S AT STAKE?

Probably the most beneficial component of a spill kit is that they are pre-packaged with all the materials that will be needed in the spill clean-up procedure. Once a spill occurs time is of the essence and being able to quickly grab the kit will ensure the spill is addressed immediately and effectively. Not only will the spill be contained and cleaned quickly, the PPE included in the spill kit will keep workers safe while they are handling the spilled materials.

WHAT'S THE DANGER?

Most facilities have various materials that are dangerous, yet necessary for getting specific jobs done. Most of the time these products are used without any problem, but in the event of a spill it is important to be able to get them contained and cleaned up as quickly and safely as possible. This is why it is so important to have a good spill kit available that can properly clean up the specific solution that is spilled.

DANGERS

1. Oil based products, water based products and chemicals spills.
2. Corrosive battery acid spills.
3. Mercury spills containing amalgamation powder; indicator powder used in fluorescent light bulbs, thermometers, and lab equipment
4. Bloodborne pathogen spills and any type of bodily fluids.

HOW TO PROTECT YOURSELF

ENSURE FAST/EFFECTIVE RESPONSE TO SPILLS

1. Assess the risk

From the moment a spill occurs and throughout response, responders should determine the risks that may affect human health, the environment and property. The spilled material can be identified from the container label or the Safety Data Sheet (SDS).

Next, identify how much has been spilled and the primary dangers posed to the spill responders and the environment. Once the extent of the spill and the risks are understood, appropriate measures may need to be taken to isolate the spill area (e.g. setting up exclusion zones).

2. Select personal protective equipment (PPE)

The spill responder may already be wearing the necessary PPE because they were working with the spilled liquid, but if not, it is crucial that the appropriate PPE is chosen. Consulting the SDS, Chemical Manufacturers literature or the PPE Manufacturers literature can aid in choosing. If the danger is uncertain and the material is unknown, the worst should be assumed and the highest level of protection used.

3. Confine the spill

Confining the spill may be a simple task for spills of a few liters or it could be more difficult for larger spills, so it is important to make sure that the correct absorbents and size of spill kit are available for the liquids that have been spilled.

Responders should limit the spill area by blocking, diverting, or confining the spill. The flow of the liquid should also be stopped before it has a chance to contaminate a water source – minimizing the spill area and protecting drains are the priorities. Make sure the barrier is placed far enough away from the spill to ensure you can complete the setup but also far away from sensitive areas,

such as drains and waterways.

4. Stop the source

This step may happen before the spill is even confined depending on the extent or the size of the spill. This could simply involve turning a container upright, or plugging a leak from a damaged drum or container. Once the leak has been stopped the liquids should be transferred from the damaged container to a new one.

5. Evaluate the incident and implement cleanup

Once the spill is confined and the leak has been stopped, it is time to reassess the incident and develop a plan of action for implementing the spill cleanup. First, responders should make sure they have enough spill response supplies to deal with the incident. Once absorbents are saturated, they may be considered hazardous waste and should be disposed of properly.

6. Decontaminate

The site, personnel, and equipment should be decontaminated by removing or neutralising the hazardous materials that have accumulated during the spill. This may involve removing and disposing of contaminated media, such as soil, that was exposed during the spill incident. PPE may be able to be reused after inspection and cleanup. An effective decontamination area should also be created to ensure the health and safety of emergency responders.

7. Complete required reports

As soon as possible after the spill, all spill notifications and reports required by local and national guidelines should be completed. Failure to do so can result in severe penalties. Typical reports include medical reports, local council or district reports, Environment Agency reports and company safety reports.

SPECIFIC PREVENTION STEPS

Oil Based and Water Based Spill

- **Safety Gloves**– Having nitrile safety gloves will provide protection to the person cleaning up a spill. These types of gloves are resistant to corrosion from chemicals.
- **Eye Goggles**– If even a small amount of many chemicals, oils or other things get in the eyes it can cause severe problems. This is why it is so important to keep your eyes protected with these goggles.
- **Shoe Covers**– It is often necessary to step in the spill while cleaning it up and these shoe covers will protect your shoes and your feet.
- **Sorbents**– The absorbent items that will actually clean up the spill need to be able to quickly absorb and hold in a variety of liquids. OSHA spill kits can have any number of types of sorbents. Most will have larger pads to put over the spill, pillows to contain and absorb the spill and smaller sorbent socks.
- **Handbook** – Having the information you need to stay safe during a spill is also important. Most good spill kits will contain a book that helps you determine the potential dangers associated with cleaning up a specific type of spill.
- **Disposal Bag** – Having a large bag or other storage bin that can hold everything after it has been used until it can be properly disposed of is absolutely essential.

Battery Acid Spills

If you work in an area where large, powerful batteries are present it is important to have an OSHA approved battery acid spill kit. These are different than other options because they can clean up the very corrosive battery acid safely. Many things such as the nitrile gloves, eye goggles and storage bags.

In addition to these standard items, the battery acid kids also have a poly apron to help protect your clothes from getting holes

in them if the acid comes in contact with them. Having a special polymer that will neutralize the acid is also very important as it can minimize any damage during and after the cleanup process. While not always required, most spill kits of this type will have a scoop to help pick all the acid up.

Mercury Spills

Mercury can be very dangerous but it is a necessary element in things like fluorescent light bulbs, many types of thermometers and some lab equipment. Mercury spill kits need to contain amalgamation powder, indicator powder to make sure it is all cleaned up, a vapor suppressor bottle, an aspirator bottle and a chemical sponge to absorb all the mercury.

Biohazard Spills

If any biological spill occurs, including blood, this type of kit can be very effective. These kits are also known as blood borne pathogen spill kits. It is used to safely absorb just about any type of bodily fluids quickly and sanitarily. The following items should be in any bio-spill kit:

- **Bio-Hazard Sorbents**– These are special sorbents that are made to absorb and secure biological materials. They can come in many shapes and sizes including large mats, thick pillows and more.
- **Neoprene Gloves**– Neoprene gloves will help ensure nothing gets onto your hands. Many kits will have gloves with longer sleeves to help keep all the biological materials off your wrist and arms too.
- **Sanitizing Surface Wipes**– Once you've cleaned up all the visible biological materials you'll want to sanitize all surfaces with these wipes. They are made to kill any bacteria or virus that is left behind.
- **Sanitizing Hand Wipes**– While you should ideally shower as quickly as possible after cleaning up a biological spill, these wipes will sanitize your hands and arms until that is possible.

SPILL FOLLOW-UP

Provide Spill Cleanup Training

Another important tip to keep in mind is that you should always provide good training to anyone in the facility so they know how to use the cleanup kits. While the maintenance or safety team should ideally be the people to clean up any hazardous spill, it may be necessary for other people to do it in certain situations.

Proper Storage of Spill Kits

Spill kits should be kept as close to the area where the things they are made to clean up are kept. For example, if you are operating a medical facility, the blood born spill kits should be kept in the blood lab. Letting everyone know where each kit is stored will allow them to grab it as quickly as possible. It may even be a good idea to use labels or floor signs near where the kits are kept to make them easier to find.

Keeping Multiple Kits on Hand

If it is at all possible, your facility should have at least two of each of the needed spill kits on hand at all times. This is because spill kits are made to be used just once and then disposed of. After a kit is used you will need to order a new one to replace it. If you don’t keep a spare on site you will be left without one until the replacement arrives.

Improve Safety with Spill Cleanup Kits

The bottom line whenever thinking about spill kits is that they should always be used to eliminate hazards and improve the overall safety of a facility. Keeping them properly stocked and ready to use at all times will not only keep your facility in compliance but also improve the safety of the entire facility.

FINAL WORD

Every facility should have an effective spill response plan to prevent accidents from becoming disasters. Stocking the appropriate spill response equipment and providing the proper training for all employees is important before a spill response plan can be implemented.

Entering a Work Zone and Crew Parking

WHAT'S AT STAKE?

WORK ZONE SAFETY

Motorists on our highways can anticipate to see many work zones through the usual myriad of construction scenes littered with construction workers. First and foremost, motorists must keep safety in mind for themselves and the construction workers.

WHAT'S THE DANGER?

FACTS

The dangers of driving in the**" construction season"** are evident.

- During the past 5 years in work zone crashes more than 4,400 people died (85 percent of which was the driver or passenger), and 200,000 people were injured
- Drivers are the most frequent fatality in work zone crashes
- Most work zone fatalities involve working-age adults
- Rear-end crashes (running into the rear of a slowing or

stopping vehicle) are the most common type of work zone crash.
- Fatal work zone crashes occur most often in summer and fall.
- The majority of fatal work zone crashes occurred on roads with speed limits greater than 50 mph.
- Stopping distance for motor vehicles at 50 mph is 300 feet for a dry road, 400 feet for a wet roadway, and 1250 feet for icy pavement.
- A loaded 80,000 lb. tractor-trailer requires almost 50% more stopping distance.
- It takes only an extra 25 seconds to cover 1 mile at 45 mph compared to 65 mph.

HOW TO PROTECT YOURSELF

WORK ZONE SAFETY TIPS

Protect lives of motorists and construction workers by following these tips.

- Stay Alert and Minimize Distractions
- Keep Your Headlights On
- Pay Attention to the Road
- Merge into the Proper Lane
- Don’t tailgate
- Obey the Posted Speed Limit
- Change Lanes Safely
- Expect the Unexpected
- Slow Down
- Keep a Safe Distance
- Pay Attention
- Obey Road Crew Flaggers
- Keep up with traffic flow
- Check Road Conditions Before You Travel
- Be Patient and Stay Cal**m**

ROAD CONSTRUCTION SAFETY

Statistics have shown us that both motorists and construction

personnel in construction highway work zones contribute to injuries and fatalities.

Warmer weather means that roadwork season is in full effect which means more and more work zones are popping up on our interstates, highways, and streets. It’s also the time of year when more people are on the road traveling greater distances to the beach, mountains and other vacation spots.

10 Road Construction Work Zone Safety Tips

Have a Plan: Every road construction project should have a transportation management plan. The plan should consist of a temporary traffic control plan to protect workers by safely conducting traffic around or through the work zone. You should also have a traffic control plan for inside the work zone that manages the flow of heavy equipment, construction vehicles, and workers.

Properly Control Traffic: The work zone should consist of an advanced warning area with warning signs alerting motorists of upcoming changes in driving conditions, a transition area using traffic control devices for lane closures and traffic pattern shifts, a buffer area, the work area and a termination area to allow traffic to resume back to normal and a sign indicating that the work zone has ended.

Create Separate Work Areas: Road construction work zones are busy areas usually with several work activities taking place at the same time. To avoid accidents, use cones, barrels, and barriers to clearly delineate specific areas of the work zone such as material storage, areas where heavy equipment is being used, vehicle parking and safe areas for workers on foot to move about in.

Wear Proper Safety Equipment: Proper safety equipment should be worn by all personnel inside the work zone. Personal protective equipment (PPE) including hard hats, steel-toed boots, highly visible clothing and, depending on the noise levels, hearing protection.

All highly visible clothing whether it’s a vest, jacket or shirt should be bright fluorescent orange or lime/yellow and have visible reflective material especially if working at night and should meet ANSI Class 2 or 3 standards.

Be Aware of Your Surroundings: Regardless of what your job duties entail in the work zone, you should always be mindful of what’s going on around you. Avoid walking behind any vehicles that may be backing up or into the swing radius of heavy equipment.

Whenever possible, face traffic while inside the work zone or have a spotter available when your back is turned. Spotters should also be used to monitor the movement of vehicles and heavy equipment inside the work zone in addition to monitoring traffic to alert worker to any potential dangers.

Avoid Blind Spots: Vehicles and heavy equipment are constantly moving about inside the work zone including dump trucks, compactors, pavement planers, excavators, pavers, and rollers.

If you are on foot and working near these machines while in operation remember that the driver has a limited line of sight. Always stay in visual contact with the driver. A good rule of thumb to follow is that if you can’t see them then they probably don’t see you.

Have a Competent Person on Hand: A competent person should be onsite whenever work is being performed. Per OSHA, a competent person is someone “capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. “A competent person is needed to conduct hazard assessments and regular inspections of the worksite.

A competent person is also needed to select the appropriate class of PPE to be used by workers and to approve the appropriate types of traffic control devices. Workers should report any unsafe hazards or equipment to the competent person assigned to the work zone so they can be corrected immediately.

Start Each Workday with a Safety Meeting: In addition to ensuring that all personnel at the jobsite have the proper training required it is also a good idea to have a quick safety meeting before work begins. Since conditions can change greatly from day to day in the work zone workers should be briefed on the work activity scheduled each day and notified of all potential hazards. This is also a good time to ensure that all workers have and are wearing the proper PPE required for the work being done that day.

Have a Site-Specific Safety Program: Every road construction project is different and each work zone has its own unique hazards and challenges so creating a safety program geared specifically for the site can go a long way in preventing accidents.

The site specific safety program include identifying all hazards and plans to control and mitigate them, schedules to routinely inspect all equipment and material, a plan for first aid and emergency medical care in the event of an accident and safety training schedules for all employees.

Stay Hydrated: Workers performing road construction are susceptible to overexertion and heat-related illnesses.

Workers should drink plenty of water or liquids high in electrolytes like sports drinks or coconut water. Workers should also get out of the heat and sun as much as possible especially on extremely hot days to avoid heatstroke, dehydration and heat exhaustion.

FINAL WORD

Entering a work zone on our highways is literally a “two – way street.” One part is the safety of motorist and the other part is the safety of our workers. The public at large has an investment in protecting and guaranteeing the safety and security of all our citizens who participate and use the work zone no matter what time of the year.

Ladder Setup and Safety

WHAT'S AT STAKE?

Ladders are just another tool much like a screwdriver or pliers. People run the risk of becoming complacent with the use of ladders. It is particularly critical for jobsite safety to choose the right ladder for the job and climb the ladder with care amongst other precautions.

WHAT'S THE DANGER?

DANGERS ASSOCIATED WITH LADDERS

The use of ladders presents many hazards. Injuries involving ladders frequently cause permanent disability.

The hazards associated with ladders include:

- Falls from ladders
- Struck by falling ladders
- Struck by materials falling from ladders
- Tripping over ladders (erect or lying on floor)
- Lifting heavy ladders
- Striking persons or objects when carrying ladders
- Contact with electrical equipment

HOW TO PROTECT YOURSELF

GENERAL PRECAUTIONS FOR SAFE USE OF LADDERS

- Ladders must be maintained free of oil, grease, and other slipping hazards.
- Wooden ladders must not be painted as this could hide flaws

or damage of the ladder.

- Ladders must not be loaded beyond their manufacturer’s rated capacity.
- Ladders must be used only for the purpose for which they were designed.
- Non-self-supporting ladders must be used at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder.
- Fixed ladders must be used at a pitch no greater than 90 degrees from the horizontal, measured from the backside of the ladder. Above 8’, ship’s ladders should be installed with slip resistant steps and handrails as required.
- Ladders must be used only on table and level surfaces unless secured to prevent accidental movement.
- Ladders must not be used on slippery surfaces unless secured or provided with slip- resistant feet to prevent accidental movement. Slip-resistant feet must not be used as a substitute for the care in placing, lashing, or holding a ladder upon slippery surfaces.
- Ladders placed in areas such as passageways, doorways, or driveways, or where then can be displaced by workplace activities or traffic must be secured to prevent accidental movement or a barricade must be used to keep traffic or activities away from the ladder.
- The area around the top and bottom of the ladders must be kept clear.
- The top of a non-self-supporting ladder must be placed with two rails supported equally unless it is equipped with a single support attachment.
- Ladders must not be moved, shifted, or extended while in use.

BASIC LADDER TIPS

Choose the Right Ladder

Using the wrong ladder can be dangerous. Think about the task at hand, choose the right size and style, and be sure to follow the

directions on the ladder before you climb.

Firm Foundation

No matter what kind of ladder you're using, place the base on a firm, solid surface and avoid slippery, wet or soft surfaces.

Use Care on the Climb

When people use ladders frequently at work or at home, they run the risk of becoming complacent. Make sure every time you step on a ladder you are mindful of the task at hand, have reviewed the labels on the ladder and confirmed that the ladder is in good working condition.

Inspection

- Always check a ladder before using it. Inspect wood ladders for cracks and splits in the wood. Check all ladders to see that steps or rungs are tight and secure. Be sure that all hardware and fittings are properly and securely attached. Test movable parts to see that they operate without binding or without too much free play. Inspect metal and fiberglass ladders for bends and breaks.
- Never use a damaged ladder. Tag it "Defective" and report it to the boss so that it may be removed from the job.

Setup Procedure

- Place ladder feet firmly and evenly on the ground or floor. Make sure the ladder is sitting straight and secure before climbing it. If one foot sits in a low spot, build up the surface with firm material.
- Do not try to make a ladder reach farther by setting it on boxes, barrels, bricks, blocks or other unstable bases.
- Brace the foot of the ladder with stakes or place stout boards against the feet if there is any danger of slipping.
- Never set up or use a ladder in a high wind, especially a lightweight metal or fiberglass type. Wait until the air is calm enough to insure safety.
- Never set up a ladder in front of a door unless the door is

locked or a guard is posted.
- Use Safety shoes on ladder feet whenever there is any possibility of slipping.

Ladder Climbing and Standing

- Keep the steps and rungs of ladders free of grease, oil, wet paint, mud, snow, ice, paper and other slippery materials. Also clean such debris off your shoes before climbing a ladder.
- Always face a ladder when climbing up or down. Use both hands and maintain a secure grip on the rails or rungs
- Never carry heavy or bulky loads up a ladder. Climb up yourself first, and then pull up the material with a rope.
- Climb and stand on a ladder with your feet in the centre of the steps or rungs.
- Do not overreach from a ladder, or lean too far to one side. Overreaching is probably the most common cause of falls from ladders. A good rule is to always keep your belt buckle inside the rails of a ladder. Work as far as you can reach comfortably and safely, then move the ladder to a new position.
- Never climb onto a ladder from the side, from above the top or from one ladder to another.
- Never slide down a ladder.

FINAL WORD

Ladders can be used safely if they are given the respect they deserve. If one requires assistance in setting up a ladder, ask a co-worker, boss or supervisor for that assistance. Prior to the use of any ladder, make sure it is in good condition; that you are in good condition to climb and the ladder is the right ladder for the job.

Propane Tank Use Safety Talk

WHAT'S AT STAKE?

PROPANE GAS

Propane gas is one of the gases that fits the definition of LPG – Liquefied Petroleum Gas. Propane is a flammable hydrocarbon gas that is liquefied through pressurization and commonly used for fuel in heating, cooking, hot water and vehicles. Propane can also be used for refrigerants, aerosol propellants and petrochemical feedstock.

Propane gas can be compressed into liquid at relatively low pressures. Propane is generally stored, as a liquid, in steel vessels ranging from small BBQ gas bottles to larger gas cylinders and LPG storage tanks.

Storage

Propane, whether burned as a gas or liquid, is stored in liquid form in a portable or stationary tank. Small portable tanks are used with gas grills and similar appliances, while stationary tanks are either mounted on legs and typically placed in the backyard of a home or business or buried underground. Stationary liquid propane tanks require care in installation, filling and maintenance.

Valves

All propane tanks approved for use must be equipped with a standard series of valves. These include a fill valve for attaching a delivery hose from a truck; a vapor return valve to keep pressure within limits during delivery; a service valve, which converts the liquid gas to vapor; a relief valve to bleed off excess pressure in emergency situations; and a liquid withdrawal valve, which governs the amount of LP gas withdrawn from the tank. Two types of gauges must also be operative: a float gauge that shows the amount of propane in the tank and a fixed

liquid level gauge that warns when the level is about to exceed the maximum allowable 80-percent fill.

WHAT'S THE DANGER?

Propane under Pressure

The key to propane's portability, and what packs so much energy into a relatively small volume of space, is pressure. In its natural state, propane is a vaporous gas. Under pressure, however, that vapor is converted to a form that is easier to transport and store. Liquified Petroleum Gas, or LPG, is the result of pressurizing propane gas, which causes it to drop below its boiling point of -44 degrees Fahrenheit.

At this temperature or below, propane remains in a liquid state, which condenses a large amount of energy into a small volume of fluid. When the propane's temperature increases, it begins to "boil" off and this vapor is the usable form of propane that is converted to flame and heat your appliances. In this state, propane gas has a natural reaction to expand until it reaches equilibrium, or where it has normalized with atmospheric pressure.

SAFETY CONSIDERATIONS

Excessive Heat

If a propane tank is in contact with extreme heat, such as a garage fire, the external heat can cause the temperature inside the tank to increase, creating a **BLEVE** –or **boiling liquid expanding vapor explosion.** As the heat raises the temperature of the propane, the vapor expands and increases the pressure inside the tank, which can lead to a rupture.

Cold Temperatures

On the other extreme, propane itself is unlikely to freeze –that would require a temperature below -306 degrees Fahrenheit. However, trace amounts of water in supply lines can freeze inside fuel ports and fittings in extremely cold conditions.

HOW TO PROTECT YOURSELF

Propane Gas is very helpful to our society infrastructure. But propane gas can be very destructive. If propane leaks and you smell gas, take the following steps:

- Immediately put out all open flames and smoking materials
- Do not operate any electronic devices, lights, telephones, or cell phones
- Immediately get everyone out of the building
- If safe to do so, turn off the main gas supply valve on the propane tank
- Report the leak to your propane retailer or dial 911 or your local fire department (do this in an area away from the building)
- Do not return to the building until your propane retailer, a service technician, or an emergency responder deems it is safe to do so
- Have your system checked before you attempt to use the system again

PRESSURE

The "How" to check pressure in propane tank

1. Use a pressure gauge. This device can be installed between the shutoff valve and the initial regulator and is particularly common on larger residential systems.
2. Release full tank pressure to the gauge, allowing enough gas to pass through to lower the pressure gauge reading by 10 psi.
3. Close the shut-off valve and allow the system to stand for three minutes without showing an increase or decrease in pressure. Any increase in pressure indicates a faulty valve, while a decrease indicates a leak.

The Range – Propane Tank's Pressure

Generally, propane pressure **should be between 100 and 200 psi to ensure that the liquid propane gas remains in a liquid state**.

Normally, the pressure inside a propane tank fluctuates based on the outside temperature. For example, a standard 20-pound propane tank at 70 degrees will have 145 psi internal pressure. That same tank on a 100-degree day will have 172 psi of pressure.

Propane pressure levels exceeding 200 psi are likely to trigger a release from the safety relief valve commonly installed on propane storage tanks. This device allows propane gas to safely vent out of the tank if there's excessive pressure.

KEY SAFETY POINTS

- Do not transport tanks inside a vehicle and do not transport more than 5 tanks at one time. Be sure to secure the load to prevent movement.
- Damaged tanks or tanks older than five years should be taken to **local regulatory** disposal sites.
- Before using the tank, check the service life date stamp. Do not smoke in the storage area or within 15 meters of a propane unit that is in use.
- Always inspect valves and hoses prior to use.
- Propane must be stored in a designated weather protected area. Temperature protection (i.e. from freezing) is not necessary in our climate for an undamaged tank.
- Use the appropriate wrench when tightening the hose to the tank. Do not use pliers

PROPANE SAFETY

- Don't enter an area where you suspect a gas leak. If you are in such an area, leave immediately! Don't allow others to enter the area.
- Do not try to judge for yourself the level of danger of a gas leak by trying to determine if one smell of gas is weak or strong. All gas leaks pose a risk.
- Be alert for propane odor when working in areas where propane is used. Even a faint odor may indicate a hazardous situation.
- Repeated pilot light outages could indicate a hazardous

condition. Don’t attempt to re-light the pilot, or service your equipment.

- Don’t tamper with or use tools to operate controls. If controls are difficult to operate by hand. Keep combustible products like gasoline, kerosene, or cleaners in a separate room from propane appliances. Your appliance pilot lights could ignite fumes from these combustibles.
- Contact with propane vapours can cause surface burns to your skin. Wear gloves when there is a possibility of danger of contact with the vapours.

PROPANE GENERAL SAFETY TIPS

- Store propane tanks outside and above ground
- Keep portable propane tanks away from electrical sources.
- Paint your propane storage tank.
- Keep your face away from valves on tanks or cylinders
- Cap or plug non-connected gas lines and valves.

FINAL WORD

Understand the power of propane. Its potential for harm is obvious to most. The protocols /practices of large scale propane gas operations have many safety considerations, including installation and use and refilling and maintenance issues.

Working Alone Procedure Review

WHAT’S AT STAKE?

“Watch Out For One Another”

Lone work presents a fundamental challenge to watchfulness. How can someone watch a colleague’s back if that colleague is working

alone and out of sight?

A lone worker can be anyone who works alone in a fixed facility or away from his or her typical base. At times, the definition applies to those who work alone in factories or warehouses on nights or weekends. It also applies to traveling workers in construction, utilities, maintenance and repair, agriculture, and other fields.

WHAT'S THE DANGER?

IS WORKING ALONE DANGEROUS, OR, AT LEAST A PROBLEM?

While it is not always hazardous to work alone, it can be when other circumstances are present. Whether a situation is a high or low risk will depend on:

- the location.
- type of work.
- interaction with the public.
- consequences of an emergency, incident, injury.

Workers working alone may be concerned that if they become seriously injured, the absence of others around them may prevent them from receiving immediate, possibly life-saving treatment. The cause of such an emergency can vary; whether it is a workplace injury, personal illness, or personal harm as a result of robbery or assault.

THE RISKS

Exposure to violence and poor access to emergency assistance are the two main hazards of working alone. However, these hazards can also be faced by people who work with colleagues.

- Because there are no hazards which are exclusive to working alone, working alone does increase the risks of any given job. For example, an attendant working alone late at night in a 24-hour convenience store may be a greater target for exposure to violence.
- Working alone can also increase the severity of workplace

injuries. A park ranger who is bitten by a snake has an increased chance of severe consequences if they are working alone rather than with colleagues who can help.

- Working alone can increase the likelihood of some workplace hazards or risks occurring and in those cases where incidents do occur, the consequences can be more severe.
- In some cases other people may be close by, such as a cleaner working by themselves in a city office building. In other cases the employee could be in a remote location, such as a researcher undertaking field work by themselves in a national park.
- It is important that as an Employer you need to understand and be adequately prepared for the challenges employees that work-alone may face.

HOW TO PROTECT YOURSELF

GENERAL

Employers have a responsibility to protect their workers regardless of whether they're surrounded by colleagues or alone on an assignment. Organizations of all sizes can promote lone worker safety by developing policies, communicating with workers, and using available technology to track worker location and movement.

Factors in Assessing the Workplace

The following must be considered and evaluated in assessing and protecting employees who work alone.

- Length of time the person will be working alone
- Available forms of communication
- Location of the work
- Type or nature of work
- Characteristics and training of the individual who is working alone

CHECK – IN PROCEDURE

The most important step in the prevention of harm to an employee is to establish a check – in procedure.

Decide if a verbal check-in is adequate, or if the worker must be accounted for by a visual check. Make sure your plan is appropriate for both regular business hours as well as after main office hours.

For most lone workers, the telephone will be the main source of contact. If using cell phones, always be sure that it is close by and charged. If cell phone service is unreliable in your area, be sure to have alternative methods of communication available (such as use of cameras, automated warning/duress devices, global positioning systems (GPSs), two-way radio, site visits or satellite technology).

Example of a check-in procedure

- Prepare a daily work plan so it is known where the lone worker will be and when.
- Identify one main person to be the contact at the office, plus a backup.
- Define under what circumstances the lone worker will check in and how often.
- Stick to the visual check or call-in schedule. You may wish to have a written log of contact.
- Have the contact person call or visit the lone worker periodically to make sure they are okay.
- Pick out a code word to be used to identify or confirm that help is needed.

When travelling out of the office, the main contact person should know the following details:

- Estimated time of arrival.
- Return time or date.
- Contact information.
- Mode of travel (public transit, car, plane, etc.).
- Alternate plans in the event of bad weather, traffic

problems, etc.

OSHA PERSPECTIVE

OSHA says employers must check on workers at regular intervals, be it once for a brief assignment or multiple times a day for a longer assignment. Means of verification include:

- Visual: Camera, in-person
- Verbal: Two-way radio (such as a walkie-talkie); in-person; intercom system

The agency says cell phones are permissible in areas where reception exists. Cell phones are not allowed when an employer cannot show that reception is available, such as below deck. Other unreliable, unacceptable forms of communication include the sound of power tools or whistles and tapping on decks, bulkheads or tank walls to check on a worker.

FINAL WORD

Organizations of all sizes can promote lone worker safety by developing policies, communicating with workers, and using available technology to track worker location and movement.

COVID-19 Testing and Screening Guidance for Employers

Introduction

Many organizations are preparing plans to restart business operations after either operating in a diminished capacity or ceasing operations during COVID-19 stay at home orders. Employers are focused on how they can best protect their workers, families,

and the community, and many are considering what role testing and screening can play. This testing and screening overview will help to answer many common questions. This is a rapidly changing field, and there are likely to be substantial advances in testing and screening in coming months.

Employee Testing vs Employee Screening

Companies are considering whether and when to screen or test those who enter the workplace. There are currently no laws requiring testing, although there are some states that require screening of those who enter the workplace or a place of business. There is no screening or testing strategy that will guarantee that no one who is contagious will enter the workplace. The chance of workplace spread of the coronavirus which causes COVID-19 is minimized by having fewer workers at the workplace, by opening the workplace at a point where the level of transmission in the local community is low, and by changing workplace design, policy, and processes to allow physical/ social distancing.

Employee Testing

The Occupational Safety and Health Administration (OSHA) requires employers provide employees with a safe work environment free from recognized hazards under the General Duty Clause (Section 5 of the OSH Act–5(a)(1)). Some employers are considering or are implementing testing a regimen designed to identify COVID-19 cases.

There are currently tests available to diagnose current COVID-19 infection and to assess whether a person had COVID-19 in the past. Tests for acute infection could identify those who should be excluded from the workplace. Tests for past COVID infection do not necessarily show immunity from future infection, and so cannot guide employer or

employee decision-making. All tests have false negatives and false positives, and we will review why this is important for employers as they consider and design a testing program.

Tests must be ordered by a licensed health professional, and

companies must have clear policies and procedures about how they will address both positive and negative test results.

Two kinds of tests are available for COVID-19: tests for current infections and tests for previous infections.

Note that the Food and Drug Administration (FDA) has offered emergency use authorizations for some tests, but has not as of mid-May formally approved any COVID-19 test. The FDA initially allowed test vendors to market antibody tests with no oversight, although it has begun to require makers to provide information on test accuracy and has required some manufacturers to stop selling tests in the U.S.

Public health authorities can require that employers provide information about COVID-19 diagnoses among employees. Employers cannot, however, discriminate against those with positive tests or share information with other employees about a positive test without the employee's express permission.

Safety Around Conveyors

WHAT'S AT STAKE?

A conveyor is a machine that transfers material from one area to another by use of stationary framework and rotating or vibrating belts, rollers, chains, etc. Conveyors may or may not be motorized and can be used overhead, underground or at working height. Transfer methods may include belts, buckets, or other material-specific carriers. Conveyors can be hazardous due to the nature of the moving parts and transferred material. Caution needs to be used when working with or around them.

WHAT’S THE DANGER?

HAZARDS/DANGERS

Common Hazards Around Conveyors Include:

- Spills and falling materials.
- Power transmission interfaces, such as drives or shafts.
- Rotating parts or pinch points can drag in, crush or entangle.
- Confinement or assembly areas (the area between a fixed object and a moving one) can shear or crush.
- Parts that slide or reciprocate (press down) can crush or shear.
- Items can break or be ejected (thrown from) the conveyor system.
- Items can fall off the conveyor.
- Electrical, fire or explosion hazards.

Musculoskeletal Injuries

Working at a conveyor or belt may include manual material handling, including repetitive motions, reaching, and lifting that may lead to musculoskeletal injuries, especially when movements are done quickly and for a long period of time.

HOW TO PROTECT YOURSELF

The conveyor equipment manufacturers association, CEMA, recommends the following guidelines for conveyor safety.

1. Do not climb, sit, stand, walk, ride, or touch the conveyor at any time

2. Do not perform maintenance on conveyor until electrical, air, hydraulic, and gravity energy sources have been locked out or blocked

3. Operate equipment only with all approved covers and guards in place

4. Do not load a stopped conveyor or overload a running conveyor

5. Ensure that all personnel are clear of equipment before starting

6. Allow only authorized personnel to operate or maintain material handling equipment

7. Do not modify or misuse conveyor controls

8. Keep clothing, body parts, and hair away from the conveyor

9. Remove trash, paperwork, and other debris only when power is locked out and tagged out

10. Ensure that ALL controls and pull cords are visible and accessible

11. Know the location and function of all stop and start controls

12. Report all unsafe conditions. Jams should be cleared ONLY BY authorized, trained personnel

While these safety rules are deemed the most obvious and most important by CEMA, each employee should be on alert for potential safety concerns while working around conveyor equipment.

EMPLOYERS' RESPONSIBILITIES

General

Employers are responsible for ensuring that conveyors and machinery are safe, and that all applicable regulations are followed. Employers must identify job-related hazards. Once the hazards are identified, the employer must implement safe work procedures, with input from the joint health and safety committee (JHSC), or health and safety representative. If the workplace does not have a JHSC or health and safety representative, the employer should work directly with the affected employees and supervisors to identify hazards and safeguarding solutions. Employers are

responsible to train their employees on the safe use, maintenance and repair of conveyors and the safety devices.

Specifics

Employers must ensure that:

- There is enough clearance between the material being transported and any fixed or moving object.
- Shearing points between the moving and fixed parts are avoided.
- Material is not fed onto a stopped conveyor.
- Power-driven conveyors that can be accessed by employees have emergency stop devices at the loading and unloading stations, drive and take-up sections and other accessible places along the run of the conveyor.
- The conveyor has an anti-rollback device for loads carried up an incline.
- An elevated conveyor that an employee can access must have a walkway along its entire length that is not less than 500 mm wide and is equipped with guardrails.
- Designated crossing areas are provided where employees must travel over a conveyor.
- Sheet metal or screen guards are installed under or alongside the conveyor, if it is not entirely enclosed, to prevent material from falling off the conveyor.

Employer Takeaway

Employers have the responsibility to train employees on the safe use, maintenance and repair of conveyors and the safety devices. Training should be repeated often.

EMPLOYEES RESPONSIBILITY

Employees must:

- Never climb or stand on a conveyor frame to load, unload or clear a blockage, unless it is stopped and locked out.
- Never remove heavy or bulky articles by hand from a moving conveyor unless at a designated station.

- Never ride or sit on a conveyor.
- Not do maintenance or complete repairs on a conveyor without following lock-out procedures.
- Wear close-fitting clothing and ensure head and facial hair is cut or confined when working near a machine where clothing may come into contact with moving parts.

Employee Takeaway

Every employee working around conveyors should be on alert for potential safety concerns.

FINAL WORD

Conveyors, like forklifts, drive the industry and business in our modern industrial matrix. Conveyors can and are hazardous if proper training is not meted out to employees in the operation and safe use of conveyors. On-going training and refresher protocols must be conducted on a regular basis.

Safety Around Degreasing Solvent

WHAT'S AT STAKE?

All industrial grade degreasers have one thing in common: They excel at cutting through tough accumulations of grease and leaving the material underneath free of greasy residue.

Cleaning solvents are used to remove oil, grease, solder and other contaminants.

WHAT’S THE DANGER?

HEALTH EXPOSURE

Millions of workers are exposed to solvents on a daily basis. Health hazards associated with solvent exposure include toxicity to the nervous system, reproductive damage, liver and kidney damage, respiratory impairment, cancer, and dermatitis.

Sometimes it is necessary to get rid of grease, particularly in equipment maintenance. **There are hundreds of different solvents that can do the job, and many of these have varying degrees of danger to the human body**.

SOLVENTS

Solvents are among the most commonly used chemicals in workplaces. Workers in different jobs regularly use solvents for degreasing, metal cleaning, and adhesion and as paint thinners or lubricants. Exposure to solvents can have both short and long-term health effects on workers.

Solvents are substances used to dilute or dissolve another substance to create a solution, and are widespread in workplaces. While water is the most common solvent (many substances are easily soluble in water), some substances cannot be easily dissolved and require strong chemicals as solvents.

Many solvents have exposure standards that must be complied with in the workplace. These standards indicate the permissible “airborne contaminant” levels of exposure, and, in some cases, ceiling levels to which workers may be exposed without causing detrimental health effects.

Some commonly used solvents, and their uses, are:

- Acetone (industrial coating)
- Trichloro ethylene (degreasing)
- Toluene (industrial coating, manufacture)
- Methyl ethyl ketone (MEK) (printing ink)
- Perchloro ethylene (dry cleaning)

- White spirit (paints, printing ink, manufacturing)
- Ethylene glycol ethers (maintenance work; semiconductor industry)

HOW DO SOLVENTS ENTER THE BODY

1. **Inhalation:** Most solvents are “volatile”, ie they evaporate into the air very quickly. The fumes, dusts, gases and vapours that result can then be breathed in and easily passed through the lungs into the blood stream.
2. **Ingestion:** Solvent droplets can form in the hairs inside the nose, be sniffed in or swallowed. Mouth contact with contaminated hands, food and cigarettes can also result in the ingestion of solvents.
3. **Skin Absorption:** Solvents can be absorbed through the skin by direct contact and enter the bloodstream in this way.

THE HEALTH EFFECTS

Different solvents have different effects, depending on how exposure happens, how much and for how long. The effects of many solvents are still poorly understood.

Short-term effects can be caused by single exposures, often to a large amount of solvent. Short-term exposure can cause:

- dermatitis or skin problems
- headaches
- drowsiness
- poor coordination
- nausea (feeling sick)

These effects usually take place very quickly. In cases of exposure to very high concentrations of solvent vapour, unconsciousness and even death can occur.

Repeated (long term) exposure to solvents may affect:

- the brain and the nervous system (see below)
- the skin – causing dermatitis
- the liver – causing liver damage
- the blood-forming system

- the kidneys
- the fertility of both men and women
- the foetus in a pregnant woman and increased likelihood of spontaneous abortion

Some solvents, for example, benzene, can cause cancer.

Some solvents will have synergistic effects with other hazards and drugs. This means that the solvent will have greater health effects when it is in combination with other hazards. For example, after using an organic solvent, the effects from exposure will be greater if the person smokes cigarettes or drinks alcohol soon afterwards.

HOW TO PROTECT YOURSELF

SOLVENTS AND OTHER CHEMICALS SHOULD BE DEALT WITH IN THIS WAY

- Identification of the hazard
- Assessment of the risk
- Elimination or reduction of the risk
- Review and evaluation of any control strategies.

Employer Responsibilities

- Provide information and training, and increases awareness of people who work with solvents.
- Ensure solvents are appropriately stored in a cool place, away from any potential ignition sources.
- Ensure the storage area is well ventilated and firmly secured.
- Ensure that solvent containers are properly labeled indicating the hazards of the substance and what should be done in case of an emergency.
- Ensure spills or leaks are contained with sand or other appropriate absorbents. Spillages must not be allowed to enter drains or other waterways.
- Provide adequate facilities for working and dining.
- Provide proper P.P.E. for employees.

Workers ‘Responsibilities

Do not use a substance unless you have been provided with adequate information about it and training in how to use it. All workers should make sure they know what the substance is, its effects, and how to use it correctly. They should have the appropriate PPE if it is needed.

Workers should also practice good hygiene by washing hands well before eating, drinking, smoking or going to the toilet.

FINAL WORD

Solvents represent the best and worst of our economics with the resultant impact on the health of society and the environment. We strive to continually meet the challenge of balancing the needs of society and protecting the environment through the lens of solvent use.