New Hire Orientation

DVD Supplemental Material
&
Additional Safety Topics

R. OLSON

R. Olson Construction Company
New Hire Orientation Training Checklist

Employee Name: _____ Date of Hire: _____

This checklist is to certify that I have reviewed or had the following items discussed with me.

New Hire Orientation DVD Topics	**Yes**	**No**
1. Roles & Responsibilities and Disciplinary Policy *	❑	❑
- Safety Culture and Safe Work Practices	❑	❑
- OK to report unsafe acts or conditions without reprimand	❑	❑
2. Incident and Injury Reporting Policy - Must be reported same day *	❑	❑
3. General Safety Rules - Review Operations and Work Site Safety Regulations *	❑	❑
& Workplace Violence and Harassment Policy/PPE *	❑	❑
4. Proper Lifting Techniques - Material Handling / Back Safety *	❑	❑
5. Hazard Communication Program *	❑	❑
6. Personal Protective Equipment (PPE) - Care and Use *	❑	❑
7. Respiratory Protection: Voluntary Use (Appendix D) *	❑	❑
8. Silica Exposure Control Plan *	❑	❑
9. Ladder Safety *		
- Safe Setup and Use	❑	❑
- A-Frame or Step Ladder	❑	❑
- Extension Ladder	❑	❑
10. Fall Protection *		
- Guard Rails	❑	❑
- Harnesses and Lanyards	❑	❑
11. Scaffold Safety *	❑	❑
12. Final Wrap Up		
- Do not Operate any Equipment you are not Trained to Operate	❑	❑
- Ask for Training if you are unfamiliar with Process or Equipment	❑	❑
- Report any Unsafe Acts and/or Work Conditions	❑	❑
- The Company's Zero Tolerance for Workplace Violence	❑	❑
- Have the PPE you need to do your Work Safely	❑	❑

* - See the New Hire Orientation booklet for further information on this topic

Additional Safety Topics

These sheets can be found at the end of the New Hire Orientation Booklet.	**Yes**	**No**
Please check Yes, to verify you have read and understand these additional topics: Excavations, Trench Protection, Confined Space, Electrical Cord, GFCI vs. Circuit Breaker, Lockout/Tagout, Housekeeping & Defensive Driving	❑	❑

Employee Name: _____

Employee Signature: _____

Trainer Signature: _____

Orientation Date: _____

RETURN YOUR SIGNED FORM TO YOUR SUPERINTENDENT TO BE ISSUED YOUR HARDHAT SAFETY STICKER.

R Olson Construction Co.
New Hire Orientation Training Supplements

The items following this page are intended as training aids for the New Hire Orientation process. They are to be used to walk new employees through the New Hire Orientation Training Checklist

Roles & Responsibilities

This section lists the responsibilities of the employer and employees. These responsibilities are to be taken seriously at all times.

Employer's Responsibility

R Olson Construction Co.'s pre-eminent obligation is to provide a safe and healthful work environment. This can be accomplished through training and information-provision to all levels of employees regarding proper work practices and safe operating practices. Accomplishment of this objective is to be checked through regular inspections of facilities and equipment where unsafe conditions might be found. It is the policy of R Olson Construction Co. to provide a place of employment free from recognized hazards which may cause illness, injury, or death to any employee. It is also this company's policy to establish an effective and on-going safety program incorporating educational and monitoring procedures maintained to teach safety, correct deficiencies, and provide a safe, clean working environment. All company supervisors, managers, directors, and officers are responsible for the enforcement of safety policies and practices. They must ensure that their staff members are trained in appropriate safety procedures.

Employee's Responsibility

It is the employee's responsibility to follow all safety rules and policies, and work safely at all times. It is the employee's responsibility to report or correct unsafe equipment, practices, and events. Safety is everybody's business, all the time. All employees have a responsibility to themselves and to the company for their safety and the safety of their coworkers. All employees are required to:

- Comply with all federal, state, and local rules and regulations relevant to their work.
- Observe all company rules, regulations, and policies related to the efficient and safe performance of their work.
- Incorporate safety into each job function and live by this philosophy in the performance of job duties.
- Report or correct unsafe equipment and practices.
- Report any accidents that occur while on the job.

Employees will not face disciplinary action for the reporting of unsafe acts or conditions.

Disciplinary Policy

All safety rules, procedures, and plans at R Olson Construction Co. are to be followed. The purpose of this Disciplinary Policy is to inform the violating employee of their error and to correct the type of behavior which could result in an injury to either this employee or their coworkers or damage to property.

The form titled "Corrective Action Notice" will be utilized. In the event of early warnings, they will also be notified of the action to be taken to correct their behavior.

Upon violation of any company safety rule, the company will utilize the following progressive steps:

Verbal Reprimand (Recorded):

An informal discussion of the inappropriate behavior that should take place as soon as possible after the supervisor has knowledge of the employee misconduct. This reprimand will also be recorded in writing and filed in the employee's personnel record.

Written Reprimand:

A written form which documents the employee misconduct. This form is to be presented to the employee and placed in the employee's personnel file. This level of reprimand indicates a status of probation for the employee. The employee must understand the changes necessary for restoration and also that not meeting these expectations may be grounds for termination.

Suspension:

A written and formal elevated form of disciplinary action. This action requires unpaid time away from work activities, typically 3 days. The employee must understand that any further disciplinary action brought against him/her may result in immediate termination of employment.

Dismissal/Termination of Employment:

The permanent separation of an employee from the company, initiated for disciplinary reasons or safety misconduct.

*R Olson Construction Co. reserves the right to penalize any employee by initiating appropriate levels of reprimand up-to and including termination

Incident and Injury Reporting

It is our goal to have zero work place injuries!

This is a big goal but it can be reached if we all work together.

One way we will achieve this goal is through good reporting of incidents and injuries. This reporting will assist us in identifying hazards in the work place. We can then eliminate them so we reduce the risk of injury to other workers.

Therefore, it is necessary for ALL work place incidents and injuries to be reported immediately. Immediately means right away, as soon as the incident or injury occurs. It doesn't mean later today, tomorrow, or next week. Delays in reporting could result in medical complications or additional injury to other workers. Also, a delay or failure to report may result in disciplinary action or a loss of benefits. The longer a worker waits, the harder it is to prove that the injury is work related.

Work with your supervisor to fill in the correct paperwork and document the incident completely. The better the report we have, the more we can do to eliminate the cause. It also helps us defend the company in the case of things like vehicle accidents, vandalism or damage by other contractors.

Supervisors: Make sure you notify upper management so they are aware. They may want to be involved in the investigation or even involve a third party consultant like Optimum. Also, do not disturb the scene or cover anything up. It only complicates the investigation and may cause another injury.

Incident: Any event that results in property damage or could have caused property damage or personal injury.

Injury: Any incident that results in bodily injury to an employee or other person.

Why don't we call them accidents? Because the word accident means that you couldn't do anything to stop it. The cause was purely beyond your control. Very seldom is this the case.

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General Safety Rules

1. Proper personal protective equipment is required at all times on project sites. This includes, but is not limited to, the following:
    a. **Hard Hat, Work Boots, Safety Glasses and Hi Visibility Shirts, Vests, or Coats *at all times!***
    b. Face shields, in addition to safety glasses, when grinding or cutting using any material which can fly toward the face.
    c. Face shields which are tinted with a #3 or #5 shade, in addition to safety glasses, when cutting steel with a torch.
    d. Welding hoods with a #10 or #12 shade, in addition to safety glasses, when performing any welding operations.
    e. NIOSH approved respiratory protective equipment when required.
    f. Long pants and shirts with a minimum 4" sleeve must be worn.
    g. No muscle shirts, tank tops, gym shoes or shorts will be allowed.
2. Personal protective equipment must be available for use when needed, inspected and maintained in good condition.
3. Running, horseplay, throwing objects, and scuffling is not permitted.
4. Intoxicating substances are not permitted. Drinking of alcoholic beverages or the consumption or sale of illegal drugs is a direct violation of this policy. It is grounds for immediate removal from the site.
5. Obey all warning signs and read all safety bulletins that are posted.
6. Learn the location of firefighting equipment, exits and first aid kits.
7. Store material, trucks, skids, racks, crates, boxes, ladders, and other equipment so as not to block exit doors, firefighting equipment, or power panels.
8. Keep floors clean and clean up spills. Keep your work area clean and orderly. Maintain good housekeeping in all work areas at all times.
9. Walking and working surfaces should be kept clear of objects such as materials, tools, cord, etc. in an effort to minimize slip, trip and fall hazards.
10. Report all incidents, injury or illness to supervisor immediately. Delay in receiving medical or first aid care can further complicate the effects of an injury. Additionally, unreported incidents can promote reoccurrence of the incident with possibility of further worker injury. This policy mandates that a report be filed with the office the same day in all instances.
11. Perform your assigned tasks safely. When in doubt of how to do so, ask for additional help or training. Workers should not perform any task or operate any equipment unless trained in the specific operation of and made aware of the hazards associated with the task/equipment and the controls of such hazards.
12. Do not lift objects which are too heavy. Request help, or use a lift.
13. Bend with the legs when lifting. Do not use the back.
14. Do not smoke near flammable materials.
15. Make sure all guards are in place when operating equipment. Also, do not remove guards unless you are authorized to do so as part of a lockout/tagout process.
16. Machinery shall not be re-fueled, oiled, serviced, or repaired while in operation.
17. Fall protection must be utilized at fall heights as follows:
    When over 6' in a construction setting.
    When over 10' from a scaffold.
18. Fall protection equipment such as a full body harness and lanyard shall be worn when operating any articulating boom platform or lift. Additionally, occupants of the basket shall remain on the floor of the lift and not use the rails, toe boards or materials to elevate themselves off the floor of the lift.
19. Check each ladder before use to ensure that the ladder has no defects.

20. Extension ladders shall be inspected prior to use, used at the proper 4:1 ratio, properly secured, and extended 3' above the landing surface. The user shall always face the ladder, use 3 points of contact, and maintain good balance by keeping their belt buckle within the rails of the ladder. No materials, tools, or anything else shall be carried up the ladder. Materials and tools shall be hoisted to upper levels with the use of a hoist rope.
21. Workers shall not handle, repair, or tamper with electrical equipment unless authorized.
22. Insure that electrical equipment such as power tools, electrical cords, or portable lighting is all in good repair with no broken or missing parts or insulation.
23. Insure that GFCI receptacles are utilized at all times with any cords or corded equipment.
24. Safe work practices will be employed while working in or around trenches and excavations including:
    a. Ladders or ramps will be provided in excavations deeper than 4'
    b. Travel distances shall be kept to less than 25' to the ladder or ramp
    c. Protective measures such as shoring, sloping, benching or trench shields shall be utilized in all trenches deeper than 5'

Hazardous Materials

1. All employees shall be aware of any hazardous material on the job or that they have potential exposure to.
2. Employees should be trained in the safe handling and potential hazards of the material.
3. All aspects of the employee Hazard Communication Act including awareness, protection, and proper handling shall be observed and practiced.
4. Each employee has a right to read the Safety Data Sheets on any chemical that they have the potential to be exposed to. Employees shall wash hands after the use of any Hazardous Substance.

Workplace Violence & Harassment Policy

The Safety Coordinator is responsible for the implementation and enforcement of the workplace violence and harassment program. In the event this policy is violated disciplinary procedures will be enforced.

The Safety Coordinator has established this policy to address any violence or harassment that may occur on the The Safety Coordinator premises and to ensure the safety of our employees.

Roles & Responsibilities

Employees

Report all threats or acts of violence, both direct and indirect, as soon as possible. If your manager cannot be reached contact any other manager. Be specific when reporting the facts of the incident.

Coverage

The Safety Coordinator will provide a safe environment for all personnel, including visitors, customers, and vendors. Acts and/or threats of violence by employees on this company's property including carrying weapons in other than an official capacity **will not be tolerated**. These acts and/or threats will be grounds for appropriate remedial action, including but not limited to, discipline up to and including termination of employment and criminal prosecution. Similarly, acts and/or threats or violence by visitors against employees will not be tolerated and will be grounds for appropriate remedial action, including but not limited to criminal prosecution.

Reporting & Investigation Procedures

In keeping with a policy of zero tolerance of workplace violence, all reported incidents will be investigated in the interest of a safe and productive workplace. An employee who engages in prohibited conduct will be subject to appropriate disciplinary action, as determined by the findings of an objective and impartial investigation. Discipline for inappropriate conduct may include warnings, reprimand, suspension, or immediate termination. In addition, certain actions may cause the employee to be subject to criminal prosecution, or held legally liable under state and/or federal law.

Personal Protective Equipment

The following list of personal protective equipment (PPE) is available to all employees and shall be used as required by company policy and/or Fed/State/Local regulations: Hard had, safety glasses, work boots and high visibility clothing. Prescription safety glasses and non-specialty safety-toe boots if required must be supplied by the worker. For questions about other items, please see your supervisor or the Safety Coordinator.

Employees can request PPE from The Foreman.

Proper personal protective equipment is required at all times on project sites. This includes, but is not limited to, the following:

- Hard Hat, Work Boots, Safety Glasses and Hi Visibility Shirts, Vests, or Coats *at all times!*
- Face shields, in addition to safety glasses, when grinding or cutting using any material which can fly toward the face.
- Face shields which are tinted with a #3 or #5 shade, in addition to safety glasses, when cutting steel with a torch.
- Welding hoods with a #10 or #12 shade, in addition to safety glasses, when performing any welding operations.
- NIOSH approved respiratory protective equipment when required.
- Long pants and shirts with a minimum 4" sleeve must be worn.
- No muscle shirts, tank tops, gym shoes or shorts will be allowed.

Personal protective equipment must be available for use when needed, inspected and maintained in good condition.

Maintenance and Cleaning

All employees are instructed to wash promptly and thoroughly after exposure to injurious substances, regardless of the type of protective clothing or equipment which has been used. It is against work rules to use PPE that is in disrepair or not able to perform its intended function. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. It is important that all PPE be kept clean and properly maintained by the employee to whom it is assigned. Contaminated PPE which cannot be decontaminated or is saturated or impregnated with flammable liquids, corrosive substances, irritants, oxidizing agents, or other hazardous chemicals is promptly removed and disposed of in a manner that protects employees from exposure to hazards.

Materials Handling – Back Safety

Proper Body Mechanics

1. **Keep your feet shoulder width apart.**
2. **Keep one foot slightly in front of the other.** This increases their base of support side to side as well as front to back.
3. **Bend your knees.** If possible try to keep your knees from bending out over your toes. If they go out too far over the toes it puts extra strain on your knees. In order to correct this you need to stick your butt way out, and this doesn't look COOL. Don't worry about that. It's better to be un-cool with a good back than a fool with a bad one.
4. **Maintain the three natural curves of your back.** The cervical (neck), thoracic (middle back) and lumbar (lower back).
5. **Keep the load as close as possible.** Remember that holding a 10lb. weight close against your body it is equal to 10 lbs. of downward force on your lumbar spine. But if you hold it out on a fully extended arm it is equal to 100 lbs.
6. **Tighten your stomach muscles to add support.** This is like wrapping an ace wrap around your spine.
7. **Lift with your legs, not from your waist.** Think about Olympic weight lifters and their form. It is perfect, because those athletes know if they are bent forward at the waist, with the amount of weight they are lifting, they will likely blow a disc out.
8. **Do not twist, especially with a load.** Instead, pick your feet up and pivot. Especially if your are moving a load. The combination of downward force and shearing forces from twisting are the ingredients for a low back injury.

A Special Thanks for Materials Provided for This Focus³ By:

Matt Klebenow, Manager Industrial Rehab
Provena Saint Joseph Medical Center
Physical Therapy & Industrial Rehab. Center

What does a jelly donut and 2 wood spools have to do with your back?

Forward bending at the waist creates space between vertebral bodies and possibly allows intervertebral disc to slip.

Poor Body Mechanics

Use proper body mechanics and get some help if it's too heavy!

Question: What happens when you smash a jelly donut with 2 wooden spools?

Answer: The same thing that happens when you smash your disc with 2 vertebrae.

HazCom (GHS) - Overview

What in the world is HazCom ?

OSHA says that you, the employee, have the **"right to know"** about the hazards of the chemicals that you may be exposed to AND you have the **"right to understand"** the hazards of the chemicals and what precautions to take.

Everyday, workers are exposed to some pretty hazardous chemicals. Some can cause serious long term health problems such as cancer. It is important to know what it is that you are working with so you can make some informed decisions and take proper precautions to protect yourself.

What does OSHA say?

In order to make sure that you are protected, OSHA has set up guidelines for the employers to follow. **They say the employers must:**

- Provide information about OSHA's requirements for HazCom
- Provide information about the chemicals the workers use
- Provide a written HazCom program and Safety Data Sheets
- Properly label containers so hazards are easily identified
- Provide Personal Protective Equipment and training on its use

Notice: The 1994 OSHA Hazard Communication Standard 1910.1200 (HCS 1994) was revised and published in 2012 (HCS 2012). The revisions align the standard with the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS). These changes will be identified in the next three Focus^3 Toolbox Talks.

Up and Coming...

In upcoming weeks, we'll explore the topics of Globally Harmonized System, Safety Data Sheets (SDS) and container labeling…

Ask your supervisor where your SDS's and HazCom program are located …

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HazCom (GHS) – Old vs. New

STOP!

There is no reason to panic about GHS!
The changes are easy to understand, once broken down.

Background: The 1994 OSHA Hazard Communication Standard 1910.1200 (HCS 1994) was revised and published in 2012 (HCS 2012). The revisions align the standard with the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The framework and scope remain the same while the quality and consistency of information provided to workers, employers and chemical users improves.

HCS 1994	VS.	HCS 2012
❑ Not aligned w/ GHS		✓ Aligned w/ GHS
❑ Guidance for determining chemical hazards		✓ Uniform approach for classifying chemical hazards
❑ Guidance for defining chemical hazards		✓ Uniform approach for communicating hazard info
❑ General hazard warning labels		✓ Standardized label elements
❑ Material safety data sheet (MSDS)		✓ Standardized safety data sheet (SDS)

HCS 1994 VS. HCS 2012

HCS 1994

VS.

HCS 2012

Completion Date	Requirement(s)	Who
December 1, 2013	Train employees on the new label elements and SDS format	Employers
June 1, 2015 December 1, 2015	Comply with all modified provisions of this final rule, except: Distributors may ship products labeled by manufacturers under the old system until 12/01/15	Chemical manufacturers, importers, distributors and employers
June 1, 2016	Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards.	Employers
Transition Period	Comply with either HCS 1994, or HCS 2012 (GHS) or both.	Chemical manufacturers, importers, distributors and employers

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HazCom (GHS) – MSDS vs. SDS

It's Your Right to Know: What is it? What are the Hazards?

Under the new Hazard Communication Standard (HCS 2012) OSHA requires the chemical manufacturer, distributor, or importer to provide Safety Data Sheets (SDS) (formerly MSDS) for each hazardous chemical to downstream users to communicate information on these hazards. OSHA also requires employers to make SDS's available to employees.

HazCom 2012 requires that the information on the SDS be presented using 16 specific section headings in a specified sequence. HazCom 1994 indicated what information to include on the MSDS, but did not specify a format for presentation or order of information.

It's Your Right to Understand... ...appropriate handling and safe use of hazardous chemicals!

Safety Data Sheets – Standardized16 Section Format

1 Identification	2 Hazard(s) Communication	3 Composition/ Info on Ingredients	4 First Aid Measures
5 Fire-fighting Measures	6 Accidental Release Measures	7 Handling & Storage	8 Exposure Controls / PPE
9 Physical & Chemical Properties	10 Stability & Reactivity	11 Toxicology Information	12 Ecological Information
13 Disposal Consideration	14 Transportation Information	15 Regulatory Information	16 Other Information

Always read the SDS before handling a new chemical. See your immediate supervisor for any questions you have after reviewing the SDS.

HMIS / NFPA	NEW GHS
0 Minimal Hazard	1 Severe Hazard
1 Slight Hazard	2 Serious Hazard
2 Moderate Hazard	3 Moderate Hazard
3 Serious Hazard	4 Slight Hazard
4 Severe Hazard	5 Minimal Hazard

ORDER REVERSES

Hazard Ratings: The numbers are now located in section #2 of the SDS and will no longer be required on the container label.

VS.

December 1, 2013 – All employers are required to train employees on the new SDS format

June 1, 2015 – All SDS's are required to be in a uniform format including the 16 section numbers, headings, and associated information

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HazCom (GHS) - Labels

You Have the Right-To-Know & Understand!

- Chemical manufacturers and importers will be required (no later than **June 1, 2015**) to provide a label that includes a harmonized signal word, pictogram, and hazard statement for each hazard class and category. Precautionary statements must be provided.
- Employers must make sure each container has a legible label.
- Signs, placards, process sheets, batch tickets or similar materials may be used on individual stationary process containers instead of labels.
- Employees must read the label before using any chemical.
- **December 1, 2013** – All employers are required to train employees on the new label elements

Pictograms

1. Acutely Toxic (fatal or toxic)
2. Oxidizer
3. Gas Under Pressure
4. Burns Skin, Damages Eyes, Corrosive to Metals
5. Explosive, Self-Reactive, Organic Peroxide
6. Irritant to Skin, Eyes or Respiratory Tract
7. Flammable, Self-Reactive, Pyrophorics, Self-Heating, Emits Flammable Gas, Organic Peroxides
8. Carcinogen, Mutagen, Reproductive Toxin, Respiratory Sensitizer, Toxic to Target Organs, Toxic if Aspirated
9. Toxic to Aquatic Life (Non-Mandatory)

HCS 1994 Label Requirements

Common or Chemical Name

Ammonium Hydroxide

HEALTH	2
FLAMMABILITY	0
REACTIVITY	0

0 Minimum Hazard
1 Slight Hazard
2 Moderate Hazard
3 Serious Hazard
4 Severe Hazard

Personal Protection **J**

Hazard Warnings (HMIS / NFPA Numbers)
- Health
- Flammability
- Reactivity

HCS 2012 (GHS) Label Requirements

EPICHLOROHYDRIN (1)

UN No. 2023
CAS No. 106-89-8

(2) **DANGER**

(4) Flammable liquid and vapor. Toxic if swallowed. Toxic in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause cancer.

(5) Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection.

Fill Weight: 18.52 lbs.
Gross Weight: 20 lbs
Expiration Date: 1/15/2018

Lot Number: A0323111323
Fill Date: 1/15/2012

(6) JACKSON CHEMICAL COMPANY - City of Industry, Los Angeles, California, USA (800)-444-456-8989

1. **Product identifier** - the name or number used for a hazardous chemical
2. **Signal word -** "danger" or "warning" used to indicate the relative level of severity of hazard assigned to a hazard class and category
3. **Pictogram -** eight pictograms are designated for application to a hazard category to convey the health and physical hazard(s) of a chemical
4. **Hazard statement -** standard phrases assigned to a hazard class and category that describes the nature of the hazard(s)
5. **Precautionary statement -** measures to minimize or prevent exposure to a hazardous chemical
6. **Supplier Identification** - name, address and telephone number

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PPE – Overview

Always read and follow your manufacturer's instructions for use, care, and replacement of your PPE.

Head:
A **hard hat** may save your life when tools, concrete, or other objects strike your head. It will also reduce the chances of injury if you strike an object.

Hands and Fingers:
There are many different types of **gloves** to protect your hands from a variety of hazards.

Eyes and face:
A **full face shield** is required while cutting any material using a power tool. **Safety glasses** with **side shields** are required at all times, even under the face shield.

Ears:
By middle age, most of us start to notice hearing loss which is made worse by exposure to noise. Always wear your **earplugs** properly when exposed to noise of 85dBA or more. For example – Running your lawnmower exposes you to 95dBA.

Rule of Thumb:
If you have to raise your voice, it's too loud.
Wear your earplugs if in doubt.

Arm and Legs:
4" sleeves protect your body from power tool debris, sparks, welding flash, and sunburn. Don't forget **long pants**, too!

Never use altered or damaged PPE.

Feet and Toes:
Footwear needs to be worn which will protect the feet from the hazards of the job. This may include **boots** for ankle protection, **protective toes** for falling objects, **puncture resistant soles** for nails and other hazards as needed.

Lungs:
Depending on the hazards present and the amount of hazards in the air **a dust mask, respirator**, or **supplied air** will be appropriate.

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Respiratory Protection – Voluntary Use

OSHA 29 CFR 1910.134 Appendix D

(Mandatory) Information for Employees Using Respirators When not Required Under Standard. - 1910.134 App D

Regulations (Standards - 29 CFR) - Table of Contents

• **Part Number:**	1910
• **Part Title:**	Occupational Safety and Health Standards
• **Subpart:**	I
• **Subpart Title:**	Personal Protective Equipment
• **Standard Number:**	1910.134 App D
• **Title:**	(Mandatory) Information for Employees Using Respirators When not Required Under Standard.

Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Silica Exposure Control Plan

R. Olson Construction Co. has recognized a potential exposure to silica for its employees during the occasional cutting of concrete sewer pipe with a gas powered saw. The company also recognizes that engineering controls, when effective, are the best way to protect its employees from hazards such as Silica.

One of the most effective ways to control the silica exposure identified is to utilize wet cutting methods at all times.

R. Olson Construction Co. will utilize wet cutting kits attached to the gas powered saws to control this exposure. Where a saw may not be equipped with the proper fittings for this, a portable sprayer can filled with water may be used. Water will be applied to the cutting area by a second employee in amounts sufficient to encapsulate and eliminate the silica dust.

R. Olson Construction Co. experiences cold temperatures during the winter in the region it operates in. Therefore, wet cutting using water may not be an effective option year round. During these times when temperatures are below freezing, Propylene Glycol antifreeze may be added to the water to prevent freezing. Concentrations will vary based on the freezing point desired (See Manufacturer for specifics). One commercially available brand of antifreeze which contains Propylene Glycol is outlined below. It is sold under the following trade names:

Trade Name	% by Weight	Freeze Point
PEAK® RV & MARINE ANTIFREEZE	25 - 30	5-10° Above
SIERRA® ANTIFREEZE/COOLANT	94 – 96	MSDS States Will Not Freeze
	50	26° Below
	30 – 40	5° Above

Data related to concentrations and freeze points has been taken from the MSDS and conversations with the manufacturer. Whichever antifreeze is used, its MSDS should be consulted and strictly followed.

WARNING: Propylene Glycol is an "environmentally friendly" antifreeze typically used in marine and RV applications. It is "generally recognized as safe" by the FDA and is used in food additives, etc. This antifreeze is not to be confused with Ethylene Glycol which is the primary ingredient found in everyday automotive antifreeze. Ethylene Glycol is not to be used under any circumstances as it has negative health consequences.

Due to the extremely negative health consequences of exposure to Silica, ALL cutting of materials such as concrete pipe will be done utilizing wet methods.

NOTE: Failure to follow these guidelines for wet cutting will result in disciplinary action.

Silica Awareness

What is Silica?

Silica, also called quartz, is found naturally in the earth's crust. Silica is the basic component of sand and rock. Concrete and Masonry products also contain silica. Construction workers may be exposed to silica when working with stone, concrete, brick or Masonry. Activities that can lead to exposure include:

- Chipping, hammering, and drilling
- Saw cutting and grinding
- Crushing, loading, and dumping rock and concrete
- Abrasive blasting using sand
- Abrasive blasting on concrete or stone surfaces
- Dry sweeping

What is Silicosis?

Silicosis is a disease caused by breathing silica dust. This dust can cause scarring and damage in the lungs. There is no cure for silicosis. So prevention is very important. There are stages of silicosis. Early stages may go unnoticed and can occur after 10 or more years of exposure. The disease can cause fatigue, shortness of breath, loss of appetite, pain in the chest and respiratory failure. Eventually breathing becomes difficult and strains the heart. Some cases of Silicosis are fatal. Silicosis causes people to be more susceptible to tuberculosis and bronchitis. Recent scientific information indicates that silica can cause lung cancer.

What You Can Do To Protect Yourself?

- Know the health effects of silica and what tasks create Silica dust.
- Use all available controls to reduce dust, like wet methods and vacuums
- Participate in air monitoring and training programs
- Use a respirator with a P-100 (HEPA) filter for protection against silica dust.
  - Change the filter when it is dirty, damaged, or breathing is difficult.
  - Be clean shaven when you wear a respirator; facial hair interferes with the seal.
  - Employers must provide fit tests every year.
  - When exposures are too high, like when sand blasting, use airline respirators.
- Change into disposable or washable work clothes at the worksite. Shower, if possible, and change into clean clothing before going home.
- Do not eat, drink or use tobacco products in work area.
- Wash your hands and face before eating, drinking, smoking, or using lip balm.

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Ladder Safety

Ladders are a necessary part of our day to day work and allow us to reach the heights required to do our work. We must use them. However, we must use them correctly. The first thing to remember is to properly inspect the ladder before using it. The second is to properly set it up and use it correctly to prevent hazards.

Inspection

What To Look For:

- All rivets and fasteners in place
- No cracks on side rails
- All components such as locking clasps functional
- No missing feet or rubber pads
- No bent or damaged rungs

Use and Setup

All Ladders:

- Never carry objects up or down a ladder
  -Use a hand line for tool or material hoisting
- Work facing the ladder, never away from it
- Never overreach the ladder to the side
  -Keep your belt buckle within the side rails to prevent tipping and falling
- Do not exceed the load rating of the ladder

A-Frame or Step Ladders:

- Open the frame up
  -Never use in the folded position
- Lock the spreader in the fully open position
- Work facing the ladder, never away from it
- Never stand on the top 2 steps

Extension Ladders:

- Use at the proper vertical to horizontal ratio of 4:1
- Maintain 3 points of contact while climbing
- Secure ladder to structure to prevent accidental slipping
- Extend 3' above landing
- Properly designate ladder access area when accessing other levels

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Fall Protection – When & What Types?

When do we need it?

OSHA Requires That Construction Workers Use Some Type Of Fall Protection When Working At Heights Over:

- 6' – In Most Cases
- 10' – On Scaffolding
- 15' – For Steel Erection

Why do we need it?

Falls from elevations continue to be one of the ***leading causes of death*** among construction workers.

What are the options?

Guardrails

Must be erected to protect the worker along each unprotected side or edge. They also must meet very specific height and strength requirements. Workers erecting the rails must be protected while doing so.

Personal Fall Arrest

Consists of items such as harnesses, lanyards, anchor points, lifelines, etc. Each of these items must meet strict design requirements. Workers must be adequately trained in their use and limitations prior to their use.

Safety Monitoring

Must be used as part of a complete fall protection plan and only in certain instances such as leading edge work, precast concrete erection, some roofing work and residential construction work.

Warning Lines

A barrier used to warn workers of an unprotected side or edge. Also used to designate the area where work activities are taking place under an alternative fall protection plan.

Other options include safety nets and positioning device systems.

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Fall Protection – Guard Rails

Top Rail - Top between 39" and 45" from surface

Mid Rail – Between top of top rail and surface

Surface level

Guardrails must meet strict design criteria to be compliant and effective.

When a construction worker falls from an edge, he falls outward and downward. Guardrails must withstand force in those same two directions

Toe boards are needed if employees below are exposed to falling objects

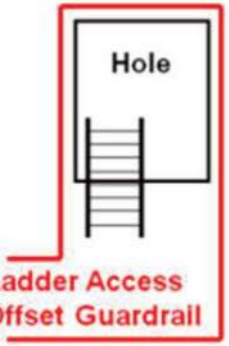
Toe boards

These wall openings already have their toe boards and may already have their mid-rails. If the wall at the base of the opening is at least 21" from the surface, no mid-rail is needed. However, they definitely need a top rail. Wouldn't you agree?

Guardrails must be erected along each unprotected side or edge with a fall exposure over 6 feet.

Wire rope may be used for guardrails if it meets the same strength and height requirements. It cannot sag in the center to below 39" and must be flagged for visibility every 6' unless high visibility mesh for falling object protection is used.

When guardrails are used around access openings such as stairs or ladders, they must create an offset to protect workers from the open edge.



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Fall Protection – Personal Fall Arrest

The facts about Harnesses

Harness and Lanyard systems used in fall arrest for workers must meet certain strict requirements. They must:

- Restrict force on the body to less than 1,800 lbs.
- Be rigged so a worker can "free fall" no more than 6 feet.
- Also rigged so the worker will not strike other objects below in a fall.
- Limit the employee's deceleration distance to no more than 3 ½ feet.
- Be inspected prior to each use looking for wear and deterioration.
- Be taken out of service if subjected to an impact load such as a fall.
- Not be used for any purpose other than personal fall arrest.
- Use snaphooks which are of the locking type.
- Use hardware (snaphooks, dee-rings) with a min. strength of 5,000 lbs. and be proof-tested to 3,600 lbs.
- Be attached to anchorage points capable of supporting 5,000 lbs. per worker attached.

Phew, that's a lot!

Buckles should be adjusted snug to limit harness slide in a fall but not so tight as to be constricting.

Correct dee-ring position is between the shoulder blades so the worker hangs upright in a fall.

Which end attaches to the dee-ring? (See below for answer)

Latches and components must be free of damage and function properly!

Inspection

Prior to each use!

Look for signs of UV damage, weld spatter and dry rot on webbing!

Rescue

- ✓ Within moments of a fall, Suspension Trauma can set in. This occurs when a worker hangs in a harness with little or no movement and with restricted blood flow through the main arteries in the legs. This can result in severe damage or even death.
- ✓ Rescue measures must be planned ahead and can be as simple as a ladder or aerial lift to relieve the pressure of the worker's weight on the body's pressure points.
- ✓ Also consider that the worker could be injured in the fall. Even though the harness arrests the fall, the worker may be unable to assist the rescue. Planning ahead can make the difference between life and death.

Answer: Always the end with the shock absorber.

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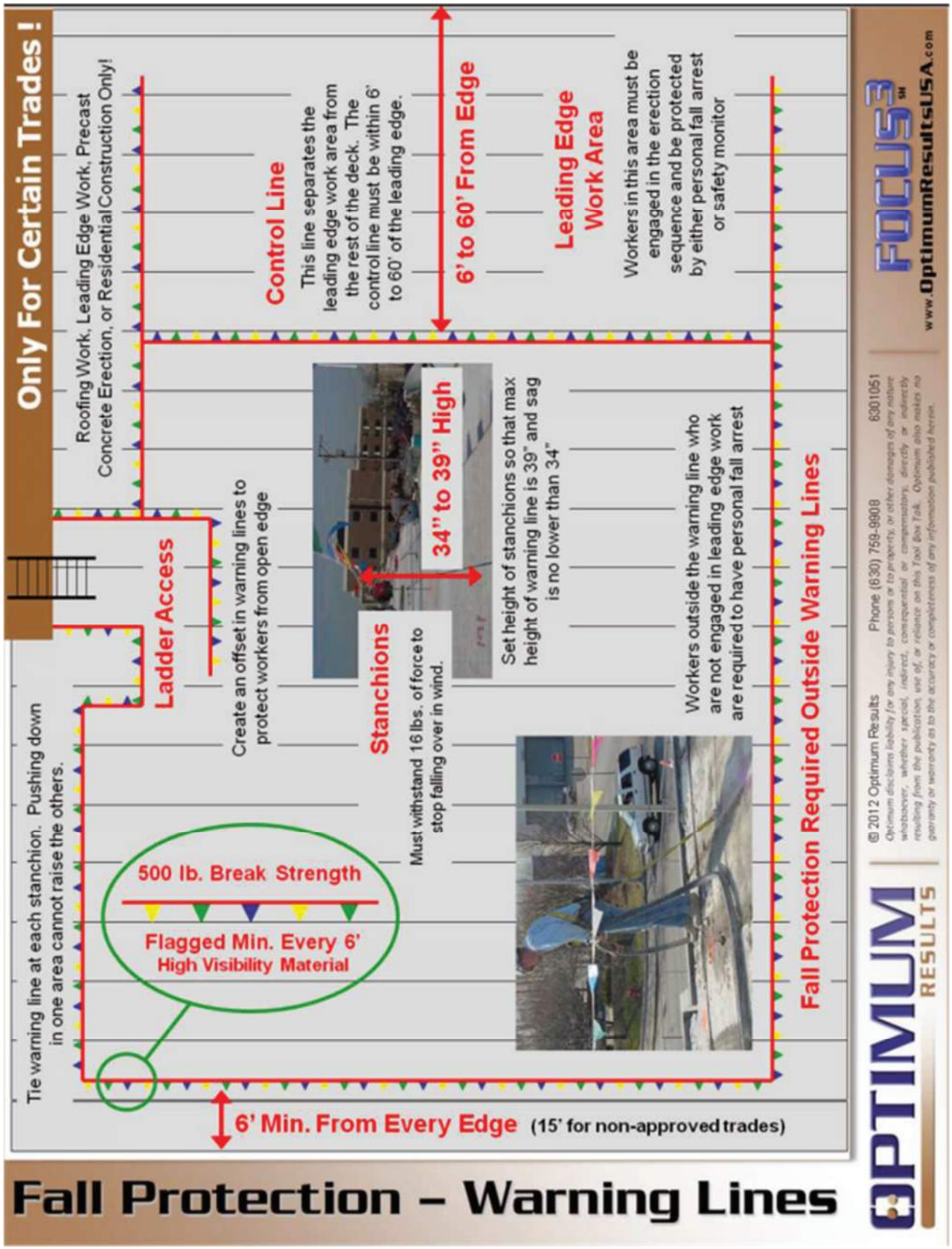
Only For Certain Trades !
Roofing Work, Leading Edge Work, Precast Concrete Erection, or Residential Construction Only!
Control Line
This line separates the leading edge work area from the rest of the deck. The control line must be within 6' to 60' of the leading edge.
6' to 60' From Edge
Leading Edge Work Area
Workers in this area must be engaged in the erection sequence and be protected by either personal fall arrest or safety monitor
Ladder Access
Create an offset in warning lines to protect workers from open edge
34" to 39" High
Set height of stanchions so that max height of warning line is 39" and sag is no lower than 34"
Stanchions
Must withstand 16 lbs. of force to stop falling over in wind.
Workers outside the warning line who are not engaged in leading edge work are required to have personal fall arrest
Tie warning line at each stanchion. Pushing down in one area cannot raise the others.
500 lb. Break Strength
Flagged Min. Every 6'
High Visibility Material
Fall Protection Required Outside Warning Lines
6' Min. From Every Edge (15' for non-approved trades)
Fall Protection – Warning Lines
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Fall Protection – Safety Monitoring

Who can use it?

OSHA Restricts This "Alternative" Method of Fall Protection To Certain Types of Work:

- ❑ Low Slope Roofing Work
- ❑ Precast Concrete Erection
- ❑ Leading Edge Work

What is a Safety Monitor?

A Worker Who:

- Is Designated by the employer
- Is Competent to recognize fall hazards
- Warns other workers who
  - appear unaware of a fall hazard, or
  - are acting unsafely
- Is on the same surface as other workers
- Has visual line of sight of other workers
- Must be close enough to communicate by voice
- Can have no other responsibilities which would distract him or her

What Does Competent Mean?

So, like, hey, does that mean that all the safety monitor can do is stand there all day and do nothing but watch the other guys work? Huh? The boss ain't gonna go for that...

No, that's not what that means!

The safety monitor can't do anything while the workers are outside the warning lines near the edge that will distract him from watching the workers. When the workers come away from the edge he can do whatever else he needs to. But, he must be ready to monitor again when the workers return to the edge.

Competent person means one who is ***capable of identifying existing hazards*** in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and ***who has authorization to take prompt corrective measures*** to eliminate them.

By the way, designated also means that the workers need to know who the safety monitor is and the monitor should be identifiable. That is why many companies choose to use the orange vest to designate their safety monitors (see photo above).

So what's the plan?

OSHA requires that safety monitoring systems be implemented as part of a complete fall protection plan when used in leading edge work or precast concrete erection. Some people know this as a "Site Specific Fall Protection Plan". Workers must be trained at the start of each project and sign-off signifying that they understand the specifics of the plan in place on that project. The specifics include who is allowed in the erection zone, what protective methods will be used in each work situation, the use of controlled access zones to limit other trades in the area, etc.

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Scaffolding Guidelines

I. GENERAL SCAFFOLDING GUIDELINES

- ☑ **Insure that all persons who** erect, dismantle or use scaffolding are aware of these scaffolding safety guidelines.
- ☑ **Follow all state, local and federal codes, ordinances and regulations** pertaining to scaffolding.
- ☑ **Survey the job site.** A survey shall be made of the job site for hazards, such as untamped earth fills, ditches, debris, high tension wires, unguarded openings, and other hazardous conditions created by other trades. These conditions should be corrected or avoided as noted in the following sections.
- ☑ **Inspect all equipment before using.** Never use any equipment that is damaged or defective in anyway. Remove it from the job site or tag it out of service.
- ☑ **Scaffolds must be erected in accordance with design and/or manufacturers' recommendations.**
- ☑ **Do not erect, dismantle or alter a scaffold** unless under the supervision of a competent person.
- ☑ **Do not abuse or misuse the scaffold equipment.**
- ☑ **Erected scaffolds should be continually inspected** by users to be sure that they are maintained in safe condition. Report any unsafe condition to your supervisor.
- ☑ **Never take chances! If in doubt regarding the safety or use of the scaffold, consult your supervisor, competent person, or scaffold supplier.**
- ☑ **Consideration must be given** to the provision of falling object protection for workers or the public below the scaffolding. This is to be achieved by the appropriate use of toe boards, mesh and/or canopies.
- ☑ **Never use equipment for purposes or in ways for which it was not intended.**
- ☑ **Scaffold components shall be** capable of withstanding 4 times the maximum intended load.
- ☑ **Do not work on scaffolds** if your physical condition is such that you feel dizzy or unsteady in anyway.

II. GUIDELINES FOR ERECTION AND USE OF SCAFFOLDS

- ☑ **Scaffold base must be set on an adequate sill or pad** to prevent slipping or sinking and fixed thereto where required. Any part of a building or structure used to support the scaffold shall be capable of supporting the maximum intended load to be applied.
- ☑ **Use adjusting screws** or other approved methods instead of blocking to adjust to uneven grade conditions.
- ☑ **Bracing, leveling & plumbing of frame scaffolds:**

  1. Plumb and level all scaffolds as the erection proceeds. Do not force frames or braces to fit. Level the scaffold until proper fit can easily be made.

2. Each frame or panel shall be braced by horizontal bracing, cross bracing, diagonal bracing or any combination thereof for securing vertical members together laterally. All brace connections shall be made secure, in accordance with the manufacturer's recommendations.

☑ **Bracing, leveling & plumbing of tube & clamp and system scaffolds**

1. **Posts shall be erected plumb** in all directions, with the first level of runners and bearers positioned as close to the base as feasible. The distance between bearers and runners shall not exceed manufacturer's recommended procedures.
2. **Plumb, level and tie** all scaffolds as erection proceeds.
3. **Fasten all couplers and/or connections** securely before assembly of next level.
4. **Vertical and/or horizontal diagonal bracing must be installed** according to manufacturer's recommendations.

☑ **Tie continuous (running) scaffolds to the wall or structure** at each end and at least every 30 feet of length when the scaffold height to base width ratio exceeds 4:1 or the manufacturers' recommendations, whichever is lower. Begin ties or stabilizers when the scaffold height exceeds that dimension, and repeat at vertical intervals not greater than:

20 feet for scaffolds 3' wide or less, or
26 feet for scaffolds over 3' wide.

The top anchor shall be placed no lower than four (4) times the base dimension from the top of the completed scaffold. Anchors must prevent scaffold from tipping into or away from wall or structure. Stabilize circular or irregular scaffolds in such a manner that completed scaffold is secure and restrained from tipping.

When scaffolds are partially or fully enclosed or subjected to overturning loads, specific precautions shall be taken to insure the frequency and accuracy of ties to the wall and structure. Due to increased loads resulting from wind or overturning loads the scaffolding component to which ties are subjected shall be checked for additional loads.

☑ **Do not erect scaffolds near electrical power lines unless proper precautions are taken.** Consult the power service company for advice.

☑ **A means of access to all platforms shall be provided.**

☑ **Do not use** ladders or makeshift devices on top of scaffolds to increase the height.

☑ **Provide guardrails and mid-rails at each working platform level** where open sides and ends exist, and toe boards where required to provide for falling object protection.

☑ **Brackets and cantilevered platforms:**

1. Brackets for **System Scaffolds** shall be installed and used in accordance with manufacturer's recommendation.
2. Brackets for **Frame Scaffolds** shall be seated correctly with side bracket parallel to the frames and end brackets at 90 degrees to the frames. Brackets shall not be bent or twisted from normal position. Brackets (except mobile brackets designed to carry materials) are to be used as work platforms only and shall not be used for storage of material or equipment.
3. Cantilevered platforms shall be designed, installed and used in accordance with manufacturer's recommendations.

☑ **All scaffolding components** shall be installed and used in accordance with the manufacturer's recommended procedure. Components shall not be altered in the field.

☑ **Planking**

1. Working platforms shall cover scaffold bearer as completely as possible. Only scaffold grade wood planking, or fabricated planking and decking meeting scaffold use requirements shall be used.
2. Gaps in planking should be maintained to no more than 1" except where warranted due to brackets which prevent complete coverage. In this case, the gap must not exceed 9.5". (See 29 CFR 1926.451 (b)(1))
3. Check each plank prior to use to be sure plank is not warped, damaged, or otherwise unsafe.
4. Planking shall have at least 12" overlap and extend 6" beyond center of support, or be cleated or restrained at both ends to prevent sliding off supports.
5. Only materials rated appropriately to be used as scaffold plank shall be used for this purpose.
6. Solid sawn lumber, LVL (laminated veneer lumber) or fabricated scaffold planks and platforms (unless cleated or restrained) shall extend over their end supports not less than 6" nor more than 18". This overhang should not be used as a work platform.

☑ **For Rolling scaffolds the following additional guidelines apply:**

1. **Riding a rolling scaffold is very hazardous.** Be sure to follow all manufacturers' guidelines. If the manufacturer advises against it, don't do it.
2. Casters with plain stems shall be attached to the panel or adjustment screw by pins or other suitable means.
3. Wheels or casters shall be provided with a locking means to prevent caster rotation and scaffold movement and kept locked.
4. Joints shall be restrained from separation.
5. Do not use brackets or other platform extensions without compensating for the overturning effect.
6. Cleat or secure all planks.
7. Secure or remove all materials and equipment from platform before moving.
8. Do not attempt to move a rolling scaffold without sufficient help - watch out for holes in floor and overhead obstructions - Stabilized against tipping.

III. DISMANTLING SCAFFOLDING THESE GUIDELINES APPLY:

☑ Check to assure scaffolding has not been structurally altered in a way which would make it unsafe and, if it has, reconstruct where necessary before commencing with dismantling procedures. This includes all scaffold ties.

☑ Visually inspect plank prior to dismantling to be sure they are safe.

☑ Consideration must be given as to the effect removal of a component will have on the rest of the scaffold prior to that component's removal.

☑ Do not accumulate excess components or equipment on the level being dismantled.

☑ Do not remove ties until scaffold above has been removed (dismantled).

☑ Lower dismantled components in an orderly manner. Do not throw off scaffold.

☑ Dismantled equipment should be stockpiled in an orderly manner.

☑ Follow erection procedures and use manuals.

These safety guidelines (Codes of Safe Practice) set fourth common sense procedures for safely erecting, dismantling and using scaffolding equipment. However, since field conditions vary and equipment and scaffolding systems differ, reference must always be made to the instructions and procedures of the supplier and/ or manufacturer of the equipment.

Frame Scaffolds - Basics I

Competent person must:

- Have knowledge and authority to correct issues
- Oversee the construction of the scaffold
- Ensure it is being used correctly
- Inspect scaffold daily
- Make sure employees are trained

Capacity

Must support 4 times intended weight including:

- Employees
- Tools
- Equipment
- Materials

Scaffold Platforms

- Use only scaffold grade planks in good condition
- No more than 1" gap between planks
- Front edge no more than 14" from face of work (18" for EFIS)
- Each end of a plank 10' or less must extend over its support by at least 6" and no more than 12"
- Each end of a plank greater than 10' must extend over its support by at least 6" and not more than 18"
- Overlaps used to create a longer platform must occur over a support and overlap no less than 12"

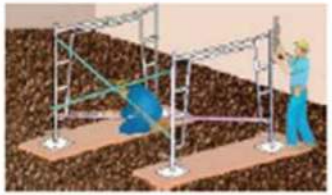
Fully planked

More than 1" gap

Scaffold Base

- Must be on a firm foundation with base plates
- If mud sills are needed, base plates must be secured
- Base plates must be used even if the scaffold is sitting on concrete
- Must be plumb, square and adequately braced

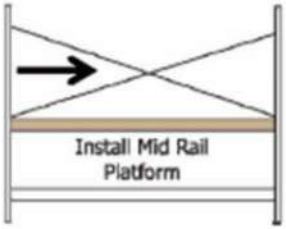
It all starts in the first bay, if it's set plumb and square, the rest will follow.



Guardrails

- Must be installed when working height is 10' or greater
- May be required at 6' if needed to satisfy work site fall protection requirements
- Top rail must be between 38" and 45" high
- A mid rail must also be installed
- Cross braces can be used as a top rail or mid rail, but not both

Crossing point for brace to be used as a top rail must be must be 38" to 48" above platform.



Supported scaffolds with a height four times greater than their smallest base dimension must be restrained from tipping by bracing or be tied into the structure.

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Frame Scaffolds - Basics II

Scaffold Use - The Four Main Hazards

Falls

- Make sure scaffold is fully planked
- Install guard rails as required
- Use personal fall arrest system (PFAS)

Struck by Falling Objects

- Barricade areas below scaffold
- Install toe boards or screens
- Post signs "Overhead Work"

Scaffold Collapse

- Build scaffold on stable ground
- Always use base plates
- Secure base plates to mudsills
- Tie scaffold into structure at 4:1 ratio

Electrocution

- Remain 10' from lines
- De-energize lines
- Install protective covering

Weather Conditions

Employees shall not work on:

- Scaffolds covered with snow, ice or slippery material
  (Unless removing the material)
- During storms
- When high winds are present

Means of Access

Required if there is a 24" distance above or below the access point. Access can be accomplished by:

Stair Towers

Must be inspected

Ladders

Correct angle

End Frames

If designed for access

Never Climb Cross Braces!

Do not stand on ladders or other materials such as buckets to increase work heights!

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Rolling Scaffolds – Basics I

GENERAL REQUIREMENTS

As with any scaffold, mobile scaffolds must be plumb, level, and square. Connections to all braces must fit together properly and be secured.

Employees must not ride on scaffolds unless:

- Surface is within 3 degrees of level
- Surface is free of pits, holes and obstructions
- The height to base width ratio is 2:1 or less
- Outrigger frames when used are on both sides of scaffold
- Before moving, employee should be made aware of the move
- Casters must be locked when stationary
- No employee is on any part of the scaffold that extends beyond the wheels or casters

Cross braces, horizontal braces, diagonal braces, or a combination of braces must be used to secure vertical members to prevent collapse.

Caster and wheel stems shall be pinned or otherwise secured in scaffold legs or adjustment screws.

Best Practices:

- Always use guardrails
- Evaluate all aspects when moving a scaffold including ground conditions
- Check that the scaffold is properly pinned, locked and secured
- Know your surroundings and watch for hazards above such as power lines
- Inspection by competent person before each work shift is required

The scaffold casters must have positive wheel and swivel locks.

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Additional Safety Topics

Excavations - Basics

What is an excavation?
Any man-made cut, cavity, trench, or depression in a ground surface, formed by earth removal.

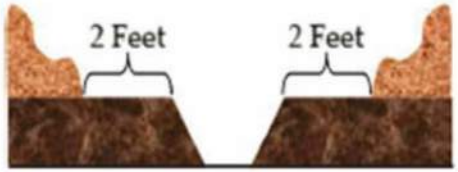
What is a trench?
A narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet.

A Competent Person...
- Must identify existing and predictable hazards in the surroundings or working conditions
- **AND** has authorization to take prompt corrective measures to eliminate them
- Often this is the foreman
- Direct all questions, worries, and concerns to the competent person

Why do I need to know?
Your competent person is a valuable resource; direct all questions, worries, and concerns to that person. Failure to follow safe practices can have fatal results.

TRENCH PROTECTION
- Around 36 deaths annually industry-wide in the US result from trench hazards.
- Designed to prevent cave-ins and to protect you from being buried alive.
- Required at 5' depth or more. (For unstable soil, protection may be required at less depth)
- Options: Sloping, Benching, and Shoring

Spoil Piles: All soil and rock removed must be piled back at least 2' from the excavation to help prevent collapse and falling objects.



Hazards: • Trench Collapse • Struck by Heavy Equipment • Bad Atmosphere • Falls

ACCESS/EGRESS
- Trenches 4' deep or deeper require a safe means of entry and escape within 25' of the worker.
- Options include ladders and ramps.
- Ladders must extend 3' above the trench or trench box.
- The means of exit or entry must be in a protected area of the trench if over 5' deep.
- Employees must not exit through or even momentarily occupy an unsafe trench area.

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Trench Protection – Types

When do we need it?

OSHA Requires Trench Protection When Working At Depths:

- ✓ 5' – In Most Cases
- ✓ Under 5' if the ground is unstable

Why do we need it?

At least 36 fatalities occur annually in the US from excavation hazards including collapse.

Sloping

Sloping at a safe angle (based on soil type) prevents or minimizes the risk from a collapse.

Soil Type A	¾:1
Soil Type B	1:1
Soil Type C	1½:1
(Run over Rise)	

The safest condition is to treat all soil as Type C. This may not always be practical.

Benching

Benching requires the same overall angle as sloping.
This technique can be used only in soil types A and B.

What are the options?

Shoring/Trench Shields

Shoring allows for a very narrow excavation saving time and backfill. In order to make it safe for workers, follow these guidelines:

- Box raised no higher than 2' up from bottom

- Must be pre-planned with data sheets available
- Must be in proper repair
- Timber Shoring, Aluminum Hydraulic Shoring, Trench Jacks and Shields must be properly rated and installed.

Violations

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Confined Space Awareness

What is a Confined Space?

OSHA defines a confined space as:

- A space that is large enough and so configured that an employee can enter and perform work,

AND

- has limited openings for entry and exit,

AND

- is a space that is not designed for continuous employee occupancy.

These spaces are usually designed more for the purpose of product storage, process and material enclosure, or are spaces used to transport materials or substances.

Some examples of confined spaces include silos, storage tanks, pits, vats, manholes, utility vaults, and tunnels. (Ready mix concrete truck drums)

Employees are generally only required to enter these spaces to perform such tasks as maintenance, equipment testing and inspections.

All permit-required confined spaces must be clearly marked.

What are the hazards?

- Hazardous atmospheres such as:
  - Oxygen deficient or enriched
  - Flammable vapors
  - Toxic environment
- Engulfment Hazards due to:
  - Liquids
  - Fine granulated materials
- Falling objects
- Temperature extremes
- Noise
- Slick /wet surfaces
- Toxic chemicals

Only specially trained rescue personnel are allowed to perform a confined space rescue. Statistics show that 60% of confined space fatalities are untrained would-be rescuers.

Permit-Required vs. Non-Permit Required

To determine if a confined space is permit-required or non-permit-required, the employer must consider if there are any hazards or potential hazards within the space to be entered.

Characteristics that would make a space permit-required would include:

- A hazardous atmosphere or potentially hazardous atmosphere
- Contains a material that could lead to engulfment
- Is shaped in such a way that workers could be trapped
- Has any other serious health hazards

To be considered a non-permit-required confined space, the space must be free of:

- All hazards that could lead to serious injury or death
- A hazardous atmosphere or the potential to become hazardous

The employer must verify that none of these conditions are present in order for a space to be classified non-permit-required

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Electrical Cords

What do all of these have in common?

Any one of them could have caused this!

HAZARDOUS

Avoid the electrical hazards summary:

- Always use a functioning GFCI with cords or corded tools
- Make sure your cord has a ground prong
- Inspect the cord for external damage such as cuts and strains
- Look for signs of internal damage like bulging or rolling
- Never use the cord to lift anything, including its own power tool
- Never unplug it by pulling on the cord – pull on the plug only

Electrical burn on hand and arm.

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GFCI vs. Circuit Breaker

What's the difference?

GFCI Ground Fault Circuit Interrupter

Designed to protect people, like you!

- Senses a loss of current
- Very minimal loss (.005 amp)
- Stops the current flow in approximately 1/5 of a second
- You will still feel the sting
- But, it is so brief that it will not cause an injury

Circuit Breaker

Designed to protect equipment and wiring due to overloads

- Requires enough current, in excess of the breaker rating
- Also requires it for a sustained time
- The excess current generates heat in the breaker
- That's how it pops. But, not soon enough!
- It has enough current to kill and cook you before you know it

FACTS:

- It takes less than .5 amps to cause severe burns to your skin or muscles
- It only takes .05 to .1 amps to put your heart into irregular rhythm (ventricular fibrillation)
- If your heart can't pump blood, you die within minutes
- No matter how big a man you think you are, there is nothing you can do about that
- GFCI's limit the current flow through you to levels that will not injure

It's so easy to do. Why wouldn't you insure YOUR power is GFCI protected?

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Lockout/Tagout – Affected Persons

LOCKOUT / TAGOUT

(OSHA Standard 1910.147)

Machines are used throughout your facility everyday. They are used to make your job easier. As helpful as this equipment is, it cannot tell the difference between flesh & metal. That is why we need to Lock & Tag all equipment when we are maintaining it.

The facility must decide which specific locks they will use for LOTO.

Then, this style of lock may not be used for any other purpose.

An **Authorized** employee is one who has completed a LOTO training course and whose job it is to conduct the servicing and/or maintaining of equipment.

An **Affected** employee is one whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Lockout/Tagout (LOTO) is to be used when:

1. An employee is required to remove or bypass a guard or other safety device; or
2. An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

Example: Changing the blade of chop saw. Unplug cord and maintain exclusive control over cord. LOTO not required.

- Locks and Tags are only to be applied by the employee performing the work and shall only be removed by the employee who put on the lock or tag.
- Any employee removing another employees lock is subject to disciplinary actions up to and including termination.

YOU MAY NOT WORK ON EQUIPMENT REQUIRING LOCKOUT / TAGOUT PROCEDURES UNLESS YOU HAVE BEEN TRAINED IN YOUR LOCKOUT / TAGOUT PROGRAM.

The standard does not apply to work on cord & plug connected electric equipment if:

- Exposure to the hazards of unexpected start up of the equipment can be controlled by the unplugging of the equipment from the energy source, and
- The plug stays under the exclusive control of the employee performing the servicing or maintenance.

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Occupational Safety - Housekeeping

FIRE EXIT

- ✓ Keep walkways clear to avoid Slips, Trips, And Falls.
- ✓ Keep emergency exits, safety equipment, and electric panels clear in case of fire or other emergency.
- ✓ If you can't see the floor, how do you know whether you are stepping on a nail, an oil spill, or a banana peel?
- ✓ Put things back where they belong after use.
- ✓ Housekeeping is part of the job, not something you do at the end of the day.
- ✓ When housekeeping gets this far out of control, even cleaning up the mess can be hazardous. Clean up as you go to avoid hazards.
- ✓ Clean up all spills immediately to avoid slip hazards. Put an absorbent material on oil spills.

Causes of Accidental Death

1. Vehicular 44%
2. **Falls 18%****
3. Poisoning 13%
4. Drowning 4%
5. **Fire 3%****

**GOOD HOUSEKEEPING will prevent many of these deaths and injuries.

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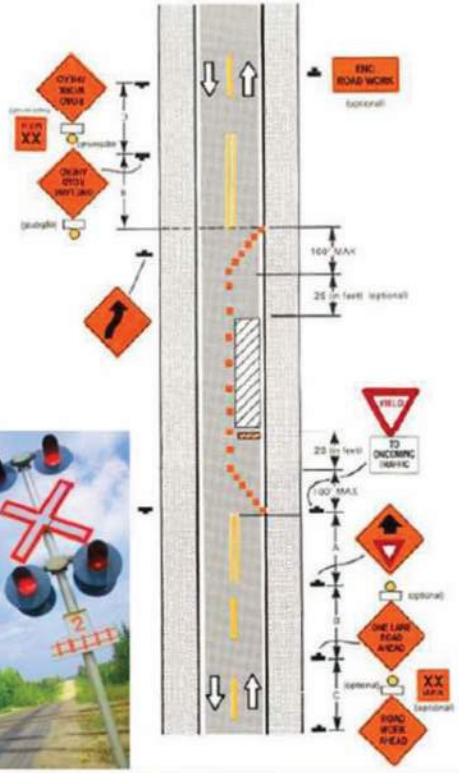
Defensive Driving

FOLLOW THESE STEPS TO AVOID COLLISIONS

1. Keep your vehicle in good repair
2. Be familiar with your car (front/rear wheel drive, ABS breaks)
3. Be aware of other drivers.
4. Anticipate hazards. (Examples: road hazards, pedestrians, ice)
5. Leave space to avoid a collision.
6. Ignore aggressive drivers and don't be one.
7. Avoid distractions (smoking, cell phone, alcohol, drugs).
8. Do not drive through activated train crossings.
9. Give the right-of-way to emergency vehicles.
10. Allow extra space for break downs and oversized vehicles.
11. Follow the rules of the road.



STATISTICS

Collisions with Animals=1.5 Million Annually, $1 billion in damages, 10,000 injuries, 150 deaths

Cell Phone use: Increases chance of collision up to 5 times

Drinking and Driving: Involved in 39% of traffic fatalities

Fatal Traffic accidents: 25% of injury-related deaths

COMMON DRIVING HAZARDS

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