MCAA
Mechanical Contractors Association of America

VOLUME VI

TOOLBOX SAFETY TALKS FOR MECHANICAL CONSTRUCTION WORKERS

MSCA Mechanical Service Contractors of America
PCA Plumbing Contractors of America
NCPWB National Certified Pipe Welding Bureau
MANUFACTURER / SUPPLIER COUNCIL MCAA Adding Value to Your Supply Chain
MCERF Mechanical Contracting Education & Research Foundation

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Training Documentation for Talk # _____

The undersigned workers have participated in safety training covered by the MCAA Toolbox Safety Talk that corresponds to the number in the space above.

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Instructions for the Toolbox Safety Talk Presenter

PREPARATION

1. Select the most appropriate talk for the week.
2. Keep track of the talks you present so you don't inadvertently repeat them.
3. Print copies of the talk you plan to use (one for each participant).
4. Print a copy of the training documentation sheet and write in the number of the talk in the blank at the top.
5. Read the talk you plan to present several days ahead of time.
6. Make sure you understand all aspects of the topic you'll be presenting.
7. Anticipate the questions that are most likely to be asked and prepare your responses to them ahead of time.

PRESENTATION

1. Answer any questions from the previous week's talk that you were unable to answer during the presentation.
2. Give a copy of the new talk you will be presenting to each participant.
3. Present the content of the talk slowly and clearly.
4. Relate any experiences you've had that relate to the topic.
5. Ask the participants to share their own experiences that relate to the topic.
6. Write down any questions that you can't answer and any comments that you think would be useful to the company.
7. Have each participant sign the training documentation sheet.
8. File the training documentation sheet where you can access it quickly if needed.

FOLLOW-UP

1. Be sure to re-read the questions and comments that you recorded.
2. Find the answers to the questions you were unable to answer. Start the next week's talk by revisiting the topic and answering those questions.

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TOPIC: Silica – General #1

PRIMARY POTENTIAL HEALTH HAZARDS

- SILICOSIS (Lung Disease – Inflammation and Scarring in the Lungs)
- LUNG CANCER (Malignant Lung Tumor(s))

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Cutting, boring, drilling, chipping, jackhammering, etc. into concrete
- Work in close proximity to other trades that are cutting, boring, chipping, jackhammering, drilling, etc. into silica containing materials such as concrete, brick, block, tile, etc.
- Work in close proximity to other trades performing sand blasting

SAFE WORK PRACTICES

- Wear a suitable respirator unless your company's competent person for silica informs you that overexposure will not occur even if you don't use respiratory protection.
- Before using any respirator, be sure you have the appropriate medical clearance, fit test, and respiratory protection training.
- Use appropriate engineering controls, such as High Efficiency Particulate Air (HEPA)-filtered dust collection systems, the wet method, and/or local exhaust ventilation whenever they are available.
- Use only sharp masonry drill bits and saw blades when drilling or cutting into concrete.
- Never dry sweep, dry brush, or use compressed air to clean clothing or surfaces in affected work areas.
- Be sure not to eat, drink, smoke, or apply cosmetics in affected work areas.
- Wash your hands and face before eating, drinking, smoking, or applying cosmetics.
- If you have any questions or concerns about silica, immediately check with your company's *Competent Person* for silica.

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TOPIC: Silica – Standard Drills/Hammer Drills #2

PRIMARY POTENTIAL HEALTH HAZARDS

- SILICOSIS (Lung Disease – Inflammation and Scarring in the Lungs)
- LUNG CANCER (Malignant Lung Tumor(s))

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Drilling, hammer drilling into concrete

SAFE WORK PRACTICES

- Whenever they are available, use standard drills and hammer drills fitted with a commercially available shroud or cowling, and an adequate dust collection system.
- Ensure that the dust collection system is designed for, and filtered by, High Efficiency Particulate Air (HEPA) filters.
- Before starting to work, make sure that the HEPA filter(s) is clean and that the dust collection system is working properly.
- Be sure to follow the tool/dust collection system manufacturers' instructions carefully to minimize dust emissions.
- When drilling holes to install pipe or duct hangers, make sure you clean out the holes with an approved HEPA filtered vacuum before installing the hangers.
- Use an exhaust ventilation system in conjunction with the dust collection system if visible airborne dust begins to accumulate while you're performing the work.
- If you have any questions or concerns about silica, immediately check with your company's *Competent Person* for silica.

TOPIC: Silica – Rig Mounted Core Drills/Saws #3

PRIMARY POTENTIAL HEALTH HAZARDS

- SILICOSIS (Lung Disease – Inflammation and Scarring in the Lungs)
- LUNG CANCER (Malignant Lung Tumor(s))

PRIMARY EXPOSURE FOR MECHANICAL CONSTRUCTION WORKERS

- Cutting/boring into concrete

SAFE WORK PRACTICES

- Use rig mounted core drills/saws with integrated water delivery systems.
- Make sure that the core drill/saw is working properly.
- Be sure to use only sharp bits/blades.
- Check to be sure that the water supply is being applied directly to the cutting surface.
- Confirm that the water flow rate is strong enough to adequately minimize visible dust emissions.
- Carefully follow the core drill/saw manufacturer's instructions to ensure that you are minimizing dust emissions as much as possible.
- Ensure that the core drill/saw's power cord is plugged into a Ground Fault Circuit Interrupter (GFCI), especially since water may accumulate near the cord.
- If you have any questions or concerns about silica, immediately check with your company's *Competent Person* for silica.

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TOPIC: Silica – Hand-Held & Walk Behind Masonry Saws #4

PRIMARY POTENTIAL HEALTH HAZARDS

- SILICOSIS (Lung Disease – Inflammation and Scarring in the Lungs)
- LUNG CANCER (Malignant Lung Tumor(s))

PRIMARY EXPOSURE FOR MECHANICAL CONSTRUCTION WORKERS

- Cutting into concrete

SAFE WORK PRACTICES

- Wear a suitable respirator unless your company's *Competent Person* for silica informs you that overexposure will not occur without respiratory protection.
- Before using any respirator, be sure you have the appropriate medical clearance, fit test, and respiratory protection training.
- Make sure that the saw you'll be using is working properly.
- Be sure to use only sharp saw blades made for cutting concrete.
- Use saws with integrated water delivery systems.
- Check to be sure that the water supply is being applied directly to the cutting surface.
- Confirm that the water flow rate is strong enough to adequately minimize visible dust emissions.
- Carefully follow the saw manufacturer's instructions to ensure that you are minimizing dust emissions as much as possible.
- If you have any questions or concerns about silica, immediately check with your company's *Competent Person* for silica.

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TOPIC: Silica – Jackhammers & Powered Chipping Tools #5

PRIMARY POTENTIAL HEALTH HAZARDS

- SILICOSIS (Lung Disease – Inflammation and Scarring in the Lungs)
- LUNG CANCER (Malignant Lung Tumor(s))

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Jackhammering or chipping into concrete

SAFE WORK PRACTICES

- Wear a suitable respirator unless your company's *Competent Person* for silica informs you that overexposure will not occur without respiratory protection.
- Before using a respirator, be sure you have the appropriate medical clearance, fit test, and respiratory protection training.
- Use a jackhammer or hand-held powered chipping tool fitted with either a water delivery system that supplies a continuous stream or spray of water at the point of impact, **or** a commercially available shroud or cowling, and an adequate dust collection system.
- When using the water delivery system, make sure the water flow rate is strong enough to minimize visible dust.
- When using the shroud, or cowling/dust collection system, ensure that the system is designed for, and filtered by, High Efficiency Particulate Air (HEPA) filters.
- Before starting to work, make sure that the HEPA filter(s) is clean and that the dust collection system is working properly.
- Whether using the water delivery system or the dust collection system, be sure to follow the manufacturer's instructions carefully to ensure the minimization of dust emissions.
- If you have any questions or concerns about silica, immediately check with your company's *Competent Person* for silica.

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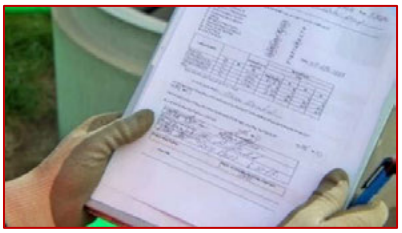
TOPIC: Confined Spaces – Permit vs. Non-Permit Spaces #6

PRIMARY POTENTIAL HEALTH AND PHYSICAL HAZARDS

- INSUFFICIENT OXYGEN – ASPHYXIATION – SUFFOCATION
- TOXIC AIR CONTAMINANTS – IMPAIRMENT – INCAPACITATION – DEATH
- FLAMMABLE GASES & VAPORS – FIRES & EXPLOSIONS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Entry into pipelines, ductwork, equipment housings, boilers, manholes, sewers, vaults, tunnels, shafts, vessels, pits, tanks, etc. that have limited or restricted means for entry or exit, and are not designed for continuous human occupancy
- Hot work inside a confined space that could change what would otherwise be acceptable atmospheric conditions to hazardous atmospheric conditions



PERMIT-REQUIRED CONFINED SPACES

- All confined spaces are *Permit-Required* spaces unless your company's designated *Competent Person* and *Entry Supervisor* reclassify the spaces.

NON-PERMIT REQUIRED CONFINED SPACES

- The *Competent Person* performs a thorough hazard assessment inside the space, and in surrounding areas outside the space.
- No atmospheric hazards exist inside the space.
- If atmospheric hazards were identified inside the space, forced air ventilation alone removes the atmospheric hazards.
- Other hazards inside the space, if they were not altogether eliminated, remain isolated.
- No hazards are present in surrounding areas outside the space.
- Based on a thorough hazard assessment, the *Competent Person* recommends to the *Entry Supervisor* that the space be reclassified as a non-permit required space.
- The *Entry Supervisor* evaluates the recommendation, agrees that the space should be reclassified, and completes the procedures and paperwork required for reclassification.

SAFE WORK PRACTICES

- Even though a space is classified as a non-permit space, make sure that you continuously monitor the space for atmospheric hazards throughout entry operations.

TOPIC: Confined Spaces – General #7

PRIMARY POTENTIAL HEALTH AND PHYSICAL HAZARDS

- INSUFFICIENT OXYGEN – ASPHYXIATION – SUFFOCATION
- TOXIC AIR CONTAMINANTS – IMPAIRMENT – INCAPACITATION – DEATH
- FLAMMABLE GASES AND VAPORS – FIRES & EXPLOSIONS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Entry into pipelines, ductwork, equipment housings, boilers, manholes, sewers, vaults, tunnels, shafts, vessels, pits, tanks, etc. that have limited or restricted means for entry or exit and are not designed for continuous human occupancy
- Hot work inside a confined space that could change what would otherwise be acceptable atmospheric conditions to hazardous atmospheric conditions

SAFE WORK PRACTICES

- Treat every confined space as a *Permit-Required* space unless your company's designated *Competent Person* and *Entry Supervisor* reclassify the space as *Non-Permit Required*.
- Never enter any confined space until you have the appropriate confined space entry safety training. Carefully follow the safe work practices and procedures from the training.
- Before entering any confined space, make sure the *Competent Person* has tested the atmospheric conditions inside the space and informed you that it is safe to enter.
- Once you enter the space, continuously monitor the atmosphere inside for changes that could render the space unsafe.
- Use monitoring equipment with built-in hazard detection alarms. If an alarm sound, exit the space immediately and do not re-enter until the *Competent Person* informs you that it is safe to do so.
- If you have any questions or concerns about confined space entry, check with your company's *Competent Person* for confined space entry immediately.

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TOPIC: Confined Spaces – Acceptable Entry Conditions #8

PRIMARY POTENTIAL HEALTH AND PHYSICAL HAZARDS

- INSUFFICIENT OXYGEN – ASPHYXIATION – SUFFOCATION
- TOXIC AIR CONTAMINANTS – IMPAIRMENT – INCAPACITATION – DEATH
- FLAMMABLE GASES & VAPORS – FIRES & EXPLOSIONS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Entry into pipelines, ductwork, equipment housings, boilers, manholes, sewers, vaults, tunnels, shafts, vessels, pits, tanks, etc. that have limited or restricted means for entry or exit and are not designed for continuous human occupancy
- Hot work inside a confined space that could change what would otherwise be acceptable atmospheric conditions to hazardous atmospheric conditions

ACCEPTABLE CONDITIONS WITHOUT ADDITIONAL PROTECTIVE MEASURES

- You have successfully completed the appropriate confined space entry safety training, and agree to carefully following the safe work practices/procedures from your training;
- Oxygen levels in the space are between 19.5% and 23.5%;
- Flammable gases/vapors/mists levels in the space are at or below 10% Lower Flammability Level (LFL);
- Toxic air contaminants in the space are at or below allowable/safe levels (parts per million (PPM));
- All physical hazards are eliminated or isolated;
- All other recognizable safety and health hazards are eliminated or isolated;
- Airborne combustible dust does not obscure vision at 5’ distance or less; and
- Your company’s designated *Competent Person* for confined space entry has informed you that it is safe to enter the space.

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TOPIC: Confined Spaces – Common Gases/Hazards #9

PRIMARY POTENTIAL HEALTH AND PHYSICAL HAZARDS

- INSUFFICIENT OXYGEN – ASPHYXIATION – SUFFOCATION
- TOXIC AIR CONTAMINANTS – IMPAIRMENT – INCAPACITATION – DEATH
- FLAMMABLE GASES & VAPORS – FIRES & EXPLOSIONS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Entry into pipelines, ductwork, equipment housings, boilers, manholes, sewers, vaults, tunnels, shafts, vessels, pits, tanks, etc. that have limited or restricted means for entry or exit and are not designed for continuous human occupancy
- Hot work inside a confined space that could change what would otherwise be acceptable atmospheric conditions to hazardous atmospheric conditions

COMMON HAZARDOUS GASES/ISSUES IN MECHANICAL CONSTRUCTION

- Oxygen – Levels in confined spaces must be between 19.5% and 23.5%. Levels below 19.5% can lead to immediate organ damage and ultimately death. Also, since oxygen accelerates the rate of combustion, levels that are too high can make the space more susceptible to fires and explosions.
- Methane – Is highly flammable (it is the main constituent of natural gas). Methane is not considered to be toxic. However, it can displace oxygen in the lungs leading to asphyxiation and suffocation.
- Carbon Monoxide – Prevents efficient exchange of oxygen in the circulatory system and can be fatal.
- Hydrogen Sulfide – Is highly flammable, and is considered a toxic substance. It is an irritant that can cause respiratory failure over time if it goes undetected.

SAFE WORK PRACTICES

- Continuously monitor the atmosphere inside the space for hazardous gases.
- Use an appropriate, properly calibrated monitoring instrument with a built-in hazard detection alarm. If the alarm system(s) activates, evacuate the space immediately.

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TOPIC: Confined Spaces – Atmospheric Monitoring #10

PRIMARY POTENTIAL HEALTH AND PHYSICAL HAZARDS

- INSUFFICIENT OXYGEN – ASPHYXIATION – SUFFOCATION
- TOXIC AIR CONTAMINANTS – IMPAIRMENT – INCAPACITATION – DEATH
- FLAMMABLE GASES & VAPORS – FIRES & EXPLOSIONS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Entry into pipelines, ductwork, equipment housings, boilers, manholes, sewers, vaults, tunnels, shafts, vessels, pits, tanks, etc. that have limited or restricted means for entry or exit, and are not designed for continuous human occupancy
- Hot work inside a confined space that could change what would otherwise be acceptable atmospheric conditions to hazardous atmospheric conditions

SAFE WORK PRACTICES

- Use an appropriate direct read instrument to evaluate the atmosphere inside the space.
- Ensure that the equipment monitors oxygen levels, flammable gases/vapors/mists, and toxic air contaminants.
- Make sure the monitor is properly calibrated, equipped with properly functioning batteries/properly charged, and otherwise working correctly.
- Evaluate the atmosphere at all applicable vertical and horizontal levels concentrating on the immediate work areas.
- Continuously monitor the atmosphere inside the space for changes that could render the space unsafe for entrants.
- Always use monitoring equipment with built-in hazard detection alarms. If an alarm activates, exit the space immediately, and do not re-enter until the *Competent Person* informs you that it is safe to do so.
- If you have any questions or concerns about confined space entry, check with your company's *Competent Person* for confined space entry immediately.

TOPIC: Confined Spaces – Ventilation #11

PRIMARY POTENTIAL HEALTH AND PHYSICAL HAZARDS

- INSUFFICIENT OXYGEN – ASPHYXIATION – SUFFOCATION
- TOXIC AIR CONTAMINANTS – IMPAIRMENT – INCAPACITATION – DEATH
- FLAMMABLE GASES & VAPORS – FIRES & EXPLOSIONS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Entry into pipelines, ductwork, equipment housings, boilers, manholes, sewers, vaults, tunnels, shafts, vessels, pits, tanks, etc. that have limited or restricted means for entry or exit and are not designed for continuous human occupancy
- Hot work inside a confined space that could change what would otherwise be acceptable atmospheric conditions to hazardous atmospheric conditions

SAFE WORK PRACTICES

- Never enter a confined space that has a hazardous atmosphere, such as low oxygen levels, excessive levels of flammable gases or toxic air contaminants, etc. unless you are properly protected from all health and physical hazards in the space.
- Whenever it's necessary to eliminate or isolate atmospheric hazards inside a confined space, establish a system of continuous forced air ventilation.
- Make certain that the air supply for the ventilation system is from a clean source. For example, the ventilation system intake should not be anywhere near sources of carbon monoxide, such as gasoline or diesel fueled vehicles.
- Ensure that the forced air ventilation is being directed to the immediate work areas.
- Continuously monitor the space with a properly calibrated direct read confined space monitor to ensure that the ventilation system is performing efficiently and effectively.
- Use a monitor with a built-in hazard detection alarm. If the alarm activates, evacuate the space immediately, do whatever is necessary to prevent others from entering the space, and inform your company's designated *Competent Person* for confined space entry.
- If the ventilation system fails for any reason, evacuate the space immediately, do whatever is necessary to ensure that no one else enters the space, and inform the *Competent Person* immediately.

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TOPIC: Zika Virus #12

PRIMARY POTENTIAL HEALTH HAZARDS

- GUILLAIN-BARRÉ SYNDROME (Nervous System Illness/Nerve Cell Damage)
- MICROCEPHALY (Babies Born with Smaller than Normal Heads and Brains)
- OTHER BIRTH DEFECTS (Babies Born with Brain, Eye, Joint, and/or Muscle Damage)

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Workplace exposure to mosquitos that are carrying the Zika virus, especially work in geographic areas with large populations of mosquitos where the Zika virus is prevalent.
- Be cautious everywhere, but be especially careful when working in California, Florida, New York, Texas, Puerto Rico, and the U.S. Virgin Islands.

SAFE WORK PRACTICES

- Do whatever is necessary to avoid mosquito bites.
- Wear long sleeve shirts and long pants.
- Stay inside of enclosed structures whenever possible.
- Air conditioned structures are best because mosquitos are cold blooded and are much less active in colder temperatures. An air-conditioned jobsite trailer would be a good place for breaks and lunches when working in or near mosquito infested areas.
- Whenever possible, remove standing water where it's found around the jobsite.
- When standing water can't be removed, avoid the areas where standing water exists as much as possible.
- The Zika virus can also spread by way of sex with an infected partner.
- If you contracted or may have contracted the Zika virus, be especially careful not to infect a female partner who is pregnant or trying to get pregnant.

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TOPIC: Marijuana #13

POTENTIAL HEALTH HAZARDS

- DIFFICULTY BREATHING (Same Effect Experienced by Cigarette Smokers)
- INCREASED HEART RATE (For Extended Periods Increases the Risk of Heart Attack)
- MENTAL ILLNESS – DEPRESSION – ANXIETY – SUICIDAL THOUGHTS
- LOSS OF SOUND JUDGEMENT (Increases the Potential for Physical Hazards)
- KILLS IRREPLACEABLE BRAIN CELLS

WHAT YOU SHOULD KNOW ABOUT MARIJUANA USE IN GENERAL

- Marijuana is still illegal under federal law. It is still classified as a *Schedule I* drug (no currently accepted medical use and a high potential for abuse) by the federal Drug Enforcement Agency (DEA).

WHAT YOU SHOULD KNOW ABOUT MEDICAL MARIJUANA USE

- The *UA/MCAA Smart Dispatch Model Substance Abuse Testing and Treatment Program Policy* is based on U.S. DOT Drug Testing Regulations.
- Use of marijuana for medicinal purposes, even when prescribed by a medical doctor, is not considered by DOT to be a legitimate explanation for a positive marijuana drug test.
- There are currently no restrictions on testing for medical marijuana.
- There are currently no laws that require employers to accommodate on-duty drug use in the workplace.
- Despite the differences is state laws concerning medical marijuana, all states prohibit the use of marijuana on jobsites and while working.
- There are currently no laws prohibiting employers from taking disciplinary action against employees who are working while under the influence of medical marijuana.

WHAT YOU SHOULD KNOW ABOUT RECREATIONAL MARIJUANA USE

- Most states prohibit driving under the influence of marijuana.
- There are currently no laws prohibiting employers from taking disciplinary action against employees who are working while under the influence of recreational marijuana, even in states where recreational marijuana is legal.

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TOPIC: Suicides in Construction (Mental Health) #14

FACTS

- Construction is the industry with the highest numbers of suicides.
- Suicide is the second leading cause of death for men between the ages of 25 and 54.
- More than 41,000 suicides occur annually.

SOME OF THE KEY THINGS TO WATCH FOR

- Thinking, talking or wishing about suicide and/or preoccupation with death
- Common signs of *depression,* such as fatigue, too much or too little sleep, stomach or back aches, irritability, trouble concentrating, anger/hostility, stress, indecision, etc.
- Common signs of *anxiety,* such as excessive worry, sleep problems, irrational fears, muscle tension, chronic indigestion, self-consciousness, panic, flashbacks, perfectionism, compulsive behaviors, self-doubt, etc.
- Thoughts or statements about hopelessness, helplessness, or worthlessness
- No sense of purpose or belonging
- Withdrawal from family, friends, hobbies, etc.
- Dramatic changes in mood
- Prescription painkiller (opioid) abuse
- Alcohol and/or non-prescription drug abuse
- Feelings of having no way out
- Recklessness (high risk behavior)
- Loss of interest in activities that were previously pleasurable
- Getting affairs in order, and or giving away prize possessions

WHAT TO DO

- If you suspect someone has suicidal tendencies approach the person in private.
- Be direct and ask him if he is thinking about suicide.
- If he answers yes, ask if he has thought about how he would do it.
- If he answers yes, ask him if he has what is needed to do it.
- If he answers yes, ask him if he has thought about when he would do it.
- If you believe that someone is suicidal, help them get help immediately.
- If you have thoughts of suicide, you can easily get help too.
- For immediate help call the **National Suicide Prevention Hotline at 1-800-273-8255**.

TOPIC: Skin Cancer #15

FACTS

- Every year around 5 ½ million skin cancer cases are treated in the United States.
- The vast majority of skin cancer cases are attributed to Ultraviolet (UV) Radiation from the sun.
- It makes no difference whether you are dark complected. Dark skin does not block UV rays.
- It makes no difference whether it's cloudy outside. Cloud cover does not block UV rays.

TYPES OF SKIN CANCER

- Basal Cell Carcinoma – Most Common (Around 4 million cases diagnosed annually)
- Squamous Cell Carcinoma – 2nd Most Common (1 million+ cases diagnosed annually)
- Melanoma – 3rd Most Common (One person dies of melanoma every 54 minutes)

PRIMARY EXPOSURE FOR MECHANICAL CONSTRUCTION WORKERS

- Unprotected skin exposure to *UV Radiation* from the Sun.

SAFE WORK PRACTICES

- Work in shady areas as much as possible, even if you need to make your own shade.
- When shade is not an option, cover as much skin as possible with sun-safe clothing.
- Wear the widest brim hardhat that is available to you.
- Cover the back of your neck and ears with a hardhat compatible sun-safe neck shade.
- Protect any remaining exposed skin with, at a minimum, SPF 15 sunscreen.
- Reapply the sunscreen at regular intervals (follow the manufacturer's instructions).
- See a dermatologist for a skin check-up, especially if you have ever had a bad sunburn.
- Ask the dermatologist what to watch for in terms of warning signs, such as the appearance of a new mole, or changes to an existing mole.
- Follow the dermatologist's instructions for skin cancer prevention and make any recommended skin checkup appointments at regular intervals.

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TOPIC: Prescription Opioid (Painkiller) Abuse #16

SOME OF THE POTENTIAL HEALTH AND PHYSICAL HAZARDS

- ADDICTION (Can Lead to Suicidal Tendencies)
- MENTAL IMPAREMENT
- INCREASED RISK OF FALLING

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Treatment for back, shoulder, and other musculoskeletal pain
- Treatment for bad headaches

WHAT YOU SHOULD KNOW ABOUT OPIOIDS IN GENERAL

- Opioids are prescription painkillers. Some of the more common opioids include: *Morphine*, *Oxycodone* (such as Oxycontin and Percocet) *Hydrocodone* (such as Vicodin and Zohydro), and *Methadone*.

WHAT YOU SHOULD KNOW ABOUT OPIOID USE AND ABUSE

- Opioids are highly addictive.
- Nearly 30% of all Emergency Room (ER) visits result in a prescription for an opioid.
- About 60% of patients who visit the ER with back pain receive an opioid prescription.
- Primary care doctors give opioid prescriptions to 35% of their patients who present with back pain.
- In most cases, acute pain (pain lasting less than 3 months) can be relieved more effectively and efficiently with a combination of two over-the-counter pain medicines as follows: 200 mg of ibuprofen and 500 mg of acetaminophen.
- There is no evidence that opioids are effective for treatment of chronic pain (pain lasting more than 3 months).
- The American Academy of Neurology recommends against using opioids for back pain, headaches, and fibromyalgia (widespread musculoskeletal pain).

SAFE WORK PRACTICES

- Avoid using opioids, especially for back pain, headaches and fibromyalgia.
- Ask your doctor about using alternative medications, such as ibuprofen and acetaminophen. Both are available in prescription doses.
- If you must use an opioid, such as immediately after an extensive surgical procedure, consult with your doctor about getting off the opioid as soon as you possibly can.

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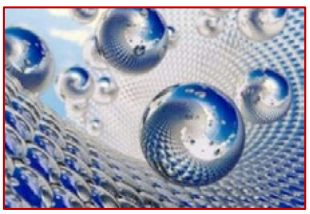
TOPIC: Nanomaterials in Mechanical Construction #17

POTENTIAL HEALTH HAZARDS

- Possible Risk of Toxicological Problems with Some Nanomaterials Used in Construction
- Possible Risk of Lung Problems Similar to Asbestos Related Problems, i.e. Lesions
- Possible Risk of Mesothelioma

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Work with, or in close proximity to, disturbed construction materials that contain nanomaterials, such as some boiler additives, certain types of HVAC equipment greases, coatings, lubricants, cements, adhesives, insulation, and patching compounds
- Welding fumes from nano-enabled steel/welding products
- Drilling, cutting, and boring into nano-enabled concrete



WHAT YOU SHOULD KNOW ABOUT NANOMATERIALS IN GENERAL

- Nanomaterials are often used to coat construction materials such as cement and steel products to make them more durable, and to enhance their performance.
- Our primary concern is the uncertain potential for respiratory illnesses associated with inhaling nanoparticles when they are disturbed during construction processes.
- There are currently no labeling requirements for nanomaterials.
- OSHA has not established a Permissible Exposure Limit (PEL) for nanomaterials.
- Nanomaterials can also be ingested and translocated throughout the body.
- The human health risks of nanomaterials are not well understood.
- Mechanical construction workers should limit their exposure to nanomaterials as much as possible until the health risks are better known.

SAFE WORK PRACTICES

- When needed and available, use tools with built in High Efficiency Particulate Air (HEPA) dust collection systems.
- Provide local exhaust ventilation in the affected work areas.
- If dust collection systems don't adequately reduce dust levels, use an appropriate air-purifying respirator with HEPA filters.
- Before using any respirator, be sure you have the appropriate medical clearance, fit test, and respiratory protection training.

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TOPIC: Legionella #18

POTENTIAL HEALTH HAZARDS

- LEGIONNAIRES DISEASE (Pneumonia – Lung Infection)

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Inhalation of an aerosol of water that is contaminated with Legionella from equipment that uses evaporation to reject heat. Some possible sources include cooling towers, evaporative condensers, and fluid coolers.
- Hot-water systems with water heaters that operate below 60°C (140°F) and deliver water to taps below 50°C (122°F)
- Stagnant water in fire sprinkler systems
- Warm water at safety eye wash stations and in safety showers

SAFE WORK PRACTICES WHEN LEGIONELLA HAS NOT BEEN DETECTED

- When you are working where there could be a risk of exposure to Legionella, but where there is no known risk, you can voluntarily wear an N95 respirator (lightweight dust mask type respirator).
- When you wear this respirator voluntarily the typical respirator use requirements, such as medical clearance, fit testing, and respiratory protection training do not apply.

SAFE WORK PRACTICES WHEN LEGIONELLA HAS BEEN DETECTED

- When you are working where the presence of Legionella has been established, wear a half-face respirator with High Efficiency Particulate Air (HEPA) filters.
- Before using any respirator that you are required to wear (non-voluntarily use), be sure you have the appropriate medical clearance, fit test, and respiratory protection training.
- Wear impervious disposable coveralls and gloves.
- When you are finished working, carefully follow your company's established decontamination procedures.

TOPIC: The Aging Construction Workforce #19

FACTS

- More than half of mechanical construction workers are 40 years old or older.
- Aging workers experience losses in strength, speed of movement, motor skills, balance, range of motion, tactile sensation in their feet and hands, hearing, and eyesight.
- Aging workers have less oxygen circulating throughout their musculoskeletal system than they did in the past. The result is quicker muscle fatigue, and longer muscle recovery time.
- Around 53% of Workers' Compensation (WC) claims for injuries in the mechanical construction industry are from workers 40 years old and older.
- Around 58% of WC claims for injuries from falls from elevations in the mechanical construction industry are from workers over 40 years old.

PRIMARY POTENTIAL PHYSICAL HAZARDS

- MUSKULOSKELETAL INJURIES AND/OR PAIN
- FALLS FROM LADDERS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Lifting and/or moving materials without using lifting and/or materials moving equipment
- Improper lifting/moving/lowering of heavy and/or bulky objects by hand
- Excessive bending, reaching, and ladder climbing

SAFE WORK PRACTICES

- Use equipment to lift and/or move heavy or bulky objects, such as forklifts, pallet jacks, wheelbarrows, carts, etc. whenever it is available and practical.
- When you must move heavy or bulky objects by hand, get someone to help you.
- Reduce the number of times you must bend by staging materials off the ground or floor somewhere around waist height. Use pipe racks, commercially available mobile tables, jobsite made temporary tables, stacked pallets, etc. to get the materials staged properly.
- Reduce the number of times you must reach by positioning yourself closer to the work whenever it is possible and practical.
- Reduce the number of times you climb up and down ladders by carefully planning your work ahead of time. Once you have the necessary measurements and the materials properly sized, make sure you have *everything* you need to complete the task before climbing back up the ladder.

TOPIC: Avoidable Bending #20

FACTS

- On average, mechanical construction workers bend somewhere around 50 times every hour while completing their work tasks.
- Based on a 250-day work year, that amounts to somewhere around 100,000 bends per worker per year.
- In a 30-year career, mechanical construction workers bend more than 3 million times while performing their daily work tasks.

PRIMARY POTENTIAL PHYSICAL HAZARDS

- BACK INJURY AND/OR PAIN

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Failure to pre-plan each task with the intention of reducing the number of times it will be necessary to bend to complete it
- Poorly established work areas that require *unnecessary* bending while welding, cutting, brazing, or performing any other mechanical construction task
- Picking up small items or lifting larger objects from the ground, floor, or anywhere lower than waist height

SAFE WORK PRACTICES

- Pre-plan each task carefully to reduce the number of times that you will need to bend to complete it.
- Have your materials staged off the ground or floor somewhere around waist height. Use pipe racks, commercially available mobile tables, jobsite made temporary tables, stacked pallets, etc. to have the materials staged properly.
- Whenever possible, position yourself so that you won't have to bend to complete the task. Sometimes doing so is as simple as making quick and easy adjustments to the immediate work area, adjusting your body position, or adjusting the work itself.

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TOPIC: Avoidable Reaching #21

FACTS

- On average, mechanical construction workers reach (arms extended 20 inches or more away from the torso) somewhere around 100 times every hour while completing their work tasks.
- Based on a 250-day work year, that amounts to somewhere around 200,000 reaches per worker per year.
- In a 30-year career, mechanical construction workers reach more than 6 million times while performing their daily work tasks.

PRIMARY POTENTIAL PHYSICAL HAZARDS

- BACK and/or SHOULDER INJURY
- BACK and/or SHOULDER PAIN

PRIMARY EXPOSUES FOR MECHANICAL CONSTRUCTION WORKERS

- Failure to pre-plan each task with the intention of reducing the number of times it will be necessary to reach to complete it
- Poorly established work areas that require *unnecessary* reaching while welding, cutting, brazing, or performing any other mechanical construction task
- Poor body and/or work positioning requiring *additional unnecessary* reaching

SAFE WORK PRACTICES

- Pre-plan each task carefully to reduce the number of times that you will need to reach to complete it.
- Whenever possible, arrange the work area so that you can easily and safely position yourself to complete the work without reaching.
- Whenever it's feasible, position yourself so that you won't have to reach to complete the task. Sometimes doing so is as simple as moving the ladder closer to the work, taking a step or two up or down the ladder, or using alternative methods to access the work.

TOPIC: Avoidable Ladder Climbing #22

FACTS

- On average, mechanical construction workers climb ladders 25 times every hour while completing their work tasks.
- Based on a 250-day work year, that amounts to somewhere around 50,000 climbs per worker per year.
- In a 30-year career, mechanical construction workers climb ladders more than 1,500,000 times while performing their daily work tasks.

POTENTIAL PHYSICAL HAZARDS

- As the Number of Times You Climb Increases, the Risk of Falling Also Increases
- Concussion, Broken Bones, Punctures, Lacerations, Contusions, etc. from the Impact of Falling

PRIMARY OMISSIONS BY MECHANICAL CONSTRUCTION WORKERS

- Failure to pre-plan each task with the intention of reducing the number of times it will be necessary to climb a ladder
- Failure to use alternative methods to access the work whenever they are available and feasible

SAFE WORK PRACTICES

- Pre-plan each task carefully to reduce the number of times that you will need to climb a ladder.
- Whenever possible, use an alternate method of accessing your work area, such as using an aerial lift or a mobile work platform.
- When using a ladder, you may have to climb down to reposition it to provide better access or reduce your reach. When initially placing the ladder, try to place it to reduce the number of times you'll need to climb down to move it.
- Whenever possible, get all the necessary measurements in one trip up the ladder.
- Make all your cuts and assemble all the items you'll need.
- Before climbing back up the ladder, take the time to ensure that you have all of materials, tools, and equipment you need to complete the task.

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TOPIC: Asbestos/Gaskets #23

POTENTIAL HEALTH HAZARDS

- ASBESTOSIS (Scarring of Lung Tissue with Shortness of Breath)
- LUNG CANCER (Uncontrolled Division of Abnormal Cells in the Lungs)
- MESOTHELIOMA (Cancer of the Pleura/Membrane Lining the Lungs)

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Line breaking in older piping systems
- Grinding, filing, sanding, and/or wire brushing by hand to remove gaskets containing asbestos
- Use of any type of power tool to remove gaskets containing asbestos

SAFE WORK PRACTICES FOR REMOVING "INTACT" GASKETS

- "Intact" gaskets are gaskets that are in a non-friable (not able to crumble, pulverize, or be reduced to powder by hand pressure) condition.
- Before attempting to remove any gasket containing asbestos, complete at least two hours of asbestos awareness training that includes specific instruction on how to determine whether a gasket is intact and how to minimize fiber release while removing intact gaskets.
- To keep intact gaskets from becoming friable while removing them, use a gasket softener and a putty knife.
- When an intact gasket can't be successfully removed with a gasket softener and putty knife, do not attempt to remove it. Inform your supervisor immediately and follow his instructions.
- Likewise, if you discover a gasket that is in friable condition (not intact), do not attempt to remove it. Inform your supervisor immediately and follow his instructions.

TOPIC: Ammonia Refrigerant (Anhydrous Ammonia) #24

POTENTIAL HEALTH AND PHYSICAL HAZARDS

- CORROSIVE TO LUNGS
- CORROSIVE TO EYES
- CORROSIVE TO SKIN
- FROSTBITE (Exposure to Skin May Cause Frostbite)
- FLAMMABLE (Under the Right Conditions)
- EXPLOSIVE (Under the Right Conditions)

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Uncontrolled release of ammonia from a mechanical compression system or ammonia storage tank. Ammonia is a liquid while it's under pressure, but it turns into a respirable vapor when released into the air.

SAFE WORK PRACTICES FOR WORK WITH ANHYDROUS AMMONIA

- Before working on ammonia compression systems, get the proper safety training and make sure you thoroughly understand the potential hazards and appropriate protective measures.
- Ensure that the work area is well ventilated before you start to work.
- Always wear the appropriate personal protective equipment.
- Protect your lungs, eyes, and face with a full-face respirator outfitted with the appropriate ammonia cartridges and pre-filters.
- Before using any respirator, be sure you have the appropriate medical clearance, fit test, and respiratory protection training.
- Protect your hands with impermeable gloves designed for work with ammonia-like chemicals.
- Protect your body with a chemical-resistant coverall or chemical-resistant long-sleeve shirt and pants.
- Wear boots made of an impermeable material.
- When you are not working in close proximity to an emergency safety shower, keep a water source nearby to dilute the ammonia if it contacts your skin.
- After working with ammonia, wash your hands and face carefully before eating, drinking, smoking, or applying cosmetics.

TOPIC: Sulfuric Acid

#25

POTENTIAL HEALTH HAZARDS

- CORROSIVE TO LUNGS
- CORROSIVE TO EYES
- CORROSIVE TO SKIN
- DEATH (May be Fatal if Inhaled in Large Enough Concentrations)

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Inhalation of sulfuric acid vapors and/or unprotected contact with eyes or skin while working with substances containing sulfuric acid, such as battery fluid, drain cleaners, detergents, resins, etc.

SAFE WORK PRACTICES

- Ensure that the work area is well ventilated before you start to work.
- Always wear the appropriate personal protective equipment.
- If you could encounter exposure to sulfuric acid in an area that's not properly ventilated, wear the appropriate respirator.
- Before using any respirator, be sure you have the appropriate medical clearance, fit test, and respiratory protection training.
- Protect your eyes and face with splash-proof safety goggles and a face shield.
- Protect your hands with impermeable gloves designed for work with sulfuric acid-like chemicals.
- Protect your body with an appropriate chemical-resistant apron or coverall, or chemical-resistant long-sleeve shirt and pants.
- Keep emergency eye wash nearby and flush your eyes immediately if you get the acid in your eyes.
- If you get the acid on your skin, thoroughly rinse it with water.
- After working with the acid, wash your hands and face carefully before eating, drinking, smoking, or applying cosmetics.

TOPIC: LP Gas

#26

POTENTIAL HEALTH AND PHYSICAL HAZARDS

- SUFFOCATION (LP Gas Displaces Oxygen)
- FROSTBITE (Exposure to Skin May Cause Frostbite)
- FLAMMABLE (LP Gas is Extremely Flammable)
- EXPLOSIVE (LP Gas Can Form an Explosive Mixture with Air)

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Undetected leaks of LP Gas used to fuel portable heaters and other types of construction equipment
- LP Gas containers placed too close to ignition sources, such as portable heaters, welding, cutting, grinding operations, etc.

SAFE WORK PRACTICES

- Before using LP Gas, carefully inspect the containers, valves, connectors, manifold valve assembly, and regulator to ensure that they are in good condition.
- Replace any defective parts, and follow your company's procedures for taking defective parts out of service.
- While inspecting the system, verify that all parts are the correct components for that system.
- If you find one or more system parts that are not compatible with the system, don't use them. Replace them with the proper part(s) before using the system.
- While inspecting the system, make sure that each LP Gas container and vaporizer has approved safety relief valves in place.
- Verify that the cylinder has an excess flow valve to minimize the flow of gas in case the fuel line becomes ruptured.
- Keep LP Gas cylinders away from ignition sources at all times.
- Wear safety glasses and standard work gloves when making connections with cylinders and system parts that are attached to a cylinder.
- Never store LP Gas inside a building.
- Always make sure there is a Class ABC fire extinguisher close by wherever LP Gas is used or stored.

TOPIC: Laser Tools

#27

POTENTIAL HEALTH HAZARDS

- SEVERE EYE INJURIES (Burning on the Retina)
- SKIN BURNS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Working with and/or around laser levels and/or laser measuring devices
- Unexpected/unknown reflection of laser light into eyes

SAFE WORK PRACTICES

- Make sure you receive laser safety training before operating a laser or working in close proximity to others who are using lasers.
- Never look directly into, or work in the path of, a laser beam.
- When working with a laser level or laser measuring device, always wear laser safety glasses or laser safety goggles (these are not standard sun protection safety glasses). Laser protective eyewear is specially designed to keep scattered laser beams and radiation from getting into your eyes.
- Be sure to choose the appropriate grade of laser eye protection depending on the specific wavelength of the laser. If you're not sure about it, check with your supervisor before you start the work.
- When the laser is not being used, be sure to turn off or block the beam with beam shutters or caps.
- Be aware of other trades using lasers in your work area.
- If working in your immediate work area will expose you to laser light hazards, establish a temporary laser barrier or protective curtain for protection from the laser light while you are working.
- When establishing a temporary barrier or protective curtain is not practical, leave the area and ask your supervisor to temporarily move you to a different work area.

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TOPIC: Cranes and Derricks #28

PRIMARY POTENTIAL PHYSICAL HAZARDS

- STRUCK BY FALLING LOAD
- STRUCK BY, OR CAUGHT IN BETWEEN, SWINGING LOAD
- ELECTROCUTION FROM CONTACT WITH OVERHEAD POWER LINES
- STRUCK BY OVERTURNING CRANE/DERRICK
- STRUCK AGAINST FROM OVERTURNING CRANE/DERRICK (Operators)

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Failure to adequately pre-plan and properly prepare for the lift
- Operating in unfavorable conditions, such as unprepared ground, high winds, etc.
- Exceeding the load capacity

SAFE WORK PRACTICES

- Whether you are the operator, rigger, or signal person, participate in a pre-planning process for all lifts to ensure that nothing critical is omitted.
- Be sure to identify any overhead power lines that could be inadvertently contacted during lift operations.
- Plan the operation so that no part of the crane/derrick will get closer than the minimum safe distance from the power lines, or have them de-energized ahead of time.
- Prior to starting the operation, make sure that a *Qualified Person* has inspected the crane and approved it for the lift.
- Ensure that the load capacity of the crane/derrick is posted and visible from the operator's station.
- Before starting the operation, check with your company's *Competent Person* for cranes/derricks to ensure that the proper ground preparations have been completed.
- If you are the operator, operate the crane/derrick only on firm, level, ground, and use mats whenever they are needed, especially when lifting heavy loads.
- Make sure that the outriggers are extended before lifting the load.
- Rope off or barricade the swing radius of the rotating superstructure.
- Prior to the lift, verify that the rated load capacity will not be exceeded.
- Whenever possible, position the boom point so that it is directly over the load.

TOPIC: Damaged Equipment #29

PRIMARY POTENTIAL PHYSICAL HAZARDS

- FALLS FROM ELEVATION
- STRUCK BY OBJECTS
- CAUGHT IN-BETWEEN OBJECTS
- ELECTRICAL SHOCK/ELECTROCUTION

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Use of damaged equipment, such as damaged ladders, chain falls, jacks, rigging equipment, generators, etc.
- Failure to immediately remove damaged equipment from service
- Failure to properly tag damaged equipment out of service so that no one else uses it

SAFE WORK PRACTICES

- Carefully inspect all your equipment each time before you use it.
- Start by making sure there are no missing parts or pieces.
- Look for broken, bent, cracked, burned, melted, charred, cut, abraded, torn, distorted, etc. parts and pieces.
- Watch for wear indicators, such as pronounced rounding of metal parts, red tracer yarn in some types of worn rigging slings, etc.
- When you come across damaged equipment, take it out of service immediately.
- Know your company's procedures for taking damaged/defective equipment out of service, including the protocol for attaching conspicuous damaged equipment warning tags to damaged equipment, and where to place the damaged items at the jobsite.
- Make sure that anyone else who could come across the damaged equipment can quickly and easily determine that it should not be used or placed back into service by carefully following your company's procedures for taking damaged/defective equipment out of service.

TOPIC: Disposal Chutes & Disposing of Waste Materials #30

POTENTIAL PHYSICAL HAZARDS

- FALLS FROM ELEVATIONS
- STRUCK BY FALLING OBJECTS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Accessing chutes that are not adequately equipped with fall prevention systems
- Activity in close proximity to waste dumpsters positioned directly under disposal chutes
- Activity near overhead floor openings where waste materials are dropped to the lower level

SAFE WORK PRACTICES

- Stay away from disposal chute access areas that present potential fall hazards and are not equipped with a fall prevention system, such as a guardrail system or an adequate physical barrier.
- If you see an unprotected potential fall hazard at a disposal chute access area, let your supervisor know about it immediately.
- Be sure to use a disposal chute any time you need to drop materials more than 20 feet below to a point outside the building.
- When dropping waste materials through floor openings to a lower level, set up a barricade around the waste materials landing area.
- Barricades should be at least 6 feet further out than the edges of the opening above.
- Make sure the barricades are at least 42” high.
- Keep a safe distance away from waste dumpsters that are directly under disposal chutes.
- Post warning signs to warn others about materials falling from overhead, and to keep them away from the barricaded waste materials landing zone.

TOPIC: Personnel & Materials Hoists #31

PRIMARY POTENTIAL PHYSICAL HAZARDS

- FALLS FROM ELEVATIONS
- STRUCK BY OBJECTS FALLING FROM OVERHEAD
- CAUGHT IN-BETWEEN

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Relying on others to ensure that personnel and/or materials hoists are safe for operation, and used for their intended/approved purposes

SAFE WORK PRACTICES

- The first time you use the hoist make sure the safe operation speeds, hazard warnings, and any special operation instructions (if applicable) are legibly posted on the car or platform.
- Evaluate material hoists' entrances and exits to determine whether there are full-length gates or bars in place, and that they are marked with contrasting colors, such as black and yellow stripes.
- If the entrances and exits don't have full-length gates or bars and color coding, don't use the hoist. Let your supervisor know about it immediately.
- Evaluate a personnel hoist's doors or gates to determine whether they are at least 6 feet 6 inches apart, and equipped with mechanical locks that can't be accessed/operated from the landing side of the hoist.
- If the doors or gates are closer than 6 feet 6 inches apart, and or there are no properly established mechanical door/gate locks in place, don't use the hoist. Let your supervisor know about it immediately.
- Before using any personnel hoist, make sure that an adequate overhead protective covering is secured in place to protect you and other hoist users from objects falling from overhead.

TOPIC: Motor Vehicles & Mechanized Equipment #32

POTENTIAL PHYSICAL HAZARDS

- STRUCK AGAINST (Operators)
- STRUCK BY

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Distractions away from, and omissions of, critical safety requirements while preparing vehicles or mechanized equipment for safe operation, or verification that they are safe to operate
- Distractions while operating vehicles or mechanized equipment
- Failure to use safety belts and other safety features

SAFE WORK PRACTICES

- Inspect the vehicle/mechanized equipment before you use it.
- If you find anything wrong with the vehicle or mechanized equipment, don't use it. Immediately follow your company's procedures for taking defective vehicles and mechanized equipment out of service.
- If your view becomes obstructed any time you're operating a vehicle or mechanized equipment, stop what you're doing. Render the vehicle/mechanized equipment safe and find a spotter outside the vehicle with an unobstructed view to help you move it safely with signals.
- Be sure to set the parking brake any time the vehicle or mechanized equipment is stopped or parked for any period.
- Set the parking brake and chock the wheels any time the vehicle or mechanized equipment is stopped on an incline, even if it is only a slight incline.
- Clean the windows and mirrors as needed to ensure that your visibility is as clear as possible.
- Always fasten your safety belt before the vehicle is moved, and make sure that any others in the vehicle have done so as well.

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TOPIC: Temporary Heating Devices #33

POTENTIAL HEALTH AND PHYSICAL HAZARDS

- ASPHYXIATION – SUFFOCATION
- FIRES
- EXPLOSIONS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Work in areas with inadequate ventilation where temporary heating devices are being used
- Placing temporary heating devices close to flammable/combustible materials
- Use of temporary heating devices that are void of the necessary safety features

SAFE WORK PRACTICES

- When using any type of temporary heating device, make sure the work area has an adequate supply of fresh air.
- Before starting a temporary heating device that is fueled by LP Gas, check to be sure that it is equipped with an automatic shut-off device to stop the flow of gas in case the flame goes out.
- Avoid using solid fuel salamanders inside buildings or when working on scaffolds.
- When setting up temporary heating devices, be sure to place them at least 10 feet away from area covers that are flammable or combustible, such as plastic or canvas tarps, and any other flammable or combustible materials.
- Take the time to securely fasten area covers so that they can't displace or knock over temporary heating devices in high winds.
- While you are working, be sure to keep flammable and combustible materials, such as fuels, flammable and combustible chemical substances, wood, trash, etc. at least 10 feet away from temporary heating devices.

TOPIC: Work Lead Set-Up (Electric Arc Welding) #34

POTENTIAL PHYSICAL HAZARDS

- ELECTRIC SHOCK
- ELECTROCUTION

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Work cable not attached directly to the work
- Work cable attached too far away from the welding unit
- Work cable attached to a building column
- Performing welding operations in wet clothing

SAFE WORK PRACTICES

- When setting up to perform electric arc welding, attach your work lead directly to the work itself, and never to a building column, or steel bolt attached to a building column.
- Always attach your work lead as close to the weld as is practical.
- The exception to not connecting your work lead directly to the work itself is when the work is on a conductive work table. When that's the case, it's permissible to connect to the work table, but always as close to the weld as is practical.
- When there is no open pipe close enough to attach your work lead clamp correctly, use a high quality magnetic clamp designed specifically for welding on pipe (See photo above at right).
- If your shirt sleeves, pant legs, or any other parts of your clothing that will be in contact with the work are wet from heavy sweating or any other source, dry them out or change into dry clothing before you start to weld.
- Keep an extra pair of welding gloves with you at all times.
- Any time your welding gloves get wet, remove them immediately and let them dry out while using the spare pair of gloves.
- Always remember to:
    - Limit the connections so that the current will pass through as few connections as possible, and
    - Keep the welding circuit as short as is practical.

TOPIC: Workplace Fires – Fire Extinguishers #35

POTENTIAL HEALTH AND PHYSICAL HAZARDS

- ASPHYXIATION – SUFFOCATION
- BURNS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Hot work in close proximity to flammable or combustible materials and/or chemicals
- Unfamiliarity with fire extinguisher locations on each jobsite
- Unfamiliarity with the types and proper use of nearby fire extinguishers

Letter	Symbol	Type of Material	Examples of Materials
A		Common Combustibles	Wood, Paper, Cloth, etc.
B		Flammable Liquids and Gases	Gasoline, Propane and Solvents
C		Live Electrical Equipment	Computers, Fax Machines, etc.
D	D	Combustible Metals	Magnesium, Lithium, Titanium, Sodium, Aluminum Powder

Multi-Class Fire Extinguishers			
AB			
AC			
BC			
ABC			

SAFE WORK PRACTICES

- Make sure you're familiar with the different types of fire extinguishers and their intended use. (See the charts above.)
- Before starting work at a new jobsite locate the fire extinguishers in your work areas.
- Make sure that the fire extinguishers in your work areas are Class ABC extinguishers, fully charged, and recently inspected (the inspection tags on each extinguisher should show that a maintenance inspection was performed within a one year period).
- Ensure that there is a Class ABC fire extinguisher within 50 feet of any areas where there is more than 5 gallons of a flammable/combustible liquid, and/or 5 pounds of a flammable gas.
- When performing hot work, make sure you have a Class ABC fire extinguisher readily accessible to you.
- If a fire breaks out, warn others in the area and make sure that you or someone else calls 911 or the closest fire department for help.
- If the fire is small **AND** there is no chance of being overcome by smoke inhalation **AND** you can maintain a safe escape route while fighting the fire, use a fire extinguisher to extinguish the fire.
- If the fire starts to get out of your control, evacuate immediately.

TOPIC: Workplace Fires – Proper Fire Extinguisher Use #36

POTENTIAL HEALTH AND PHYSICAL HAZARDS

- ASPHYXIATION – SUFFOCATION
- BURNS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Staying to fight a fire in heavy smoke
- Staying to fight a fire without a guaranteed safe escape route
- Staying to fight a fire that appears to be getting out of control

SAFE WORK PRACTICES

- If a fire breaks out, warn others in the area and make sure that you or someone else calls 911 or the closest fire department for help.
- If the fire is small **AND** there is no chance of being overcome by smoke inhalation **AND** you can maintain a safe escape route while fighting the fire, use a fire extinguisher to extinguish the fire.
- To use the fire extinguisher correctly, start by pulling the pin.
- Get as close to the fire as you safely can.
- Aim the extinguisher nozzle low at the base of the fire.
- Squeeze the handle to start the flow of the extinguishing agent.
- Deliver the extinguishing agent sweeping the extinguisher nozzle from side to side until the fire is out.
- Watch the area carefully for at least 30 minutes to ensure that the fire does not start back up.
- If at any time while fighting the fire it starts to get out of your control, evacuate immediately.

TOPIC: Lighting – Illumination #37

PRIMARY POTENTIAL PHYSICAL HAZARDS

- SLIPS – TRIPS – FALLS
- STRUCK AGAINST OBJECTS
- CUTS – BRUISES – BURNS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Work in poorly lighted mechanical rooms
- Work in areas where light is blocked by ducts or other objects
- Work in confined spaces

SAFE WORK PRACTICES

- Before starting work, always make sure your work areas are lighted well enough for you to perform your work tasks safely.
- If your work area is not well lighted, obtain the lighting you need before getting started.
- If for any reason you can't get the lighting you need, inform your supervisor immediately.
- To measure illumination in foot candles, use a light meter when one is available.
- If a light meter is not available, you can use your phone to get a general idea of the illumination in your work area by downloading a light meter app that measures illumination in foot candles.
- Make sure that you have at least 5 foot candles of illumination in all your general mechanical construction areas.
- Ensure that you have at least 5 foot candles of illumination in tunnels, shafts, and underground work areas as well.
- In mechanical equipment rooms, make sure you have at least 30 foot candles of illumination.

TOPIC: Hand Injuries – Cut Resistant Gloves #38

POTENTIAL PHYSICAL HAZARDS

- CUTS
- ABRASIONS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Working around and/or handling materials with sharp edges, such as the open ends of steel pipe, ducts, pieces of sheet metal, etc.
- Working with and/or around tools with sharp blades
- Working around equipment with sharp edges

SAFE WORK PRACTICES

- Wear cut-resistant gloves when performing mechanical construction work.
- The only exception should be when you are wearing welding gloves while performing welding and cutting operations.
- Choose the type of cut-resistant gloves you'll need by the type of exposure you'll encounter at your next work task.
- Always remember that no class of cut-resistant gloves can completely protect your hands from all types of cut hazards.
- When selecting your cut-resistant gloves, keep in mind that you want to keep as much flexibility, dexterity, and tactile sensation as possible while providing your hands with the level of protection needed for the work task.
- When performing general mechanical construction work, use a set of gloves that provide Class 2 cut-resistance protection.
- When working with sheet metal, use a set of gloves that provides Class 4 cut-resistance protection.
- When using extremely sharp cutting tools, use a set of gloves that provides Class 5 cut-resistance protection.

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TOPIC: Tool Tethering #39

PRIMARY POTENTIAL PHYSICAL HAZARDS

- STRUCK BY FALLING OBJECTS
- HAND & WRIST FATIGUE/PAIN

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Tools dropped from ladders, aerial lifts, scaffolds, leading edges, etc.
- Difficult to open/use tethering connectors

SAFE WORK PRACTICES

- Tether your tools when working where others could walk underneath your overhead work area.
- Become familiar with, and always carefully follow, the manufacturer's instructions regarding safe tether selection and use.
- Be sure to choose tethers that are properly rated for the weight of the tools that they will be supporting.
- When you are not sure about the weight of a tool, take the time to weigh it before selecting your tether.
- When preparing to use a tether, never exceed the manufacturer's rated load capacity/safety factor.
- Make sure the lanyard attachment points are strong enough to safely support the force of the falling tools.
- When working with more than one tether at a time, use retractable tethers to prevent entanglement.
- Whenever practical, anchor the tether to a secure part of the structure.
- When using heavier tools, always anchor the tether to a secure part of the structure.
- Use quick release tethers when using smaller/lighter tools.

TOPIC: Rollover Protective Structures #40

PRIMARY POTENTIAL PHYSICAL HAZARDS

- STRUCK AGAINST
- CAUGHT IN-BETWEEN

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Use of mechanized materials and earth moving equipment without rollover protective structures in place
- Failure to use a safety belt while operating the equipment

SAFE WORK PRACTICES

- Make sure that all the mechanized equipment you use for moving materials, earth, etc., such as rough terrain forklifts, front end loaders, skid steer loaders, etc., are properly equipped with Rollover Protective Structures (ROPS).
- Always inspect the equipment, including the ROPS each time before you use it.
- Ensure that the manufacturer's name and address, the ROPS number, and the make and model or serial number of the equipment that the ROPS is designed for are permanently attached to the ROPS.
- Make sure that the ROPS on the equipment that you'll be using is designed for that piece of equipment.
- If a ROPS is not designed for the equipment you'll be using, don't use it. Inform your supervisor immediately.
- During your inspection, always check to ensure that a safety belt is in place and in good working condition.
- If you observe any problems, or have any concerns about the equipment, don't use it. Inform your supervisor immediately.
- Never remove a ROPS from the equipment unless you have the proper training, and intend to replace it before the equipment will be used again.
- Always wear your safety belt when operating the equipment.

TOPIC: Unobserved Hazards & Signs, Signals, Barricades #41

POTENTIAL PHYSICAL & HEALTH HAZARDS

- SLIPS – TRIPS – FALLS
- STRUCK AGAINST
- STRUCK BY
- EXPOSURE TO TOXIC OR HAZARDOUS SUBSTANCES

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Simultaneously working in the same area with several other trades
- Failure to observe signs, signals and/or barricades in the work areas

SAFE WORK PRACTICES

- Whenever you are working, watch carefully for signs, signals, and barricades that are there to warn you about hazards that may otherwise go unobserved.
- Always obey the signs, signals, and barricades when you see them.
- When you see a *Danger* sign, be instantly aware that the hazard is immediate and/or imminent.
- When you see a *Caution* sign, be aware that it's there to caution you about potential hazards, or against performing unsafe work practices.
- When you see a *Safety Instruction* sign, be aware that it is there to help ensure injury and non-injury incident prevention.
- When you see a *Notice* sign, pay close attention to its instruction.
- When you see *Accident Prevention* tags, be aware that the tool or equipment is defective and should not be used, or that there is a source of uncontrolled energy that could not be locked out.
- When you are installing or erecting a sign, signal, or barricade, make sure that it is clearly visible to those walking or working in the area, and make sure any writing is easily legible.

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TOPIC: Emergency Action Plans #42

COMMON INCIDENTS THAT MAY TRIGGER IMPLEMENTATION

- FIRES
- HAZARDOUS CHEMICAL SPILLS
- EXCAVATION/TRENCH CAVE-INS
- CONFINED SPACE INCIDENTS
- SEVERE JOBSITE INJURIES
- TORNADOS – HURRICANES – FLOODS
- TERRORIST ATTACKS

PRIMARY RESPONSIBILITY FOR MECHANICAL CONSTRUCTION WORKERS

- Become familiar with the contents of your company's site-specific emergency action plans before an emergency occurs

SAFE WORK PRACTICES

- Make sure that you have read and understand your company's site-specific emergency action plan. If you have any questions about it, be sure to ask your supervisor.
- If you're working in an industrial process facility or any other established facility, make sure that you are familiar with its emergency action plan.
- Always know who to contact, and how to contact them immediately, if an emergency does occur. There will likely be various contacts depending on the type of emergency.
- No matter where you are working, ensure that you thoroughly understand the emergency evacuation routes and procedures.
- Know the name of the person who is responsible for accounting for all of the structure's occupants, and recognize where to meet up with him.
- Identify where you can quickly access all necessary emergency telephone numbers, and the location of the nearest working landline phone in case you can't get good cell phone reception where you are working.
- Know the address of your location and how to guide emergency response personnel to the site itself, and to the exact location of the emergency once on the site. Identify landmarks in route to the site, and at the site itself to help you guide the response team.
- Use landmarks, such as major road crossings, railroad tracks, water towers, conspicuous buildings, cranes, trailers, easily identified building entrances, etc.

TOPIC: Waste Management Plans #43

MOST COMMON MECHANICAL CONSTRUCTION WASTE MATERIALS

- METALS
- CARDBOARD PACKAGING
- PLASTIC SHEETING – SHRINK WRAP PACKAGING
- CONCRETE PIECES

PRIMARY RESPONSIBILITIES FOR MECHANICAL CONSTRUCTION WORKERS

- Become familiar with the contents of your company's waste management plan
- Become familiar with the facility's waste management plan where applicable

SAFE WORK PRACTICES

- Make sure that you have read and understand your company's waste management plan. If you have any questions about it, be sure to ask your supervisor.
- If you're working in an industrial process facility or any other established facility, make sure that your company's waste management plan is in sync with the facility's plan. If not, work with your supervisor to adjust your waste management practices accordingly.
- Understand the difference between hazardous and non-hazardous waste materials.
- Make sure that you have the proper training before working with any type of hazardous waste material.
- Be sure to store each different type of waste material, such as reusables, recyclables, and landfill bound materials, properly.
- Label all waste containers with clearly visible and legible labels to prevent improper mixing of reusable, recyclable, and/or landfill bound waste materials.
- Ensure that dumpsters, bins, receptacles, etc. are properly covered to prevent scattering of solid waste materials, and runoff of liquid waste.
- Inspect dumpster and recycling bin contents on a regular schedule, and remove materials that are in the incorrect dumpsters/bins.

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TOPIC: Helicopter Picks #44

POTENTIAL PHYSICAL HAZARDS

- STRUCK BY
- CAUGHT IN-BETWEEN
- OBJECTS IN EYES
- EXCESSIVE NOISE LEVELS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Hooking the load
- Guiding the load
- Receiving the load
- Unhooking the load

SAFE WORK PRACTICES

- Make sure that you have the proper training before participating in a helicopter pick.
- Carefully and deliberately follow your company's helicopter pick procedures.
- Always wear reasonably snug fitting clothing that won't flap in the down wash.
- Wear a hardhat with chin strap, safety glasses with side shields, and hearing protection.
- Carefully inspect all rigging equipment prior to rigging the pick.
- If any rigging components are worn or damaged, don't use them. Immediately follow your company's procedures for taking defective equipment out of service and replace the damaged equipment before the pick.
- Ensure that you have a safe route of access and egress to and from the pick location.
- Check the work area and access/egress routes for housekeeping issues, and remove any potential slip, trip, and/or fall hazards.
- When working on rooftops, always ensure that an acceptable method of fall prevention or protection is in place.
- Ensure that there is a reliable system of constant communication with the pilot.
- When visibility is poor and it can't be corrected, use a communication system that does not involve signaling.
- Avoid performing initial rigging operations directly under a hovering helicopter.
- Perform only hooking/unhooking of the load while directly beneath a hovering helicopter.
- Use taglines to safely guide each suspended load, but be sure to follow your company's procedures for protecting yourself from static charges. The suspended load may have to be grounded, or you may have to wear specialized non-conductive gloves.

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TOPIC: Power Transmission & Distribution #45

POTENTIAL PHYSICAL HAZARDS

- ELECTRICAL SHOCK
- ELECTROCUTION

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Work in close proximity to power transmission and distribution lines and/or equipment, and other energized parts providing electrical service to buildings and facilities

SAFE WORK PRACTICES

- Before starting work in a new area, especially in a mechanical room, evaluate the area looking for power transmission and distribution hazards.
- Locate all energized lines, circuits and equipment, including power communications, cable television, fire alarm circuits, etc.
- Treat all electrical equipment and powerlines as if they are energized.
- Maintain a safe distance from electrical equipment and powerlines at all times.
- Since safe approach distances vary depending on voltage, type of current (AC or DC), and whether there are exposed, energized conductors and/or circuit parts, be sure to check with your supervisor about safe approach distances to the electrical equipment and/or powerlines in your work areas.
- When you need to access a work area and can't do so without violating the safe approach distance, inform your supervisor so that he can get it powered down, tested, and locked out before you start to work in that area.
- If the electrical equipment or powerline can't be powered down, make sure that you get the specialized training and specialized protective equipment necessary to do the work safely in close proximity to the equipment/powerline.
- When preparing to operate mechanized equipment anywhere near powerlines, determine the minimum safe clearance distance, and never exceed it.

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TOPIC: Fixed Scaffolds #46

POTENTIAL PHYSICAL HAZARDS

- FALLS FROM ELEVATIONS
- STRUCK BY FALLING OBJECTS
- ELECTRICAL SHOCK

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Setting up fixed scaffolds
- Getting on and off fixed scaffolds
- Working under fixed scaffolds

SAFE WORK PRACTICES

- Before starting work from any fixed scaffold for the first time, take the time to inspect it for obvious inadequacies.
- Check to ensure that the scaffolding system isn't set up too close to overhead powerlines or electrical equipment.
- Make sure that the scaffolding system is set up properly on a firm, level base.
- Look at the work areas on the scaffold to ensure they are properly planked or decked.
- When applicable, be sure that the scaffold's guardrail systems are in place, and properly installed.
- Evaluate the established methods of getting on and off the scaffold. If a method doesn't appear safe, don't use it. Inform your supervisor about it immediately.
- Look closely at the scaffold system's guys and ties to ensure that they are properly installed and in good condition.
- Find out from the designated *Competent Person* for scaffolds what the rated load capacity is for each particular scaffold, and make sure that it is never exceeded.
- Make sure that you are always protected by a fall prevention or protection system while working on fixed scaffolds. If there is no guardrail system in place, be sure to use a fall arrest system or some other acceptable form of fall protection.
- If any part of the fixed scaffold system appears damaged or inadequate, or if you're not sure about it, don't use it. Ask your supervisor about it immediately.

TOPIC: Working Over Water

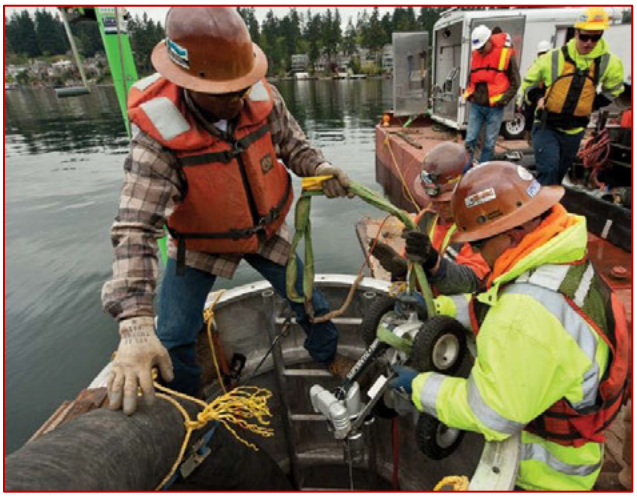
#47

POTENTIAL PHYSICAL HAZARDS

- FALLING
- DROWNING

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Pipe installation over water
- Pipe cleaning over water
- Pipe inspections over water



SAFE WORK PRACTICES

- Before starting to perform work over any body of water, become familiar with the potential hazards and the protective measures you'll need to protect yourself from falling in and drowning.
- When you are working over water where the danger of drowning exists, be sure to wear a U.S. Coast Guard approved life jacket or buoyant work vest.
- Always inspect your life jacket or life vest before and after each use.
- If you identify any defects in the device, don't use it. Immediately follow your company's procedures for taking defective equipment out of service.
- Before you start your work, make sure there are ring buoys readily available in conspicuous locations at least every 200 feet in the affected areas.
- Ensure that each ring buoy is attached to at least 90 feet of line.
- Check to ensure that at least one lifesaving skiff is always available, in good working condition, and easily accessible from any affected work areas.

TOPIC: Extreme Heat on Building Rooftops #48

POTENTIAL HEALTH HAZARDS

- HEAT STROKE
- HEAT EXHAUSTION
- HEAT CRAMPS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Installing heating, ventilation, and air conditioning equipment on building rooftops in the summer months
- Other mechanical construction work on building rooftops during the summer months

SAFE WORK PRACTICES

- Pay attention to the weather forecasts for heat and humidity.
- When extremely hot and/or humid weather is anticipated, plan ahead to protect yourself from overexposure to the heat and/or humidity.
- Start hydrating way ahead of time. Several days ahead is ideal if it's practical.
- Avoid drinking alcohol and other dehydrating beverages while you are in the process of getting super hydrated.
- Plan the work first thing in the morning, or in the late afternoon or early evening.
- Wear clothing that will keep you as cool as possible, but that will also protect you from UV radiation. When it's so hot that you can't wear a long-sleeve shirt, be sure to use sunscreen (at least SPF 15) on all exposed skin.
- Use commercial cooling products, such as hardhat cooling pads and cooling sweat bands, cooling vests, cooling towels, neck shades, etc.
- Stay in the shade as much as possible.
- Shade your work area with a tarp, free standing cover, or something similar whenever it's practical to do so.
- Take frequent breaks in shady, cool locations.
- Stay thoroughly hydrated throughout each workday involving exposure to extreme rooftop heat.

TOPIC: Workplace Violence #49

POTENTIAL PHYSICAL HAZARDS

- GUN SHOTS – LACERATIONS – STRUCK BY OBJECTS

PRIMARY EXPOSURES FOR MECHANICAL CONSTRUCTION WORKERS

- Performing work at, or near existing facilities where people who are not related to the construction project are present
- Working around severely disgruntled or unstable individuals.

SAFE WORK PRACTICES

- Always be aware of the people around you, and specifically, their actions and statements. If someone appears to be excessively disgruntled, and or makes a statement about carrying out any type of physical threat, never assume that the threat is idle. Stop what you're doing and inform your supervisor immediately.
- Likewise, if someone's actions consistently appear to be those of an unstable individual, inform your supervisor immediately.
- Pay close attention to those who feel they have suffered a personal or professional loss, such as a relationship breakup, having been passed over for a promotion, involvement in a recent out-of-character altercation with a supervisor, etc.
- Keep your cell phone with you so that you can receive warning calls, or call for help if a workplace violence incident occurs.
- If you determine that a workplace violence incident is unfolding, assess the situation, believe everything you see and hear, and determine the best way for you to survive the situation.
- You should either get out of the area, hide or fight, in that order.
- If there is an active shooter and you believe you can get out of the area, move as quickly as you can. Leave your belongings behind and get where the shooter can't see you.
- If you can't run, try to find a good place to hide and call 911. It's best if the hiding place can be locked or barricaded.
- If you're trapped in a location with other victims, spread out to make hitting the targets harder for the shooter.
- Look for objects that you can use as weapons, and quietly develop an action plan. If other willing individuals are present, include them in the action planning.
- If you're cornered, attack the active shooter. The more individuals who are involved in a simultaneous attack, the better your chances of survival.

TOPIC: Recordable Injuries/Illnesses #50

WHAT DOES RECORDABLE MEAN?

- Recordable injuries/illness are work-related injuries/illnesses that meet established criteria, and therefore must be recorded on OSHA injury/illness recordkeeping forms or equivalent forms. Recordable injures/illnesses must also be reported to OSHA electronically.

WHAT ARE THE RECORDKEEPING FORMS?

- OSHA 300 Log – Detailed listing of all work-related injuries/illness in a calendar year
- OSHA 300 A Summary – Summary of all work-related injuries/illness from the 300 log
- OSHA 301 Incident Report Form – Description of each individual injury/illness

WHAT CONSTITUTES A RECORDABLE WORK-RELATED INJURY OR ILLNESS?

- The injury/illness must be work-related.

WHAT CONSTITUTES "WORK RELATED?"

- Injuries/illness are considered work-related if they occurred in the workplace itself (physical location).
- Injuries/illnesses are considered work-related if they occur in another location where the victim was working, or was present as a condition of employment.
- Injuries/illnesses are considered work-related if they are caused by equipment and/or materials used by the victim during the course of work.

TO BE WORK-RELATED

- The injury/illness must have resulted in *death*; or
- The injury/illness must have resulted in *days away from work*; or
- The injury/illness must have resulted in *restricted work*; or
- The injury/illness must have resulted in *transfer to another job*; or
- The injury/illness must have resulted in *medical treatment beyond first aid.*

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TOPIC: Your Right to Report Injuries/Illnesses #51

WHAT DOES "REPORT" MEAN?

- To officially inform your employer about your work-related injury or illness

HOW ARE MECHANICAL CONSTRUCTION WORKERS INVOLVED?

- All employers that are affected by OSHA's rule on *Recording and Reporting of Occupational Injuries and Illnesses* are required to involve all their workers in the recordkeeping process.
- You must be informed by your employer about all your rights regarding the reporting of your work-related injuries/illnesses.
- You are expected to report all your work-related injuries/illnesses.

WHAT ARE YOUR RIGHTS AS A MECHANICAL CONSTRUCTION WORKER?

- You have the right to know how to report a work-related injury/illness.
- You have the right to a "reasonable procedure" for reporting your work-related injuries/illnesses.
- You and your representative have the right to access your employer's injury and illness records.
- You have the right to reporting procedures that do not deter or discourage you from accurately reporting your work-related injuries/illnesses.
- You have the right to report your work-related injuries/illnesses without retaliation.
- You have the right to know that your employer may not discharge or discriminate against you in any manner for reporting your work-related injuries/illnesses.

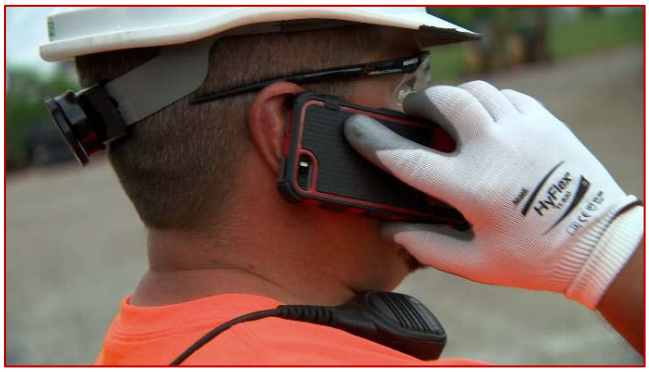
TOPIC: How to Report Injuries/Illnesses #52

WHICH INJURIES/ILLNESSES SHOULD YOU REPORT?

- Report all your work-related injuries/illnesses.
- If you're not sure whether an injury/illness is recordable, report it anyway. Your company's designated person will determine whether it's recordable.

WHO SHOULD YOU CONTACT TO REPORT YOUR INJURIES/ILLNESSES?

- Learn who your company has designated to receive information regarding work-related injuries/illnesses. It may be your foreman, a project manager, or your company's occupational safety and health professional.



WHAT INFORMATION SHOULD YOU REPORT WHEN IT'S APPLICABLE?

- Your name, address, birthdate, and date of hire
- The name, address, and telephone number of the physician or other health care provider who treated you
- Whether you were treated in an emergency room
- Weather you were hospitalized overnight
- The date the injury/illness occurred
- The time you began work the day the injury/illness occurred
- The time the injury/illness occurred
- What you were doing just before the injury/illness occurred
- A detailed description of what happened
- A detailed description of the injury/illness itself
- The type of object or substance that directly harmed you