

SAFETY ORIENTATION

Instructor:
Date:



SAFETY ORIENTATION

Section 1:
Safety Leadership

Uncompromising Safety Leaders

- Have courage
- Are comfortable being out in front while everyone else is behind them
- Take a stand when no one else will
- Get their energy from transforming and challenging the status quo

Uncompromising Safety Leaders

- Believe that all incidents are preventable
- Believe their commitment to safety is non-negotiable
- Believe everyone is empowered to be a safety leader
- Create the conditions for everyone to safely return home each night

Uncompromising Safety Leaders

- Are familiar with and follow all company and site safety rules
- Practice situational awareness
 - If they see something at-risk, they address and/or report it immediately
- Contribute and participate in toolbox talks and other safety discussions



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Section 2:
Project-Specific Safety
Guidelines

Grounds for Removal from the Project

- Failure to follow policies and procedures
- Failure to wear your PPE
- Fighting
- Alcohol or Drug Use or Possession
- Weapons Possession

Safety Policy and Goals

- All incidents are preventable.
- Everyone returns home without injury each day.
- Everyone is empowered to prevent incidents.
- Our goal is to **create the conditions** to ensure the safety of our employees, subcontractors, customers, and the general public.

Project-Issued Safety Fines and Violations

Placeholder

- **Insert your company-specific and/or project-specific safety fines and violations on this slide**

Substance Abuse Policy

- We are committed to maintaining a safe and drug-free workplace
- We conduct post-incident, random and for cause testing.
- For more info, including our Employee Assistance Program (EAP), contact your HR rep
- More info can be found at <http://www.drugfreeconstruction.org/>

Project-Specific Emergency Action Plan

Insert project / company specific info here

Exit Routes

Muster Point

Medical Information/ Local Hospital

- Insert exit route here
- Insert muster point here
- Insert medical info/local hospital info here

Cell Phone Policy

Cell phone use is prohibited while:

- Conducting job responsibilities
- Operating company vehicles or machinery
- Standing within 10 feet of moving vehicles



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Section 3: General Worksite Safety

Worksite Hazards

OSHA's Fatal Four:

- Falls
 - Electrocutation
 - Caught in/between objects (trench collapse, pinch points)
 - Getting struck by an object (vehicles, falling objects)
-
- Do not enter restricted areas without permission
 - Ensure work has stopped before entering an area.
 - Do not work under suspended loads

Stop Work Authority

- Stop Work Authority empowers employees and contract workers with the ability and obligation to stop work if conditions are deemed at-risk
- If you see something that doesn't look right, say something to authorities or your supervisor

Pre-Job Planning

- Also known as:
 - Job Safety Analysis (JSA)
 - Activity Hazard Analysis (AHA)
 - Pre-Task Plan (PTP)
- A step by step analysis of a specific activity, the potential hazards associated with the activity and the tools / methods necessary to mitigate those hazards
- Consider tasks that will be performed by other trades in proximity to your work

Globally Harmonized System (GHS)

- Ensures information about chemicals, including information and ingredients, can be universally communicated
- Formally known as the Hazard Communication Standard (HCS) or Haz-Com

Safety Data Sheets (SDS)

- Provides all information necessary to safely handle a particular chemical
- Must be readily accessible to any employee using a hazardous chemical
- Any chemical identified with a label that states “Danger, Caution, or Warning” must have a SDS

Safety Data Sheets (SDS)

Most useful sections to know:

- Section 1: Identification
 - Chemical name, emergency contact info, recommended use, etc.
- Section 2: Hazard(s) Identification
 - All hazards regarding the chemical; required label elements
- Section 4: First Aid Measures
 - Important symptoms/effects, acute, delayed; required treatment
- Section 5: Fire-Fighting Measures
 - Suitable extinguishing techniques, equipment, chemical hazards from fire

Safety Data Sheets (SDS)

- Section 6: Accidental Release Measures
 - Emergency procedures; protective equipment; proper methods of containment and cleanup
- Section 7: Handling and Storage
 - Precautions for safe handling and storage, including incompatibilities
- Section 8: Exposure Controls/Personal Protection
 - OSHA's Permissible Exposure Limits (PELs), ACGIH Threshold Limit Values (TLVs), and any other exposure limit used or recommended by the chemical manufacturer along with personal protective equipment (PPE) requirements

Housekeeping

- Keep your work area clean at all times
- Place cords and hoses overhead to prevent tripping hazards
- Dispose of trash in the proper containers
- Bend or back out nails in scrap lumber

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Section 4:
Occupational Health
and Wellness

Silica

- Employers must replace crystalline silica materials with safer substitutes whenever possible
- When feasible, employers must use engineering or administrative controls such as local exhaust ventilation and blasting cabinets to reduce exposures below the PEL
- Use protective equipment or other protective measures if engineering controls are not adequate
- Use all available work practices to control dust exposures, such as water sprays and integrated water delivery systems

Silica

- Participate in training, exposure monitoring, health screening, and surveillance programs to monitor any adverse health effects caused by crystalline silica exposures
- Be aware of the operations and job tasks that create crystalline silica exposures in your workplace environment and know how to protect yourself
- Be aware of the health hazards related to exposures to crystalline silica
- Be aware that smoking adds to the lung damage caused by silica exposures

Silica

- Do not eat, drink, smoke, or apply cosmetics in areas where crystalline silica dust is present
 - Wash your hands and face outside of dusty areas before performing any of these activities
- Wear only a N95 NIOSH certified respirator if respirator protection is required
 - Do not alter the respirator
 - Do not wear a tight-fitting respirator with a beard or mustache that prevents a good seal between the respirator and the face
- Wear disposable or washable work clothes and shower if facilities are available
 - Vacuum the dust from your clothes or change into clean clothing before leaving the work site

Blood Borne Pathogens

- If it is reasonably anticipated employees will be exposed to blood or other potentially infectious materials while using first-aid supplies, employers should provide personal protective equipment (PPE) including, but not limited to:
 - Gloves
 - Gowns
 - Face shields
 - Masks
 - Eye protection

Injury Reporting

- Report all work related injuries to your supervisor immediately
- Injury types include, but are not limited to:
 - Minor cuts
 - Scrapes
 - Scratches
 - Burns
 - Other treatments that require minimal training or technology to administer
- Know the location of first aid supplies



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Section 5: Personal Protective Equipment

Head Protection

- Wear hard hats where there is a potential for:
 - Objects falling from above
 - Bumps to the head from fixed objects
 - Accidental head contact with electrical hazards
- Routinely inspect hard hats for:
 - Dents
 - Cracks
 - Deterioration
- Replace after a heavy blow or electrical shock
- Maintain in good condition

Eye Protection

- Must be worn onsite at all times
- Prescription glasses, with side shields, must meet minimum ANSI requirements

Hearing Protection

- OSHA recommends that workplace noise levels be kept below 90 dBA as an 8-hour time-weighted average
- As the noise level increases, it damages your hearing more quickly
- If a sound level meter is not available use the 2-to-3 foot rule:
 - Stand about an arm's length away from your coworker
 - If you have to raise your voice to be heard 2-3 feet away, assume the sound level is at or above 90 dBA

Foot Protection

- Composite toe footwear is recommended
- A minimum 6" boot is highly recommended

Hand Protection

- Insert your company hand protection policy here

Respiratory Protection

- Employers must develop and implement a written respiratory protection program with required work specific procedures
- Employers must use NIOSH-certified respirators
- Employees must be medically approved and trained before they are assigned a task requiring respirator use
- Employees must be fit tested if using a negative or positive pressure tight-fitting facepiece

High Visibility Clothing

- At a minimum, a class II reflective vest should be worn while working onsite
- High visibility clothing may be worn in lieu of the vest



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Section 6:
Fall Protection/
Working at Heights

Fall Protection

Falls are the #1 cause of injury and death on construction sites

- All employees exposed to a fall > 6', must be **effectively tied off**
- **That means the fall distance and anchor point have been calculated / approved by a competent person and is deemed adequate**
- Harness and lanyards must be inspected daily
- Remove from service if defects are found

Aerial Lifts

Articulating boom lifts

- Must be tied off while inside the basket, even if boom is not extended
- Must be trained on the specific model that you are operating
- Operators must remain in the lift basket at all times (feet on the floor, not railing)

Scissor lifts

- Follow manufacturer's, site guidelines for fall protection
- Must be trained on the specific model that you are operating
- Overhead work warnings (signs, barricades), should be in position

Guardrail Systems

- Typically are 42” in height (+-3”) with a midrail installed at least 21” in height
- Must be able to withstand 200 lbs. of force, in any direction, without failure
- Top rail deflection must not exceed 3”
- Wire rope must be at least ¼” in diameter and flagged every 6’ for visibility

Personal Fall Arrest Systems (PFAS)

- PFAS must be inspected prior to each use for wear, damage, and other deterioration
- Defective equipment must not be worn and must be immediately removed from service
- Lanyards must be shock absorbing and must be attached to the D-ring in the middle of the back at the shoulder level
- Anchor points must be able to withstand at least 5,000 lbs.
 - Think the weight of a pickup truck

Personal Fall Arrest Systems (PFAS)

- The employer must provide for prompt rescue of employees in the event of a fall
- PFAS cannot be attached to guardrail systems
- Positioning devices must be rigged so that the employee cannot fall more than 2'
- Positioning devices must be connected to an anchor capable of supporting at least twice the load impact or 3,000 lbs., whichever is greater

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Section 7:
Fire Safety

Fire Protection

- Fire extinguishers must be conspicuously located and periodically inspected
- Travel distance to an extinguisher must not exceed 100'
- In a multistory building, extinguishers must be located at each stairwell on every level
- A fire extinguisher must be within 50' of any outdoor storage of flammable liquids exceeding 5 gallons

Flammable Liquids

- Flammable liquids must be stored in metal safety cans containing a spring loaded top and a flash arrestor
- Flammable liquids must not be stored near stairwells or other access / egress points
- Flammable liquids may not be stored in plastic containers
- No more than 25 gallons of flammable liquids may be stored in a room outside of an approved storage cabinet
- Outdoor storage must not exceed 1,100 gallons, in any one area, and be positioned at least 20' from any building

Liquefied Petroleum (LP-Gas)

- LP-Gas containers must not be stored within buildings, regardless of whether they are full or empty
- When stored outdoors, containers must be in a suitable, well ventilated enclosure
- At least one 20-BC fire extinguisher must be in place
- Outdoor storage distance from buildings is as follows:
 - < 500 lbs 0'
 - 501-6,000 lbs 10'
 - 6,001-10,000 lbs 20'
 - > 10,000 lbs 25'



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Section 8: Equipment and Tools

Heavy Equipment

- Do not operate vehicles in reverse with an obstructed rear view unless it has a reverse signal alarm capable of being heard above ambient noise levels or a signal observer indicates that it is safe to move
- Be aware of blind spots
- Make eye contact with the operator when entering their work area
- Only use equipment for its intended purpose
- Maintain a minimum 10' safe working distance from electric lines

Ladders and Stairways

- A ladder or stair must be provided at all work points of access where the break in elevation is $> 19''$ and no ramp, runway, sloped embankment, or personnel hoist is provided
- A double cleated ladder or two or more separate ladders must be in position when there are 25 or more employees in an elevated work area

Ladders

- Maintain a 3-point contact
 - Two hands and a foot, or two feet and a hand when climbing/ descending a ladder
- Stay near the middle of the ladder and face the ladder while climbing up or down
- Only put ladders on a stable and level surface that is not slippery
- Extend the top of the ladder three feet above the landing

Ladders

- Stepladders must be opened fully and locked while in use
 - They cannot be used as straight ladders
- Ladders must be secured to prevent accidental displacement
- Ladders must be used as designed
 - Not as scaffold planks, “bridges”, etc.
- Set the ladder at the proper angle
 - When a ladder is leaned against a wall, the bottom of the ladder should be one-quarter of the ladder’s working length away from the wall

Scaffolds

- Each scaffold and scaffold component must support— without failure— its own weight and at least 4 times the maximum intended load applied or transmitted to it
- A qualified person must design the scaffolds, which are loaded in accordance with that design
- Each platform must be planked and decked as fully as possible with the space between the platform and uprights not more than 1 inch
- Scaffold planking must be able to support, without failure, its own weight and at least four times the intended load

Scaffolds

- Supported scaffolds are platforms supported by legs, outrigger beams, brackets, poles, frames, or similar rigid support
- The structural members must be plumb and braced to prevent swaying and displacement
 - Poles, legs, posts, frames, and uprights
- Supported scaffolds with a height to base width ratio of more than 4:1 must be restrained by guying, tying, bracing, or an equivalent means
- Supported scaffolds' poles, legs, posts, frames, and uprights must bear on base plates and mud sills, or other adequate firm foundation

Scaffolds

- Guardrails or PFAS must be used when the fall hazard exceeds 6'
- Scaffolds must be inspected by a competent person before each shift and should be tagged that it's safe to access
- Scaffolds must not be moved while employees are working from them
- Cross braces cannot be used for access / egress

Cranes

- Ground conditions
 - The controlling entity must ensure that ground conditions are safe for the crane to be assembled and used
 - The Assembly / Disassembly (A /D) director determines if safe ground conditions are present
- Cranes must remain a minimum of 10' from overhead high voltage (OHHV) lines
- The employer must assume the OHHV lines are energized unless the utility confirms that they are not
- A competent person must inspect the crane prior to each shift

Cranes

- Operators must be certified by one of four entities:
 - An accredited crane operator certification testing organization
 - An audited employer program
 - Qualification by the U.S military
 - Licensing by a government entity
- Swing radius must be barricaded to prevent accidental contact
- The employer must ensure that each signal person meets the standard's qualification requirements

Hoisting and Lifting

- Only certified riggers are allowed to control loads
- Tag lines must be used to control loads
- Alterations and modifications may not be made to any material or personnel hoists unless approved by the manufacturer
- Signal persons must be qualified by the employer
- Only one person may signal a crane at a time

Hand and Power Tools

- Power tools must be fitted with guards and safety switches
- When replacing grinding wheels, make sure the RPM rating on the wheel exceeds the motor rating
- Exposed moving parts of power tools need to be safeguarded including, but not limited to:
 - Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating, or moving parts

Hand and Power Tools

- To protect user from shock and burns:
 - Electric tools must have a three-wire cord with a ground
 - Must be plugged into a grounded receptacle, be double insulated, or be powered by a low-voltage isolation transformer
 - Third prong must never be removed from the plug
- When using pneumatic tools:
 - A safety clip or retainer must be installed to prevent attachments such as chisels on a chipping hammer from being ejected during tool operation

Hand and Power Tools

- If an air hose is more than 1/2-inch in diameter:
 - A safety excess flow valve must be installed at the source of the air supply to reduce pressure in case of hose failure
 - Pneumatic power tools must be secured to the hose with a whip-check device to prevent accidental disconnection
- Powder-actuated tools operate like a loaded gun and must be treated with extreme caution
- Proof of training must be with the operator at all times

Materials Handling

Back Injury Prevention

- Have materials delivered as close to where they will be used as possible
- Use pallet jacks and hand trucks to transport heavy items
- Ask for help if lifting heavy objects
- Maintain neutral and straight spine alignment whenever possible

Materials Handling

Proper Lifting Procedure

- Kneel on one knee and pull load onto knee before standing
- Bending at the knees, not the waist, helps maintain proper spine alignment
- Place materials that are to be manually lifted at "power zone" height, about mid-thigh to mid-chest
- Turn your whole body, not just your waist, when lifting or lowering materials
- Move items close to your body and use your legs when lifting an item from a low location

Welding and Cutting

- Valve protection caps shall be in place and secured when transporting, moving, and storing compressed gas cylinders
- Compressed gas cylinders shall be secured in an upright position at all times
- Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials, a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour
- Torches shall be lighted by friction lighters or other approved devices, and not by matches or from hot work

Welding and Cutting

- Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them; when this is impractical, fire resistant shields shall be provided
- No welding, cutting, or heating shall be done where the application of flammable paints, or the presence of other flammable compounds, or heavy dust concentrations creates a hazard
- Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use

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Section 9: Working Over or Near Water

Working Over or Near Water

- Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard-approved life jacket or buoyant work vests
- Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet
- At least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water
- Landscapers, and other employees working on slopes adjacent to water, should take additional precautions



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Section 10:
Electrical Safety

Electrical Safety

- Look for overhead power lines and buried power line indicators
- Stay at least 10 feet away from overhead power lines and assume they are energized
- Use factory-assembled cord sets and only extension cords that are 3-wire type
- Use only cords, connection devices, and fittings that are equipped with strain relief
- Use ground-fault circuit interrupters (GFCIs) on all 120-volt, single-phase, 15- and 20-ampere receptacles, or have an assured equipment grounding conductor program (AEGCP)

Electrical Safety

- Extension and power cords shall be protected from sharp edges and potential pinch points
- Temporary lights must be protected by cage guards
- Extension cords must have a strain relief device to prevent excessive pull from being transmitted to the terminal screws
- Electrical tape cannot be used to repair nicks in extension and power cords
- Circuits must be locked and tagged out prior to employees working on them

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Section 11: Motor Vehicles and Maintenance of Traffic

Motor Vehicles and Mechanized Equipment

- All vehicles and equipment must be checked at the beginning of each shift to ensure that all parts and accessories that affect the safe operation are free from defects
- Any vehicle or equipment, with an obstructed view to the rear, must have a back up alarm or a spotter in place while backing
- Heavy machinery or equipment beds must be blocked against falling or pinching hazards while employees are working under them

Traffic Control and Flagging

- All traffic control must be performed in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) along with state and local guidelines
- Flaggers must use the STOP / SLOW paddle when flagging, not an orange / red flag

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Section 12: Excavation and Trenching

Excavations and Trenching

- Specific excavation requirements:
 - Contact “Miss Utility” at 811 to locate underground utilities prior to excavating
 - Employees working in an excavation >5’ in depth must be protected by a sloping or shoring system
 - Soil must be classified by a competent person using at least one manual and visual test
 - Excavations must be inspected daily by a competent person
 - Shoring systems must extend at least 2’ above the surrounding surface so as to prevent material or debris from entering the excavation



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Section 13: Permits

Hot Work Permit

- Insert company policy here

Confined Space Entry

- Confined spaces have three criteria:
 - Large enough for a worker to enter
 - Limited means of entry or exit
 - Not designed for continuous occupancy
- Before workers can enter a confined space, employers must provide pre-entry planning, including:
 - Having a competent person evaluate the work site for the presence of confined spaces, including permit-required confined spaces

Confined Space Entry

- Once the space is classified as a permit required confined space, identify:
 - The means of entry and exit
 - Proper ventilation methods
 - Elimination or control of all potential hazards in the space

Work Permit

- Add specific company policy here



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Section 14:
Concrete and Masonry
Construction

Concrete and Masonry Construction

- No employee shall be allowed to work under concrete buckets
- To the extent practical, elevated concrete buckets shall be routed so no employee, or the fewest number of employees, are exposed
- Concrete troweling machines must be equipped with a “dead man” switch
- Protruding rebar, onto which employees could fall, must be protected against impalement hazards

Concrete and Masonry Construction

- A limited access zone (LAZ) shall be established whenever a masonry wall is being built
- The zone shall be equal to the height of the finished wall plus 4'
- All masonry walls > 8' must be braced to prevent collapse
- Masonry saws must be guarded with a semicircular guard over the blade



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Section 15:
Steel Erection

Steel Erection

- **General requirements:**

- Each employee engaged in steel erection on an unprotected deck > 15' must be protected by PFAS, guardrail or safety net systems
- Connectors working more than 2 stories or 30', whichever is less, must be protected by PFAS, guardrail or safety net systems
- Best practice: employees must be protected at 6'
- Shear connectors cannot be installed until after metal decking is placed

Steel Erection

- Columns must be anchored with at least 4 anchor bolts, structural members must have at least 2 bolts
- Controlled decking zones (CDZ) must be clearly marked and used only by employees in leading edge work
- Many companies require a 6' fall protection requirement rule, regardless of the type of work performed

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Conclusion and
Final Questions

Conclusion

- Safety is everyone's responsibility!
- If you see something, say something
- You can contribute to saving 800 lives per year

Thank you!

- Please contact (**insert instructor name and contact information**) for further information