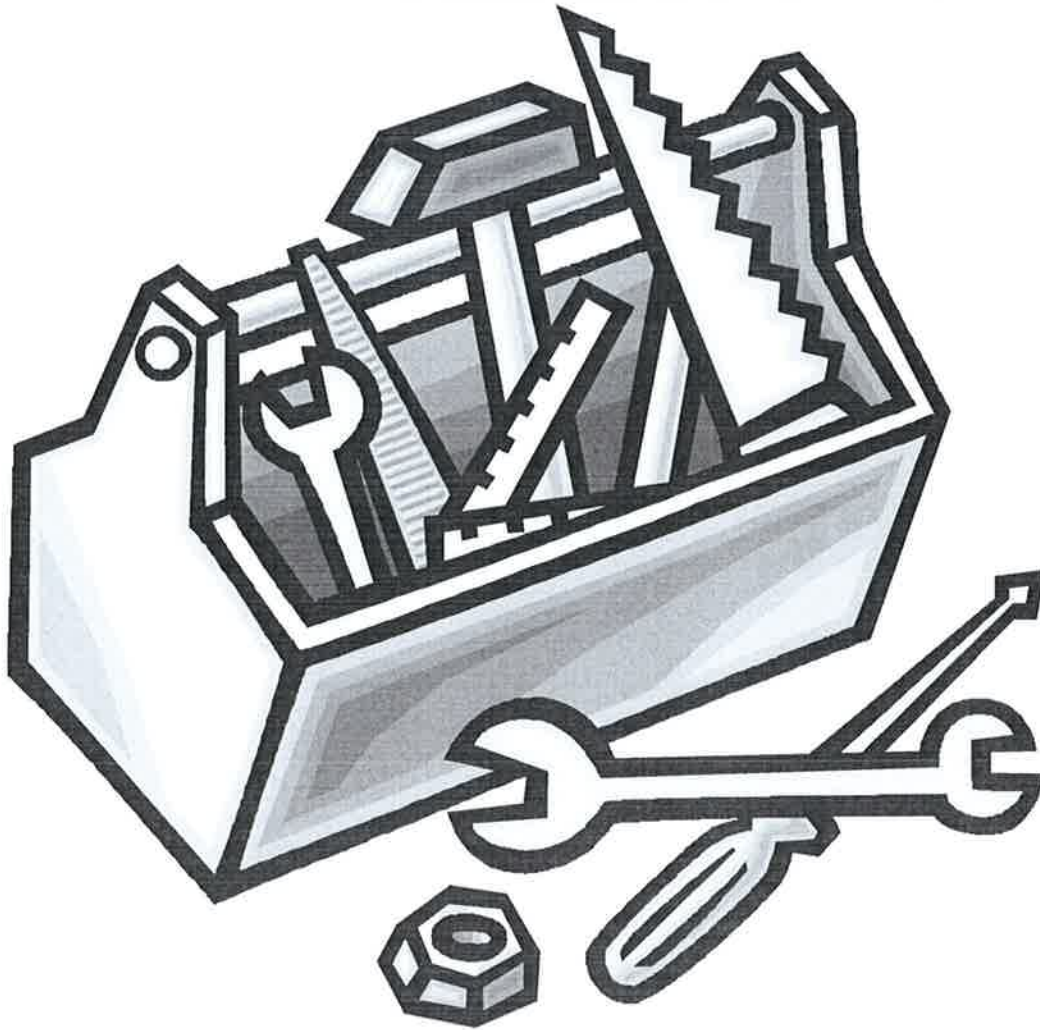




**Think results.**



# Safety and Health Program



**Safety & Health General Orientation**  
**New Hires and Transferred Employees**  
**Lantz Construction Company**  
**Broadway, Virginia**

Safety & Health Manual # \_\_\_\_\_

**Lantz's goal is to be the leader in Health & Safety performance. All employees must follow the policies described in this training session. (Please initial in blanks as topics are reviewed.)**

**Initial Orientation**

**A.**

- |   |  |
|---|--|
| <input type="checkbox"/> Vehicle Operations Policy                | <input type="checkbox"/> OSHA On-Site Visits                 |
| <input type="checkbox"/> Blood Borne Pathogens                    | <input type="checkbox"/> Reporting of Accidents              |
| <input type="checkbox"/> Confined Space                           | <input type="checkbox"/> Eye Protection (100%)               |
| <input type="checkbox"/> Cranes                                   | <input type="checkbox"/> Steel Toed Boots (100%)             |
| <input type="checkbox"/> Extension/Power Cord Inspection & Repair | <input type="checkbox"/> Hard Hats (100%)                    |
| <input type="checkbox"/> Emergency Action Plan (EAP)              | <input type="checkbox"/> Respiratory Protection Policy       |
| <input type="checkbox"/> Excavations & Trenches                   | <input type="checkbox"/> Voluntary Use (Appendix D)          |
| <input type="checkbox"/> Fall Protection                          | <input type="checkbox"/> Scaffolds                           |
| <input type="checkbox"/> Fire Extinguisher Training               | <input type="checkbox"/> Ladder Use                          |
| <input type="checkbox"/> Powered Industrial Trucks                | <input type="checkbox"/> Safety Incentive Programs           |
| <input type="checkbox"/> Power Tools/Hand Tools                   | <input type="checkbox"/> Construction Fatalities & Accidents |
| <input type="checkbox"/> Hazardous Communication Policy           | <input type="checkbox"/> Material Handling (Lifting)         |
| <input type="checkbox"/> House Keeping                            | <input type="checkbox"/> Employees Under 18 Years of Age     |
| <input type="checkbox"/> Lock Out/Tag Out                         | <input type="checkbox"/> Cell Phone Policy                   |

**B. I have received the following Personal Protective Equipment (PPE) and agree to wear such equipment as outlined in the Safety & Health Program.**

☐ Hard Hat

☐ Safety Glasses

☐ Gloves

**C. I agree to return all equipment, manuals or materials issued to me upon my termination from Lantz Construction Company. In addition, by signing below, I am authorizing the cost of any item issued but not returned, to be deducted from my final paycheck.**

**Print Name** \_\_\_\_\_ **Sign Name** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Trainer:** \_\_\_\_\_ **Trainer's Signature:** \_\_\_\_\_



## Lantz Construction Company Cardinal Safety Rule

---

We will not engage in known illegal activities, procedure violations, or willful unsafe behaviors that endanger or injure ourselves or others; and/or pose significant risk to or damage company property.

Behaviors considered to be very serious safety violations and in violation of the above rule include, but are not limited to (as determined by management):

### Illegal Activities

- Possession, use or sale of illegal drugs, firearms, or explosives on company properties or related job sites
- Provoking or instigating a fight on company property or related job sites
- Knowingly disposing of hazardous materials in an illegal manner
- Knowingly falsifying environment, health, or safety records
- Failure to report a change in drivers license status (i.e., revoked, suspended, cancelled...) if operating a company vehicle
- Acts of sabotage (i.e., purposely damaging safety equipment, tools or structures related to Lantz Construction or any of it's projects)

### Procedure Violations and Willful Unsafe Behaviors

- Failure to comply with the intent of Lock Out Tag Out (Zero Energy) procedures
- Failure to comply with the intent of the following permit requirements: Cutting and Welding (outside designated areas) and Confined Space Entry
- Failure to comply with the intent of Elevated Work procedures and fall arrest systems
- Knowingly directing an employee to operate equipment with inoperative or malfunctioning safety devices exposing an immanent hazard
- Operating equipment after intentionally bypassing or defeating a required safety device (unless alternative precautions have been taken i.e., permit, procedures, or task specific training)
- Intentionally operating equipment that has been taken out of service or tagged as unsafe to operate

**The actions listed above pose such great potential for serious injury or business interruption that any employee engaging in such actions will be immediately suspended pending a formal investigation. Depending on the outcome of this investigation, disciplinary action up to and including termination may be taken.**

Development, communication publication, and enforcement of the Cardinal Rule is intended to establish minimum acceptable standards for safe behavior in an effort to protect the health and safety of all employees, visitors, and contractors. All employees are expected to understand and adhere to the Cardinal Safety Rule and immediately request assistance in questionable situations. In addition, employees, contractors and visitors are encouraged to continuously evaluate the safety of all company related operations, encourage safe behavior, actively strive to correct unsafe behavior, as well as to become involved in the continuous improvement of our safety performance.

Deviations from the above require a Project Manager's and Safety Director's approval of alternative safeguards (i.e., written safe job procedures, PPE, permits, and/or task specific training).

I acknowledge the significance of the above requirements and agree to comply with all safety requirements.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

Revised By: Allen Hatch  
Revised: 5/10/12

## **Lantz Construction Company**

### **Cell Phone/Electronic Device Use Policy**

The No. 1 on-the-job fatality is transportation incidents, and at Lantz Construction Company, it is our job to enforce procedures that mitigate this risk. It is for your safety, as well as the safety of everyone else on the road, that the company has put this Cell Phone/Electronic Device Use Policy in place.

All employees are expected to understand when this policy applies and follow all procedures. As technology evolves, Lantz Construction Company also expects employees to use common sense and err on the side of caution when assessing electronic device use while driving. The company encourages all employees to take a proactive approach to road safety, so Lantz Construction Company expects employees to report any problems or known violations of this policy to their supervisor.

Prior to working on any Lantz Construction Company job site, each employee is expected to have read the entire Cell Phone/Electronic Device Use Policy, which includes

- Purpose
- Scope and Applicability
- Definitions
- Procedures
  - State Laws
  - General Procedures
  - Headset/Hands-Free Use
  - Emergency Calls
  - GPS Systems
  - MP3 and Other Audio Devices

If you have any uncertainty or questions regarding the content of these policies, you are required to consult your supervisor. This should be done prior to signing and agreeing to the Lantz Construction Company Cell Phone/Electronic Device Use Policy.

I have read and understand Lantz Construction Company's Cell Phone/Electronic Device Use Policy, and I understand the requirements and expectations of me as an employee. I agree to adhere to all provisions and procedures outlined in the policy, and I understand that failure to do so will result in discipline up to and including termination.

Employee Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## **Quiz - Respiratory Protection**

1. The type of respirator used is based on:
  - a. the chemical properties of the contaminant.
  - b. the permissible exposure limit of the contaminant.
  - c. the oxygen level in the air.
  - d. all of the above.
  
2. If there is not enough oxygen in the area you can use a “dust mask?”  
  
True or False
  
3. The use of a dust mask at Lantz Construction Company is voluntary?  
True or False
  
4. “Dust Masks” are used for particulates?  
  
True or False



## **Reporting of Accidents and Medical Treatment Policy**

- Any and all accidents, injuries, and illnesses must be reported to your immediate supervisor **at the time of occurrence**. Failure to report work related incidents immediately could threaten your worker's compensation benefits and may result in denial of claim.
- It is Lantz Construction Company's policy to seek attention for any and all work-related injuries and illnesses requiring doctor's care. Care will be provided by an approved company physician. A complete list of approved physicians will be provided in the event of a work-related injury or illness requiring medical attention.
- Lantz Construction Company may not be responsible for any medical expenses or physician's orders incurred other than from an approved company physician.
- It is essential that all employees requiring treatment for a work related injury / illness be seen by an approved company physician. These physicians are familiar with our business and will ensure that if possible the employee will remain at work, even if restricted duty is prescribed. If the employee feels this is a potential life-threatening emergency, the employee should seek medical attention immediately and contact the Safety Director as soon as possible.
- **Failure to comply with any part of this written policy may lead to disciplinary action up to and including termination.**

**I have read and understand the above statements. By signing below, I acknowledge that Lantz Construction Company's policy and procedures regarding injury and illness reporting has been explained to me, and I agree to abide by these policies and procedures.**

**Name:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Trainers Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## **Appendix D to §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 respirator's 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.

Print: \_\_\_\_\_

Sign: \_\_\_\_\_

Date: \_\_\_\_\_



## Our Safety Mission:

Provide an accident free workplace by:

- Involving everyone from top management to each worker.
- Everyone's job is to spot and correct hazards or report them immediately.
- Everyone is responsible for his or her own safety and that of our co-workers.
- Working safely is a condition of employment.
- An accident free workplace is not a goal – It Is Our #1 Priority.

Lantz Construction Company's employees are our most valuable assets.



# Fire Extinguisher Inspection

- How Often
  - Monthly
  - Serviced Yearly



- Items To Be Inspected

## 1 Pin

- ❑ The pin is installed and secured in place.

## 2 Gauge

- ❑ The gauge must be in the green.

## 3 Nozzle/Hose

- ❑ Make sure the hose is tight and nothing is stuck in the nozzle opening.

## 4 Dents

- ❑ Bigger than the size of a quarter or deeper than a ¼ inch.

## 5 Inspection Tag

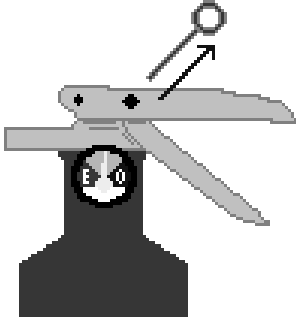
- ❑ The tag on the extinguisher must be less than 1 year old.
- ❑ The annual inspections are required to be preformed by a fire extinguisher professional.



**Finally initial the tag by the appropriate month.**

# How to Operate an Extinguisher

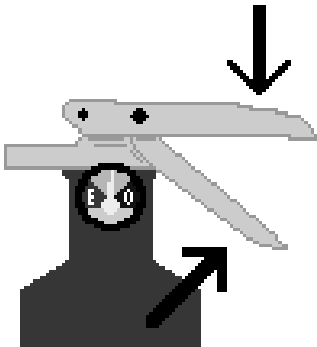
It's easy to remember how to use a fire extinguisher if you can remember the acronym **PASS**, which stands for **Pull**, **Aim**, **Squeeze**, and **Sweep**.



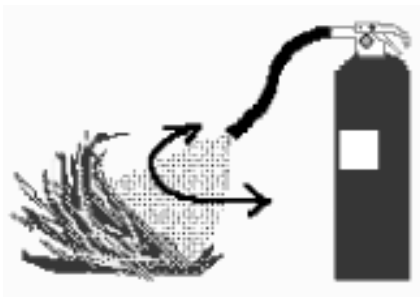
**Pull** the pin. This will allow you to operate the extinguisher.



**Aim** at the base of the fire. This is where the fuel is.



**Squeeze** the top handle or lever. This releases the pressurized extinguishing agent in the extinguisher.



**Sweep** from side to side until the fire is completely extinguished. Start using the extinguisher from a safe distance away, then move forward. Once the fire is out, keep an eye on the area in case it re-ignites.

# Lantz Construction Company

## Extension/Power Cord Inspection

**Note(s):** Flat extension/power cords are not acceptable and must be thrown away.

Only extension cords of the three-wire type with grounding prongs can be used.

Power tool cords must be the three-wire type, or the power tool must be double insulated.

**A GFCI (Ground Fault Circuit Interrupter) must be used with all extension/power cords.**

1. Pick out the extension cord or power tool you want to use and physically and visually examine the end attachment(s) for:

\* Lack of Strain Relief – Visible black, white, and/or green conductors at the plug end attachments.

\* If the original end has separated from the outer sheaving/jacket install a new attachment plug.

\* If a replacement end is installed, shorten the cord slightly so the end of the plug tightens completely around the outer sheaving/jacket.

\* Metal Attachments:

\* If the attachment plug casing is completely made of metal, a new plastic plug attachment must be installed.

\* For partial metal attachments a rubber bushing must protect the outer jacket from the metal clamp(s).

\* If the rubber bushing is missing, a new bushing or a new plastic plug attachment must be installed.

\* Missing grounding prongs and/or loose or missing screws.

\* If a grounding prong is missing a new end attachment is to be installed.

\* If the screws on the attachment plug are missing install new screws.

\* If the screws are loose tighten the screws securely.

2. While unrolling the electrical cord run the entire length of the cord through your hand; to physically and visually examine it for cuts/knicks to the outer sheathing/jacket.

\* Any cuts/knicks on the cord in which, you can visually see the copper wires (inner conductors) must be shortened and a new end attachment installed or the cord thrown away.

3. If cuts/knicks are only to the outer sheaving/jacket, you may use the Lantz Construction Company extension/power cord repair process:

\* Limitations on electrical cord repair:

\* **Only one repair is allowed per 2 foot of extension cord. If more than 6 repairs are needed within a 25-foot section that section of cord must be discarded.**

\* Only two repairs are allowed on the cords of power tools (saws, drills, table saws, etc...). If more than one repair is necessary the cord must be replaced.

**Note:** When rolling up an extension/power cords follow the above steps in the reverse order.

4. When installing a new attachment plug the color coding for cord conductors and screws are:

\* Black conductor to brass screw

\* White conductor to white screw Green or bare conductor to green screw

**Note:** For any repair that can not be made immediately the cord must be tagged “Do Not Use” until repaired.

# Construction Company

## Extension/Power Cord Repair

Any extension/power cord in which you can see the copper wires (inner conductors) can not be repaired using the method below.

The extension/power cord must either be shortened or thrown away.

If the outer sheaving/jacket is missing completely around the inner conductor insulation the cord must be shortened or thrown away.

1. Thoroughly inspect the cut/knick to ensure there are no visible copper wires (inner conductors). If there are copper wires present the cord must be shortened or thrown away.
2. Clean the cord 3-inches above and 3-inches below the cut/knick to ensure the electrical coating and vinyl electrical tape will stick to the cord.
3. Using either the Star-Brite® Liquid Electrical Tape or the 3M Scotchkote® Electrical Coating UL approved liquid coating:
  - \* Apply the liquid 1-inch above and 1-inch below cut/knick completely around the cord.
  - \* Bend the cord to ensure the coating works inside the cut/knick an additional amount of coating may need to be added to the cord.
  - \* Allow the coating to set-up for approximately 5 minutes or until tacky.
4. After allowing the coating to dry, apply at least 3 layers/wraps of an UL 510 vinyl electrical tape 2-inches above and 2-inches below the cut/knick.
  - \* While wrapping the vinyl electrical tape stretch it to  $\frac{3}{4}$  its original width.
5. After wrapping the cord with vinyl electrical tape apply a second liquid coating completely covering the vinyl electrical tape.
  - \* Allow the repair to dry for at least 30 minutes before putting the cord back in service.

# Accident Causes

## Unsafe Conditions

- Missing Machine Guards
- Exposed Electrical Wires
- Damaged Equipment
- Slippery Walking Surfaces
- Improper storage



## Unsafe Acts

- Horseplay
- Running
- Violating Safety rules
- Failure to Use Personal Protective Equipment
- Operating Equipment You Have Not Been Authorized or Trained to Use

**Unsafe acts can hurt  
someone else... think  
before you act.**

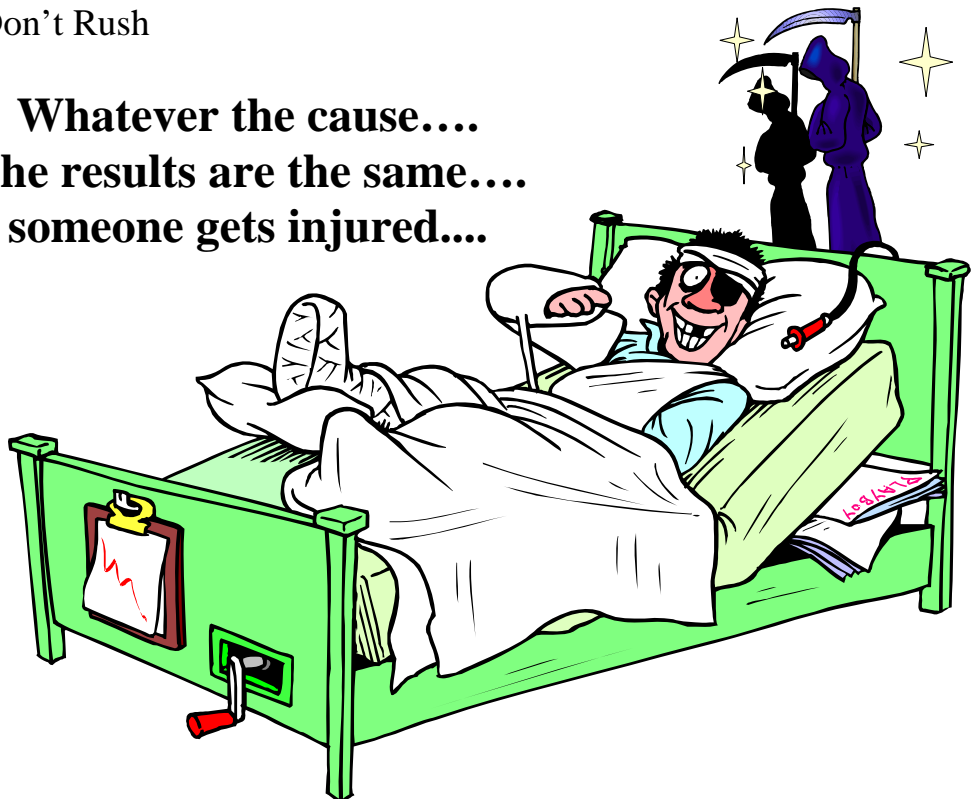
## Prevent Accidents **Think First ---- Act Second**

- Stay safe and keep others from harm by following all safety rules and use your **PPE**.
- When you have, questions ask your supervisor immediately.
- Don't take chances. Don't Rush

**Whatever the cause....  
The results are the same....  
someone gets injured....**

## Results of Accidents

- Amputations
- Cuts and Bruises
- Broken Bones
- Chemical Burns
- Loss of eyesight
- Fires
- Death



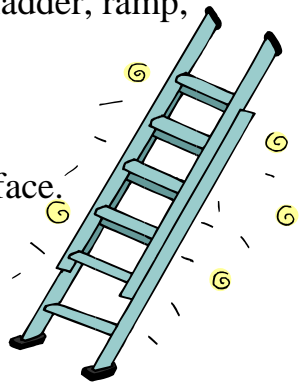
# Excavations and Trenches

## Excavation Safety Facts

- Each year as many as 400 workers die and another 4000 are injured from cave-ins.
- Most are 20-30 years old with no training.
- Most deaths are in trenches 5-14 ft deep.
- Cave-ins cause deaths by; Suffocation, Crushing, Loss of Circulation, and Falling Objects.
- One cubic foot of soil can weigh up to 140 lbs.
- One cubic yard can weigh 3000 lbs.

## Safe Access and Egress

- Excavations greater than 4-feet in depth must have access and egress (i.e. ladder, ramp, stairs, etc.).
- Access must be within 25-feet of employees.
- Ladders must extend from the bottom of excavation to 3 feet above surface.
- Personnel ramps must be at least 18 inches wide.



## Protective Systems (Cave-in Protection)

- Required in any excavation or trench where the depth is greater than 5 ft deep.
- Also required at any depth if there is any possibility of a cave-in (i.e. sandy or wet soils).

## 3-Types of Protective Systems

- Benching and Sloping Options
- Shoring Support System Options
- Trench Boxes - Shield Systems



**NOTE:** A Registered Professional Engineer must design any trench greater than 20 feet deep.

All trenches and excavations **can not** have any tools, equipment, or spoil pile within 2-feet of either edge when employees are working in them.

# Fall Protection

## Each Year

370 Falls from elevation result in death.

67,000 Falls from elevation result in injuries with lost workdays.

## WHEN IS PROTECTION NEEDED?

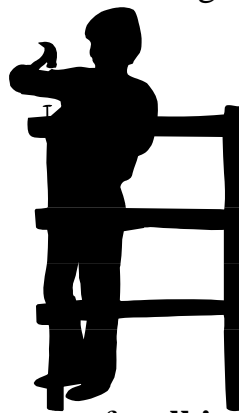
- Unprotected sides or edges 6-feet or more above lower levels.
  - (window and door openings)
- Walking or working surface 6-feet or more above a lower level.
  - (floors, lofts and excavations)
- Leading edges 6-feet or more above lower levels.
  - (roofs and mezzanines)



## TYPES OF PROTECTION

### Conventional:

- **Guardrail Systems:**
  - Top Rail - 42" vertical height, plus or minus 3"
  - Midrail - About 21" vertical height, height between top edge of top rail and walking/working surface
  - Toeboard - 3 1/2" vertical height, board rest on walking/working surface when items are laid on the working level within 6-feet of the guardrail system.
- **Safety Net Systems**
- **Personal Fall Arrest Systems**



### Non Conventional:

- Fall Protection Plans
- Warning Line Systems
- Safety Monitoring Systems
- Controlled Access Zones

**COVERS** are required over any opening on any type of walking surface that has any one dimension that is 2-inches or greater.

(Skylights, Duct Openings, Pipe Openings, Around Columns, etc.....)

- Capable of supporting, without failure, at least twice the weight that may be imposed.
- Secured to prevent accidental displacement.
- Color-coded or marked with "COVER" or "HOLE".

**WALL OPENINGS** require a guardrail if it is greater than 30-inches high and wider than 18-inches.

# Hazardous Communications (HAZCOM) Material Safety Data Sheets (MSDS's)

## Employee Rights

- Be provided with a copy of the MSDS within 24 hours of your request.
- Be told the hazards of the chemicals you work with.
- Be told the appropriate equipment and methods to use to protect yourself and any emergency procedures.

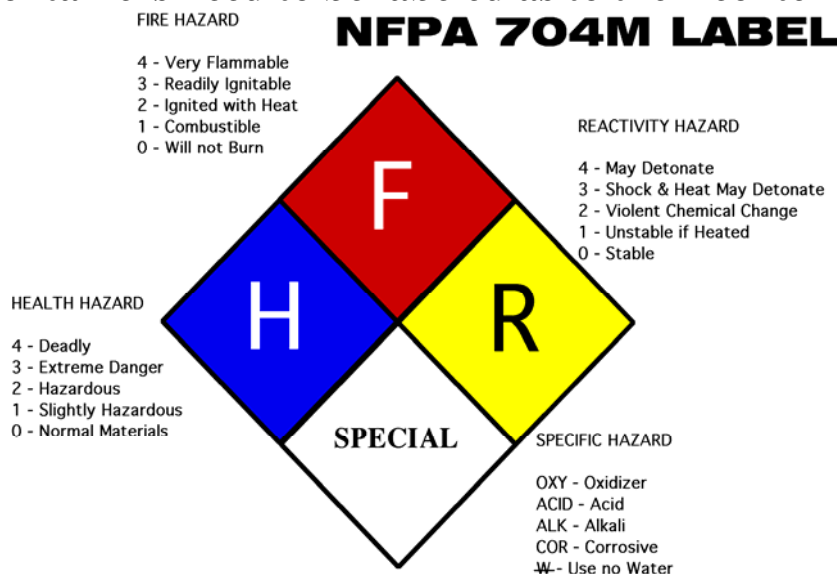
## Employee Responsibilities

- Know where to obtain the MSDS.
  - Owner Owned
  - Lantz Construction Company Sites
- Read the MSDS prior to working with the chemical.
  - Use protective equipment listed on the MSDS.
  - Follow manufacturer directions for use.

## • ASK QUESTIONS!

## Labeling Containers

- Primary Containers - Containers that the chemical is placed in and labeled by the manufacturer.
- Secondary Containers - Containers that the user places the chemical in. (i.e. Spray bottles, portable sprayers, safety cans, plastic bottles.)
- **Secondary containers need to be labeled as to their contents.**





# Ladder Use

**All ladders will be inspected before use for defects.**

- **Missing parts spreaders, rivets, feet, etc...**
- **Cracked or broken parts side rails, rungs, feet, etc...**

**All broken ladders will be tagged “Do Not Use” until repaired.**

**Ladders will only be used for the purpose for which they were designed.**



## ➤ **Stepladders:**

- **Can not be used as straight ladders.**
  - **Will be unfolded and spreaders locked before use.**
- **The top step and top cap will not be used for climbing or standing on.**

## ➤ **Straight ladders:**



- **Can not be used for decking, bridging, planking, etc...**
- **The top 3 steps will not be used for standing or climbing.**
- **Will be used at the proper angle.**
- **Measured from the bearing point the ladder will be moved 1 foot horizontal, for every 4 feet vertical.**

**All ladders used to access an upper work surface will be:**

- **Held in place by someone until secured.**
- **Tied off and secured to prevent displacement.**
- **Extended at least 3 feet above the work surface.**

**On average 136 people die from falls off of ladders each year!!!!!!**



## Lifting The Do's:

- Be in good physical shape
  - Stretch prior to lifting any load.



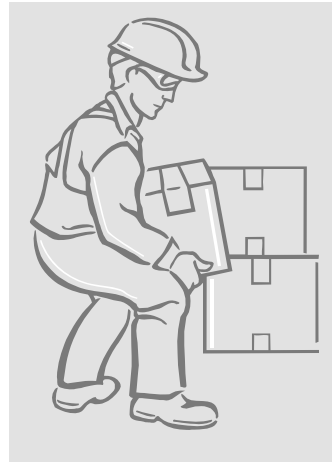
- Think prior to lifting/carrying any object.  
Can I use something to help me lift/carry the object?
  - Hand Trucks
  - Forklifts



- Squat keeping your back straight as possible, bend at your knees, not your waist.
  - It is okay to go down on one knee for heavy loads.



- Get a good grip on the material.
- Draw the load close to your body.
- Lift with your legs not your back.
- LOOK STRAIGHT AHEAD
- Turn with your feet not with your back.
- ASK FOR HELP if it is too heavy.



## Lifting “The Don’ts”

- Never twist or bend sideways to grasp any object.
- Never lift any material with arms fully extended.
- Never lift hard to grasp items.
- Never lift more than 80 pounds by yourself.



Don't make the mistake  
that could cause a backache.



# Lantz Construction Company

## Scaffold Requirements

Approximately **80 occupational fatalities** occur **yearly** while working on or erecting scaffolding.

Employees are **not allowed** to carry any items in their hands or hung over their shoulders while climbing or descending **any type of scaffolding ladder/climbing system**. All items that are needed (i.e. drills, saws, large work belts, etc.) on any level of the scaffold will be pulled up or lowered by rope and bucket or another method in which the employees will not have to climb/descend while handling these materials.

Scaffolds are required to be inspected daily before use.

**All working levels must be fully decked no matter the height.**

Planks that have splits or cracks longer than 12 inches in any one direction can not be used.

**Base plates are required to be used at all times for inside or outside work.**



When using scaffolds outside, a mudsill of at least 9 ½" by 9 ½" must be used for the base plate to rest on.

- This can be accomplished by laying 3, two by fours cut 9 ½" long or longer, side by side.
- It is also a good idea to secure the base plates to the mudsills using nails to prevent displacement.

Lantz Construction Company scaffolds can not be used as shoring to support loads unless approved by the engineering department.

Any scaffold erected by LCC employees in excess of 35-feet high will need prior approval by the Safety Director.

### **Measurement Requirements**

1 inch - maximum gap in between scaffold boards/walk planks.

6 inch - minimum scaffold board overhang unless cleats are used.

12 inch - maximum scaffold board overhang.

6 feet - fall protection required a guardrail system or harness system must be used.

- The side that the work is being performed on may be left open if it is 14 inches or closer to the work face.



### **Guying, Tying Bracing Requirements For All Scaffolds**

Any scaffold with a height to base width ratio of more than 4 to 1 must be secured by guys, ties or braces.

- Scaffolds three foot wide
  - Tied to the wall or other structure at a height of 12 feet and then every 20 feet there after.
- Scaffolds five foot wide.
  - Tied to the wall or other structure at a height of 20 feet and then every 26 feet there after.

All scaffolds that are used in a continuous run of more than 30 feet in length must be tied into the wall no matter the height.

### **Mobile Scaffolds**

Employees on mobile scaffold can not be pushed around unless the height to base ratio is 2 to 1 or less and the floor is free of holes, pits, or obstruction.

All 4-wheels will be locked prior to using the scaffold and the working level fully decked.

No mobile scaffold can exceed a height to base width ratio of 4 to 1.

### **Scaffold Wagons**

When lowering or raising platforms on scaffold wagons and employees are on the platform 2 people need to be utilized, one to pull the pin and one to hold the platform in place.

# Work Restrictions for Employees Under The Age of 18:

Virginia Law states anyone under the age of 18 may not work in any occupation that exposes them to a recognized hazard capable of causing injury or death.

Lantz Construction Company has setup the following guidelines for our Superintendents to follow:

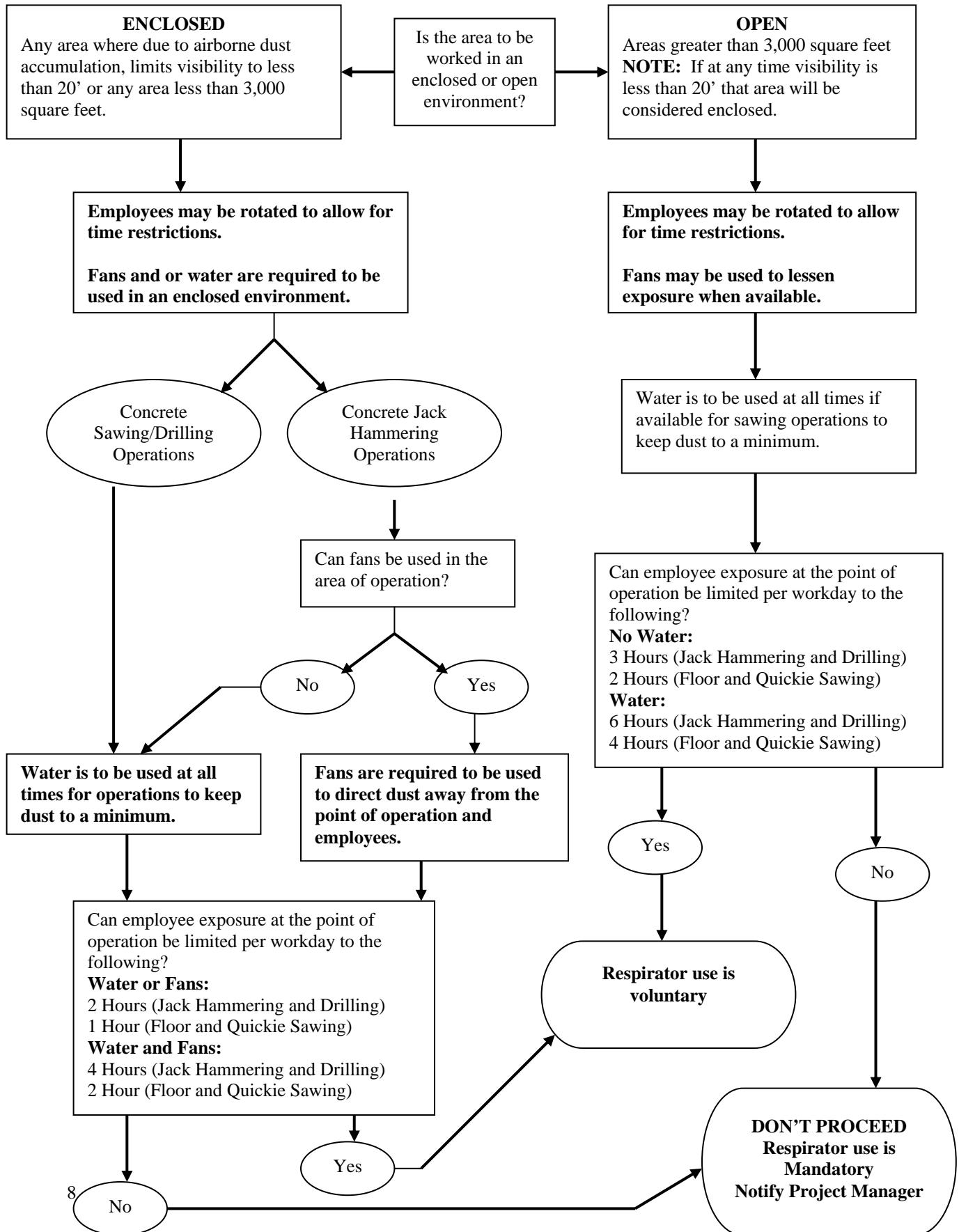
## **What a minor can not do:**

- Use any power hand tools (i.e. skill-saws, grinders, Hilti-guns, air guns, jackhammers, table saws, etc) If it is powered by electricity they can not use it. One exception a drill less than ½ horsepower.
- Work on any roof.
- Work in any excavation/trench deeper than 4 feet at any point.
- Work in any permit required confined space.
- Work in demolition operations.
- Perform steel erection in the air.
- Operate any dangerous equipment (i.e. backhoe, skid loader, bulldozer, forklift, etc.).
- Erect scaffolds, they may work off of a scaffold after it is fully erected completely decked with guardrails.
- Operate aerial and scissors lifts minors may work off of lifts but can not be the operator.
- Operate a motor vehicle.

## **What a minor can do:**

- √ Clean up after hazardous operations have stopped.
- √ Assist with layout.
- √ Use non-powered handtools (i.e. hammer, screwdrivers, chisels, files, etc.)
- √ Work in excavation/trenches less than 4 feet in depth at any point.

Respirator Use  
Voluntary or Mandatory  
**Concrete, Block, and Brick  
Removal ONLY**



# Lantz Construction Company

## Combustion Engine Use Permit

USE THE ASSESSMENT TOOL TO DETERMINE IF A PERMIT IS REQUIRED									
Location:							Date:		
							Start Time:		
							End Time:		
Type of Space:	Interior Room(s)	Exterior Rooms(s)	Outside	Defined Confined Space?	YES	NO	If "YES", <b><u>Do Not Proceed.</u></b> Contact Safety Director		
Description of work:									
Reason for using Combustion Engine:						Equipment:			
Superintendent:			Project Manger:			Employee completing permit:			
<b>----- PRE-USE CHECKLIST -----</b> <b>Part 1</b>									
Notifications	YES	NO		<b>Check all Potential Hazards</b>					
				<b>Hazardous Atmosphere</b>			<b>Physical Hazards</b>		
Safety Director				(✓) Notify Safety Director			(✓) Requires Control of Hazard		
Operations Manager				Carbon Monoxide			Temperature		Other (list):
Project Manager				Toxins			Chemical Contact		1.
Superintendent				Irritants			Noise		2.
Other: _____				Corrosives			Vibration		3.
<b>THIS PERMIT <u>CAN NOT</u> BE USED TO ENTER A CONFINED SPACE*</b>				Low Oxygen			Electrical Equip.		
				High Oxygen			Mechanical Equip.		
				Flammables (LEL)			Spark Producing		
				Other(list)			Spilled Liquids		
				1.			Engulfment		
				2.			Limited Egress		
<b>----- HAZARD CONTROLS -----</b> <b>Part 2</b>									
	YES	NO					YES	NO	
Atmospheric Testing completed				Hot Work Permit required					(✓) permit complete?
GFCI's for all electrical equipment				Lock Out Tag Out required					
Barriers erected (if required)				Required PPE in place					
Inspection of equipment complete				Dust hazard considered					
Fire Extinguisher readily available				Affected employees trained					requires CO training
<b>----- AIR SAMPLING EQUIPMENT -----</b> <b>Part 3</b>									
Equipment (Model)	Serial Number		Date of Last Calibration		User Name				
1.									
2.									
3.									
4.									

Permit Approved: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

----- AIR SAMPLING RESULTS -----

Part 4

Date	Time	Location(s)	Oxygen % (19.5-23.5%)	Combustibles % LEL (0-10%)	H <sub>2</sub> S (≤30ppm)	CO (≤30ppm)
	(+15 min)					
	(+15 min)					
	(+15 min)					
	(+15 min)					
	(+15 min)					
	(+15 min)					

----- EMPLOYEES PERFORMING WORK -----

Part 5

Name	Signature	Name	Signature
1.		3.	
2.		4.	

----- CERTIFICATION -----

Part 6

I certify that the requirements of this permit have been met.

Review Date: \_\_\_\_\_

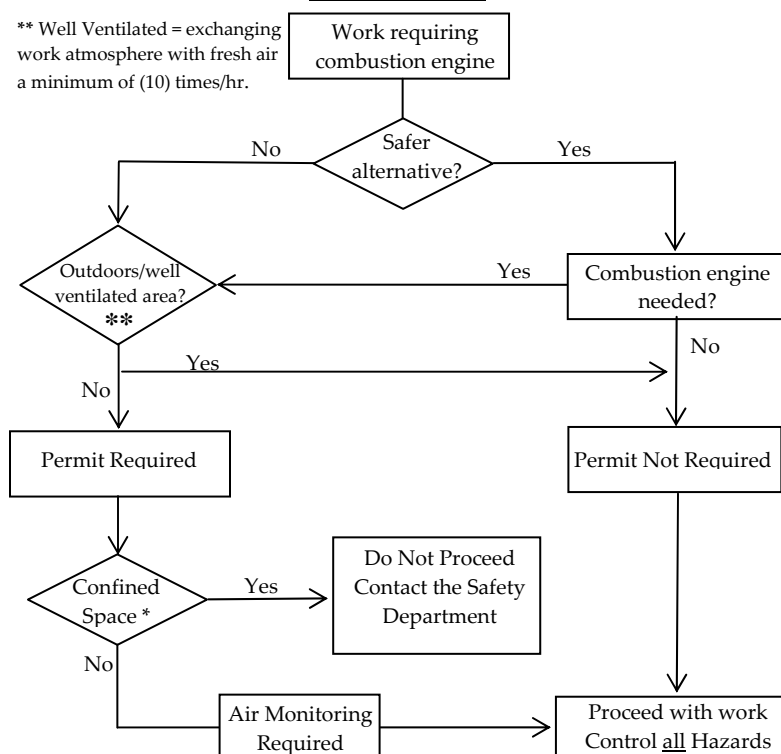
Reviewed by: \_\_\_\_\_

Superintendent \_\_\_\_\_

----- ASSESSMENT TOOLS -----

Decision Tree

\*\* Well Ventilated = exchanging work atmosphere with fresh air a minimum of (10) times/hr.



EMERGENCY CONTACT INFORMATION

Fire-Rescue-Police	911
Allen Hatch, Safety Director	540.271.5033 (cell)
Doug Driver, President	540.271.5021 (cell)
Clint Shuler, VP. Operations	540.271.5032 (cell)
<u>Public Relations</u> Doug Driver	540.271.5021 (cell)

OTHER CONTACTS

Lantz Office, Broadway	540.896.8911
VOSH, Verona Office	540.248.9280
VOSH, Northern Virginia	540.535.2879

CONFINED SPACE DEFINITION

(must meet 1, 2 & also 3 or 4 )

1.	Any space not intended for continuous employee occupancy
2.	Has a limited means of egress
3.	Is subject to either the accumulation of an actual or potentially hazardous atmosphere
4.	Space has a potential for engulfment

# Lantz Construction Company

## Confined Space Permit

Permit No:	*NOTE: this permit expires (12) hours from the "Start Time" listed below							
Location:							Date:	
							Start Time:	
							End Time:	
	Type of Space:	Tank	Pipe	Manhole	Tunnel	Vault	Other:	
	Description:							
	Purpose of Entry:							
Entrant:		Attendant:			Supervisor:			
<b>ATMOSPHERE CHECK</b>								
Instrument Type: Sperian Multi-Pro		Checked by:			Date of last Calibration:			
Document atmospheric testing every <b>30 minutes</b> or as any change occurs inside the confined space. Entrant must be using a continuous atmospheric monitoring system in the confined space.								
Time of First Reading:		Readings: Just prior to entry	+ 30 Minutes	+ 60 Minutes	+ 90 Minutes	+ 120 Minutes	+ 150 Minutes	+ 180 Minutes
Oxygen (19.5% - 23.5%)								
Combustible Gas (under 10% LEL)								
CO (35 ppm)								
H2S (10 ppm)								
Other								
<b>ENTRY REQUIREMENTS CHECKLIST</b>								
Enter a check mark as each item is completed. Enter N/A for any item that does not apply.								
	De-Energize/Lock, Tag & Try Out			Asbestos Precaution				
	Line(s) Broken-Capped-Blanked			Structural Precaution				
	Purge-Flush & Vent			Temperature Precaution				
	Continuous Ventilation			Noise Precaution				
	Continuous Monitoring			Lighting (Explosion Proof)				
	Full Body Harness w/ "D" Ring			Fire Extinguishers				
	Emergency Escape Retrieval Equip			Cutting & Welding Permit				
	Lifelines			Protective Clothing				
	Secure Area (Post & Flag)			Other Personal Protective Equip.				
	Radio Communication			Specify:				
	Voice Communication							
<b>THIS PERMIT MUST REMAIN ON THE JOB SITE UNTIL THE WORK IS COMPLETED</b>								
Signature:					Date:			
Entry supervisor certifying completion of all steps and necessary notifications above and authorizing entry.								
<b>TO SUMMON RESCUE SERVICES FOR EMERGENCIES CALL:</b>								
Fire Department: 911					Ambulance: 911			



		3.5 Hours	4 Hours	4.5 Hours	5 Hours	5.5 Hours	6 Hours	6.5 Hours	7 Hours
Oxygen (19.5% - 23.5%)									
Combustible Gas (under 10% LEL)									
CO (35 ppm)									
H2S (10 ppm)									
Other									
		7.5 Hours	8 Hours	8.5 Hours	9 Hours	9.5 Hours	10 Hours	10.5 Hours	11 Hours
Oxygen (19.5% - 23.5%)									
Combustible Gas (under 10% LEL)									
CO (35 ppm)									
H2S (10 ppm)									
Other									

## CUTTING/WELDING & HOT WORK PERMIT

Inspection of area to be made immediately prior to cutting/welding and re-inspected if work is interrupted. Cutting/welding shall be stopped in event of power failure. Date: \_\_\_\_\_ Time: \_\_\_\_\_

Building/Area: \_\_\_\_\_

Job Description: \_\_\_\_\_

### **PRECAUTIONS** (ALL LINE ITEMS MUST BE CHECKED, IF NOT APPLICABLE, NOTE AS NA)

- ☐ Area has been inspected. Initials: \_\_\_\_\_
- ☐ Superintendent and affected employees notified of cutting/welding & hot work
- ☐ A 20: ABC Fire Extinguisher available & within 20 feet of Hot Work
- ☐ A currently certified welder must perform any welding of structural steel
- ☐ Personal Protective Equipment identified and used
- ☐ Cutting & welding equipment inspected and in good repair
- ☐ Area well ventilated
- ☐ Combustible walls/floors/ceilings/equipment identified. If welding on/adjacent to combustible construction materials, Safety Director must approve. List preventive measures: \_\_\_\_\_

- ☐ Combustibles relocated beyond 35 ft. from hot work area or protected and floors swept clean.
- ☐ Combustible/walls/floors/equipment wet down, covered w/damp sand or fire retardant material (within 35 ft.).
- ☐ Walls, floor grating, pits and other openings protected.
- ☐ Area below elevated hot work clear of combustibles & flammables.
- ☐ Both sides of building wall or tank wall inspected for combustible material when working on common wall
- ☐ Lockout procedures used when necessary
- ☐ Spouting, piping, conveyors, chutes, valves & other similar conduits for dust or flammable product are either disconnected, plugged with wet material or blanked off. Conduits similar to those above must be inspected before resuming normal operation
- ☐ Tanks, piping, vessels & equipment using flammable liquids are thoroughly cleaned and purged. Piping ducts and other connections disconnected, plugged or where appropriate, double blocked/bled.
- ☐ Is flammable liquid/vapor in area of Hot Work? If so, contact Safety Director prior to beginning work.
- ☐ Wet environment? No use of AC welders in wet environment.

### **PROCEDURES FOR CUTTING IN A CONFINED SPACE:**

Air quality monitoring, ventilation, lockout, equipment isolation & rescue methods must be established prior to cutting & welding in confined space. A Confined Space Entry Permit must be issued & implemented in addition to Hot Work Permit.

### **FIRE WATCH:**

- ☐ Maintained for duration and for a minimum of 45 minutes after cutting, welding or other hot work has stopped. Name of Fire Watch: \_\_\_\_\_
- ☐ Supplied with extinguisher(s) or water hose.
- ☐ Employee has been trained in Fire Watch responsibilities, welding safety, and in the use of emergency equipment.
- ☐ Method to summon emergency help \_\_\_\_\_
- ☐ The area where the Hot Work has been performed is occasionally monitored for at least 2 hours after mandatory Fire Watch has been performed

I have personally examined the above area, understand my responsibilities as Fire Watch, and certify that the above precautions have been taken and implemented.

Signed: \_\_\_\_\_ (Fire Watch)

I have personally examined the above area and certify that the above precautions have been taken and implemented.

Signed: \_\_\_\_\_ (Qualified Person to Perform Work)

### **PERMISSION IS GRANTED FOR THIS WORK: (NEXT LEVEL APPROVAL)**

Permit expires: \_\_\_\_\_ Time: \_\_\_\_\_

Signed: \_\_\_\_\_ (Superintendent /Designee)

Time started: \_\_\_\_\_ Time finished: \_\_\_\_\_

### **FINAL CHECK:**

Work area and all adjacent areas to which sparks and heat might have spread were inspected at least 45 minutes after the work was completed and were found fire safe.

Time work inspected: \_\_\_\_\_ Signed: \_\_\_\_\_ (Fire Watch )

# LANTZ CONSTRUCTION COMPANY

## HEARING CONSERVATION PROGRAM

Revised: 8/15/2012  
Reviewed: 8/15/2012

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### **PURPOSE:**

The purpose of this program is to protect our employees from potential damage to their hearing from occupational noise exposures. This policy covers the assignment of responsibilities, noise monitoring, audiometric testing, administrative and engineering controls, hearing protection devices, training, recordkeeping and employee access to information. This policy covers all employees who may be exposed to noise exposures equal to or exceeding an 8-hour time-weighted average of 85 decibels in an industry setting or 90 decibels in the construction setting. The company may, however, apply the policy to employees whose exposure is less than this action level.

### **RESPONSIBILITIES:**

The Director of Safety is responsible for the implementation of this program and has the authority to make necessary decisions and changes to ensure its success. The Director of Safety will be responsible for providing necessary equipment, conducting the necessary training, and otherwise ensuring that this program is effectively implemented.

The Director of Safety, in conjunction with the Vice President of Operations, will determine which jobs or areas of the plant or construction site(s) involve noise exposures, the level of noise exposure, and the administrative or engineering controls or personal protective devices that are necessary to reduce noise exposures to acceptable levels. He will obtain outside assistance, when necessary, to test for noise exposures and will conduct frequent inspections of the workplace to ensure compliance with this program.

Superintendents will be responsible for ensuring that all employees wear proper hearing protection devices in areas where it is required. They will ensure that employees follow the provisions of this program and any supplemental procedures which may be developed by the Director of Safety.

Employees are responsible for following all provisions of this program and related procedures. They are responsible for wearing hearing protection devices where required and for properly cleaning any hearing protection devices assigned to them. Failure to comply will result in disciplinary action.

### **NOISE MONITORING:**

All areas of the workplace where there is a possibility of noise levels being over 85 decibels will be tested to determine noise level exposures. Monitoring will be repeated whenever there is a change in production, process, equipment or controls that may increase noise exposures. This testing will include area sampling and, when necessary, dosimeter testing to determine which employees could be exposed to noise levels at or above the action level of an 8-hour time-weighted average of 85 or 90 decibels.

Employees affected by this testing or their representatives will be provided with an opportunity to observe any noise measurements which are conducted. Employees who are exposed at or

# LANTZ CONSTRUCTION COMPANY

## HEARING CONSERVATION PROGRAM

Revised: 8/15/2012  
Reviewed: 8/15/2012

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above the action level of an 8-hour time-weighted average of 85 or 90 decibels, respectfully, will be notified of the results of the noise monitoring.

### **AUDIOMETRIC TESTING PROGRAM:**

All employees exposed to noise levels equal to or exceeding an action level of an 8-hour time-weighted average of 85 or 90 decibels will have their hearing tested as a part of our audiometric testing program. Prior to establishment of a baseline audiogram at least 14 hours without exposure to workplace noise should be observed. Baseline tests will be done within 6 months of an employee's first exposure at or above the action level. Annual audiometric tests will be performed on all employees exposed at or above the action level and these annual tests will be compared to the employee's baseline test. These tests will be provided at no cost to the employees.

Audiograms will be evaluated by an audiologist, otolaryngologist, or physician to determine if there has been any change in hearing when compared to the baseline test. If a standard threshold shift (reduction of 10 decibels or more at 2000, 3000, and 4000 Hz in either ear) has occurred, the employee will be informed of this fact in writing within 21 days of the determination.

If a standard threshold shift occurs, the employee will be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.

### **ADMINISTRATIVE AND ENGINEERING CONTROLS:**

To the extent that it is possible and feasible, the company will use engineering controls to reduce noise levels below the action level. Examples of engineering controls are: machinery maintenance, sound absorption materials, vibration isolating devices, lowering air pressure, alternative equipment, etc.

If engineering controls are not feasible or are insufficient to reduce the noise to acceptable levels, administrative controls will be utilized. This may include rotating employees from one job or one area to another to reduce the time-weighted average of the total exposure for an employee.

If engineering and administrative controls fail to reduce the noise level to acceptable levels, personal protective equipment will be provided and used to reduce sound exposure to acceptable levels.

### **SELECTION & USE OF HEARING PROTECTION DEVICES:**

Hearing protection devices will be selected on the basis of the hazards to which the workers' are exposed or potentially exposed. All selections will be made by the Director of Safety and will be at no cost to the employee.

### **TRAINING:**

The Director of Safety will provide the training necessary to implement this program. Training will be provided to all managers, supervisors, and employees who may be exposed to noise at

# LANTZ CONSTRUCTION COMPANY

## HEARING CONSERVATION PROGRAM

Revised: 8/15/2012  
Reviewed: 8/15/2012

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or above an 8-hour time-weighted average of 85 or 90 decibels. The Director of Safety may use outside resources to provide or assist with the required training.

The training will include, but not be limited to the following:

- o The effects of noise on hearing
- o The purpose of hearing protection devices
- o The advantages, disadvantages, and attenuation of various types of hearing protection devices
- o Selection, fitting, use and care of hearing protection devices
- o The purpose of audiometric testing, and an explanation of the test procedures
- o Employee's rights to information, training materials and records

The training will be provided to all new employees and will be repeated annually for all employees exposed above the action level of an 8-hour time-weighted average of 85 or 90 decibels.

### **RECORDKEEPING:**

The company will maintain records of all noise level and noise exposure monitoring. These records will be retained for a period of at least two years.

The company will maintain records of all audiometric tests for at least the duration of the affected employee's employment. These records will be provided upon request to the employee, former employee, and representatives designated by the individual employee.

### **EMPLOYEE ACCESS TO INFORMATION:**

Employees affected by this policy will be given copies of the OSHA Occupational Noise Exposure standard (CFR 29 1910.95) and this company policy. A copy of the OSHA standard will also be posted in the workplace.

### **NOTE:**

This policy is intended to comply with the OSHA Occupational Noise Exposure standard (CFR 29 1910.95). Refer to the standard for any details not included in the policy.

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# **Lantz Construction Company**

# **Safety Policy**

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## **I. PURPOSE**

The goal of Lantz Construction Company's Safety and Health Program is to provide an accident free workplace by training all employees on safety and health principles, assigning them responsibilities, requiring comprehensive accident reporting, and creating incentives to reward employees for performing all tasks safely. Each employee is provided with a copy of Lantz Construction Company's written Safety and Health Program. The written program covers various phases of construction and includes VOSH requirements, ANSI standards, and Lantz Construction Company work practices. The written program is arranged in an easy to read format that can be used for quick reference on the project site. Company management reserves the right to make any necessary changes to this policy at anytime.

## **II. POLICY**

It is the policy of Lantz Construction Company to require each employee to become involved in providing and maintaining a safe work environment for themselves and their fellow employees. Each employee is a valuable resource to improve our Safety and Health Program if they will voice their ideas and concerns. Employees should feel free to bring input regarding the Safety and Health Program to any management person without fear or reprisal and expect to receive help and direction on their safety concerns. Each employee is required to review the written Safety and Health Program to familiarize themselves with the various safety policies and requirements. Project Superintendents are required to keep a copy of the written Safety and Health Program on their project sites to be reviewed by employees and subcontractors. If requested, subcontractors of Lantz Construction Company will receive a copy of the written Safety and Health Program and are required to review and adhere to the standards set forth in it.

## **III. SAFETY AND HEALTH PROGRAM RESPONSIBILITIES**

Company Management – Whole-hearted support of the goals and policies of the Safety and Health Program by providing the leadership and resources to make the workplace accident free, and to hold each employee responsible for his/her role in the Safety and Health Program.

Safety Director - Overall administration of the Safety and Health Program. The Safety Director will periodically review the program, report to management on the success of the program, and make recommendations to management on changes that may be taken to maintain an accident free workplace.

Project Managers – Promote the goals of the Safety and Health Program by placing project site safety equally with other project goals of cost, schedule and quality. Project Managers should lead by example, emphasizing that a safe project site is more productive and cost effective than a

# **Lantz Construction Company**

# **Safety Policy**

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hazardous project site.

Project Managers have the responsibility to see that the Safety and Health Program is being practiced and enforced on the project sites for which they are responsible. They will be alert to unsafe practices and safety hazards prior to, and during, the course of construction.

Project Managers will coordinate a meeting with the Safety Director and Project Superintendent at the project site prior to the start of construction. This meeting is to address safety matters related to the various phases of construction.

Project Superintendents – Project Superintendents, because of their responsibilities and nature of their job, are the most important link in determining the success of the Safety and Health Program. Project Superintendents must accept the lead role in implementing the Safety and Health Program. They must lead by example. Project Superintendents are responsible for the overall safety of their project sites and are given the responsibility and authority by management to enforce safe work practices on their project sites. In short, the Project Superintendents must do the following:

1. Set the proper example by leadership.
2. Enforce all safety rules.
3. Plan ahead for safety matters in the various phases of construction.
4. Instruct employees in safe procedures for the various phases of construction.
5. Correct unsafe practices immediately.
6. Conduct weekly toolbox talks.
7. Conduct bi-monthly safety inspections.
8. Implement and understand the necessity for using the right tool for the job
9. Understand the potential hazards from not using the proper tool for the task at hand
10. It is also the Superintendent's responsibility to advise subcontractors if they are in violation of safety rules or procedures.

If subcontractors refuse to comply, Project Supervisors must advise the Project Manager, Safety Director, and Vice President of Operations immediately so that proper action can be taken.

For every operation on the project site, the project superintendent must insist that safety be given the same priority as cost, quality, and schedule. Project Superintendents must correct all unsafe conditions brought to their attention in a timely manner to avoid any worker injury that may result.

Each Employee – Employees must follow all instructions given in the written Safety and Health Program and the Virginia Occupational Safety and Health standards. Employees must notify project superintendents of unsafe conditions immediately as well as the acts of others that may result in injury to them or someone else. Employees must accept the responsibility to correct hazardous conditions that are under their control. Employees who willfully violate this policy will be subjected to disciplinary actions, which may include dismissal from employment with the Company.

# Lantz Construction Company

# Safety Policy

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## IV. TRAINING PROGRAMS

### **Informal Training**

Initial training - During the initial orientation period the Safety Director must brief all new employees on the Company's policy and program and set the purpose of our program clearly in the new employee's mind.

Project site training - Begins when the new employee begins work at the project site. The project superintendent is responsible to give each newly assigned employee a project site orientation including a tour of the project site. During the orientation all unusual or risky operations will be pointed out to the employee. The employee will be given the opportunity to respond and ask questions about their concerns.

On the job training – Each time an employee is assigned a new task it is the responsibility of the lead person or project supervisor to ensure the employee has the technical knowledge and ability to perform the task and knows the safety requirements for performing the task. No lead person or project supervisor will assume any employee “knows better” when it comes to performing a task safely.

### **Formal Training**

Weekly Toolbox Safety Talks – All project superintendents are required to conduct a toolbox safety talk for all employees on their project site at least one time each week. Toolbox talks shall include a review of any accident on the project site in the past week and the corrective actions taken to prevent the accident from reoccurring. Additional information such as “Fatal Facts” sheets should be distributed to allow employees to help them recognize the need to think about working safely at all times. Subcontractors shall be invited to attend the meetings. All Lantz Construction Company employees in attendance shall print and sign their names on the sign-in form. Project Superintendents are required to complete and return the signed form to their Project Managers within five workdays from completion of the toolbox talk. Project Managers will initial the completed toolbox form and forward it to the Assistant Project Manager for recording within two working days from their receipt of the form. The completed form will then be forwarded to the Office Project Assistant(s) for filing in the project folder.

\* Note: An increasing amount of superintendents are now completing tool box talks electronically and sending in via email to the office for tracking and electronic filing.

\* OSHA 10 Hour Construction Courses – Will be conducted by an authorized instructor and records kept in the Safety Director's office. Employees attending the course will receive a card of completion.

\* CPR Training - Will be conducted by an authorized instructor and records kept in the Safety

# Lantz Construction Company

# Safety Policy

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Director's office. Employees attending the course will receive a card of completion.

\* First Aid Training - Will be conducted by an authorized instructor and records kept in the Safety Director's office. Employees attending the course will receive a card of completion.

\* The goal is to have all employees receive these safety courses as time constraints and work schedules permit.

**Note:** All Formal Training is to be documented.

## **Accident Reporting**

Each employee must report any accident to his/her Project Superintendent, whether personal injury occurred or not. The reason for reporting *all* accidents is to allow the Project Superintendent to evaluate the situation to determine a cause and a solution so that other employees will not get injured in the same way. Project Superintendents are required to complete the "First Report of Accident Form" and keep a copy on file at the project site for review during toolbox talks and forward a copy to the Safety Director.

**Note:** Each employee who seeks medical care for a work-related accident after working hours must notify his/her Project Superintendent as soon as possible.

Whenever a personal injury occurs resulting in an employee receiving medical care, the Project Superintendent must call the Safety Director/Assistant Project Manager for initial notification, then completely fill out the "First Report of Accident Form" and return it to the Assistant Project Manager within 24 Hours.

Within seven days, the Safety Director is to make an on-site visit to meet with the employee and the Project Superintendent to assess the conditions of the site and make any recommendations on corrective actions to prevent a similar accident from reoccurring.

Reporting requirements are not only important to Lantz Construction Company, but there are strict worker's compensation laws that require the company to report illnesses and injuries so that claims can be resolved quickly and fairly. Failure to report accidents may affect an employee's ability to receive compensation and may lead to disciplinary action.

## **PLEASE BE AWARE THAT COMPENSATION UNDER THE VIRGINIA WORKER'S COMPENSATION ACT MAY BE DENIED IF:**

- You willfully acted outside the (VOSH) standards.
- You were intoxicated or were under the influence of drugs or alcohol.
- You were attempting to injure another employee.
- You willfully refused to use safety equipment or a protective device required by the

# **Lantz Construction Company**

# **Safety Policy**

safety standards and was brought to your knowledge prior to the incident.

## **Incentive Program (THIS PROGRAM TEMPORARILY ON HOLD 1/1/10)**

Worker's Compensation Premium Distribution Program - Worker's compensation policies, and premiums, are structured on a twelve-month basis. Currently Lantz Construction Company has a retrospective rating plan for payment of premiums. A key feature of this type plan is a "rebate or refund" if the insured keeps losses or claims below given levels. As an incentive for the insured to hold claims to a minimum, a "penalty premium" is also charged if claims go over a given amount.

Six months after the policy term, the insurance company and Lantz Construction Company personnel review our claims for that year to determine if we owe more premiums than the base rate, or if we get a refund for that year. If Lantz Construction Company is eligible for a refund, 50% of the refund will be distributed to the employees in the form of a cash bonus. In order to qualify for a bonus, an employee must have worked in the year for which the refund applies and must not have been dismissed from employment for any reason during the policy period.

All Lantz Construction Company employees have a responsibility to work safely. They also have the right to expect to work in a safe environment. This means that the unsafe acts of a fellow employee can cause us to work in an unsafe environment and can have a direct impact on our worker's compensation coverage or VOSH violation penalties. In either case, we recognize that unsafe acts by any employee cannot be tolerated. We must all be aware of our acts and the impact that our actions can have on company operations as a whole.

An accident free workplace is not just a goal of our Safety and Health Program but must become a foundation of our working life. What each one of us does can and will affect everyone else. We believe that this incentive program reflects this reality.

## **V. DISCIPLINARY ACTIONS**

Lantz Construction Company reserves the right to impose and enforce disciplinary actions, including termination of employment, for any violation of the Safety Policy. All disciplinary and employment decisions will be made, at the sole discretion of Management, after considering the seriousness of the violation, the employee's current job assignment, length of service, overall job performance, the impact of the violation on the business, any other aspects of the particular situation that Management deems relevant, and any applicable Federal or State laws and regulations.

Specific disciplinary actions include, but are not limited to:



# **Lantz Construction Company**

# **Safety Policy**

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1. Verbal or written reprimand.
2. Unpaid Suspension.
3. Probation.
4. Demotion.
5. Termination.

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Douglas Driver, President

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Clint Shuler, Vice President of Operations

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Allen Hatch, Director of Safety

# **Lantz Construction Company      Substance Abuse Policy**

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## **I.      PURPOSE**

The goal of Lantz Construction Company's Safety and Health Program is to provide an accident free workplace. The construction industry has a potential for accidents and personal injuries. Most safety mishaps are due to mental carelessness and thoughtlessness. Combining the natural potential for danger in our industry with the mind-altering affects of unlawful substances is a disaster waiting to happen. In order to fulfil our obligation to provide all employees with a safe working environment, we have established a drug free workplace policy. If you are in violation of this policy, you will be subjected to immediate dismissal from employment with the Company.

## **II.     POLICY**

It is the policy of Lantz Construction Company to that no employee will be allowed to produce, distribute, dispense, possess, use or be under the influence of, any controlled substance on Lantz Construction Company premises. For purposes of this policy "controlled substances" include alcoholic beverages, illegal and prescription drugs, marijuana, designer and synthetic drugs, inhalants, and equipment or paraphernalia related to illegal drug or substance use. For purposes of this policy "Lantz Construction Company premises" shall include all land, property, buildings, structures, cars, trucks, and other means of transportation or equipment owned or leased by the Company, or otherwise used for Company business. Company premises shall also include all project work sites and locations of our clients for whom we are doing construction, including their buildings, structures, offices, plants, warehouses, and other facilities.

The testing that is required under this Substance Abuse Policy is independent of any testing that is required by the customers of Lantz Construction Company

## **III.    DRUG AND ALCOHOL TESTING**

**Pre-employment Drug Testing:** All job applicants will be shown a copy of this policy before hiring. All newly hired employees will be required to submit to a urinalysis drug screen and a negative result returned to the Company before the employee will be allowed to begin work. This process may take as much as seven days to complete. Any new employee that has a positive drug test returned will be notified that a positive drug test has been received and that the employee will not be able to begin work. At the new employee's discretion and expense, evidence may be presented by the new employee, including the results of another test paid for by the new employee that refutes the earlier test results. Management reserves the right to rely upon the original test and to refuse to employ the applicant it so chooses.

# **Lantz Construction Company      Substance Abuse Policy**

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**Reasonable Suspicion:** Any employee that is reasonably suspected of behavior that would suggest that the employee is under the influence of controlled substances will be asked to submit to a drug test. Failure to comply with this request will result in immediate dismissal from the workplace. Refusal to submit to testing may result in termination of employment. Reasonable suspicion in this instance would include, but not be limited to, instances in which drugs and/or alcohol have been detected in the employee's possession or in the Company vehicle, or when there are observable signs of impairment to the employee's ability to perform (i.e. difficulty in maintaining balance, slurred speech, significant changes in performance or behavior), or at any time an unusual or unexplained incident occurs where drug or alcohol use could have been a contributing factor. Reasonable suspicion will be based on the judgement of the employee's immediate supervisor and at least one other member of the Company's management staff.

**Post-Accident Testing:** After each accident resulting in damage to persons or property, Lantz Construction Company reserves the right to require the employee to submit to a drug test. Failure to do so will cause the employee to be relieved of his duties and may result in termination of employment.

**Random Testing:** A minimum of ten percent (10%) of the employees of Lantz Construction Company will be randomly tested for drugs each year. The cost of the tests will be paid for by Lantz Construction Company and will be conducted on Company time. Any employee with a positive test result will be allowed to be re-tested at the employee's expense. If the second test is negative, the results will be submitted to a qualified medical practitioner for final review. If the results are positive, the employee is subject to dismissal.

**Drug Testing:** All testing will be conducted by a laboratory licensed and approved by the National Institute on Drug Abuse and all results will be kept confidential.

**Re-Testing:** An employee or job applicant will be notified of a positive result within seven days of Lantz Construction Company's receipt of the test result. Upon initial notification to the employee that he or she tested positive, he or she will be given an opportunity to submit information to the medical review officer explaining or contesting the results. The employee can also request the review of the results of another test of the specimen by a certified NIDA laboratory.

## **IV.      COMMUNITY OUTREACH PROGRAM**

The Company encourages employees with a substance abuse problem to voluntarily seek medical attention, counseling and/or professional rehabilitation through the Community Outreach Program by contacting the Human Resource Manager and/or Safety Director.

1.      Any request for assistance will be treated as confidential and only those Company personnel who need to know, in the discretion of Management, will be informed.

## **Lantz Construction Company**      **Substance Abuse Policy**

2. The Human Resource Manager or Safety Director will supply the employee with the names of appropriate providers, programs and facilities offering substance abuse treatment and rehabilitation.
3. Such treatment and rehabilitation will be the sole responsibility of the employee. The employee may be entitled to benefits under the Company's group medical insurance plan if the substance abuse is defined as a covered illness and the Company has a medical insurance plan in effect.
4. The Company reserves the right to consider the seriousness of the abuse problem along with the employee's current job assignment, length of service, over all job performance, the opinion of the treating health care practitioner, any other specific elements of the situation Management deems relevant and any applicable Federal and State laws and regulations before making a determination concerning the employment status of the employee.
5. It will be at the sole discretion of Management to determine if the employee will be allowed to continue working while participating in a treatment program, or be granted a leave of absence to seek treatment, or be terminated immediately.

### **V. RETURN TO WORK/CONTINUED EMPLOYMENT**

1. Before returning to work from a leave of absence or after testing positive for substance abuse, or after acknowledging substance abuse, the employee must submit to a substance abuse test and have a negative result.
2. In addition the employee must submit a certification by a licensed health care practitioner, in a form satisfactory to the Company, stating that the employee is drug free and able to work.
3. Upon returning from a leave of absence, the employee will be placed in his or her same job if it is still available, or in a comparable job so long as it does not impose undue hardship on the Company. If the employee's leave of absence qualifies under the Family/Medical Leave Policy, the employee will be placed in his or her same job or an equivalent job.
4. The employee must commit in writing to remain substance abuse free by signing the Company form titled "RETURN TO WORK/CONTINUED EMPLOYMENT AGREEMENT" and must agree to follow prescribed after-care for a period of no less than two (2) years.
5. The employee must agree in writing to routine unannounced substance abuse testing for two

# **Lantz Construction Company      Substance Abuse Policy**

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(2) years at the employee's expense.

6. A confirmed positive test for substance abuse during the two-year period will result in immediate termination.

## **VI. DISCIPLINARY ACTIONS**

Lantz Construction Company reserves the right to use disciplinary actions, including termination of employment, for any violation of the Company Substance Abuse Policy.

All disciplinary and employment decisions will be made, at the sole discretion of Management, after considering the seriousness of the violation, the employee's current job assignment, length of service, overall job performance, the impact of the violation upon the conduct of business, any other specific elements of the situation Management deems relevant and any applicable Federal and State laws and regulations.

Specific disciplinary actions include, but are not limited to:

1. Verbal or written reprimand.
2. Unpaid Suspension.
3. Probation.
4. Demotion.
5. Termination.

Any employee, who has been temporarily removed, voluntarily or otherwise, from his or her job assignment due to a positive substance abuse test or because of a substance abuse problem, must agree to abide by the conditions in the RETURN TO WORK/CONTINUED EMPLOYMENT section above, prior to their being allowed to return to work.

## **VII. OFF-THE-JOB CONDUCT**

Any employee whose off-duty conduct related to the use or abuse of drugs or alcohol shall be subject to disciplinary action up to and including immediate termination, if in the sole discretion of Management, Management believes that this off-duty conduct could possibly:

1. Affect the employee's job performance.

## **Lantz Construction Company                      Substance Abuse Policy**

2.      Affect the safety of other employees, the general public or the premises.
3.      Reduce the community trust in the ability of the Company to conduct business.

### **VIII.   OTHER SUBSTANCE ABUSE POLICIES APPLICABLE TO LANTZ CONSTRUCTION COMPANY**

All employees holding a Commercial Driver's License (CDL) and other safety sensitive workers as defined by the U.S. Department of Transportation (DOT) are subject to additional Federal drug and alcohol regulations.

# **Lantz Construction Company      Vehicle Operations Policy**

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## **I.      PURPOSE**

The goal of Lantz Construction Company's Safety and Health Program is to provide an accident free workplace. As all employees know, there is a great deal of risk involved when operating a motor vehicle. Driver error and poor operating practices, factors that can be controlled, cause the majority of all motor vehicle collisions. Only a small percentage of vehicle accidents are due to mechanical failure or improper maintenance of equipment. It has long been recognized that drivers with a history of accidents and moving violations are likely to continue this pattern in the future. The following policy, procedures, and disciplinary actions have been developed to minimize the risk of vehicle operators becoming involved in a serious or fatal accident. Company management reserves the right to make any necessary changes to this policy at anytime.

## **II.     POLICY**

All employees required to operate company vehicles will sign a release that will enable Lantz Construction Company to acquire from the DMV (Division of Motor Vehicles) a copy of their MVR (Motor Vehicle Record).

Only authorized employees may operate a Company-owned vehicle or leased equipment.

Employees who operate company vehicles will notify the Director of Safety or the Vice President of Operations of any parking or traffic citation they receive and if their driver's license is suspended for any reason.

Any employee operating a Company-owned vehicle or leased equipment will at all times follow safe driving practices.

Employees operating a Company-owned vehicle or leased equipment will always wear their seatbelts to include all passengers unless they provide a copy of a physician's excuse to the Director of Safety.

Employees will never operate Company-owned vehicles or leased equipment under the influence of drugs or alcohol to include prescription drugs that impair driving ability.

Employee's who violate this policy or established procedures may be subjected to disciplinary actions, which may include dismissal from employment with the Company.

## **III.    PROCEDURES**

**Pre-employment Motor Vehicle Review:** All new hires will be provided a copy of this policy before hiring. All newly hired employees will be required to submit to Management a copy of their Motor Vehicle Record for the past seven years before they will be allowed to begin work. The

## **Lantz Construction Company      Vehicle Operations Policy**

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Director of Safety/Vice President of Operations will review the MVR and notify the employee if they do not qualify to operate a Company-owned vehicle or leased equipment.

**Annual Motor Vehicle Review:** The Director of Safety, Vice President of Operations or Insurance carrier will review the MVRs and notify those employees that do not qualify to operate a Company-owned vehicle or leased equipment. The Director of Safety/Vice President of Operations will review the MVR and notify the employee if they do not qualify to operate a Company-owned vehicle or leased equipment.

**Collision Reporting:** Employees involved in any accident with a Company-owned vehicle on highways and state or county roads will call the police department having jurisdiction in that area and request the officer to complete and file an accident report.

Employees involved in any accident that causes property or vehicle damage on Lantz Construction Company property or projects sites will notify their supervisor and fill out a First Report of Accident form.

In all cases the Director of Safety/Vice President of Operations shall be notified as soon as possible following a motor vehicle accident with Company-owned vehicles or leased equipment.

The Director of Safety/Vice President of Operations will investigate all accidents.

**Licensing Requirements:** Employees are required to maintain a current driver's license and all endorsements necessary to perform the position for which they were hired. If at anytime the employee fails to maintain the proper endorsements or have their driver's license suspended they will be subjected to disciplinary actions, which may lead to dismissal from employment with the Company.

Authorized drivers will notify the Director of Safety/Vice President of Operations if their license is suspended or revoked for any reason.

**Vehicle Maintenance:** The vehicle operator will inform the Equipment Manager of all servicing requirements and needed vehicle repairs in a timely manner. Company vehicles are required to be serviced at least every 3,000 – 3,500 miles unless otherwise noted.

**Company Assigned Vehicles:** All employees assigned a Company-owned vehicle are required to read and sign the Company-Owned Vehicle Use Agreement. In addition, the [cell phone policy](#) must also be strictly adhered to can be found by the following link.

**Loading and Use:** All employees will insure that loads are secured to vehicles properly. Employees will not exceed manufacturer's recommendations or specifications when loading a vehicle, or towing



# **Lantz Construction Company      Vehicle Operations Policy**

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a load.

## **VI. DRIVER SELECTION CRITERIA**

The following conditions will make an employee ineligible to operate Company-owned vehicles.

A. Conviction for the following serious motor vehicle violations:

1. Operating under the influence of drugs, alcohol or other impairment.
2. Failure to stop following and accident, "hit and run".
3. Homicide or manslaughter with a motor vehicle.
4. Operating a vehicle while license under suspension.
5. Participating in a speed contest or drag race.
6. Fleeing or eluding a police officer.
7. Reckless driving or driving to endanger.
8. Use of a motor vehicle in the commission of a felony.
9. Theft or use of a motor vehicle without permission of the owner.
10. Assault with a motor vehicle.
11. Violations of state regulations on implied contest.

B. More than four (4) convictions for motor vehicle violations (other than those listed in A above) during the previous 36 months. All violations are counted, whether they occurred in a commercial or a private vehicle.

C. Involvement in two or more chargeable (at fault) accidents during the previous 36 months.

D. Any combination of four incidents, (other than those listed in A above) accidents/violations within the previous 36 months.

## I PURPOSE

The purpose of this program is to provide a commendation or warning mechanism to advise employees and subcontractors about their actions or conditions that are or are not acceptable to Lantz Construction Company. *Lantz Construction Company employees (including all divisions of Lantz Construction Company) should use the Employee/Subcontractor Commendation/Warning Report* for employees as well as any subcontractors performing work for Lantz Construction Company.

## II POLICY

It is the policy of Lantz Construction Company to recognize outstanding employees and subcontractors. Recognizing outstanding performers is essential to their continued performance. Documenting outstanding performance allows management to affectively evaluate employees and subcontractor performance during review periods. Management will conduct physical inspections of work areas throughout the year.

It is also policy of Lantz Construction Company to document all unsafe conditions/practices and deficiencies in employee and subcontractor work. Documenting unsafe conditions/practices and deficient areas will make employees and subcontractors aware of those areas that are in need of immediate correction or improvement. The warning report is to be used as a tool to correct and or improve work habits that are detrimental to Lantz Construction Company and our customers.

The Employee/Subcontractor Commendation/Warning Report is to be placed in the employee's personal file or the subcontractor's project file for review.

## III PROCEDURES

The Employee/Subcontractor Commendation/Warning Report is to be filled out by supervisory employees only.

Supervisory employees are prohibited from using the warning report for any personal gain or to discriminate against any employee or subcontractor.

The Employee/Subcontractor cited in a warning report will be afforded the opportunity to write a rebuttal statement on the Employee/Subcontractor warning report and receive a copy of the report if so desired.

The Employee/Subcontractor will be afforded instructive counseling and/or training to assure a clear understanding of the infraction and the proper conduct under Company policies.

Management, including project managers and project superintendents will also be accountable for, and subject to disciplinary action as a result of, the following reasons:

- Any reason listed on the Employee/Subcontractor warning report.
- Repeated safety rule violation by Lantz Construction Company employees under their control.
- Failure to provide adequate training prior to employee assignment to a job task.
- Failure to report accidents promptly.
- Failure to control unsafe conditions or work practices by employees.
- Failure to maintain good housekeeping on project sites including office and storage trailers.

## IV. DISCIPLINARY ACTIONS

### **Lantz Construction Company Employees**

Lantz Construction Company reserves the right to impose disciplinary actions, including termination of employment, for any violation of the Company policies.

All disciplinary and employment decisions will be made, at the sole discretion of Management, after considering the seriousness of the violation, the employee's current job assignment, length of service, overall job performance, the impact of the violation on the conduct of business, any other particular aspects of the situation that management deems relevant, and/or any applicable Federal and State laws and regulations.

Management reserves the right to impose whatever disciplinary action it deems appropriate. This is not a progressive disciplinary system and may include any one or more of the following:

1. Verbal or written reprimand.
2. Unpaid Suspension.
3. Probation.
4. Demotion.
5. Termination.

### **Subcontractor/Employees**

Lantz Construction Company reserves the right to impose disciplinary actions, including subcontractor/employee removal from the project site permanently.

All disciplinary and employment decisions will be made, at the sole discretion of Management, after considering the seriousness of the violation, overall job performance, the impact of the violation on the conduct of business, any other particular aspects of the situation that management deems relevant, and/or any applicable Federal and State laws and regulations.

Management reserves the right to impose whatever disciplinary action it deems appropriate. This is not a progressive disciplinary system and may include any one or more of the following:

1. Verbal reprimand.
2. Written reprimand sent to subcontractor's Owner/President

3. Removal of the subcontractor's employee from the project site indefinitely.

## I. PURPOSE

This section is intended to establish safe practices, means, methods, transportation, storage and operations for Blasting.

## II. DEFINITIONS

Magazines - A depot or space used to store explosives.

Approved Storage Facility - An area or building used for storage of explosives that is licensed or permitted by the Bureau of Alcohol, Tobacco and Firearms.

Blasting Cap - A metallic tube containing a charge capable of making a spark or flame.

Blasting Agent - Material or mixture consisting of a fuel and oxidizer used for blasting.

## III. PROCEDURES

General Requirements - Lantz Construction Company will ensure that only qualified employees will be permitted to handle and use explosives. No smoking or open flames will be used near magazines or while explosives are being transported. All utilities will be located before blasting begins. Only proper magazines will be used for transport. A complete inventory will be kept at all times. Any theft of explosives or unauthorized entrance of magazines will be reported to authorities. Proper P.P.E. will be used at all times. Warning signs against the use of mobile radios will be displayed at all times. The use of black powder is prohibited at all times. Before discharging the blast, a warning will be given to all in the area.

Storage of Explosives - Storage will be in approved facilities as per 26 CFR 181 commerce in explosives. Blasting caps, electric blasting caps, detonating primers and primed cartridges will be stored in a separate area than explosives or blasting agents.

Transportation of Explosives - Only a qualified licensed driver will be allowed to transport any explosives. No other cargo will be transported with any blasting agents. Vehicles transporting explosives will be in good mechanical condition. Vehicles will be secured at all times to prevent thefts. Vehicles will be marked on all sides "EXPLOSIVES" in letters not less than 4 inches in height.

**IV. TRAINING**

A blaster will be qualified by training and licensing through a local authority. A blaster will be in good physical condition.

**V. RECORD KEEPING**

Keep accurate record of inventory and manifests.

**VI. CERTIFICATIONS**

Maintain a copy of blasters license on file at the project trailer.

**VII. CHECKLIST ITEMS**

- Only qualified persons will handle and use explosives.
- No smoking or open flame will be used in blasting areas.
- All utilities will be located before “Blasting”.
- A complete inventory will be kept at all times.
- Any thefts will be reported to authorities.
- Personal Protective Equipment will be used at all times.
- Warning/Traffic signs will be used in all applicable areas.
- Blasters will sound a warning before discharging.
- Black powder is prohibited from use.

# Lantz Construction Company

## Cell Phone/Electronic Device Use Policy

Effective Date: July 30, 2012

Latest Revision: July 30, 2012

### PURPOSE

Lantz Construction Company recognizes that our employees are the most important contributors to our continued growth and success. Thus, we are firmly committed to employee safety and preventing workplace accidents.

Crashes attributed to driver distraction are quickly on the rise, in large part because of widespread use of cell phones and other portable electronic devices behind the wheel. In fact, according to the National Highway Traffic Safety Administration, distraction-related fatalities represented 16 percent of all traffic fatalities in 2009. Researchers across the country have found that response times and attentiveness while using a mobile device are as low as those of drunk drivers. In fact, because of the dramatically increased risk of injury and death that comes with texting while driving, the Occupational Safety and Health Administration (OSHA) has stated that companies' legal obligation to create and maintain a safe and healthful workplace includes having a clear, unequivocal and enforced policy against the hazard of texting while driving. To protect employees driving on company business as well as others on the road, Lantz Construction Company developed this Cell Phone/Electronic Device Use Policy, effective January 6, 2012.

### SCOPE AND APPLICABILITY

The Cell Phone/Electronic Device Use Policy applies to all employees of Lantz Construction Company who fit any or all of the following criteria:

- Driving on Lantz Construction Company business in any vehicle, personal or otherwise
- Driving a company vehicle, whether on company business or not
- Placing work-related calls, whether driving on company business or not
- Using a company-issued cell phone or other electronic device while driving

### DEFINITIONS

**Cell phone** (also known as a **mobile phone, smart phone, handheld cell** or **handset**) – a mobile electronic device that engages in telecommunications including voice calls, text messaging/short message service (SMS) and/or e-mail. Cell phones also may include features like complete Internet access, games, multimedia messaging service (MMS), instant messaging (IM) service, digital audio (MP3) players, cameras, radios and global positioning systems (GPS). Any device that engages in these functions is included in this policy.

**Electronic device** – in this policy, electronic device means any portable apparatus that involves user interaction. This includes, but is not limited to, laptops, GPS systems, MP3 players, cameras, pagers and personal digital assistants (PDAs).

**Headset** (also known as **hands-free**) – an extension of the cell phone either connected to the handset via cord or wirelessly through Bluetooth technology that allows the user to engage in voice communication without holding onto the cell phone itself.

## **PROCEDURES**

The following procedures apply to all Lantz Construction Company employees falling under the conditions outlined above in **SCOPE AND APPLICABILITY**.

### **State Laws**

Lantz Construction Company is not responsible for any traffic violations or parking tickets acquired by violation of city ordinance, state or federal laws regarding your driving habits and operation of your motor vehicle. Any ticket issued is the employee's responsibility, even if the ticket is issued while conducting business for Lantz Construction Company.

Note that cell phone driving laws vary greatly by state, and it is the employee's responsibility to be familiar with and abide by such laws.

As of November 2010, except for novice drivers and drivers of school buses, no state has completely banned all types of cell phone use (handheld and hands-free); however, all Lantz Construction Company employees must comply with the company Cell Phone/Electronic Device Use Policy on top of abiding by any state or local regulations addressing the matter.

### **General Procedures**

- Use of cell phones for text messaging/SMS, e-mail, MMS, Internet use, camera use, etc. while driving is strictly prohibited. Employees are encouraged not to place or answer phone calls while in the act of driving. If you must use the phone then being connected to the handset via cord or wirelessly through Bluetooth technology should be utilized.
- Passengers making or taking calls for the driver is permissible provided the interaction does not affect the driver's performance

### **Headset/Hands-Free Use**

The use of headsets or hands-free devices while driving is permissible IF:

- Use of the device does not cause distraction (i.e., fiddling with the device or taking eyes off road to get it to function properly)
- Any dialing or use of the handset is handled while stopped or pulled to the side of the road
- Conversations do not interfere with the driver's ability to drive safely
- Road conditions are generally good and do not threaten your safety

### **GPS Systems**

Lantz Construction Company understands that sometimes, especially when traveling in unfamiliar areas, drivers require assistance with directions. GPS systems are extremely helpful devices, but they can also be distracting if used improperly. Employees must adhere to the following:

- Mounted GPS systems may not block or obstruct the driver's view in any way
- GPS systems must be voice narrated and must not require that the driver look away from the road to follow instructions



- Employees may not program the system while in motion
- Programming or otherwise engaging with the GPS screen may only occur while stopped or while pulled off the road

### **MP3 and Other Audio Devices**

In some cases, worrying about music selection or touching dials and buttons on an MP3 player or other audio device may be just as dangerous as cell phone use. It takes eyes and concentration off the road, which is not permissible under Lantz Construction Company policy. Lantz Construction Company does allow employee use of personal, portable audio devices. However, while the company does not want to eliminate employees' ability to enjoy music while behind the wheel, certain guidelines are in place:

- Programming music settings while stopped, pulled off the road or before departing is permissible behavior
- Employees may not under any circumstances use MP3 players or other handheld electronic audio device with headphones – not only is it illegal in most states, it also impedes the driver's ability to properly hear warning signs, signals or sirens.

## **Lantz Construction Company**

### **Cell Phone/Electronic Device Use Policy**

The No. 1 on-the-job fatality is transportation incidents, and at Lantz Construction Company, it is our job to enforce procedures that mitigate this risk. It is for your safety, as well as the safety of everyone else on the road, that the company has put this Cell Phone/Electronic Device Use Policy in place.

All employees are expected to understand when this policy applies and follow all procedures. As technology evolves, Lantz Construction Company also expects employees to use common sense and err on the side of caution when assessing electronic device use while driving. The company encourages all employees to take a proactive approach to road safety, so Lantz Construction Company expects employees to report any problems or known violations of this policy to their supervisor.

Prior to working on any Lantz Construction Company job site, each employee is expected to have read the entire Cell Phone/Electronic Device Use Policy, which includes

- Purpose
- Scope and Applicability
- Definitions
- Procedures
  - State Laws
  - General Procedures
  - Headset/Hands-Free Use
  - Emergency Calls
  - GPS Systems
  - MP3 and Other Audio Devices

If you have any uncertainty or questions regarding the content of these policies, you are required to consult your supervisor. This should be done prior to signing and agreeing to the Lantz Construction Company Cell Phone/Electronic Device Use Policy.

I have read and understand Lantz Construction Company's Cell Phone/Electronic Device Use Policy, and I understand the requirements and expectations of me as an employee. I agree to adhere to all provisions and procedures outlined in the policy, and I understand that failure to do so will result in discipline up to and including termination.

Employee Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## I PURPOSE

Lantz Construction Company does not allow its employees to enter a permit required confined space for any reason. If you are presented with a questionable situation, please notify the project superintendent immediately before proceeding. These procedures are in place for informational purposes and employee information.

This section is designed to implement the measures necessary to prevent unauthorized entry into confined spaces; identify and evaluate the hazards of permit spaces before employees enter them; and develop and implement the means, procedures, and practices necessary for safe permit space entry operations. This program is to be reviewed and updated as needed. At minimum this program is reviewed at least annually.

## II DEFINITIONS

Attendant - A person who is stationed outside a confined space to monitor the process or operation, and provide support or react as required.

Company Premises - Includes all land, property, buildings, structures, cars, trucks, and other means of transportation or equipment owned or leased this company, or otherwise used for Company business. Company premises will also include all project work sites and locations of our clients for whom we are doing construction, including their buildings, structures, offices, plants, warehouses, and other facilities.

Confined Space - means any space not intended for continuous employee occupancy, having a limited means of egress, and which is also subject to either the accumulation of an actual or potentially hazardous atmosphere as defined in this subsection or a potential for engulfment as defined in this subsection. Confined spaces generally include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, manholes, underground utility vaults, acid tanks, digesters, ovens, kiers, pulpers, tunnels, and pipelines.

Open top spaces more than 4 feet in depth such as pits, tubs, vaults and vessels may also be confined spaces if the three criteria above are met.

Entrant - A trained and authorized individual who enters the confined space.

Entry - The action by which a person passes through an opening into a confined space/permit space. Entry is considered to have occurred as soon as any part of the authorized entrant's body breaks the plane of an opening into the space.

Entry Permit - (Confined Space Entry Permit) the written or printed document that is completed by the entry supervisor and provided to allow and control entry into a permit space.

Entry Team - All persons involved or participating in the entry of a confined space/permit space.

Hazardous Atmosphere - An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to escape unaided from a permit space, injury, or acute illness from one or more of following:

1. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
2. Airborne combustible dust at a concentration that meets or exceeds its LFL (Note: this concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less.);
3. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
4. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in 29 CFR 1910, Subpart G (occupational health and environmental control) or in Subpart Z (toxic and hazardous substances), which could result in employee exposure in excess of its dose or permissible exposure limit;
5. Any other atmospheric condition that is immediately dangerous to life or health (IDLH).

Job-site/Work Area - Any room or defined space inside or outside a building where Lantz Construction Company; engages in business, has employees, or works with other contractors.

Non-permitted Confined Space - A confined space that contains no physical hazards capable of causing death or serious physical harm; the atmosphere must be documented as having no possibility of containing atmospheric hazards.

Permit-required Confined Space - A confined space with at least one of four characteristics: It contains or has the potential to contain a hazardous atmosphere; it contains a liquid or finely-divided solid material that could surround or engulf an entrant; it has an internal shape that could cause an entrant to be trapped or asphyxiated such as a downward sloping floor or converging walls; any other recognized serious safety or health hazard.

Entry Supervisor - Any employee who has been authorized to direct, oversee, control, manage, guide, survey, or regulate the actions of other Lantz Construction Company; employees during a confined space entry.

### III REFERENCES

29 CFR 1926.21(b)(6)(I) & (ii)  
29 CFR 1910.146

Confined Spaces  
Permits-Required Confined Space Standard

## IV PROCEDURES

### Pre-entry

The entry supervisor must evaluate the workplace and confined space for hazards. Warning devices will be placed before manhole covers are removed. No manhole covers will be struck directly with a spark-producing object. Open flames will not be used to thaw ice around the cover. The confined space will have the atmosphere tested before entry (oxygen level, flammable gases and vapors and toxic air contaminants) If the atmosphere is unsafe, the confined space will be flushed with a forced-air ventilator and purged to a safe level. If this can not be accomplished, the Entry Supervisor will determine alternate methods or measures prior to entry.

All mechanical and electrical hazards must be locked-out/tagged-out. Only approved lighting equipment will be used in confined space work.

Entrants or their representatives are to be given an opportunity to participate in and review calibrated air monitoring data before entry. In addition; employees, or their representatives, are entitled to request additional monitoring at any time.

Before authorizing entry into any permit space, the entry supervisor (Project Superintendent must notify the Safety Director to receive the proper training and checklists necessary to enter the space.

Confined space must be assessed for any other hazards such as heavy equipment, pedestrians & vehicles. Provisions and procedures, which will be addressed on a site by site basis, must be put in place to eliminate these potential hazards.

### Hazard Control Measures

A thorough inspection must be performed to determine physical conditions of the confined space. This inspection will be performed prior to entry. All authorized entrants for the identified hazards must wear all Personal Protective Equipment (PPE). If the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space, the permit space may be classified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.

If it is necessary to enter the permit space to eliminate hazards, such entry will be performed using an Entry Permit. If testing and inspection during that entry demonstrate that the hazards

within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated.

*Note:* Control of atmospheric hazards through forced air ventilation does not constitute elimination of the hazards.

Entry Supervisor will document the basis for determining that all hazards in a permit space have been eliminated through a certification that contains the date, the location of the space, and the signature of the person making the determination. The certification will be made available to each employee entering the space.

If hazards arise within a permit space that has been declassified to a non-permit space, each employee in the space will exit the space immediately. The entry supervisor will then reevaluate the space and determine whether it must be reclassified as a permit space and complete an entry permit if necessary.

## **Atmospheric Testing and Monitoring**

All confined spaces must have atmospheric testing to determine a hazard before entry, and throughout the workday. There may be no hazardous atmosphere within the space whenever any employee is inside the space.

## **Continuous Forced Air Ventilation**

Continuous forced air ventilation will be used, as follows:

1. An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere.
2. The forced air ventilation will be so directed as to ventilate the immediate areas where an employee is or will be present within the space and will continue until all employees have left the space.
3. The air supply for the forced air ventilation will be from a clean source and may not increase the hazards in the space.

The atmosphere within the space will be periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

- If a hazardous atmosphere is detected during entry:

1. Each employee will leave the space immediately.

2. The space will be evaluated to determine how the hazardous atmosphere developed.
3. Measures will be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

## Entry Permit

Always complete an Entry Permit before entering a permit space. The Entry Permit must contain the following information:

- Permit Space to be entered
- Purpose of Entry
- Date and authorized duration of permit
- Authorized Entrants
- Attendants
- Entry Supervisor
- Hazards of the Permit Space
- Measures to isolate or eliminate hazards in Permit Space
- Acceptable entry conditions
- Results of initial and periodic tests with associated dates and times
- Rescue and Emergency Services to be summoned, if needed
- Communication Procedures
- Equipment needed such as PPE, testing equipment, communication equipment, rescue equipment, etc....
- Additional permits such as hot work permits
- Approval by the entry supervisor
- Any other information needed for safe entry.

The completed Entry Permit must be made available to all authorized entrants at the time of entry, by posting it at the entry portal or by any other equally effective means, so entrants can confirm that pre-entry preparations have been completed.

The duration of the Entry Permit may not exceed:

- The time required to complete the task identified on the permit.
- The shift when the permit was issued.

The Entry Permit must be retained for at least one year, to facilitate the review of the confined space program by the company. Any problems encountered during an entry operation must be noted on the actual Entry Permit, so that appropriate revisions to the confined space program can be made.

## Entry

Prior to entry, the **Entry Supervisor** will direct, oversee, control, manage, guide, survey, or regulate the actions of other Lantz Construction Company; employees during a confined space entry

The **authorized entrant** must wear a lifeline attached to a full body harness, and anchored outside the confined space to a rescue apparatus.

The authorized entrant must wear a portable detection instrument when working in an existing manhole or other confined space that might contain an oxygen deficiency/enriched atmosphere; flammable gases and vapors; and potential toxic air contaminants.

There must be at least one **attendant** outside the confined space who remains in constant communication with the authorized entrant in the confined space, and who must not leave while the worker is still in the confined space.

## Retrieval

The employee responsible for retrieval of the worker will be adequately trained in the use of the retrieval equipment and emergency procedures.

If a hoist is being used, the employee must be hoisted slowly to ensure safe egress from the confined space.

## Rescue

Rescue services will be (1) provided by the host facility; or (2) provided by an outside service which is given an opportunity to examine the entry site, practice rescue and decline as appropriate; or (3) provided by the employer by selecting a rescue team that is equipped and trained to perform the needed rescue services. This will be a site specific rescue plan depending on the best and safest option. In general, the host facility will be notified via land line telephone, cell phone or radio (walkie talkie) of an emergency and they will activate the onsite rescue team. In addition, the onsite superintendent will activate the 911 system by dialing via cell phone or land line.

If an employee(s) should lose consciousness or needs other emergency care while in a confined space, emergency response personnel should be contacted immediately (dial 911).

Only a trained rescuer is authorized is to enter a confined space to rescue another employee who has lost consciousness, and only when wearing an approved Self-Contained Breathing Apparatus (SCBA), or supplied airline system respirator.



## Confined Space/Permit Space Entry of Host Employers

In addition to complying with the confined space/permit space requirements above, each entry team who is retained to perform confined space/permit space entry operations will:

1. Obtain any available information regarding permit space hazards and entry operations from the host employer.
2. Coordinate entry operations with the host employer, when both host employer personnel and entry team personnel will be working in or near confined space/permit spaces.
3. Inform the host employer of the confined space program that the entry team will follow and of any hazards confronted or created in confined spaces/permit spaces, either through a debriefing or during the entry operation.

## V TRAINING

Employees who may be engaged in activities in confined spaces/permit spaces, or responsible for confined spaces projects, will receive the following:

- An explanation of the general hazards associated with confined spaces/permit spaces;
- Specific confined space hazards associated with the facility, jobsite, or operation;
- The reason for, proper use, and limitations of personal protective devices and other safety equipment required for entry into confined space/permit space;
- An explanation of the procedural requirements for conducting a confined space/permit space entry;
- How to respond to emergencies;
- Duties and responsibilities as a member of the confined space/permit space entry team; and
- A description of how to recognize probable air contaminant over-exposure symptoms to themselves and co-workers, and method(s) for alerting attendants.
- A description of provisions and procedures for protection of LCC employees from external hazards including, but not limited to pedestrians & vehicles. (Site Specific)

## Job-Specific Training

In the event there are multiple employers working within the same confined space, the Lantz Construction superintendent will coordinate operations with the other employer's foremen or superintendents.

All records of employee's job-specific training will be recorded in the foreman's daily log.

Personnel responsible for supervising, planning, entering, or participating in a confined space/permit space entry or rescue will be trained by the employee's immediate supervisor prior to initial assignment, and consist of the following:

- Chemical hazards the employee will be/may be exposed to in the performance of his or her duties while in the confined space.
- Specific PPE required to be worn by the employee.
- Emergency procedures relating to evacuation of the confined space/permit space;
- Location of first aid supplies, medical equipment, and a list of emergency telephone numbers.
- Retrieval techniques; and attendant duties and responsibilities.

In the case of reassignment/transfer to new job duties and non-routine tasks, training by the employees immediate supervisor will be identical to that given to any new employee, and will include all the items delineated above in job-specific training.

## **VI RECORD KEEPING AND CERTIFICATIONS**

After an entry has occurred and the person that entered the confined space has completed their work. A copy of the completed permit must be forwarded to the Main Office where it will be maintained for at least one year.

Employer certification of training must include the employee's name, the signature or initials of the trainer, and the dates of training.

## **VII CHECKLIST ITEMS**

- Entry supervisor conducts confined space evaluation to determine if a permit is required.

- Make entry using a signed entry permit, if permit is required, or a written certification containing date, location of space, signature of person providing certification.
- Work area protection/warning devices will be put in place.
- Test atmosphere for oxygen level, methane, combustible gases, flammable/explosive levels of gases, and air contaminants by competent person, using calibrated equipment.
- Purge air to safe levels.
- Lock-out/tag-out all mechanical hazards.
- Wear all required appropriate safety equipment and respiratory protection, including lifeline attached to full-body harness, and portable detection equipment.
- Attendant on duty at all times outside confined space to communicate and retrieve.
- All permit-required entry team members must be properly trained.

## CHEMICAL NAME IDLH LEVELS\*

CHEMICAL NAME	IDLH LEVELS*
Ammonia.....	500 ppm
Benzene .....	2,000 ppm
Butadiene .....	20,000 ppm
2 - Butanone .....	3,000 ppm
Carbon dioxide .....	50,000 ppm
Carbon monoxide .....	1,500 ppm
Carbon tetrachloride.....	300 ppm
Chlorine .....	25 ppm
Chlorobromomethane .....	5,000 ppm
Chloroform .....	1,000 ppm
Cresol.....	250 ppm
Cyclohexane .....	10,000 ppm
Dichlorodifluoromethane .....	50,000 ppm
Dichloromonofluoromethane .....	50,000 ppm
Ethyl acetate .....	10,000 ppm
Fluorotrichloromethane .....	10,000 ppm
Heptane .....	4,250 ppm
Hexane .....	5,000 ppm
2 - Hexanone .....	5,000 ppm
Hydrogen chloride .....	100 ppm
Hydrogen sulfide .....	300 ppm
Isopropyl alcohol .....	20,000 ppm
Liquefied petroleum gas .....	19,000 ppm
Methyl alcohol .....	25,000 ppm
Methyl cellosolve .....	2,000 ppm
Methyl cellosolve acetate .....	4,500 ppm
Methyl chloroform .....	1,000 ppm
Methylene chloride .....	5,000 ppm
Nitric oxide .....	100 ppm
Nitrogen dioxide .....	50 ppm
Octane .....	3,750 ppm
Ozone.....	10 ppm
Pentane .....	5,000 ppm
Petroleum distillates mixture .....	10,000 ppm
Phenol .....	100 ppm
Phosgene .....	2 ppm
Propane .....	20,000 ppm
Sodium hydroxide .....	200 mg/M;
Stoddard solvent .....	5,000 ppm
Styrene .....	5,000 ppm
Sulfur dioxide .....	100 ppm
1, 1, 2, 2, - Tetrachloro-1, 2 - difluoroethane .....	15,000 ppm
Toluene .....	2,000 ppm
Toluene-2, 4-diisocyanate .....	10 ppm
Trifluoromonobromomethane .....	50,000 ppm
Turpentine .....	1,900 ppm
Xylene .....	10,000 ppm

# Lantz Construction Company Determination Flowchart for Confined Spaces

## ENCLOSED AREA

Does the space contain or have a potential to contain a **\* hazardous** or **IDLH** atmosphere or an engulfment hazard?

"IDLH= "immediately dangerous to life or health"

NO

\* Notify Safety Director for  
air sampling equipment

YES

YES

Is the atmospheric  
hazard an IDLH?  
(see back)

NO

Is the space designed for continuous human  
occupancy?

YES

NO

Does it have a limited or restricted means of  
entry and egress?

NO

This **IS NOT** a Confined Space

YES

This **IS** a Confined Space

Can all hazardous  
atmospheric & engulfment  
hazards be controlled?

YES

This is a Confined Space  
However; no further action required if:  
1. Hazard controls are maintained  
throughout work.  
2. No new hazards are produced by  
work

NO

**DO NOT ENTER**  
Contact Safety  
Director

# **Lantz Construction Company**

# **Crane Operations**

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## **I     PURPOSE**

This section establishes safety practices and sets standards, which apply to all crane operations, maintenance and rigging.

## **II    DEFINITIONS**

*Bird Caging* - the spreading of the wire rope cable as to create a void within the cable.

*Competent Person* – one who is capable of identifying existing and predictable hazards in the surroundings or work conditions and who has the authorization to take prompt corrective measures to correct them.

*Crawler Crane* - consists of a rotating superstructure with power plant, equipped with crawler treads for travel.

*Critical Lift* - means a lift that (1) exceeds 75 percent of the rated capacity of the crane or derrick, or (2) requires the use of more than one crane or derrick.

*Qualified Person* – means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems

*Truck Crane* - consists of a rotating superstructure, mounted on an automotive truck equipped with a power plant for travel.

## **III   REFERENCES**

29 CFR 1910.180	Crawler and Truck Cranes
29 CFR 1910.189	Slings
29 CFR 1926.552	Material Hoists, Personal Hoists
29 CFR 1926.751	Definitions
29 CFR 1926.1400	Cranes and Derricks
ANSI B 30.9	Slings
ANSI B 30.9	Hooks
ANSI B 30.9	Overload Hoists
ANSI B 30.9	Cranes
ANSI B 30.9	Crawler and Truck Cranes

# **Lantz Construction Company**

# **Crane Operations**

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## **IV    PROCEDURES**

### **General Requirements**

- All cranes will be operated in accordance with manufacturer's operator's manual and load charts.
- Crane operators must be certified in the type/capacity of the equipment to be used.
- A crane will not travel with the boom so high that it may bounce back over the cab.
- When rotating the crane, sudden starts and stops are to be avoided and the speed kept so that control over the load can be maintained.
- When operating the crane in a fixed radius, a device will lock the boom hoist in place.
- No crane will be operated without counterweight in place or in excess of the manufacturer's specifications.

Note: Currently, Lantz Construction Company does not have any trained crane operators.

***No Lantz Construction Company employee is to operate, assemble or disassemble any part of a crane. In addition, cranes will only be assembled or disassembled by a competent person who represents the manufacturer or the 3<sup>rd</sup> party crane contractor.***

Cranes must not be used unless ground conditions are able to support the equipment and any supporting materials per the manufacturer's specifications.

The superintendent shall identify the work zone and determine if any part of the equipment could reach closer than 20 feet to a power line. In addition, the crane operator and or owner are responsible for completing a pre-operation hazard assessment prior to work commencing.

All jibs or crawler and truck cranes will have positive stops to prevent their movement of more than 5 degrees above straight line of the jib.

No crane will be refueled with the engine running.

All safety devices must be in proper working order before operation begins.

All signs, placards, load capacities, operating speeds, special hazard warnings or instructions will be posted on all cranes.

## **Lantz Construction Company**

## **Crane Operations**

All moving parts will be guarded to protect employees.

Cranes that are of rotating type, a swing radius will be barricaded in such a manner as to prevent employees from being struck or crushed by the crane.

Guardrail, handhold and steps will be provided on cranes for easy access and have skid resistant surfaces.

***ANY CRITICAL LIFT (see definitions) WILL REQUIRE A CERTIFIED CRANE OPERATOR AND CERTIFIED RIGGERS SUPPLIED BY THE CRANE COMPANY. NO LANTZ CONSTRUCTION EMPLOYEE, UNLESS CERTIFIED IN RIGGING, IS TO RIG A CRITICAL LIFT.***

### **Cabs**

- Any clothing or personal belongings will be stored in such a manner as not to create a hazard.
- No loose tool, waste, oil cans or other articles will be in or about the cab.
- At minimum, a 5BC rated fire extinguisher will be kept in the cab of a crane.
- All windows or safety glass will be maintained as not to distort visibility or interfere with safe operations.
- Procedures applicable to the operation of the equipment will be readily available in the cab at all times.
- The operator has the authority to stop and refuse to handle loads whenever there is a safety concern.

**Cable Clips** - Cables clips will be attached and used in conformity to the table in 29 CFR 1926.251 Table H-20.

**Cable Lift Angle** - A maximum 45 degrees angle on any sling between the cable and the vertical unless otherwise specified by sling design.

**Wire Rope** - Wire rope will be kept in good operating condition at all times. If 6



## **Lantz Construction Company**

## **Crane Operations**

randomly broken wires in one lay or 3 in one strand in one lay, the rope will be taken out of service. Any wear, kinking, crushing, bird caging or heat damage in the wire rope, repair or replacement is recommended.

**Hooks** - Will be rated for the load capacity and will be equipped with a safety latch.

**Overhead Power Lines** - All overhead power lines are to be considered energized unless notification by owner of the power line that it has been de-energized. The following table shows the minimum required work clearance depending on voltage of power lines.

<b>Voltage ( nominal, kV, alternating current)</b>	<b>Minimum Clearance Distance (feet)</b>
Up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1000	45
over 1000	Utility or P.E. required

One employee will be given the responsibility to observe the clearance of the equipment.

**Inspections** - All cranes will be inspected in accordance with 29 CFR 1926.550 (daily, quarterly and annual). Daily pre-use inspections will be completed by the operator and given to the job site superintendent prior to the start of any work. The annual inspection/certification will be performed by a competent person or by a government or private agency recognized by the U.S. Department of Labor. These inspections will cover all areas per ANSI standards and the manufacturer's requirements.

**Modifications** - modifications or additions that may affect the capacity or safe operation of the equipment must not be made without written approval from the manufacturer or approval from a registered professional engineer.

### **Rigging & Material Handling**

- Rigging equipment for material handling shall be inspected by a qualified person prior to use, on each shift and as necessary during its use to ensure that it is safe.
- Defective rigging shall be removed from service.
- Rigging equipment shall not be loaded in excess of its recommended safe working load.

## **Lantz Construction Company**

## **Crane Operations**

- Rigging equipment, when not in use, shall be removed from the immediate work area.
- Tag lines shall be used.
- Latches will be in place on all hooks, eliminating the hook throat opening.
- No employee will be allowed under a suspended load.

### **Slings**

Whenever any sling is used the following practices will be observed:

- Slings that are damaged or defective will not be used.
- Slings will not be shortened with knots or bolts or other makeshift devices.
- Sling legs will not be kinked.
- Slings will not be loaded in excess of their rated capacities.
- Slings used in a basket hitch will have the loads balanced to prevent slippage.
- Slings will be securely attached to their loads.
- Slings will be padded or protected from the sharp edges of their loads.
- Suspended loads will be kept clear of all obstructions.
- All persons will be kept clear of loads about to be lifted and of suspended loads.
- Hands or fingers will not be placed between the sling and its load while the sling is being tightened around the load.
- Shock loading is prohibited.
- A sling will not be pulled from under a load when the load is resting on the sling.

# **Lantz Construction Company**

# **Crane Operations**

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## **V     TRAINING**

All Lantz Construction Company employees will be trained and have retraining on general crane safety on a regular basis. If any unsafe acts or accidents occur, an investigation will take place to determine if retraining is needed.

All employees exposed to crane work will be trained in the hazards of the work. In addition, employees working with crane operations will have general rigging and crane safety training. ***NO LANTZ EMPLOYEE IS TO WORK WITH OR BE EXPOSED TO CRANE OPERATIONS WITHOUT THE PROPER TRAINING.***

## **VI    RECORD KEEPING AND CERTIFICATIONS**

- All inspection records will be turned into Lantz Construction Company for filing into the job site file.

## **VII   CHECKLIST ITEMS**

- All operations will work within the guidelines of the manufacturer.
- All safety devices will be in place at all times.
- Cabs will be kept clean and free of debris.
- Cranes will be equipped with 5 BC fire extinguishers.
- Cranes will have regular inspections. The daily, weekly and monthly inspections should be with the crane while onsite at your job.
- Overhead power lines will be de-energized, removed or shielded.
- A signal person must be provided if the operator's view is obstructed, if site specific safety concerns require it, or if the operator determines that it is necessary.
- Tag lines will be used when deemed necessary by the crane operator.

## I. PURPOSE

This section is designed to provide safe guidelines during all stages of demolition work performed by employees and/or subcontractors of Lantz Construction Company.

## II. DEFINITIONS

Demolition - means the wrecking or taking out of any load-supporting structural member and or the total destruction of any building or structure.

## III. REFERENCES

29 CFR 1926, Subpart T                      Demolition

## IV. PROCEDURES

### **Preparatory operations:**

Prior to permitting employees to start demolition operations, an engineering survey will be made, by a competent person, of the structure to determine the condition of the framing, floors, and walls, and the possibility of unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed will also be similarly checked. The employer will have in writing evidence that such a survey has been performed. In addition, the appropriate demolition permit must be filed with the Virginia Department of Labor a minimum of 10 days prior to work beginning.

When employees are required to work within a structure to be demolished which has been damaged by fire, flood, explosion, or other cause, the walls or floor will be shored or braced.

All electric, gas, water, steam, sewer, and other service lines will be shut off, capped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company, which is involved, will be notified in advance.

If it is necessary to maintain any power, water or other utilities during demolition, such lines will be temporarily relocated, as necessary, and protected.

It will also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging will be performed and the hazard eliminated before demolition is started.

Where a hazard exists from fragmentation of glass, such hazards will be removed.

Where a hazard exists to employees falling through wall openings, the opening will be protected to a height of approximately 42 inches.

When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped will be completely enclosed with barricades not less than 6 feet back from the projected edge of the opening above. Signs, warning of the hazard of falling materials, will be posted at each level. Removal will not be permitted in this lower area until debris handling ceases above.

All floor openings, not used as material drops, will be covered over with material substantial enough to support the weight of any load, which may be imposed. Such material will be properly secured to prevent its accidental movement.

Except for the cutting of holes in floors for chutes, holes through which to drop materials, preparation of storage space, and similar necessary preparatory work, the demolition of exterior walls and floor construction will begin at the top of the structure and proceed downward. Each story of exterior wall and floor construction will be removed and dropped into the storage space before commencing the removal of exterior walls and floors in the story next below.

### **Stairs, passageways, and ladders:**

Only those stairways, passageways, and ladders, designated as means of access to the structure of a building, will be used. Other access ways will be entirely closed at all times.

All stairs, passageways, ladders and incidental equipment thereto, which are covered by this section, will be periodically inspected and maintained in a clean safe condition.

In a multistory building, when a stairwell is being used, it will be properly illuminated by either natural or artificial means, and completely and substantially covered over at a point on which work is being performed, and access to the floor where the work is in progress will be through a properly lighted, protected, and separate passageway.

### **Chutes:**

No material will be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected.

All material chutes or sections thereof, at an angle of more than 45 degrees from the horizontal, will be entirely enclosed, except for openings equipped with closures at or about floor level for the insertion of materials. The openings will not exceed 48 inches in height measured along the wall of the chute. At all stories below the top floor, such openings will be kept closed when not in use.

A substantial gate will be installed in each chute at or near the discharge end. A competent employee will be assigned to control the operation of the gate, and the backing and loading of trucks.

When operations are not in progress, the area surrounding the discharge end of a chute will be securely closed off.

Any chute opening, into which a substantial guardrail will protect employees who dump debris, approximately 42 inches above the floor or other surface on which the men stand to dump the material. Any space between the chute and the edge of openings in the floors through which it passes will be solidly covered over.

Where the material is dumped from mechanical equipment or wheelbarrows, a securely attached toeboard or bumper, not less than 4 inches thick and 6 inches high, will be provided at each chute opening.

Chutes will be designed and constructed of such strength as to eliminate failure due to impact of materials or debris loaded therein.

### **Removal of materials through floor openings:**

Any openings cut in a floor for the disposal of materials will be no larger in size than 25 percent of the aggregate of the total floor area, unless the lateral supports of the removed flooring remain in place. Floors weakened or otherwise made unsafe by demolition operations will be shored to carry safely the intended imposed load from demolition operations.

### **Removal of walls, masonry sections, and chimneys:**

Masonry walls, or other sections of masonry, will not be permitted to fall upon the floors of the building in such masses as to exceed the safe carrying capacities of the floors.

No wall section, which is more than one story in height, will be permitted to stand alone without lateral bracing, unless such wall was originally designed and constructed to stand without such lateral support, and is in a condition safe enough to be self-supporting. All walls will be left in a stable condition at the end of each shift.

Employees will not be permitted to work on the top of a wall when weather conditions constitute a hazard.

Structural or load-supporting members on any floor will not be cut or removed until all stories above such a floor have been demolished and removed. This provision will not prohibit the cutting of floor beams for the disposal of materials or for the installation of equipment, provided that the requirements of 1926.853 and 1926.855 are met.

Floor openings within 10 feet of any wall being demolished will be planked solid, except when employees are kept out of the area below.

In buildings of "skeleton-steel" construction, the steel framing may be left in place during the demolition of masonry. Where this is done, all steel beams, girders, and similar structural supports will be cleared of all loose material as the masonry demolition progresses downward.

Walkways or ladders will be provided to enable employees to safely reach or leave any scaffold or wall.

Walls, which serve as retaining walls to support earth or adjoining structures, will not be demolished until such earth has been properly braced or adjoining structures have been properly underpinned.

Walls, which are to serve as retaining walls against which debris will be piled, will not be so used unless capable of safely supporting the imposed load.

### **Manual removal of floors:**

Openings cut in a floor will extend the full span of the arch between supports. Before demolishing any floor arch, debris and other material will be removed from such arch and other adjacent floor area. Planks not less than 2 inches by 10 inches in cross section, full size undressed, will be provided for, and will be used by employees to stand on while breaking down floor arches between beams. Such planks will be so located as to provide a safe support for the workmen should the arch between the beams collapse. The open space between planks will not exceed 16 inches.

Safe walkways, not less than 18 inches wide, formed of planks not less than 2 inches thick if wood, or of equivalent strength if metal, will be provided and used by workmen when necessary to enable them to reach any point without walking upon exposed beams.

Stringers of ample strength will be installed to support the flooring planks, and the ends of such stringers will be supported by floor beams or girders, and not by floor arches alone.

Planks will be laid together over solid bearings with the ends overlapping at least 1 foot.

When floor arches are being removed, employees will not be allowed in the area directly underneath, and such an area will be barricaded to prevent access to it.

Demolition of floor arches will not be started until they, and surrounding floor area for a distance of 20 feet, have been cleared of debris and any other unnecessary materials.

### **Removal of walls, floors, and material with equipment:**

Mechanical equipment will not be used on floors or working surfaces unless such floors or surfaces are of sufficient strength to support the imposed load.

Floor openings will have curbs or stop-logs to prevent equipment from running over the edge.

Mechanical equipment used will meet the requirements specified in subparts N and O of 29 CFR 1926.

**Storage:**

The storage of waste material and debris on any floor will not exceed the allowable floor loads.

In buildings having wooden floor construction, the flooring boards may be removed from not more than one floor above grade to provide storage space for debris, provided falling material is not permitted to endanger the stability of the structure.

When wood floor beams serve to brace interior walls or free-standing exterior walls, such beams will be left in place until other equivalent support can be installed to replace them.

Floor arches, to an elevation of not more than 25 feet above grade, may be removed to provide storage area for debris: *Provided*, that such removal does not endanger the stability of the structure.

Storage space into which material is dumped will be blocked off, except for openings necessary for the removal of material. Such openings will be kept closed at all times when material is not being removed.

**Removal of steel construction:**

When floor arches have been removed, planking in accordance with 1926.855(b) will be provided for the workers engaged in razing the steel framing.

Cranes, derricks, and other hoisting equipment used will meet the requirements specified in subpart N of this part.

Steel construction will be dismantled column length by column, and tier by tier (columns may be in two-story lengths).

Any structural member being dismembered will not be overstressed.

**Mechanical demolition:**

No workers will be permitted in any area, which can be adversely affected by demolition operations, when balling or claming is being performed. Only those workers necessary for the performance of the operations will be permitted in this area at any other time.

The weight of the demolition ball will not exceed 50 percent of the crane's rated load, based on the length of the boom and the maximum angle of operation at which the demolition ball will be used, or it will not exceed 25 percent of the nominal breaking strength of the line by which it is suspended, whichever results in a lesser value.

The crane boom and loadline will be as short as possible. The ball will be attached to the loadline with a swivel-type connection to prevent twisting of the loadline, and will be attached



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by positive means in such manner that the weight cannot become accidentally disconnected.

When pulling over walls or portions thereof, all steel members affected will have been previously cut free.

All roof cornices or other such ornamental stonework will be removed prior to pulling walls over.

During demolition, continuing inspections by a competent person will be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, or walls, or loosened material. No employee will be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

## **V. TRAINING**

Lantz Construction Company requires that all employees involved with demolition work, at a minimum, be trained to the requirements of this section. In addition, each employee must attend safety training specific to the demolition job site. The training will be conducted by the Project Superintendent on site and will include a review of the engineering survey.

## **VI. CHECKLIST ITEMS**

- An engineering survey must be completed prior to beginning demolition operations
- All employees participating in demolition operations must be trained to this section
- All employees participating in demolition operations must be trained to the specific demolition operations for that job site and must include the engineering survey.
- Ensure all floors and walls maintain stability through supports during demolition operations
- Only access ways designation by the competent person will be used. All other access points must be blocked and barricaded.
- Never drop material to any point below unless the area is barricaded and effectively protected.
- Always maintain fall protection during demolition operations.
- Floor openings, through which material is being dropped, must be adequately protected.
- Floor openings will have curbs or stop-logs to prevent equipment from running over the edge.

- Mechanical equipment will not be used on floors and other surfaces unless these areas are of sufficient strength to support the imposed load.
- When balling or claming operations are being performed ensure all workers are located away from the operation and not permitted in those areas affected.
- Throughout the course of demolition work, a competent person must complete daily and routine inspection, as necessary, to identify, detect and predict hazards.
- All hazards identified, detected or predicted must be corrected promptly.

## I PURPOSE

This section provides electrical safety requirements that are necessary for the practical safeguarding of employees involved in construction work.

## II DEFINITIONS

Temporary - Not part of permanent wiring systems - to include the use of extension cords between permanent wiring and tools used.

Flexible Cord - The ability to bend or be flexed, but not to include Romex type of wiring.

GFCI - (Ground Fault Circuit Interrupter) - A device used to protect personnel from electrical shock by measuring the amount of current and, when there is a fluctuation, will act as a breaker.

Circuits - A closed path through which electric current flows or may flow.

Locking Out and Locked Out - The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated without removal of the lockout device.

Periodic Inspections - A regular examination or look for flaws or defects not to exceed 30 days.

## III REFERENCES

29 CFR 1926.402	Applicability
29 CFR 1926.403	General Requirements
29 CFR 1926.404	Wiring Design
29 CFR 1926.405	Wiring Methods
N.E.C. 210-8(6)	GFCI

## IV PROCEDURES

### General Requirements

An employee who is certified and licensed in the State where the work is being performed will perform all electrical work.

Currently, no Lantz Construction Company employees are to work on any energized circuit(s). In the event that energized electrical work is being performed by others (sub-contractors/facility maintenance, etc.) all Lantz Construction Company employees will stay a minimum of 10 ft. away from the work being performed. In addition, this requirement will be reviewed annually with all Lantz Construction Company employees.

Employees may not enter spaces containing exposed energized parts unless illumination is provided that enables the employees to work safely.

All wiring and accessories will be of proper size for the load and also be grounded.

Wiring and cords must be protected from vehicle traffic.

Wiring should not be hung over nails, rebars or metal objects.

All temporary cords and circuits will be protected by GFCI and be weather proof or protected in some manner.

Temporary lighting will not be hung by wire, metal banding or other conductive material(s).

Any temporary lighting will be on a separate circuit. Any bulbs will be protected by the use of cages or guards. Metal case sockets will be grounded.

When working under overhead lines a minimum of 10 ft. clearance must be maintained or lines shall be de-energized and grounded.

All equipment, tools, and electrical cords will be protected by a GFCI on construction sites.

No Lantz Construction Company employees are to work on any energized circuit(s). Lantz Construction currently does not have any “qualified” or “authorized” employees who can work on energized electrical work.

When working on or near exposed de-energized parts they are treated as live.

Vehicular and mechanical equipment must keep a clearance distance of a minimum of 10 ft. and utilize protective measures to avoid contact with energized parts.

Portable ladders shall have non-conductive side rails.

Conductive apparel shall not be worn unless the items are rendered non-conductive by covering, wrapping or other insulating means.

## **Repairs and Maintenance**

Minor corrections and repair of electrical cords and equipment will be performed by a competent person and in accordance with the National Electrical Code (NEC) and within Manufacturer's Recommendations. Repairs will be completed immediately before use of equipment can begin.

When repairing extension cord ends, the cords will be tested to ensure continuity. If the outer sheathing of the cord is the only damage, this may be repaired by the use of waterproof type covering, (i.e. electrical tape alone is not acceptable.)

## **Generators**

All generators will be used in accordance with the manufacturer's recommendations. When using a generator 5 KV or over, the use of GFCI is required. When using a generator under 5 KV, but in conjunction with an extension cord, the use of a GFCI is required.

## **Ground Fault Circuit Interrupters (GFCI)**

All electrical/extension cords and machinery on project sites will be plugged into a GFCI outlet or GFCI adapter.

## **Flexible Cords**

Flexible cords and cables will be protected from damage. Sharp corners and projections will be avoided. Flexible cords and cables may pass through doorways or other pinch points, if protection is provided to avoid damage.

Extension cord sets used with portable electric tools and appliances will be of three-wire type and will be designed for hard or extra-hard usage.

Flexible cords used with temporary and portable lights will be designed for hard or extra-hard usage.

- Examples of hard and extra-hard cord types are types S, ST, SO, STO, SJ, SJO, SJT, SJTO.

Flexible cords will be provided with attachment plugs and will be energized from a receptacle outlet.

All electrical items, power tools and cords must be properly grounded. All flexible cords and cables must be provided with a continuous ground conductor unless a power tool is provided with double insulation and the tool is clearly marked that it is double insulated. A device to check grounding on power cords will be provided on all trucks.

Flexible Cords and Cables will not be used in the following practices:

- As a substitute for the fixed wiring of a structure.
- Where run through holes in walls, ceiling, or floors.
- Where run through doorways, windows, or similar openings, except where cords and cables are protected from damage.
- Where attached to building surfaces.
- Where concealed behind building walls, ceilings, or floors.

Flexible cords will be used only in continuous lengths without splice or tap. Hard service flexible cords No. 12 or larger may be repaired if spliced so that the splice retains the insulation, outer sheath properties, and usage characteristics of the cord being spliced.

Flexible cords will be connected to devices and fittings so that strain relief is provided which will prevent pull from being directly transmitted to joints or terminal screws.

Flexible cords and cables will be protected by bushings or fittings where passing through holes in covers, outlet boxes, or similar enclosures.

Worn or frayed electrical cords or cables will not be used.

Extensions cords will not be fastened with staples, hung from nails, or suspended by wire.

Flexible cords and cables connected to equipment will not be used to raise and lower the equipment.

Employees will not handle energized cords and cables, nor plug and unplug flexible cord and cables, when hands are wet.

## **Confined or Enclosed Work Areas**

Protective shields, protective barriers or insulating materials as necessary shall be used when working in confined or enclosed work spaces where electrical hazards may exist.

## **Inspections**

All equipment, cords and wiring, will be inspected on a regular daily basis before each use. This inspection will include the ends or plugs, outer covering, covers, strain relief, bulbs and guards, GFCI's and labels.

When inspecting the equipment and it is found to be in need of repair, that item will be pulled from service immediately and repaired. If it can not be removed, it will be tagged and locked out and notify the Maintenance Shop.

Inspections of electrical hand tools will be performed at the beginning of the work day, periodically at the beginning of the month and at any time there is an incident with that piece of equipment.

A competent person will perform inspections.

## **V TRAINING**

The employer will provide training programs during initial safety orientation, through Toolbox Safety Talks and through special training programs. The following is the basic training that is covered during the training programs listed above:

### **Initial Safety Orientation**

- Lantz's policy in regards to working on energized circuits
- Inspection of power cords
- Repair procedure for extension cords
- How to recognize electrical work that has been locked out

### **Tool Box Talks (Weekly)**

- General Electrical Safety
- Ground Fault Interrupters
- Proper use and repair of extension cords
- AC vs. DC

### **Special Training Programs**

- Lock Out Tag Out for supervisors
- OSHA Electrical Subpart K for OSHA 10 & 30 hour class

## **VI CHECKLIST ITEMS**

All employees using electrical devices will inspect equipment before use and on a regular basis.

Defective or damage equipment must be removed from service immediately and tagged until equipment is repaired.

Equipment must be repaired in accordance with Manufacturers Recommendations and the National Electrical Code.

All equipment will be grounded and or double insulated.

GFCI's will always be used when on temporary services.



## **I PURPOSE**

This section is designed to provide guidance to ensure employee safety from severe winds, fire, explosion, and medical emergencies.

## **II REFERENCES**

29 CFR 1926.35      Employee Emergency Action Plan

## **III PROCEDURES**

### **Severe Winds**

No employee will work on any scaffold nor any roof or elevated station during severe winds. The project superintendent or his/her designee will make the determination if winds are severe.

### **Fires and Explosions**

If working inside a structure or space and a fire develops, attempt to extinguish the fire if it is small and not growing rapidly by use of a portable fire extinguisher.

In cases where the fire cannot be safely extinguished, notify all personnel inside the structure or space to exit immediately, exit the structure or space via the closest and safest exit.

In the event of an explosion, exit the structure or space immediately.

### **Employee Accounting Following an Evacuation**

Employees after evacuating a structure or space will assemble in a pre-designated space at least 100 feet from the structure or space. (No one is allowed to re-enter the structure or space for any reason.)

The project superintendent or his/her designee will do a head count to determine if all personnel are out of the structure or space.

Notify the Safety Director as soon as possible following an evacuation or fire.

### **Rescue, Medical Duties, Means of Reporting Emergencies**

The project superintendent or his/her designee will be responsible for calling the fire and rescue squads by use of telephones, cell phones, or radios. The emergency telephone numbers for fire, rescue, and police will be posted in the site trailer or in a company vehicle at the telephone.

Employees injured on the project site will not be moved until emergency medical services arrive.

In the event of imminent danger such as fire or explosion, the injured employee can be moved to the evacuation location.

All rescue efforts, if necessary, will be conducted by the fire department or rescue squad.

Trained first aid renderers may perform first aid on injured personnel.

## **IV TRAINING**

The employer will provide training programs at the safety orientation, through Toolbox Safety Talks and through special training programs.

## **V CHECKLIST ITEMS**

The first aid kit will be accessible and fully stocked at all times.

All fire extinguishers will be accessible, fully charged, inspected and documented on a monthly basis.

Emergency phone numbers will be posted near the phone to include rescue squad, fire department, and police.

All employees and sub-contractors will be given a project site orientation to include the emergency action plan evacuation location.

The Material Safety Data Sheets will be located on the project site at all times.

## I PURPOSE

This section is designed to ensure that employees are protected from excavation and trenching hazards.

## II DEFINITIONS

Benching - (benching system) A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Competent Person - One who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Excavation - Any man-made cut, cavity, trench, or depression in the earth's surface formed by earth removal. This can include excavations for anything from cellars to highways.

Hazardous Atmosphere - An atmosphere that, by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

Job-site/Work Area - Any room or defined space inside or outside a building where Lantz Construction Company, engages in business, has employees, or works with other contractors.

Protective System - A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

Shield - (shield system) A structure that is able to withstand the forces imposed on it by a cave-in, and thereby protect employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses.

Additionally, shields can be either pre-manufactured or job-built in accordance with OSHA Standard 29 CFR 1926.652(c)(3) or (c)(4). Shields used in trenches are usually referred to as "trench boxes" or "trench shields."

Sloping - (sloping system) A method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.

Stable rock - Natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed. Unstable rock is considered to be stable when the rock material on the side or sides of the excavation is secured against caving in or movement by rock bolts or by another protective system that has been designed by a registered professional engineer.

Supervisor - Any employee who has been authorized to direct, oversee, control, manage, guide, survey, or regulate the actions of other Lantz Construction Company, employees.

Trench - A narrow excavation made below the surface of the ground, in which the depth is greater than the width, the width not exceeding 15 feet.

### III REFERENCES

29 CFR 1926, Subpart P      Excavations

### IV PROCEDURES

#### General Requirements

Studies show that excavation work is one of the most hazardous types of work done in the construction industry. Many on-the-job accidents are a direct result of inadequate initial planning. Site conditions to be taken into account before work begins are as follows:

- traffic
- nearness of structures and their conditions
- soil
- surface and ground water
- the water table
- overhead and underground utilities
- weather

These and other conditions can be determined by project site studies, observations, test borings for soil type or conditions, and consultations with local officials and utility companies.

#### Underground Utilities

Before any excavation actually begins, the standard requires determination of the estimated location of utility installations (sewer, telephone, fuel, electric, water lines, or any other underground installations) that may be encountered during digging. Also, the utility companies or owners involved must be contacted and informed, within established or customary local response times, of the proposed work. In many cases "Miss Utility" can be notified which meets these notification requirements.

#### On-the-Job Evaluation

A competent person will inspect, on a daily basis, excavations and the adjacent areas for possible cave-ins, failures of protective systems and equipment, hazardous atmospheres, or other hazardous conditions. If these conditions are encountered, exposed employees must be removed from the hazardous area until the necessary safety precautions have been taken. Inspections are also required after natural (e.g., heavy rains) or man-made events (such as blasting) that may increase the potential for hazards.

## **Protective Support Systems**

The chief hazard to excavation workers is the danger of cave-ins. The Occupational Safety and Health Administration (OSHA) requires that excavation workers who are exposed to potential cave-ins be protected by sloping, or benching the sides of the excavation; supporting the sides of the excavation; or placing a shield between the side of the excavation and the work area.

When designing a protective support system, a number of factors are involved, including soil classification, depth of cut, water content of soil, changes due to weather and climate, or other operations in the vicinity. The OSHA standard provides several different methods and approaches.

One method of ensuring the safety and health of workers in an excavation is to slope the sides to an angle not steeper than one and one-half horizontal to one vertical (34 degrees measured from the horizontal). A slope of this gradation or less is considered safe for any soil type.

A second design method, which can be applied for both sloping and shoring, involves using tabulated data, such as tables and charts, approved by a registered professional engineer. This data must be in writing, and must include sufficient explanatory information to enable the user to make a selection, including the criteria for determining the selection, and the limits on the use of the data. At least one copy of the information, including the identity of the registered professional engineer who approved the data, must be kept at the project site during construction of the protective system.

The standard does not require the installation and use of a protective system when an excavation is made entirely in stable rock, or is less than five feet deep and a competent person has examined the ground and found no indication of a potential cave-in.

## **Other Hazards**

To avoid hazards such as exposure to falls, falling loads, and mobile equipment, the OSHA standards requires the following procedures:

- Keep materials or equipment that might fall or roll into an excavation at least two feet from the edge of excavations, or have retaining devices, or both.

- Provide warning systems such as mobile equipment, barricades, hand or mechanical signals, or stop logs, to alert operators of the edge of an excavation. If possible, keep the grade away from the excavation.
- Provide scaling to remove loose rock or soil, or install protective barricades and other equivalent protection to protect employees against falling rock, soil, or materials.
- Prohibit work on faces of sloped or benched excavations at levels above other employees unless employees at lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment.
- Prohibit employees under loads that are handled by lifting or digging equipment. To avoid being struck by any spillage or falling materials, require employees to stand away from vehicles being loaded or unloaded. If cabs of vehicles provide adequate protection from falling loads during loading and unloading operations, the operators may remain in them.

Adequate protection is necessary for excavations where water has accumulated or is accumulating. A competent person to ensure proper use thereof must monitor all water removal equipment and operations.

Under the OSHA provisions, a competent person must test excavations greater than five feet in depth (may meet the definition of a confined space)(see confined space section of this manual), as well as ones where oxygen deficiency or a hazardous atmosphere exists or could reasonably be expected to exist, before an employee enters the excavation.

If hazardous conditions exist, controls such as proper respiratory protection or ventilation must be provided. Also, controls used to reduce atmospheric contaminants to acceptable levels must be tested regularly. Where adverse atmospheric conditions may exist or develop in an excavation, emergency rescue equipment (e.g., breathing apparatus, a safety harness and line, basket stretcher, etc.) must be readily available. This equipment must be attended when used. An employee must wear a harness and lifeline (with observer present to ensure that communication is maintained and equipment is utilized properly) when entering bell-bottom pier holes and similar deep and confined footing excavations.

## **Soils Classification**

Soils must be classified by a competent person to determine protective measures before employee entry into the trench or excavation. When classifying soils a competent person must conduct, at a minimum, a visual examination of the soils as well as two manual soil tests.

The following describes a method of classifying soil and rock deposits based on site and environmental conditions, and on the structure and composition of the earth deposits.

It contains definitions, sets forth requirements, and describes acceptable visual and manual tests for use in classifying soils.

This applies when a sloping or benching system is designed in accordance with the requirements set forth in OSHA Standard 29 CFR 1926.652(b) (2) as a method of protection for employees from cave-ins. This also applies when timber shoring for excavations is designed as a method of protection from cave-ins in accordance with Appendix C to Subpart P of Part 1926, and when aluminum hydraulic shoring is designed in accordance with Appendix D. This also applies if other protective systems are designed and selected for use from data prepared in accordance with the requirements set forth in OSHA Standard 29 CFR 1926.652(c), and the use of the data is predicated on the use of the soil classification system set forth in this section. The definitions and examples given below are based on, in whole or in part, the following: American Society for Testing Materials (ASTM) Standards D653-85 and D2488; the Unified Soils Classification System; the U.S. Department of Agriculture (USDA) Textural Classification Scheme; and the National Bureau of Standards Report BSS-121.

Cemented soil - Means a soil in which the particles are held together by a chemical agent, such as calcium carbonate, such that a hand-size sample cannot be crushed into powder or individual soil particles by finger pressure.

Cohesive soil - Means clay (fine grained soil), or soil with a high clay content, that has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical side slopes, and is plastic when moist. Cohesive soil is hard to break up when dry, and exhibits significant cohesion when submerged. Cohesive soils include clay, silt, sandy clay, silty clay, and organic clay.

Dry soil - Means soil that does not exhibit visible signs of moisture content.

Fissured - Means a soil material that has a tendency to break along definite planes of fracture with little resistance, or a material that exhibits open cracks, such as tension cracks, in an exposed surface.

Granular soil - Means gravel, sand, or silt (coarse grained soil) with little or no clay content. Granular soil has no cohesive strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry.

Layered system - Means two or more distinctly different soil or rock types arranged in layers. Micaceous seams or weakened planes in rock or shale are considered layered.

Moist soil - Means a condition, in which a soil looks and feels damp. Moist cohesive soil can easily be shaped into a ball and rolled into small diameter threads before crumbling. Moist granular soil that contains some cohesive material will exhibit signs of cohesion between particles.

Plastic - Means a property of a soil which allows the soil to be deformed or molded without cracking, or appreciable volume change.

Saturated soil - Means a soil in which the voids are filled with water. Saturation does not require flow. Saturation, or near saturation, is necessary for the proper use of instruments such as a pocket penetrometer or shear vane.

Soil classification system - Means, for the purpose of this section, method of categorizing soil and rock deposits in a hierarchy of Stable Rock, Type A, Type B, and Type C, in decreasing order of stability. The categories are determined based on an analysis of the properties and performance characteristics of the deposits and the characteristics of the deposits and the environmental conditions of exposure.

Stable rock - Means natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

Submerged soil - Means soil that is underwater or is free seeping.

Type A - Means cohesive soils with an unconfined, compressive strength of 1.5 ton per square foot (tsf) (144 kPa) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam, and in some cases, silty clay loam and sandy clay loam. Cemented soils such as calcite and hardpan are also considered Type A. However, no soil is Type A if: (I) The soil is fissured; (ii) The soil is subject to vibration from heavy traffic, pile driving, or similar effects; (iii) The soil has been previously disturbed; (iv) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or (v) The material is subject to other factors that would require it to be classified as a less stable material.

Type B - Means: (I) Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa); (ii) Granular cohesionless soils including angular gravel (similar to crushed rock), silt, silt loam, sandy loam, and in some cases, silty clay loam and sandy clay loam; (iii) Previously disturbed soils, except those that would otherwise be classed as Type C soil; (iv) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; (v) Dry rock that is not stable; or (vi) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

Type C - Means: (I) Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; (ii) Granular soils including gravel, sand, and loamy sand; (iii) Submerged soil or soil from which water is freely seeping; (iv) Submerged rock that is not stable; or (v) Material in a



sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H:1V) or steeper.

Unconfined compressive strength - means the load per unit area at which a soil will fail in compression. It can be determined by laboratory testing, or estimated in the field using a pocket penetrometer, by thumb penetration tests, and other methods.

Wet soil - Means soil that contains significantly more moisture than moist soil, but in such a range of values that cohesive material will slump or begin to flow when vibrated. Granular material that would exhibit cohesive properties when moist will lose those cohesive properties when wet.

Classification of soil and rock deposits: Each soil and rock deposit will be classified by a competent person as Stable Rock, Type A, Type B, or Type C, in accordance with the definitions set forth above.

The classification of the deposits will be made based on the results of at least one visual and at least one manual analysis. Such analyses will be conducted by a competent person using tests described below, or in other recognized methods of soil classification and testing such as those adopted by the ASTM, or the USDA textural classification system.

The visual and manual analyses, such as those noted as being acceptable below, will be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify properly the properties, factors, and conditions affecting the classification of the deposits.

In a layered system, the system will be classified in accordance with its weakest layer. However, each layer may be classified individually where a more stable layer lies under a less stable layer.

If, after classifying a deposit, the properties, factors, or conditions affecting its classification change in any way, the changes will be evaluated by a competent person. The deposit will be reclassified as necessary to reflect the changed circumstances.

## **Visual Analysis**

Visual analysis is conducted to determine qualitative information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil taken as samples from excavated material.

- Observe samples of soil that are excavated and soil in the sides of the excavation. Estimate the range of particle sizes and the relative amounts of the particle sizes. Soil that is primarily composed of fine-grained material is cohesive material. Soil composed primarily of coarse-grained sand or gravel is granular material.

- Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does not stay in clumps is granular.
- Observe the side of the opened excavation and the surface area adjacent to the excavation. Crack-like openings, such as tension cracks, could indicate fissured material. If chunks of soil spall off a vertical side, the soil could be fissured. Small spalls are evidence of moving ground and are indications of potentially hazardous situations.
- Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground structures, and to identify previously disturbed soil.
- Observe the opened side of the excavation to identify layered systems. Examine layered systems to identify if the layers slope toward the excavation. Estimate the degree of slope of the layers.
- Observe the area adjacent to the excavation and the sides of the opened excavation for evidence of surface water, water seeping from the sides of the excavation, or the location of the level of the water table.
- Observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the stability of the excavation face.

## Manual Analysis

Manual analysis of soil samples is conducted to determine quantitative as well as qualitative properties of soil, and to provide more information in order to classify soil properly.

- **Plasticity.** Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8-inch in diameter. Cohesive material can be successfully rolled into threads without crumbling. For example, if at least a two-inch (50 millimeter [mm]) length of 1/8-inch thread can be held on one end without tearing, the soil is cohesive.
- **Dry strength.** If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is granular (any combination of gravel, sand, or silt). If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand or silt. If the dry soil breaks into clumps that do not break up into small clumps and can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered unfissured.

- **Thumb penetration.** The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. (This test is based on the thumb penetration test described in ASTM Standard Designation D2488 – “Standard Recommended Practice for Description of Soils [Visual - Manual Procedure].”) Type A: the thumb can not readily indent soils with an unconfined compressive strength of 1.5 tsf; however, the thumb only with very great effort can penetrate them. Type C: soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb, and can be molded by light finger pressure. This test will be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as practicable after excavation to keep to a minimum the effects of exposure to drying influences. If the excavation is later exposed to wetting influences (rain, flooding), the classification of the soil must be changed accordingly.
- **Other strength tests.** Estimates of unconfined compressive strength of soils can also be obtained by use of a pocket penetrometer or by using a hand-operated shear vane.
- **Drying test.** The basic purpose of the drying test is to differentiate between cohesive material with fissures, unfissured cohesive material, and granular material. The procedure for the drying test involves drying a sample of soil that is approximately one inch thick (2.54 centimeters [cm]) and six inches (15.24 cm) in diameter until it is thoroughly dry: (A) If the sample develops cracks as it dries, significant fissures are indicated; (B) Samples that dry without cracking are to be broken by hand. If considerable force is necessary to break a sample, the soil has significant cohesive material content. The soil can be classified as an unfissured cohesive material and the unconfined compressive strength will be determined; and (C) If a sample breaks easily by hand, it is either a fissured cohesive material or a granular material. To distinguish between the two, pulverize the dried clumps of the sample by hand or by stepping on them. If the clumps do not pulverize easily, the material is cohesive with fissures. If they pulverize easily into very small fragments, the material is granular.

## Egress From Excavation

According to OSHA regulations, when employees are required to be in trench excavations that are four feet deep or more, adequate means of exit, such as ladders, steps, ramps, or other safe means or egress, must be provided and be within 25 feet of lateral travel. If structural ramps are used as a means of access or egress, a competent person must design them if used for employee access or egress, or a competent person qualified in structural design if used by vehicles. Also, structural members used for ramps or runways must be uniform in thickness and joined in a manner to prevent tripping or displacement.

## V. CHECKLIST ITEMS

- A competent person must test the excavation atmosphere before an employee enters an excavation when over four feet deep, and oxygen deficiency or hazardous atmosphere exists or could reasonably be expected to exist.
- Every excavation 5 feet or greater in depth must be protected from cave-in.
- If danger of cave-ins exists, you must protect by:
  - sloping
  - benching
  - supporting sides
  - shielding
- Excavation less than five feet must also have a protective system or design if inspection reveals a cave-in hazard.
- Use control measures if hazardous conditions, such as those concerning ventilation call for proper respiratory protection.
- The competent person will conduct inspections:
  - daily prior to beginning work
  - periodically throughout the workday
- The competent person will evaluate for:
  - traffic
  - nearness of structures and their conditions
  - soil
  - surface and ground water
  - water table
  - overhead and underground utilities (notify utility companies)
  - weather
  - daily excavations and adjacent areas for possible cave-ins
  - failures of protective systems and equipment
  - hazardous atmospheres
  - fall protection
  - falling loads
  - access and egress
  - mobile equipment warning systems
  - other hazardous conditions

- If danger of cave-ins exists, you must protect by:
  - sloping
  - benching
  - supporting sides
  - shielding
- Excavations may be sloped or benched in accordance with one of the following methods:
  - At least 34 degree slope or bench (which is safe for any soil).
  - Classification of soil composition and the environmental conditions with maximum allowable slopes contained in the standard.
  - Tabulated data developed according to accepted engineering practices.
  - A protective system developed by a registered professional engineer.
- Shoring systems may be constructed by using one of the following methods:
  - Soil classification and system support materials with dimensions and composition contained in the standard.
  - Manufacturer's specifications.
  - Tabulated data developed according to accepted engineering practices.
  - A protective system developed by a registered professional engineer.
- A shielding system (TRENCH BOXES) must be constructed:
  - Utilizing accepted engineering practices and must be capable of withstanding any imposed forces.
- The design of protective systems require:
  - soil classification
  - depth of cut
  - water content of soil
  - changes due to weather and climate, or other operations in the vicinity
- Supporting written data used for the construction of protective systems and devices, including engineering data must be kept on site and available at all times during work. Supporting written data must include:
  - system selection criteria and limitations
  - size
  - types and configurations of materials
  - explanatory notes and manufacturer or approved engineering identity

- A registered engineer must approve sloping and benching systems in excavations greater than 20 feet in depth.
- Installation of protective systems are not required only when:
  - Excavation is made entirely in stable rock
  - Less than five feet deep, and a competent person has examined the ground and found no indications of a potential cave-in
- Provide adequate means of exit within 25 feet of lateral travel:
  - ladders
  - steps
  - ramps
  - other safe means of egress

Lantz Construction Company  
Soil Classification Worksheet

Project # ____/____/____	Project Superintendent _____	
Date ____/____/____	Time _____ a.m. p.m.	
Excavation Depth:	Excavation Width:	Excavation Length:

**Visual Analysis**

Particle Type: Fine Grained (Cohesive) _____ Granular (Sand/Silt or Gravel) _____ ( <b>Type C</b> )		
Water Conditions: Wet _____ Dry _____ Seeping Water _____ ( <b>Type C</b> ) Submerged _____ ( <b>Type C</b> )		
Previously Disturbed Soils: Yes _____ ( <b>Type C</b> ) No _____		
Layered Soils: Yes _____ No _____ The less stable layer controls soil type.		
Excavation Exposed to Vibrations: Yes _____ No _____ If yes from what?		
Crack like openings or spalling: Yes _____ ( <b>Type C</b> ) No _____		
Conditions that may create a hazardous atmosphere: Yes _____ No _____ If yes from what?		
Surface encumbrances: Yes _____ No _____ If yes what type?		
Excavation/Trench below previously installed footings or foundations which need to be supported: Yes _____ No _____		
Work performed near public vehicular traffic: Yes _____ No _____		
Possible Confined Space Exposure: Yes _____ No _____		

**Manual Analysis (1 of the 3 must be preformed)**

<p><b>Plasticity:</b> Cohesive _____ Non-Cohesive (<b>Type C</b>) _____ <b>Note:</b> A little water may be added. Mold a moist or wet sample into a ball and attempt to roll it into threads as thin as 1/8 inches in diameter. If at least a two-inch length of 1/8-inch thread can be held by one end without tearing, the soil is cohesive.</p> <p>Dry Strength: <b>Cohesive</b> _____ (<b>broken with difficulty</b>) See Note Next Page Non-Cohesive (<b>Type C</b>) Granular Soils _____ (crumbles easily into small grains) Take a sample from the spoil pile as excavation is taking place and attempt to break the sample.</p> <p><b>Thumb Test:</b> Take a sample from the spoil pile as excavation is taking place, hold the sample in one hand and push your thumb into the sample.          _____ Type A – Soil indented by thumb with very great effort. (Cohesive)          _____ Type B – Soil indented by thumb with some effort. (Cohesive)          _____ <b>Type C</b> – Soil easily penetrated by the thumb or crumbles with little effort. (Non-Cohesive)</p>
---

**Soil Classification**

Type A _____ $\frac{3}{4}$ to 1 (53 degree angle)
Type B _____ 1 to 1 (45 degree angle)
Type C _____ 1 and $\frac{1}{2}$ to 1 (34 degree angle)

**Note:** Any section, which has a check by a **Type C**, is automatically classified as a Type C soil and sloped or benched accordingly. If there is no check by a Type C, the soil can be classified as Type B. Any Type A classification needs approval by the Safety Director.

Lantz Construction Company  
Soil Classification Worksheet

**NOTE:**

**Drying Test:** The basic purpose of the drying test is to differentiate between cohesive material with fissures, unfissured cohesive material, and granular material. The procedure for the drying test involves drying a sample of soil that is approximately one-inch thick and six-inches in diameter until it is thoroughly dry:

If the sample develops cracks as it dries, significant fissures are indicated.

Samples that dry without cracking are to be broken by hand.

- If considerable force is necessary to break a sample, the soil has significant cohesive material content.
- The soil can be classified as an unfissured cohesive material and the unconfined compressive strength should be determined.

**If a sample breaks easily by hand, it is either a fissured cohesive material or a granular material.**

To distinguish between the two, pulverize the dried clumps of the sample by hand or by stepping on them.

- If the clumps do not pulverize easily, the material is cohesive with fissures.
- If they pulverize easily into very small fragments, the material is granular.

**Type A Soil:** Cohesive soils with unconfined compressive strength of 1.5 tons per square foot (TSF) or greater.

Examples: clay, silty clay, sandy clay, clay loam, hardpan, cemented soils.

No fissures/spalling present.

Not previously, excavated/back filled.

Not subject to vibration.

**Type B Soil:** Cohesive soil with and unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF.

Examples: Angular gravel, silt, silt loam, previously disturbed soils unless otherwise classified Type C.

**Type C Soil:** Cohesive soils with an unconfined compressive strength of 0.5 TSF or less.

**Note: All granular soils are Type C**

Examples: Sand, loamy sand soil with freely seeping water, any soil not otherwise classified. Previously dug or back-filled areas, any area with underground installations.



## I. PURPOSE

This section establishes guidelines on means, methods, and safe practices for Fall Protection in construction.

According to 29 CFR 1926.500(a)(2), these Fall Protection guidelines do not apply to the following areas:

- |                          |  |
|--------------------------|--|
| - 29 CFR 1926 1400       | Cranes and derricks                          |
| - 29 CFR 1926, Subpart L | Scaffolds                                    |
| - 29 CFR 1926, Subpart R | Steel Erection                               |
| - 29 CFR 1926, Subpart S | Tunneling Operations                         |
| - 29 CFR 1926, Subpart X | Stairways and Ladders                        |
| - 29 CFR 1926, Subpart V | Electric Transmission and Distribution Lines |

## II. DEFINITIONS

Anchorage - A secure point of attachment for lifelines, lanyards or deceleration devices.

Body Harness - straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

Controlled Access Zone (CAZ) - an area in which certain work (e.g., overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled.

Deceleration Device - any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

Deceleration Distance - the additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body belt or body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

Equivalent - alternative designs, materials, or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

Free Fall - the act of falling before a personal fall arrest system begins to apply force to arrest the fall.

Guardrail System - a barrier erected to prevent employees from falling to lower levels.

Hole - a gap or void 2 inches (5.1 cm) or more in its least dimension, in a floor, roof, or other walking/working surface.

Infeasible - that it is impossible to perform the construction work using a conventional fall protection system (i.e., guardrail system, safety net system, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection.

Lanyard - a flexible line of rope, wire rope, or strap which generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

Lifelines - a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorage's at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Opening - a gap or void 30 inches (76 cm) or more high and 18 inches (48 cm) or more wide, in a wall or partition, through which employees can fall to a lower level.

Overhand bricklaying, (related work) - the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. Related work includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

Personal Fall Arrest - a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

Point of Attachment - The location where the lifeline is secured.

Roofing Work - the hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.

Safety-Monitoring System - a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

Snaphook - a connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snaphooks are generally one of two types.

Toeboard - a low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

Unprotected sides and edges - any side or edge (except at entrances to points of access) of a walking/working surface, e.g., floor, roof, ramp, or runway where there is no wall or guardrail system at least 39 inches (1.0 m) high.

Walking/Working surface - any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

Warning Line System - a barrier erected on a roof to warn employees that they are approaching an unprotected roof or edge, and which designates an area in which roofing work may take place without the use of guardrail, body harness, or safety net systems to protect employees in the area.

Work Area - that portion of a walking/working surface where job duties are being performed.

### III REFERENCES

29 CFR 1926, Subpart M  
ANSI A10.14

Fall Protection  
Requirements for Safety Belts, Harnesses, Lanyards, and  
Lifelines

### IV PROCEDURES

#### General Requirements

Fall Protection will be provided for all employees where there is a fall hazard of 6 feet or more. The following are some examples when employees need to provide fall protection when working at or above 6 feet:

- Unprotected Sides or Edges
- Leading Edges
- Hoist Areas
- Holes
- Formwork and Reinforcing Steel
- Ramps, Runways and other Walkways
- Excavations
- Roofing Work on Low-Sloped Roofs
- Steep Roofs

- Precast Concrete Erection
- Residential Construction
- Wall Openings
- Walking and Working Surfaces

A site specific fall protection plan will be developed by a competent person and kept onsite until all roof work is completed.

Fall Protection can be accomplished by one of the following conventional fall protection methods:

**Guardrails** - Guardrails may be used when there is a fall hazard of 6 feet or more where an employee is exposed to the hazard. Guardrails will be constructed of an appropriate material and will have upright posts, at a minimum, of every 8 feet. The top rail will be 42" (+ or - 3") from the deck or platform with a midrail half way between the deck and the top rail. The guardrail will have a toeboard made of an appropriate material. Guardrails will have a smooth surface. All nails and other hazards will be removed before use. Where a ladder or other access is provided, the guardrail will be removable or have a gate installed. No top rail of a guardrail system will deflect more than 3 inches. Guardrails will be inspected on a daily basis and repaired as needed.

**Personal Fall Arrest System (PFAS)** - Personal fall arrest systems will be provided at a 6 foot fall hazard. Employees will be trained in the proper use of PFAS or body harnesses and components. Body harnesses and components will be inspected before each use. These will be removed from service if found to be defective. A lanyard will connect body harnesses not more than 6 feet in length or retractable type lanyard. Lifelines will be attached to a point capable of supporting 5000 pounds per person. All hooks will be of double locking type. When using a body harness, the lanyard will be adjusted as to not allow the employee to fall more than 6 feet. Body Belts are not authorized and are prohibited to be used by employees.

**Safety Net Systems** - Safety net systems will be installed as close as possible to the walking/working surface on which employees are working but not more than 30 feet below the walking/working surface. Safety Nets will extend out from the outermost projection of the work surface as follows:

Vertical distance from working level to horizontal plane of net	Minimum required horizontal distance of outer edge of net from the edge of
---	--

	the working surface
Up to 5 feet	8 feet
More than 5 feet up to 10 feet	10 feet
More than 10 feet	13 feet

Safety nets will be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force consisting of a 400 pound bag of sand dropped at the highest level from which employees will be working above the safety net. Safety nets will be inspected, at least weekly, for defects of wear, damage or deterioration. Defective nets will not be used.

Although the above information has been provided for information and inspection purposes, if and when fall net systems are used by employees of Lantz Construction Company, the fall net systems will be installed by professional installers and will meet the requirements of 29 CFR 1926.502(c) and Manufacturer's Recommendations.

**Covers** - Covers for holes in floors, roofs and other walking/working surfaces, will meet the following requirements:

- All covers must support, without failure, at least two times the maximum intended weight that might be imposed on the cover.
- All covers will be secured from accidental displacement by wind and other employees.
- All covers will be marked or color coded to warn of the hazards of falling through holes if removed. Mark covers using the words "COVER" or "HOLE".

The use of alternative fall protection, such as Fall Protection Plan, Controlled Access Zone, Warning Line and Monitor, are authorized only after all the other conditions of the work site have been analyzed and it has been determined that the use of conventional fall protection is infeasible or creates a greater hazard. Before implementing an Alternative Fall Protection System, Superintendents or Foreman will notify the Director of Safety.

### **Protection from Falling Objects**

When employees are potentially exposed to falling objects, in addition to wearing hard hats, each employee will be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy or massive to be contained or deflected by any of the above-listed measures, or the above listed protections are impractical, Lantz

Construction Company will place these objects away from the edge of the surface from which they could fall and will secure those materials as necessary to prevent their falling.

Where there is a danger of tools, materials, or equipment falling from the work surface/ location and possibly striking employees, sub-contractors, customers, owners or by-standers below, the following provisions apply:

1. Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced, or:
2. A toe board will be erected along the edge of the platforms more than six feet above lower levels for a distance sufficient to protect employees below.
  - When toe boards are used they must be capable of withstanding, without failure, a force of at least 50 pounds applied in any downward or horizontal direction at any point along the toe board.
  - Toe boards must be at least 3 1/2 inches high from the top edge of the toeboard to the level of the walking/working surface.
3. Where tools, materials, or equipment are piled to a height higher than the top edge of the toeboard, paneling or screening extending from the toeboard or platform to the top of the guardrail will be erected from a distance sufficient to protect employees below.
4. A protective system will be installed with opening small enough to prevent passage of potential falling objects.
5. A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects will be erected over the employees below. Canopies must be installed between the falling object hazard and the employees.

## V. TRAINING

The employer will train all employees in the use and inspection of all fall systems. This training will be done at the start of employment, as work duties change, and ongoing throughout the year. Training will include use of equipment, inspection, work tasks and the hazard of the tasks.

All training will be documented and copies of training will be on file in the Safety Directors office.

Employees, who demonstrate a lack of understanding or employees who have been issued disciplinary action regarding a part of the fall protection plan, will be given documented “re-training” in fall protection.

## **VI. CHECKLIST ITEMS**

Fall protection harnesses and lanyards are “out of service” if it has been five years or more since the manufacture date.

Harness/lanyard shall be inspected prior to each use for wear, damage or other deterioration. If harness/lanyard shows any of the above it shall be immediately placed “out of service.”

All employees will be protected from fall hazards at 6 feet.

All equipment will be inspected before use.

All employees will be trained in the use of fall protection equipment.

Covers must be secured and marked with “COVER” or “HOLE”.

Lanyard(s) will be adjusted as not to allow more than a 6-foot fall.

In the event of a fall, near miss, or other serious incident a documented accident investigation will take place as soon as possible.

In the event a fall takes place a prompt rescue of that employee will take place.

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## I POLICY

Lantz Construction Company is dedicated to the protection of its employees from on-the-project injuries. All employees of Lantz Construction Company have the responsibility to work safely on the project. The purpose of the plan is to supplement our existing safety and health program and to ensure that every employee who works for Lantz Construction Company recognizes workplace fall hazards and takes the appropriate measures to address those hazards.

In setting of roof/floor trusses on buildings less than 56 feet in height, conventional fall protection systems may not be the safest choice for builders. This plan is designed to enable employees to recognize the fall hazards associated with a project and to establish the safest procedures that are to be followed in order to prevent falls.

Only employees who are specifically trained to do this type of work and are trained to recognize the fall hazards will conduct installation of roof/floor trusses/rafters. The nature of such work normally exposes the employee to the fall hazard for a short period of time. This Plan details how Lantz Construction Company will minimize these hazards.

## II PROCEDURES

The Project Superintendent will prepare the Roof/floor truss Installation Fall Protection plan.

The Project Superintendent will notify the Safety Director at least 1 week prior to the start date of roof/floor truss operations.

A copy of the Roof/floor truss Installation Fall Protection plan will be available for review at all times on the project site.

Employees will not be allowed to work underneath areas where roofing operations are being preformed.

The Project Superintendent is the person responsible for implementing this Fall Protection Plan.

The Project Superintendent is responsible for correcting any unsafe practices or conditions immediately.

The Project Superintendent is responsible for ensuring that all employees understand and adhere to the procedures of this plan.

Only employees engaged in roof/floor truss operations are allowed within the area where employees are protected by a Fall Protection Plan.

The Company's Safety Director must approve any changes to the Fall Protection Plan.

**NOTE:** An employee may stop work, at anytime, if he/she feels they are in a hazardous situation.



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**Roof/floor truss Installation Fall Protection Plan  
Lantz Construction Company**

Location of Job\_\_\_\_\_

Date Plan Prepared or Modified\_\_\_\_\_

Plan Prepared By\_\_\_\_\_

Plan Approved By\_\_\_\_\_

Plan Supervised By\_\_\_\_\_

**Controlled Access Zones**

When using the Plan to implement the fall protection options available, workers must be protected by limiting access to high hazard locations. Before any fall protection plan may be used, a controlled access zone (CAZ) will be clearly defined by the Project Superintendent as an area where the recognized hazard exists and other trades will be working. No one will be allowed to work beneath the truss/roofing operations.

The Project Superintendent will accomplish the marking of the CAZ. The markings will be easily identifiable and highly visible such as signs, wires, tapes, ropes or chains. The only exception to this is when only employees working the trusses or floor are present on the projects.

Lantz Construction Company will take the following steps to ensure that the CAZ is clearly marked or controlled by the Project Superintendent:

- All access to the CAZ must be restricted to authorized entrants.
- All workers who are permitted in the CAZ will be listed in the appropriate sections of the Plan (or be visibly identifiable by the Project Superintendent) prior to implementation.
- The Project Superintendent will ensure that all protective elements of the CAZ are implemented prior to the beginning of work.

**Installation Procedures for Roof/floor truss and Rafter Erection**

During the erection and bracing of roof/floor trusses/rafters, conventional fall protection may present a greater hazard to workers. On this project, safety nets, guardrails and personal fall arrest systems will not provide adequate fall protection because the nets could cause the walls to collapse, and there are no suitable attachment or anchorage points for guardrails or personal fall arrest systems.

On this project, using ladders for the installation process will cause a greater hazard because the worker must stand on the ladder with his back or side facing the rungs of the ladder. While erecting the truss or rafter the worker will need both hands to maneuver the truss and therefore cannot hold onto the ladder. In addition, ladders cannot be adequately protected from movement

while trusses are being maneuvered into place. Many workers may experience additional fatigue because of the increase in overhead work with heavy materials, which can also lead to a greater hazard.

Exterior scaffolds cannot be utilized on this project because the recent backfilling cannot support the scaffolding. In most cases, the erection and dismantling of the scaffold would expose workers to a greater fall hazard than erection of the trusses/rafters.

On all walls less than eight feet, workers will install interior scaffolds along the interior wall below the location where the trusses/rafters will be erected. "Sawhorse" scaffolds constructed of 46-inch sawhorses and 2x10 planks will often allow workers to be elevated high enough to allow for the erection of trusses and rafters without working on the top plate of the wall.

On all walls higher than eight feet, and where the use of scaffolds and ladders would create a greater hazard, safe working procedures will be utilized when working on the top plate and will be monitored by the crew leader. During all stages of truss/rafter erection the stability of the trusses/rafters will be ensured at all times.

Lantz Construction Company will take the following steps to protect workers who are exposed to fall hazards while working from the top plate installing trusses/rafters:

- Workers will have no other duties to perform during truss/rafter erection procedures.
- All trusses/rafters will be adequately braced before any worker can use the truss/rafter as a support.
- Workers will remain on the top plate using the previously stabilized truss/rafter as a support while other trusses/rafters are being erected.
- Workers will leave the area of the secured trusses only when it is necessary to secure another truss/rafter.
- The first two trusses/rafters will be set from ladders, scissors lifts, boom trucks, scaffolds etc.
- A worker will climb onto the interior top plate via a ladder to secure the peaks of the first two trusses/rafters being set.

Only the following trained workers will be allowed to participate in securing roof/floor trusses to the top plate:

PRINTED NAME	SIGNATURE
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

The workers responsible for detaching trusses from cranes and/or securing trusses at the peaks traditionally are positioned at the peak of the trusses/rafters. There are also situations where workers securing rafters to ridge beams will be positioned on top of the ridge beam.

Lantz Construction Company will take the following steps to protect workers who are exposed to fall hazards while securing trusses/rafters at the peak of the trusses/ridge beam:

- Only trained workers will be allowed to work at the peak during roof/floor truss or rafter installation.
- Once truss or rafter installation begins, workers not involved in that activity will not stand or walk below or adjacent to the roof opening or exterior walls in any area where they could be struck by falling objects.
- Workers will have no other duties than securing/bracing the trusses/ridge beam.
- Workers positioned at the peaks or in the webs of trusses or on top of the ridge beam will work from a stable position, either by sitting on a "ridge seat" or other equivalent surface that provides additional stability or by positioning themselves in previously stabilized trusses/rafters and leaning into and reaching through the trusses/rafters.
- Workers will not remain on or in the peak/ridge any longer than necessary to safely complete the task.

Only the following trained workers will be allowed to work at the peak during roof/floor truss or rafter installation:

PRINTED NAME	SIGNATURE
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

# Lantz Construction Company

# Fire Protection

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## I PURPOSE

To provide employees with an understanding of Fire Prevention and Fire Protection procedures and to aid employees in developing good fire prevention techniques throughout all phases of construction.

## II DEFINITIONS

Approved Safety Can - an approved container, of not more than 5 gallons capacity, having a flash-arresting screen, spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.

Closed Containers - A container so sealed by means of a lid or other device that neither liquid nor vapor will escape from it at ordinary temperatures.

Combustible Liquids - Any liquid having a flash point at or above 100 degrees Fahrenheit and below 200 degrees Fahrenheit.

Combustion - any chemical process that involves oxidation sufficient to produce light or heat.

Fire-resistance - so resistant to fire that, for specified time and under conditions of standard heat intensity, it will not fail structurally and will not permit the side away from the fire to become hotter than a specified temperature.

Flammable - capable of being easily ignited, at a temperature below 600 degrees Fahrenheit, burning intensely, or having a rapid rate of flame spread.

Flammable Liquids - any liquid having a flash point below 100 degree Fahrenheit and having a vapor pressure not exceeding 40 pounds per square inch (absolute) at 100 degree Fahrenheit.

Flash Point - the temperature at which a liquid gives off vapor sufficient to form an ignitable mixture with the air near the surface of the liquid.

Portable Tank - a closed container having a liquid capacity more than 60 U.S. gallons, and not intended for fixed installation.

## III REFERENCES

29 CFR 1926.24	Fire Protection and Prevention
29 CFR 1926, Subpart F	Fire Protection and Prevention

# **Lantz Construction Company**

# **Fire Protection**

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## **IV PROCEDURES**

### **General Fire Prevention**

Any fire in the workplace has the potential to cause serious personal or property damage. When chemicals are involved, the possibilities for destruction are greatly multiplied. Prevention is the key to eliminating the hazards of any kind of fire where you work.

The best defense against a fire is to prevent a fire from starting. Although many products stored in a warehouse or at a work site are not flammable, some packaging types commonly used today, such as cardboard, foam compositions, and paper packing, are definite fire hazards. In addition, some of the chemicals you work with may be able to start or feed a fire.

The importance of good housekeeping ties in closely with fire prevention. If you allow debris or flammable material to accumulate, the risk of starting a fire increases. There is always the possibility that fire may break out by accident. Fire prevention is part of the job of every employee. Everyone must help to keep the work area clutter-free and safe from other fire hazards, such as improperly used or stored chemicals. Employees need to know what to do in the case of a fire emergency. Each work place must have a fire prevention plan spelling out everyone's roles; you should know the actions you are expected to take in the event of a fire.

When a fire starts, your first thought should be of your safety and the safety of others. Only if you have been trained in the use of extinguishers and the fire is small and tame enough to be extinguished by a hand-held extinguisher should you try to put it out by that method.

When the fire is out of control, the combustible material is unknown, or you have not been trained in the proper use of extinguishers, leave the fire fighting to professionals with the proper equipment. In this case, sound the fire alarm, and then call for emergency help from a safe place.

Preparation is the key to controlling the consequences of a fire:

1. Keep work areas clean and clutter-free.
2. Know how to handle and store chemicals.
3. Know what you are expected to do in case of a fire emergency.
4. Call professional help immediately; don't let a fire get out of control (this applies to a fire wherever you are).

# Lantz Construction Company

# Fire Protection

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5. Know what chemicals you work with; you might have to advise fire fighters on the scene of a chemical fire concerning the type of hazardous substances involved.

## **Classification of Fires and Fire Extinguishers**

The National Fire Protection Association (NFPA) has classified four general types of fires, based on the combustible materials involved and the kind of extinguisher needed to put them out. The four fire classifications are A, B, C, and D. Each classification has a special symbol and color identification.

*Class A:* This type of fire is the most common. The combustible materials are wood, cloth, paper, rubber and plastics. The common extinguisher agent is water, but dry chemicals are also effective.

*Class B:* Flammable liquids, gases and greases create class B fires. The extinguishers to use are foam, carbon dioxide and dry chemical. Also, water fog and vaporizing liquid extinguishers can be used.

*Class C:* Class C fires are electrical fires and a non-conducting agent must be used. Carbon dioxide and dry chemical extinguishers are to be used. Never use foam or water-type extinguishers on these fires.

*Class D:* Combustible metals, such as magnesium, titanium, zirconium and sodium fires are class D. These fires require specialized techniques to extinguish them. None of the common extinguishers should be used since they can increase the intensity of the fire by adding an additional chemical reaction.

There are only two dry chemical extinguishers that can be used on A, B, and C fires, and those are multi-purpose ABC extinguishers, either stored pressure or cartridge operated.

Multi-purpose extinguishers (ABC) will handle all A, B, and C fires. All fire extinguishers are labeled with either ABC, or A, or B, or C, so be sure to read the label.

## **Portable Fire Extinguishers**

Each workplace building must have a full complement of the proper type of fire extinguisher for the fire hazards present.

Access to all available fire fighting equipment will be maintained at all times.

## **Lantz Construction Company**

## **Fire Protection**

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A fire extinguisher, rated not less than 2A, will be provided for each 3,000 square feet of the protected building area, or major fraction thereof. Travel distance from any point of the protected area to the nearest fire extinguisher will not exceed 100 feet.

One or more fire extinguishers, rated not less than 2A, will be provided on each floor. In multi-story buildings, at least one fire extinguisher will be located adjacent to stairway. Extinguishers will be protected from freezing.

A fire extinguisher rated not less than 20-BC, will be provided within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the project site. This requirement does not apply to the integral fuel tanks of motor vehicles.

Carbon tetrachloride and other toxic vaporizing liquid fire extinguishers are prohibited.

Portable fire extinguishers will be inspected periodically (visual monthly check at least once every 30 days) and maintained (yearly maintenance by a professional).

Employees expected or anticipated to use fire extinguishers must be instructed on the hazards of fighting fire, how to properly operate the fire extinguishers available, and what procedures to follow in alerting others to the fire emergency.

Only approved fire extinguishers are permitted to be used in workplaces, and they must be kept in good operating condition. Proper maintenance and inspection of this equipment is required of each employer.

### **Chemical Hazards**

Many of the thousands of chemicals in use in the workplace are both highly toxic and highly volatile. Extreme caution must be used to prevent and fight fires resulting from chemical spills and accidents. Know the hazards of the chemical substances you use on the job and how to handle and store them properly to prevent dangerous chemical fires.

Chemicals can cause serious injuries through physical (fire or explosion) or health (burns or poisons) hazards. Many chemicals have inherent properties that make them very hazardous. They might include:

Flammability: These chemicals catch fire very easily; hazards include property damage, burns and injuries that result when toxic and corrosive compounds are released into the air.

Reactivity: A reactive material is one that can undergo a chemical reaction under certain conditions; reactive substances can burn, explode, or release toxic vapor if exposed to other chemicals, air or water.

## **Lantz Construction Company**

## **Fire Protection**

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As a result of these properties, chemicals can produce fires that start and spread quickly, may be difficult to fight or contain, and might inflict painful injuries.

### **Flammable Liquids**

Flammable liquids give off ignitable vapors and there are many ignition sources. Also, nearly all flammable liquid vapors are heavier than air and will accumulate when they escape. They are dangerous at that point but when they accumulate sufficiently, they travel and eventually find open flame. These flames (or ignition sources) might be cigarettes, a hand tool that sparks a cutting torch or an operating motor.

The best way to stop fires in the workplace is to eliminate the conditions and practices that enable a fire to begin in the first place. This is why the handling and storage of flammable liquids is so crucial. Safety procedures and equipment for the safe handling of these liquids can be grouped into four segments. The basic safety principles apply to all of them. You may be involved in one or all aspects discussed in this section.

Storage: The typical plant stores flammable liquids in two ways: reserve storage in drums and operational storage in small quantities (for use at work stations). For reserve storage safety, as soon as drum is unloaded, bung cap should be removed and a drum vent screwed in; this prevents build-up if the drum is exposed to heat. Proper vents also incorporate emergency relief devices, which blow out under extreme pressure. Drums should also be connected to a grounding system; this eliminates static electrical build-up when dispensing from the drum. Drums should be stored in a drum storage room, or should be stored in a safety cabinet.

Transfer: The transfer of flammable liquids refers to their removal from storage to the places where they will be used. Liquids can be dispensed from drums by two methods: gravity flow for drums stored horizontally, and pump method for drums stored vertically. For gravity flow safety, liquids should be dispensed into a safety can; OSHA requires the use of approved safety cans for transfer purposes.

A drip can be placed under the faucet to catch spills and leaks. The receiving container must be bonded to the drum to draw off any static electrical charge.

The pump method is faster, empties the drum almost completely and saves space because drums are stored vertically. Safety vents and drip cans are not required and any hoses are self-bonding.

Mobile solvent tanks (liquid caddies) are used to distribute flammable liquids to work stations using large production line equipment. They are equipped with rubber wheels, a measuring pump and a self-bonding hose.

Use: The use stage is work station operations when you are using flammable liquids as you



# **Lantz Construction Company**

# **Fire Protection**

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work. There are many work station cans and tanks from which to choose. Liquids should be stored in safety cabinets at the work station.

**Disposal:** Disposing of waste flammable liquids requires as much caution in handling as do any of the other stages. Oily, solvent-soaked rags can easily start a fire through spontaneous combustion. To prevent this, specially designed oily waste cans should always be used for temporary storage. These cans have spring-loaded lids and a raised bottom with vent holes to dispense heat. For removing flammable liquids from the work station for disposal, drain cans and liquid disposal cans offer the greatest degree of safety.

## **Hazardous Spill - Clean up**

It is the vapors, rather than the liquid itself, that burn. When the liquid is spilled, vapor release begins immediately, and continues until the liquid is removed. This requires that cleanup operations begin at once.

Specially developed absorbent materials have been developed for spill cleanup. These products are offered in pillows, pads, sheets, tubes and other shapes to fit all cleanup eds. Once the absorbent material is saturated, it should be placed in a large disposal drum and sealed with a drum cover. Another spill cleanup involves the use of specialized vacuum equipment.

## **Compressed and Liquefied Gases**

The flash points of compressed flammable gasses are extremely low and always below room temperature. Explosive mixtures are readily formed with air. Ignition of even a small leak may cause the materials to ignite.

When these gases are stored, transported or used, cylinders should never be rolled or dragged, use a hand cart or truck specially designed for gas cylinders.

All cylinders should be secured to walls or bench tops during storage or use, and be very careful about fittings or connections. Before any connections are made, inspect the cylinder carefully. Do not change, modify, repair or tamper with pressure relief devices on cylinders.

## **Ignitable Fuel Tanks and Storage Containers**

All gasoline, kerosene and diesel fuel tanks are to be stored 20 feet from any building on all sides.

All tanks must have flammable and no smoking signs attached.

All tanks must have contents and hazards identified with writing on the tank with permanent paint.

Within 200 feet of a portable tank, there will be a 12-foot wide access way to permit approach of fire control apparatus.

# **Lantz Construction Company**

# **Fire Protection**

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At least one portable fire extinguisher having a rating of not less than 20-BC units will be located not less than 25 feet nor more than 75 feet from any flammable liquid storage area located outside.

Only an “approved safety can” or UL approved plastic containers will be used for handling and use of flammable liquids.

## **Indoor Storage of Flammable or Combustible Liquids**

Quantities larger than 25 gallons shall be stored in an approved storage cabinet or inside of an approved storage room.

## **SPECIAL CONSIDERATIONS:**

- Work trailers that are used for both tool storage and as working office space shall not store gasoline, diesel fuel or kerosene inside the trailer when occupied.
- Gasoline, diesel fuel and kerosene shall be kept outside, a minimum of 20ft. from the trailer or any other building.
- Gasoline, diesel fuel and kerosene may be stored in trailers when they are unoccupied.
- Smaller quantities of flammable materials such as spray paints, spray adhesives, paint cans, mineral spirits, lacquer thinner etc., can be stored in the trailer providing the total quantity DOES NOT exceed 4 gallons.

All cabinets and rooms will be marked **Flammable-Keep Fire Away.**

Approved fire extinguishers, sprinkler system and gravity or mechanical exhaust systems will be used.

Non-compatible materials which may create a fire hazard will be segregated by a one-hour fire rated barrier.

Storage will not obstruct exits, aisles, etc.

Only “approved” safety cans will be used for handling and use of flammable or combustible liquids.

## **Temporary Heat**

Only UL approved type heaters, properly vented, will be used. Special precautions will be taken when heating near wood framework and in confined spaces. Heaters will be shut down or turned off for refueling. Care will be taken to ensure that heaters are filled with the proper fuel. Serious accidents have occurred by the substitution of gasoline for fuel oil. Employees should be cautioned when entering confined spaces where temporary heat is being used. Fire extinguishers will be located as required in the proximity where temporary heaters are being utilized. “Salamander” type heaters will not be used in enclosed or confined spaces without permission of the Superintendent or Foreman.

# **Lantz Construction Company**

# **Fire Protection**

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## **Propane Gas Heaters**

Proper ventilation will be ensured for the safety and health of the employees and to ensure proper combustion of gases.

Propane gas heaters will have an UL approved automatic shut off device to stop the flow of gas to the main burner in the event of flame failure.

All heaters will be placed on a firm level surface in an upright position.

Other than integral heater container units, the heater will be located at least 6 feet from any propane container.

Blower and radiant type heaters will not be directed towards any propane container within 20 feet.

If working in an unpartitioned area on the same floor, the propane container or containers will be separated from each other by at least 20 feet.

## **V TRAINING**

Employees will be trained in the use of fire extinguishers before using equipment.

## **VI CHECKLIST ITEMS**

Keep work areas clean and clutter-free.

Know how to handle and store all chemicals.

Know what you are expected to do in case of a fire emergency.

Make sure you are familiar with your company's emergency action plan for fires.

If you have been trained in the use of a fire extinguisher and the fire is small, you can try to extinguish the fire with a hand-held extinguisher.

When the fire is out of control, the combustible material is unknown, or you have not been trained in the proper use of extinguishers call 911 immediately.

Only UL approved safety cans will be used to transfer flammables and combustibles.

## **Lantz Construction Company**

## **Fire Protection**

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Specially designed oil waste cans will be used for temporary storage of oily rags

Vapors are very dangerous and can ignite.

Each workplace must have a full complement of fire extinguishers for the hazards present.

### **Fire extinguishers must be:**

- Easily accessible and available.
- Provided for every 3,000-sq. ft. of protected building area.
- Not more than 100 feet travel distance from protected building area.
- Provided on each floor of a multi-floor building.
- Within 50 feet of area where 5 gallons or more of flammable or combustible liquids are used.
- **Visually checked monthly for defects and annotated on the back of the fire extinguisher inspection card.**
- Annually maintained by a professional trained in the maintenance of fire extinguishers.

Only UL approved fire extinguishers are permitted in workplaces.

All tanks must have “No Smoking” signs attached.

All tanks must be marked with contents.

A fire extinguisher must be provided within 25 feet of a flammable storage area.

Only approved metal safety cans with spring-closed lids and flash-arresting screen can be used on job sites.

**In areas with dust build up contact the Safety Director as soon as possible. Open Flames are not permitted in these areas.**

## I. PURPOSE

To provide safety requirements related to the design, maintenance and use of all powered industrial trucks.

## II. DEFINITIONS

Incline – To deviate from 0 degrees horizontal or vertical, to slope or slant in any direction.

Powered Industrial Truck - a self-propelled machine for hoisting and transporting heavy objects by means of steel forks inserted under the load. Also known as “Fork Truck”, “Fork Lift” and “Truck”.

## III. REFERENCES

29 CFR 1910.178	Powered Industrial Trucks
ANSI B56.1 - 1969	Powered Industrial Trucks, Part II

## IV. PROCEDURES

### Forklift/Truck Operations

Trucks will not be driven up to anyone standing in front of a bench or other fixed object.

No person will be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.

Unauthorized personnel are not permitted to ride on powered industrial trucks.

Arms or legs of employees will not be placed between the uprights of the mast or outside the running lines of the truck.

An operator is not permitted to dismount from the fork lift while the forks are elevated.

When a powered industrial truck is left unattended, the load will be fully lowered, controls will be neutralized, power will be shut off, and brakes set. Wheels will be blocked if the truck is parked on an incline.

1. A powered industrial truck is considered unattended when:
  - The operator is more than 25 ft. away from the forklift which remains in his full view at all times.

- Or whenever the operator leaves the vehicle and it is not in his full view.
2. When the operator of an industrial truck is dismounted and within 25 ft. of the truck still in his view, the load will be fully lowered, controls neutralized, and the brakes set to prevent movement.

A safe distance will be maintained from the edge of ramps or platforms while on any elevated dock, or platform or freight car. Trucks will not be used for opening or closing freight doors.

Brakes will be set and wheel blocks will be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semi-trailer during loading or unloading when the trailer is not coupled to a tractor. The flooring of trucks, trailers, and railroad cars will be checked for breaks and weakness before they are driven onto.

There will be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.

An overhead guard will be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.

A load backrest extension will be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.

Only manufacturer approved industrial trucks will be used in hazardous locations. Hazardous locations have various class and division ratings.

Fire aisles, access to stairways, and fire equipment will be kept clear.

Whenever a truck is equipped with vertical only, or vertical and horizontal controls with the lifting carriage or forks for lifting personnel, the following additional precautions will be taken for the protection of personnel being elevated.

1. Use of a safety platform firmly secured to the lifting carriage and/or forks.
2. Means will be provided whereby personnel on the platform can shut off power to the truck.
3. Such protection from falling objects as indicated by the operating conditions will be provided.

## Traveling

All traffic regulations will be observed, including authorized plant speed limits. A safe distance will be maintained approximately three truck lengths from the truck ahead, and the truck will be kept under control at all times.

The right of way will be yielded to ambulances, fire trucks, or other vehicles in emergency situations.

Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations will not be passed.

The driver will slow down and sound the horn at cross-aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver will be required to travel with the load trailing.

Railroad tracks will be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.

The driver will look in the direction of, and keep a clear view of the path of travel.

Grades will be ascended or descended slowly.

1. When ascending or descending grades in excess of 10 percent, loaded trucks will be driven with the load upgrade.

2. On all grades the load and load engaging means will be tilted back if applicable, and raised only as far as necessary to clear the road surface. Under all travel conditions the truck will be operated at a speed that will permit it to be brought to a stop in a safe manner.

Stunt driving and horseplay is strictly prohibited.

The driver will slow down for wet and slippery floors.

Dock board or bridge plates, will be properly secured before they are driven over.

Dock board or bridge plates will be driven over carefully and slowly and their rated capacity never exceeded.

Elevators will be approached slowly, and then entered squarely after the elevator car is properly leveled. Once on the elevator, the controls will be neutralized, power shut off, and the brakes set.

Motorized hand trucks must enter elevator or other confined areas with load end forward. Running over loose objects on the roadway surface must be avoided.

While negotiating turns, speed will be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel will be turned at a moderate, even rate.

## **Loading**

Only stable or safely arranged loads will be handled. Caution will be exercised when handling off-center loads, which cannot be centered.

Only loads within the rated capacity of the truck will be handled.

The long or high (including multiple-tiered) loads which may affect capacity will be adjusted.

Trucks equipped with attachments will be operated as partially loaded trucks when not handling a load.

A load engaging means will be placed under the load as far as possible; the mast will be carefully tilted backward to stabilize the load.

Extreme care will be used when tilting the load forward or backward, particularly with high tiering loads. Tilting forward with load engaging means elevated will be prohibited except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load will be used.

## **Operation of the Truck**

If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck will be taken out of service until it has been restored to safe operating condition.

Fuel tanks will not be filled while the engine is running. Spillage will be avoided.

Spillage of oil or fuel will be carefully washed away or completely evaporate and the fuel tank cap replaced before restarting engine.

No truck will be operated with a leak in the fuel system until the leak has been corrected.

## **Maintenance of Industrial Trucks**

Any power-operated industrial truck not in safe operating condition will be removed from service. Authorized personnel will make all repairs.

Those repairs to the fuel and ignition systems of industrial trucks, which involve fire hazards,



will be conducted only in locations designated for such repairs.

Trucks in need of repairs to the electrical system will have the battery disconnected prior to such repairs.

Only parts equivalent those used in the original design will replace all parts of any such industrial truck requiring replacement.

Industrial trucks will not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor will they be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts.

Additional counter weighting of fork trucks will not be done unless approved by the truck manufacturer.

Industrial trucks will be examined before being placed in service, and will not be placed in service, if the examination shows any condition adversely affecting the safety of the vehicle. Such examination will be made at least daily.

Where industrial trucks are used on a round-the-clock basis, they will be examined after each shift. Defects when found will be immediately reported and corrected.

Water mufflers will be filled daily or as frequently as is necessary to prevent depletion of the supply of water below 75 percent of the filled capacity. Vehicles with mufflers having screens or other parts that may become clogged will not be operated while such screens or parts are clogged. Any vehicle that emits hazardous sparks or flames from the exhaust system will immediately be removed from service and not returned to service until the cause for the emission of such sparks and flames has been eliminated.

When the temperature of any part of any truck is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle will be removed from service and not returned to service until the cause for such overheating has been eliminated.

Industrial trucks will be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks. Low flash point (below 100 F.) solvents will not be used. High flash point (at or above 100 F.) solvents may be used. Precautions regarding toxicity, ventilation, and fire hazard will be consonant with the agent or solvent used.

## **V. TRAINING**

### **Operator Training**

Only trained and licensed operators will be permitted to operate a powered industrial truck.

All Lantz Construction Company employees must attend a fork truck training session before operating a fork truck that includes the following:

- Formal Training (video, lecture, etc.)
- Written Test
- Driving Evaluation

## **VI. CHECKLIST ITEMS**

Only trained and authorized persons will operate Powered Industrial Trucks.

Powered Industrial Trucks will be operated in a safe and responsible manner at all times.

Employees will never pass under elevated loads.

Employees will never place arms or legs between the uprights of the mast or outside the running line of the truck.

Never leave a Powered Industrial Truck unattended unless operator practices procedures set forth in this section.

Operators will follow all traffic regulations and maintain safe speeds while operating powered industrial trucks.

Operator's will always slow down and sound the horn at cross-aisles and other locations where vision is obstructed.

Grades must always be ascended and descended slowly.

Powered Industrial Trucks must be operated within their capacities at all times.

Powered Industrial Trucks in need of repair, defective, or in any way unsafe, will be taken out of service.

Never fill the gas tank while motor is running.

Authorized and qualified personnel will perform all repairs of Powered Industrial Trucks.

## **I PURPOSE**

The purpose of these instructions are to ensure that before any employee operates any hand and or portable powered tool, which could cause injury, they are aware of general and specific guarding requirements for the machine in use. Lantz Construction Company procedures exceed federal standards and require all employees to recognize wood working machinery hazards, in accordance with federal laws, manufacturer's instructions and applicable American National Standards Institute (ANSI) standards.

## **II DEFINITIONS**

Guarding - One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.

Ex: of guarding methods are barrier guards, two-hand tripping devices & electronic safety devices.

Point of Operation - is the area on a machine where work is actually performed upon the material being processed.

GFCI – Ground Fault Circuit Interrupter

## **III REFERENCES**

29 CFR 1926.300(b)	Definitions
29 CFR 1926.301	Hand Tools
29 CFR 1926.302	Hand Operated Powered Tools
29 CFR 1926.303	Abrasive Wheels and Tools
29 CFR 1926.304	Woodworking Tools
ANSI A10.3-1970	ANSI Requirements for Explosive-Actuated Fastening Tools
ANSI B71.1-X1968	ANSI Specifications for Power Lawnmowers

## **IV PROCEDURES**

### **General Requirements for all Hand Tools**

Lantz Construction Company will be responsible for the safe condition of tools and equipment used by employees.

# **Lantz Construction Company      Hand and Portable Powered Tools**

Revised: 12/12

Reviewed: 04/12

Compressed air will not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment.

All electrical tools will be properly grounded and used with a proper GFCI.

The proper PPE will be utilized whenever hand and or power tools are used.

Any tool which is not in compliance with any applicable requirement of this part is prohibited and shall be identified as unsafe by tagging or locking the controls to render them inoperable.

Before any employee operates any hand tool, that employee must assess the hazards and risks to themselves and their fellow employees and take all necessary steps to remove such risks and hazards or to seek and receive assistance from their supervisor before operating any tool.

## **Switches and Controls for Portable Powered Tools**

The operating control on hand held power tools will be so located as to minimize the possibility of its accidental operation.

All hand-held powered drills, tappers, fastener drivers, horizontal, vertical, and angle grinders with wheels greater than 2 inches in diameter, disc sanders, belt sanders, reciprocating saws, saber saws, and other similar operating powered tools shall be equipped with a momentary contact "on-off" control and may have a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

All hand held powered tools such as, but not limited to, platen sanders, grinders with wheels 2" in diameter or less, disc sanders with discs 2" in diameter or less, routers, planers, laminate trimmers, nibblers, shears, saber, scroll, and jig saws with blade shanks a nominal one-fourth of an inch wide or less, may be equipped with only a positive "on off" control.

All other hand-held powered tools, such as circular saws, chain saws, and percussion tools without positive accessory holding means, shall be equipped with a constant pressure switch that will shut off the power when the pressure is released.

## **Guarding of Portable Powered Tools**

### **Circular Saws**

All portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction

and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

When the tool is withdrawn from the work, the lower guard will automatically and instantly return to covering position.

Only manufacturer approved equipment, accessories, or replacement parts will be used.

Circular saws will be inspected prior to each use for defects.

**Saber, Scroll, and Jig Saws**

Saber, scroll, and jig saws with nonstandard blade holders may use blades with shanks which are non-uniform in width, provided the narrowest portion of the blade shank is an integral part in mounting the blade.

Only manufacturer approved equipment, accessories, or replacement parts will be used.

Saber, scroll and jig saws will be inspected prior to each use for defects.

**Portable Belt Sanding Machines**

Belt sanding machines will be provided with guards at each nip point where the sanding belt runs onto a pulley.

Belt sanding machine guards will effectively prevent the hands or fingers of the operator from coming into contact with the nip points.

The unused run of the sanding belt will be guarded against accidental contact.

Only manufacturer approved equipment, accessories, or replacement parts will be used.

Portable belt sanding machines will be inspected prior to each use for defects.

**Pneumatic Powered Tools**

A tool retainer will be installed on each piece of utilization equipment, which, without such a retainer, may eject the tool.

Air hoses and connections being used with compressed air will be designed for the pressure and service which they are being subjected.

Only manufacturer approved equipment, accessories, or replacement parts will be used.

Pneumatic powered tools will be inspected prior to each use for defects.

**Portable Abrasive Wheels**

A safety guard will cover the spindle end, nut, and flange projections.

The safety guard will be mounted so as to maintain proper alignment with the wheel, and strength of the fastenings will exceed the strength of the guard.

In situations where the nature of work provides a suitable measure of protection to the operator safety guards may be so constructed that the spindle end, nut, and outer flange are exposed; and where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted.

Safety guards used on machines known as right angle head or vertical portable grinders will have a maximum exposure angle of 180 degrees, and the guard will be so located so as to be between the operator and the wheel during use.

Adjustments of guards will be such that pieces of an accidentally broken wheel will be deflected away from the operator.

Only manufacturer's recommended grinding wheels will be installed on abrasive wheel machines.

A ring test will be performed on all grinding wheels prior to installation.

Only manufacturer approved equipment, accessories, or replacement parts will be used.

Portable abrasive wheels will be inspected prior to each use for defects.

**Explosive Actuated Fastening Tools (HILTI)**

The muzzle end of the tool will have a protective shield or guard at least 3 ½ inches in diameter mounted perpendicular to and concentric with the barrel.

The tool will be so designed that it cannot be fired unless it is equipped with a standard protective shield or guard, or a special shield, guard, fixture, or jig.

The firing mechanism will be so designed that the tool cannot fire during loading or preparation to fire, or if the tool should be dropped while loaded.

The tool will be so designed that all breaching parts will be reasonably visible to allow a check for any foreign matter that may be present.

Firing of the tool will be dependent upon at least two separate and distinct operations of the operator, with the final firing movement being separate from the operation of bringing the tool into the firing position.

The tool will be so designed as not to be operable other than against a work surface.

The tool will be so designed that it will not operate if any bearing surface of the guard is tilted more than 8 degrees from contact with the work surface.

The tool will be so designed that positive means of varying the power are available or can be made available to the operator as part of the tool or as an auxiliary, in order to make it possible for the operator to select a power level adequate to perform the desired work without excessive force.

No load (cased or caseless) will be used in a low velocity piston tool or hammer operated piston tool, low velocity type which will cause a fastener to have a average velocity in excess of 300 feet per second.

No tools will be loaded unless being prepared for immediate use.

No tool will be unattended while loaded.

In case of a misfire, the operator will hold the tool in the operating position for 30 seconds. The operator then will try to operate the tool a second time. The operator then will wait another 30 seconds, holding the tool in the operating position. The operator then will proceed to remove the explosive load in strict accordance with the manufacturer's instructions.

Fasteners will not be driven directly into materials such as brick or concrete closer than 3" from the unsupported edge or corner or into steel surfaces closer than 2" from the unsupported edge or corner.

When fastening other materials, such as a 2" by 4" wood section to a concrete surface, it is permissible to drive a fastener of no greater than 7/32" shank diameter not closer than 2" from the unsupported edge or corner of the work surface.

Tools will not be used in an explosive or flammable atmosphere.

Only manufacturer approved equipment, accessories, attachments, or replacement parts will be used.

Any tool found not to be in proper working order will be removed immediately from service until repaired.

All tools will be repaired in accordance with manufacturer's instructions.

# **Lantz Construction Company      Hand and Portable Powered Tools**

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Revised: 12/12

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Explosive actuated fastening tools will be inspected prior to each use and periodically while in use for defects.

Only trained and certified employees will operate explosive actuated fastening tools.

## **Power Lawnmowers**

All power-driven chains, belts, and gears will be so positioned or otherwise guarded to prevent the operator's accidental contact during normal starting, mounting, and operation of the machine.

A shutoff device will be provided to shut off the motor or engine. The device will require manual and intentional reactivation to restart the motor or engine.

All positions of the operating controls will be clearly identified.

On self propelled mowers the words, "Caution. Be sure the operating control(s) is in neutral before starting the engine," or similar wording will be clearly visible at an engine starting control point.

The mower blade will be enclosed except on the bottom and the enclosure will extend to or below the lowest cutting point of the blade in the lowest blade position.

On the discharge chute warning instructions will be affixed to the mower near the opening stating that the mower will not be used without either the catcher assembly or guard in place.

Discharge chute opens will be placed so that grass or debris will not discharge directly toward any part of an operator.

The word "Caution" or stronger wording will be placed on the mower at or near the discharge chute opening.

The mower blade(s) will stop rotating from the manufacturer's specified maximum speed within 5 seconds after de-clutching or shutting off power.

Only manufacturer approved equipment, accessories, attachments, or replacement parts will be used.

Power lawn mowers will be inspected prior to each use for defects.

## **Jacks**

The operator will make sure that the jack used has a rating sufficient to lift and sustain the load being lifted.



The rated load will be legibly and permanently marked in a prominent location on the jack by casting, stamping, or other suitable means.

In the absence of a firm foundation the base of the jack will be blocked. If there is a possibility of slippage of the cap, a block will be placed between the cap and the load.

After a load has been raised, it will be properly cribbed, blocked, or otherwise secured at once and before any work begins on the lifted item.

Only manufacturer approved equipment, accessories, attachments, or replacement parts will be used.

## **V TRAINING**

Employees will be trained on equipment they are required to use in the performance of their job.

Employees will be trained on the guarding requirements and the operational controls of the equipment they are required to use.

Employees will be trained on new equipment when it is introduced to the work environment and they are required to use it in the performance of their job.

## **VI CHECKLIST ITEMS**

Hand and portable powered tools will only be operated with guards installed.

Only trained and authorized operators will be permitted to operate hand and portable powered tools, which could cause injury.

Only trained employees are allowed to perform maintenance on hand and portable powered tools.

Authorized operators will be trained on the types of guards, their functions and locations on hand and portable powered tools they are required to operate.

# **Lantz Construction Company    Hazardous Communication**

Revised: 11/12  
Reviewed: 07/12

## **YOU HAVE THE RIGHT TO KNOW ABOUT HAZARDOUS SUBSTANCES IN YOUR WORKPLACE**

### **I      PURPOSE**

The purpose of this program is to ensure that Lantz Construction Company is in compliance with the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS) 29 CFR 1910.1200.

Lots of people today worry about chemical materials - at home and at work. They want to know if there is any risk - any hazard. Employees want to know about the possible hazards of chemical materials they work with - and how to use them safely.

The Hazard Communication Program was developed to meet this need. Lantz Construction Company is firmly committed to providing all its employees with a safe and healthy work environment. It is a matter of Company policy to provide our employees with information about hazardous chemicals on the project site through our hazard communication program, which includes container labeling, Material Safety Data Sheets (MSDS) and employee information/training. The objectives of this program are to better control chemical materials, to promote safe and healthy work practices, and to develop your ability to recognize potential chemical hazards.

The United States Occupational Safety and Health Act (OSHA) and the Access to Information About Hazardous and Toxic Substances Act give employees a way to learn about chemical hazards in the workplace and how to work safely with these materials. These laws require all employers to inventory and list all hazardous and toxic substances used in the workplace; to collect MSDS for these substances; to train the employees how to get information about the hazardous substances in their workplaces; and to train the employees in the safe use of these materials. These laws have hard-to-remember names and are commonly referred to as "The Right To Know" laws.

Lantz Construction Company is complying with these "Right To Know" laws in the following manner:

- The Company has inventoried all materials commonly used by our employees and has listed them for general project sites. Your Project Superintendent keeps in the site trailer a copy of the list for your project site. Lists of chemicals used by other employers on your project site are also available to you. Check with your Project Superintendent or the Safety Director for access to those lists. The Project Superintendent will fill out the MSDS request form as the method for your "Right To Know" about any hazardous chemical from your employer as well as other employers.

# **Lantz Construction Company    Hazardous Communication**

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- The MSDS for materials used on this project site are kept by your Project Superintendent. If you need to review an MSDS, please see your Project Superintendent or the Safety Director and arrange a meeting for your “Right to Know.” The Safety Director will act as the liaison between other employers when requested to do so by the Project Superintendent.
- The products we purchase are labeled in accordance with the “Right To Know” laws. We do not repackage any products for future use.
- The Company provides all employees with initial hazard communication training during the New Employee Orientation Program. On-the-job training about more specific hazards is given by your Project Superintendent on a need to know basis when introduced into your general project site before you are exposed to the hazard.
- Materials found on the project site belonging to other employers

## **Employee Rights:**

All employees have the right by law to:

- See the MSDS for your project site within one day of your request.
- Be provided with one free copy of the Chemical Information List and the corresponding MSDS of the substance you are working with.
- Be trained on the hazards of the chemicals in your workplace, the appropriate equipment and methods to use to protect yourself, and any emergency procedures.

Refuse to work with a specific hazardous material if you are denied access to information about that material

# **Lantz Construction Company    Hazardous Communication**

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## **II        DEFINITIONS**

CAS Number - The unique identification number assigned by the Chemical Abstracts Service to specific chemical substances.

Combustible Liquid - Any liquid having a flashpoint at or above 100 degrees.

Container - Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, tank truck, or the like that contains a hazardous substance.

Distributor - A business, other than a manufacturing or importer, which supplies hazardous substances to other distributors or to employers.

Emergency - Any potential occurrences such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment, which may or does result in a release of a hazardous substance into the workplace.

Employee - Every person who is required or directed by any employer, to engage in any employment, or to go to work or be at any time in any place of employment.

Exposure or Exposed - Any situation arising from work operation where an employee may ingest, inhale, absorb through the skin or eyes, or otherwise come into contact with a hazardous substance.

Hazard Warning - Any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning that convey the health hazards and physical hazards of the substances in the container.

Hazardous Substance - Any substance, which is a physical hazard or a health hazard or is included in the List of Hazardous Substance prepared by OSHA.

Health Hazard - A substance for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees.

Identity - Any chemical or common name that is indicated on the Material Safety Data Sheet (MSDS) for the substance. The identity used will permit cross-references to be made among the required list of hazardous substance, the label, and the MSDS.

# **Lantz Construction Company    Hazardous Communication**

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Immediate Use - The hazardous substance will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

Label - Any written, printed, or graphic material displayed on or affixed to containers of hazardous substances.

Material Safety Data Sheet (MSDS) - Written or printed material concerning a hazardous substance that is prepared by the manufacturer.

NIOSH - The National Institute for Occupational Safety and Health.

Oxidizer - A substance other than a blasting agent or explosive as defined in Section 5237(a), that initiates or promotes combustion in other materials, thereby causing fire, either of itself or through the release of oxygen or other gases.

Physical Hazard - A substance for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable, or water-reactive.

Portable container - Any container that materials may be placed into not originating from the manufacturer. (I.e. spray bottles, portable sprayers, plastic cans or jugs. Etc...)

Responsible Party - Someone who can provide additional information on the hazardous substance and appropriate emergency procedures, if necessary.

Substance - Any element, chemical compound or mixture of elements and/or compounds.

Workplace - Any place, and the premises appurtenant thereto, where employment is carried on, except a place of health and safety jurisdiction over which is vested by law in, and actively exercised by, any state or federal agency other than the Division.

## **III    REFERENCES**

29 CFR 1926.58	Hazardous Communication
29 CFR 1910.1200	Hazardous Communication

# **Lantz Construction Company    Hazardous Communication**

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## **IV.    PROCEDURES**

### **How it works for you**

The hazard communication program was developed for all employees. But the situation is different on each project site and in each office building. So the program is tailored to meet your needs - and the needs of other workers around you.

### **Employee Responsibilities:**

Your “Right to Know” program takes teamwork. The Company requires you to do your part to work with your fellow co-workers to keep your workplace safe and to protect your own health.

- Know where to get information about the hazardous substances in your workplace.
- Learn to read and understand labels and MSDSs.
- Learn to identify hazards before you start a job.
- Do not be afraid to ask questions.
- Keep your work area clean.
- Use protective clothing and the Personal Protective Equipment (PPE) supplied by the Company.
- Do not smoke, eat, or drink around hazardous substances.
- Learn the emergency procedures listed on MSDSs and those for your project site.
- Follow the manufacturer’s procedures for disposal and cleanup of hazardous substances.
- Practice safe work habits at all times.

### **Hazard Communication Written Program**

Lantz Construction Company is firmly committed to providing all its employees with a safe and healthy work environment. It is a matter of Company policy to provide our employees with information about hazardous chemical on the project site through our hazard communication program, which includes container labeling, Material Safety Data Sheets (MSDSs), and employee information/training.

# **Lantz Construction Company    Hazardous Communication**

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The Safety Director will have the overall responsibility for coordinating the hazard communication program for Lantz Construction Company. The Safety Director will make our written hazard communication program available, upon request, to employees or the Assistant Secretary of Labor for Occupational Safety and Health or any outside concern with a “Right to Know.”

## **List of Hazardous Chemicals**

As an ongoing process: the Project Manager and Project Superintendent with assistance from the Safety Director will compile a list of all hazardous chemicals that may be used on the project site by reviewing container labels and MSDSs before such chemicals are used. The MSDS will be updated periodically.

## **Labeling**

It is the policy of this Company to ensure that each container of hazardous chemicals on a project site is properly labeled. All employees are responsible for ensuring that all hazardous chemicals are labeled at Lantz Construction Company.

To further ensure that employees are aware of the chemical hazards of materials used in their work areas, it is our policy to label all secondary containers. Secondary containers will be labeled with either an extra copy of the manufacturer’s label or with a sign or generic label that lists the container's contents and appropriate hazard warnings on 55-gallon drums or greater quantities. Any directed use of smaller amounts, under the direct control of an employee, need not be labeled.

Be sure to read all container labels. A container label tells you about a product’s hazards. It cannot provide all the material you need to know about a product, but it is a good place to start (further information is available from the MSDS). If a container doesn’t have a label, don’t use it. Immediately inform your supervisor of its presence.

By law, all manufacturers must label their products with the following information if there is a hazardous chemical in the product, the identity of the hazardous chemical(s); and appropriate hazard warnings.

If you transfer any hazardous chemical into a portable container, the portable container must be labeled as to its contents.

## **Material Safety Data Sheets**

Copies of MSDSs for all hazardous chemicals to which employees may be exposed are kept in the corporate office and with the job superintendents. These are readily accessible to employees during each work shift and during emergency situations by way of fax or onsite reference. The

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Project Superintendents are responsible for obtaining, maintaining and updating the MSDS book if he or she purchases hazardous chemicals off-SITE.

All personnel ordering any chemical will forward a copy of the MSDS to the Safety Director for updating the program.

## **Non-routine Tasks**

Periodically, employees are required to perform non-routine tasks. Prior to starting work on such projects, each affected employee will be informed by the Project Superintendent about hazards to which they may be exposed and appropriate protective and safety measures.

## **Informing Other Employees**

To ensure that the employees of other contractors have access to information on the hazardous chemicals at a project site, it is the responsibility of the Project Manager/ Project Superintendent to provide the other contractors with location of MSDS's on the project site.

Each contractor bringing chemicals onto a project site must provide Lantz Construction Company, with the appropriate hazard information on those substances to which our own employees may be exposed on a project site. All owners will provide Lantz Construction Company employee's access to MSDS's found on project sites.

## **Flammable and Combustible Materials**

Most flammable and combustible materials on project sites are liquids, such as kerosene and gasoline. These liquids present the major hazards of fire and explosion, as well as adverse health effects. There are many materials you may work with that may have components that are flammable, such as: Solvent-based paints, mastic and adhesives, pipe joint compounds, sealants, cleaning solvents, glues, and paint strippers. These solid materials must be treated in a similar manner to the liquid flammable and combustible materials: You must always keep these materials away from a source of ignition, such as welding, grinding, or smoking that may cause a fire and/or explosion.

Flammable materials, whether liquid or solid, must be used only in well-ventilated areas that do not have a potential source of ignition. Spills of any flammable material should be cleaned up promptly. Flammable vapors can be particularly harmful. These vapors are invisible and usually heavier than air. They will accumulate close to the ground or floor level and can travel some

distance from the source. If they are ignited by a source such as a flame or welding spark, they may flash back to the source of the vapor, causing major fire damage and personal injury.

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## **Compressed Gases**

The compressed gases most commonly found on a project site are: oxygen, acetylene, nitrogen, propane, gas, air.

These gases are found in steel cylinders that are three to five feet tall and one to two feet in diameter. They can weigh up to 150 pounds and have an internal pressure greater than 2,000 pounds per square inch.

These cylinders present two immediate hazards: Escaping gas can ignite or explode; and a cylinder that is punctured or has the valve stem sheared off could turn into a “rocket” that has the force to crash through a solid 18-inch cinder block wall!

Compressed gas cylinders must be stored, handled, and used in a safe manner:

- Unless in use, the valve protection cap must be in place.
- All cylinders should be secured from falling.
- Unless in use or on a welding cart, oxygen and acetylene tanks should be separated by a distance of 20 feet or a five-foot tall, 1 / 4-inch steel plate.
- Cylinders should not be placed where they might come in contact with live electrical parts.
- Cylinders should always be stored and transported upright, not on their sides.
- Cylinders should be kept away from sources of heat.

## **Corrosives**

Corrosives are chemicals that cause visible destruction to living tissue at the SITE of contact. On a project site, there are corrosives such as battery acid, lye, muriatic acid, some paint removers, and masonry-cleaning agents.

To protect the eyes and exposed skin from splashing/splattering, PPE is required around corrosive substances.

## **Irritants, Dusts, and Fumes**

Irritants are substances that are not corrosive, but cause a reversible inflammatory (swollen, red, itchy) effect on living tissue. Irritants are similar to corrosives in that they cause a problem to

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living tissue, but they are weaker in their effects. Irritants generally bother the skin, the eyes, and the lungs. As with corrosive substances, PPE to protect the eyes and exposed skin from splashing/spattering is required when using or handling an irritant.

Dusts and fumes are generated from any number of activities taking place on a project site, such as diesel engines, concrete and wood saws, grinding, mixing, sifting, drywall, welding, soldering, and earth moving. The site of action of dusts, mists, and vapors is primarily in the lungs.

Protection can be accomplished with proper respiratory protective equipment and/or adequate ventilation. The Project Superintendent or Project Manager should be contacted if you can still taste or feel the dust/mist/vapors in your mouth or lungs when you are wearing respiratory protection. Eye protection may also be necessary when around this type of hazard.

## **Systemic Poisons**

Systemic poisons are materials that can damage an organ system in your body (such as your liver, your heart, or your kidneys). These materials can enter your body in any of three ways: inhalation, absorption, or ingestion. For example, years of breathing fine silica sand dust can cause silicosis, a disease of the lungs; pesticides dissolved in the moisture on your skin that pass directly into the bloodstream can cause nerve damage.

All systemic poisons have something in common, no matter how they enter your body: They can cause permanent adverse effects upon your organs before you ever feel “sick.”

## **V. CHECKLIST ITEMS**

Are employees informed of the chemical hazards associated with his or her job according to OSHA 29 CFR 1910.1200, and OSHA 29 CFR 1926.59?

Is the written Hazard Communication Program available to all employees on the project site to include sub-contractors MSDS's?

Are copies of MSDSs on file and available for all hazardous chemicals to which employees may be exposed and are hazardous chemical MSDS's including hazard ratings, available to all employees?

Are containers of hazardous chemicals labeled, including: Chemical name and number; appropriate hazard warnings; name and address of manufacturer, importer, or other responsible party; and a copy of special handling instructions?

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Are all primary and portable containers labeled?

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## **1    MATERIAL SAFETY DATA SHEET CHECK LIST**

You must ensure that each MSDS contains the following information:

1.     Product or chemical identity used on the label. \_\_\_\_\_
2.     Manufacturer's name and address. \_\_\_\_\_
3.     Chemical and common names of each hazardous ingredient. \_\_\_\_\_
4.     Name, address, and phone number for hazard and emergency information. \_\_\_\_\_
5.     Preparation or revision date. \_\_\_\_\_
6.     The hazardous chemical's physical and chemical characteristics, such as vapor pressure and flashpoint. \_\_\_\_\_
7.     Physical hazards, including the potential for fire, explosion, and reactivity. \_\_\_\_\_
8.     Known health hazards. \_\_\_\_\_
9.     Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), or other exposure limits. \_\_\_\_\_
10.    Emergency and first-aid procedures. \_\_\_\_\_
11.    Whether OSHA, NTP, or IARC lists the ingredient as a carcinogen. \_\_\_\_\_
12.    Precautions for safe handling and use. \_\_\_\_\_
13.    Control measures such as engineering controls, work practices, hygienic practices or personal protective equipment required. \_\_\_\_\_
14.    Primary routes of entry. \_\_\_\_\_
15.    Procedures for spills, leaks, and cleanup. \_\_\_\_\_

# **Lantz Construction Company    Hazardous Communication**

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## **2    HAZARDOUS MATERIALS ON PROJECT SITES**

The “Right to Know” laws require that employees be trained about the nature of the hazardous materials they are working with and learn the precautions they must take when handling/using them. Since the construction workers are exposed to an ever-changing environment, it is virtually impossible to train our employees to every possible chemical that could be brought onto a project site. Our employees are responsible for reviewing the MSDS’s for the chemicals they handle.

On our Company project site, you will generally find five (5) types of hazardous materials:

- flammable and combustible materials
- compressed gases
- irritants, dusts, fumes
- corrosives
- systemic poisons

Hazardous materials that you may work with on the project site could accidentally come into contact with parts of your body, such as your skin, eyes, or lungs. This contact could have small to profound effects upon your safety and health. You could unintentionally eat, inhale, or absorb a hazardous material through your skin and not even be aware of it. Lantz Construction Company wants you to be aware of the danger so that you can protect against it.

Inhalation is the most common way for a hazardous material to enter your body. The material may be in the form of a dust, gas, mist, or vapor. When you breathe these materials into your body, they collect in the nose and the lungs, but can be passed by the bloodstream throughout your body to all your organs.

Ingestion of a hazardous material is the next most common method for a substance to enter your body. If you work with your hands and do not wash them before touching your mouth, put a cigarette into your mouth, or your food or drink, you have a good possibility of transferring the hazardous materials into your body. These materials can simply upset your mouth, throat, and gastrointestinal system, or they can be absorbed into the blood stream and passed throughout your body.

Your skin is a living organ and is generally capable of keeping out foreign materials from entering our bodies. The skin will not allow water or solids to enter. However, there are chemicals that can pass through the skin and be absorbed immediately by the bloodstream.

## **I PURPOSE**

This section is designed to provide good housekeeping procedures and practices, to include sanitation, when handling, moving and storing materials on all work sites.

## **II DEFINITIONS**

Approved - sanctioned, endorsed, accredited, certified, or accepted as satisfactory by a duly constituted and nationally recognized authority or agency.

Authorized person - a person approved or assigned by the employer approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the project site.

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

Construction work - for purposes of this section, Construction work means work for construction alteration, and/or repair, including painting and decoration.

Defect - any characteristic or condition which tends to weaken or reduce the strength of the tool, object, or structure of which it is a part.

Hazardous substance - a substance which, by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, or otherwise harmful, is likely to cause death or injury.

Potable water - water which meets the quality standards prescribed in the U.S. Public Health Service Drinking Water Standards, published in 47 CFR Part 72, or water which is approved for drinking purposed by the state or local authority having jurisdiction.

Qualified - one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

Will - mandatory

Should - recommended

Suitable - that which fits, and has the qualities or qualifications to meet a given purpose, occasion, condition, function, or circumstance.

**III PROCEDURES****Housekeeping**

Storage areas will be kept free from accumulation of materials that constitute hazards from tripping, fire, explosions, or pest harborage. Vegetation control will be exercised when necessary.

**General Requirements for Storage**

All materials stored in tiers will be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling or collapse.

Maximum safe load limits of floors within buildings and structures, in pounds per square foot, will be conspicuously posted in all storage areas, except for floor or slab on grade. Maximum safe loads will not be exceeded.

Aisles and passageways will be kept clear to provide for the free and safe movement of material handling equipment or employees. Such areas will be kept in good repair.

When a difference in road or working levels exists, means such as ramps, blocking, or grading will be used to ensure the safe movement of vehicles between the two levels.

**Material Storage**

Materials stored inside buildings under construction will not be placed within 6 feet of any hoist-way or inside floor openings, or within 10 feet of an exterior wall which does not extend above the top of the material stored.

Each employee required to work on stored material in silos, hoppers, tanks, and similar storage areas will be equipped with personal fall arrest equipment meeting the requirements of subpart M of this part.

Non-compatible materials will be segregated in storage.

Bagged materials will be stacked by stepping back the layer and cross-keying the bags at least every 10 bags high.

Materials will not be stored on scaffolds or runways in excess of supplies needed for immediate operations.

Brick stacks will not be more than 7 feet in height. When a loose brick stack reaches a height of 4 feet, it will be tapered back 2 inches in every foot of height above the 4-foot level.

When masonry blocks are stacked higher than 6 feet, the stack will be tapered back one-half block per tier above the 6-foot level.

**Lumber:**

- Used lumber will have all nails withdrawn before stacking.
- Lumber will be stacked on level and solidly supported sills.
- Lumber will be so stacked as to be stable and self-supporting.
- Lumber piles will not exceed 20 feet in height provided that lumber to be handled manually will not be stacked more than 16 feet high.

Structure steel, poles, pipe, bar stack, and other cylindrical materials, unless racked, will be stacked and blocked so as to prevent spreading or tilting.

**Disposal of Waste Materials**

Whenever materials are dropped more than 20 feet to any point lying outside the exterior wall of the building, an enclosed chute of wood, or equivalent material, will be used. For the purpose of this paragraph, an enclosed chute is a slide, closed in on all sides, through which material is moved from a high place to a lower one.

When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped will be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs warning of the hazard of falling materials will be posted at each level. Removal will not be permitted in this lower area until debris handling ceases above.

All scrap lumber, waste material, and rubbish will be removed from the immediate work area as the work progresses.

Disposal of waste material or debris by burning will comply with local fire regulations.

All solvent waste, oily rags and flammable liquids will be kept in fire resistant covered containers until removed from project site.

**Sanitation****Potable water**

An adequate supply of potable water will be provided in all places of employment.

Portable containers used to dispense drinking water will be capable of being tightly closed, and equipped with a tap. Water will not be dipped from containers.

Any container used to distribute drinking water will be clearly marked as to the nature of its contents and not used for any other purpose.

The common drinking cup is prohibited.



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Where single service cups (to be used but once) are supplied:

- Sanitary container for the unused cups must be provided.
- A receptacle will be provided for dispensing the cups.

## **Non-potable water**

Outlets for non-potable water, such as water for industrial or fire fighting purposes only, will be identified by signs to indicate clearly that the water is unsafe and is not to be used for drinking, washing, or cooking purposes.

There will be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing non-potable water.

## **Toilets at construction project sites**

Toilets will be provided for employees according to the following table:

<i>Number of employees</i>	<i>Minimum number of facilities</i>
20 or less	1
20 or more	1 toilet seat and 1 urinal per 40 workers
200 or more	1 toilet seat and 1 urinal per 50 workers

Under temporary field conditions, provisions will be made to assure not less than one toilet facility is available.

Mobile crews will have transportation readily available to nearby toilet facilities.

## **Washing facilities**

The employer will provide adequate washing facilities for employees engaged in the application of paints, coating, herbicides, or insecticides or in other operations where contaminants may be harmful to the employees. Such facilities will be in near proximity to the project site and will be so equipped as to enable employees to remove such substances. Washing facilities will be maintained in a sanitary condition.

## **Eating and drinking areas**

No employee will be allowed to consume food or beverages in a toilet room or in any area exposed to a toxic material.

## **Vermin control**

Every enclosed workplace will be so constructed, equipped and maintained, so far as reasonably

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practicable as to prevent the entrance or harborage of rodents, insects, and other vermin. A continuing and effective extermination program will be instituted where their presence is detected.

## **IV      TRAINING**

Employer will ensure all employees are trained to understand good housekeeping procedures and practices, to include sanitation.

## **V      CHECKLIST ITEMS**

Do not allow materials to accumulate and become tripping and/or falling hazards.

All materials will be stored neatly and piles will be stacked, racked, blocked, and interlocked to prevent falling, sliding or collapse.

Signs will be posted in all storage areas to indicate maximum safe load limits.

Toilets will be provided on all project sites.

Keep all aisles and passageways free from debris and in good repair.

Keep materials back from open sided floors and edges of exterior walls at least 10 feet; 6 feet of any hoist-way or inside floor opening

Do not stack brick more than 7 feet high.

Masonry blocks stacked more than 6 feet will be tapered back 2 block per tier above 6 feet.

All scrap lumber, waste material and rubbish will be removed immediately from work areas.

Burning of debris and materials will comply with local fire regulations.

Water will be provided on all project sites.

Water containers will have lids and tap for dispensing water.

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### **I PURPOSE**

The purpose of these instructions are to ensure that before any employee performs any servicing or maintenance on machinery or equipment, where the unexpected energizing, start up, or release of any type of energy could occur and cause injury, the machinery or equipment will be rendered safe to work on by being locked out and tagged out. Lantz Construction Company, procedures exceed federal standards and require all employees to lockout and tagout all equipment.

### **II DEFINITIONS**

Affected Employee - An employee whose job requires them to use or operate machinery or equipment on which servicing or maintenance is being performed under lockout and tagout, or whose job requires them to work in an area where such servicing or maintenance is being performed. All employees in the facility are considered to be affected employees.

Authorized Employee - An employee who locks out and tags out machinery or equipment in order to perform the servicing or maintenance on that machinery or equipment.

Clear - To prepare equipment by isolating and placing it in a safe condition to avoid injury or damage if equipment should unexpectedly start during the "Try" step. This includes removing and warning personnel.

Energized - Connected to an energy source or containing residual or stored energy.

Energy Isolating Device - A mechanical device that physically prevents the transmission or release of energy. The term does not include a push button, selector switch, or other control circuit type devices.

Energy Source - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Hot Tap - A procedure used in the repair, maintenance, and service activities that involves welding on a piece of equipment under pressure in order to install connections or accessory. If hot tap operations are performed at a location, a Supervisor for the hot tap will be appointed and an instruction sheet for the hot tap prepared.

Instructions - The document specifically prepared for specific types of equipment containing such information as the energy isolating devices and their identification, type of energy isolating devices, presence and location of any stored energy, any appropriate procedure for lockout,

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Supervisor's name, authorized employees' job titles, and equipment location. An instruction sheet will be prepared for each type of machinery or equipment at the location covered under this policy. Instruction sheets do not need to be prepared in certain limited circumstances, which are listed in the Procedures section of this document. Preparation of the instruction will be the responsibility of the Supervisor who has been assigned responsibility for the machinery or equipment.

Lockout and Tagout - The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated without removal of the lockout device.

Lockout Device - A device that utilizes a positive means such as a lock, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. This device will be:

- Used only for controlling energy; not other purposes.
- Durable.
- Standardized by color, shape, or size.
- Substantial enough to prevent removal by unauthorized employees.
- Indicate the identity of the employee applying the device(s).

Lantz Construction Company will provide the protective materials and hardware, for isolating, securing, and blocking of machines or equipment from energy sources. Only one key per lock will be issued, with spare keys maintained at a separate location.

Servicing and/or Maintenance - Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machinery or equipment. This includes lubricating, cleaning, or un-jamming of machines or equipment and making adjustments or tool changes where the employee may be exposed to the unexpected start up or release of hazardous energy.

Supervisor - The supervisory or management person appointed with responsibility for the specified machinery or equipment.

Try - To test equipment to ensure the effectiveness of the lockout and the removal of stored energy.

### **III REFERENCES**

29 CFR 1910.147	The Control of Hazardous Energy (Lockout/Tagout)
29 CFR 1910.333	Selection and Use of Work Practices (Electrical)

### **IV PROCEDURES**

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### **Responsibility**

Supervisors and authorized employees will receive instructions on lockout procedures. Affected employees will receive instructions on the purpose and use of the lockout procedure. Area supervisors and the authorized and affected employees are to be listed on the specific instruction sheets for each type of machinery or equipment.

### **Preparation**

Authorized employees should obtain the appropriate manufacturer instruction sheets for the machine or equipment on which work will be performed. These instruction sheets will be located in the area where the machinery or equipment is located with duplicates maintained by the Lantz Construction Company, Equipment Manager. He or she should make a survey to locate and identify all isolating devices to be certain which switch, valve, or other isolating devices apply to the equipment to be locked out and where, if any, stored energy is located (multiple energy sources may be involved).

### **Sequence of Lockout Procedure**

The authorized employees will:

1. Notify all affected employees in the area that a lock and tag device is going to be utilized to lockout equipment, and the reason, prior to installation of the lock and tag device. The authorized employee will know the type and magnitude of energy that the machinery or equipment utilizes and will understand the hazards they could present.
2. If the machinery or equipment is operating, it should be shut down using the normal stopping procedures.
3. Position the switch, valve, or other energy-isolating device so that the machinery or equipment is isolated from its energy source. Stored energy (such as those found in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas steam, or water pressures, etc.) will be dissipated or restrained by methods such as repositioning, blocking, bleeding, etc.
4. Lockout the energy isolating devices with assigned individual locks and identification tags.
5. After ensuring that no personnel are exposed, a check on the disconnection of the energy sources, by operating the push button or other normal operating controls to make certain the equipment will not operate.

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6. After completing this test, care will be taken to return all operating controls to the “neutral” or “off” position after the test, to assure no inadvertent starting or releasing of energy later during deactivation of the lockout.
7. The machine or equipment is now locked out.

### **Lockout Removal**

These requirements will be met, in the order listed below, before circuits or equipment are energized, even temporarily.

1. A qualified person will conduct tests and visual inspections as necessary to verify that all tools, electrical jumpers, shorts, grounds, and other similar devices have been removed so that the circuits and equipment can be safely energized.
2. Check the area around the machinery or equipment to ensure that no one is exposed.
3. Employees exposed to the hazards associated with re energizing the circuit or equipment will be warned to stay clear of circuits and equipment.
4. Notify all affected employees in the area before the lockout device is removed.
5. After all tools have been removed from the machinery or equipment, guards have been reinstalled, and all employees are clear, remove the lock and tag devices.
6. Return the energy-isolating device to its normal position restoring energy to the machine or equipment.

### **Temporary Removal of Lockout Device During Servicing**

In the event a lockout device will be temporarily removed and the machinery or equipment energized to test or position the equipment, the authorized employees will ensure safety in the following manner:

1. Clear the machinery or equipment of tools or materials and remove employees from the area.
2. Remove the lockout device.
3. Energize the machinery or equipment and proceed with testing or positioning.
4. De-energize all systems and reapply energy control measures by following the lockout procedure to continue work.

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In these instances, employees will use special control circuits, equipment, or operating procedures available that are designed to provide effective protection from the machinery danger zone. For any equipment where it is necessary to perform a service procedure with the equipment energized, the special control circuits, equipment, or procedures to be utilized will be listed on the inspection sheet for the equipment.

### **Compliance of Outside Personnel**

When outside servicing personnel are involved in activities covered by this procedure, the outside employer will be informed about this procedure and will inform the Lantz Construction Company, Safety Director of its lockout and tagout procedures. If such personnel fail to follow the procedure, they will be instructed to follow the procedure.

Subsequent failure to follow this procedure will be enforced by stern measures, up to and including removal of the personnel from the facility.

### **Removal of the Lockout Device in the Authorized Employee's Absence**

If the authorized employee is not available to remove their lock and tag device, the device may be removed under the direction of the plant manager or their designee only after the following has been completed:

- Certify the authorized employee is no longer at the facility.
- Reasonable efforts have been made to contact the authorized employee to inform them of the need to remove the device(s).
- Ensure the authorized employee has knowledge of the removal before that employee resumes work.

### **Exceptions to the Lockout Procedure**

The lockout procedure will be followed for work on any machinery, except when the following conditions occur:

Normal production operations, as long as guards or other protective devices are not deactivated or bypassed. If a guard or protective device is removed or deactivated, the machinery will be locked out before any work is performed.

Work on cord and plug controlled equipment where unplugging the equipment controls start up and the plug remains under the exclusive control of the employee performing the work.

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Hot tap operations involving gas, steam, or water lines where continuity of operation is essential and shutdown is impractical. In this case, established procedures for the specific hot tap operation (as listed on the applicable instruction sheet) will be followed and special equipment that is designed to protect employees from the zone of danger will be used.

### **Types of Lockout**

#### **Individual Lockout**

Each employee working on equipment will follow the Lock, Clear, and Try steps according to instructions. The employee will retain the key to the lock in his/her possession. Only the employee locking the machine is authorized to remove the lock, except under the special circumstance noted earlier.

#### **Group Lockout**

If more than one individual is required to lockout equipment, one of the two group lockout procedures will be followed:

*Group Lockout of the Energy Isolating Device* - The authorized employee in charge of the group is responsible for ensuring the Lock, Clear, and Try steps are followed. The authorized employees in the group are responsible for verifying these steps. Each person performing work on the equipment will place their own personal lockout device on the energy isolating device. When an energy isolating device cannot accept multiple locks, a multiple lockout device (hasp) may be used. As each person completes work and no longer needs lockout protection, they will remove their lockout device.

*Group Lock Box* - The authorized employee in charge of the group is responsible for ensuring the Lock, Clear, and Try steps are followed. The authorized employees in the group are responsible for verifying these steps. The only lockout device(s) affixed to the energy-isolating device will be that of the authorized employee in charge. The key(s) to these lockout device(s) will be placed in a group lock box. The authorized employee in charge of the group will initially place their personal lockout device onto the box. As each person completes work and no longer needs lockout protection, they will remove their lockout device.

#### **Shift-Change Lockout**

During shift changes, the continuity of lockout protection will be ensured. Any time a machine needs to be locked out across a shift change, the incoming authorized supervisor will secure his/her lockout device to the equipment before the leaving supervisor's is removed. In the event this sequence is not followed and the lockout device is removed before the incoming employee arrives, the incoming employee will follow the entire lockout procedure before beginning work.



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### **Fixed Electrical Equipment and Circuits: Working On or Near Exposed De-energized Parts**

Application - This applies to work on exposed De-energized parts, or near enough to them to expose the employee to any electrical hazard they present. Conductors and parts of electrical equipment that have been De-energized but have not been locked out and tagged in accordance with this paragraph will be treated as energized parts with 29 CFR 1910.333 applying to work on or near them.

Lockout and Tagging - When any employee is exposed to contact with parts of fixed electrical equipment or circuits that have been de-energized, the circuits energizing the parts will be locked out and tagged out in accordance with the requirements of this paragraph. The requirements will be followed in the order in which they are presented.

*NOTE:* Fixed equipment in this section refers to equipment that is fastened in place or connected by permanent wiring methods.

Procedures - A written copy of this procedure is available for inspection by employees and by the Assistant Secretary of Labor and his or her authorized representatives.

### **De-energizing Equipment**

Safe procedures for de-energizing circuits and equipment will be determined before circuits or equipment is de-energized.

The circuits and equipment to be worked on will be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for de-energizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.

Stored electric energy that might endanger personnel will be released. Capacitors will be discharged and high capacitance elements will be short-circuited and grounded, if the stored electric energy might endanger personnel.

Stored non-electrical energy in devices that could re energize electric circuit parts will be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

### **Application of Locks and Tags**

A lock and tag will be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed. The lock and tag will be attached in order to prevent persons from operating the disconnecting means unless they resort to undue force or the

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use of tools. Each tag will contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

If a lock cannot be applied, a tag may be used without a lock. This would be considered a special condition and can only be approved by the Safety Director. Lantz Construction Company does not normally allow a tag to be used without a lockout device. Safety Director approval is required for any exception to this rule.

A tag used without a lock will be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by use of a lock.

### **V TRAINING**

The employer will provide training programs at the safety orientation, through Toolbox Safety Talks and through special training programs.

All authorized employees will receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means for isolation control. Thereafter, any employee who becomes an authorized employee will receive the appropriate training at the time of becoming authorized.

Periodic inspections of the energy control procedure are conducted and documented at least annually to ensure procedures and requirements are being followed.

#### **Re-training**

Retraining will occur for all authorized and unauthorized employees whenever there is a change in their job assignments; a change in machinery, equipment, or processes that present a new hazard; or when there is a change in the energy control procedure.

Additional re-training will occur whenever a periodic inspection reveals, or whenever the employer has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of procedures. All training and/or retraining will be documented, signed and certified.

### **VI CHECKLIST ITEMS**

Lockout Procedures (authorized employees only)

1. Notification to all affected employees

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2. Shutdown equipment
3. Isolate equipment from energy source
4. All operating controls at neutral or off
5. Apply lockout device
6. When servicing or maintenance is complete, check to ensure that no one will be exposed during re-activation
7. Re-install all guards
8. Notify employees before lockout device(s) is removed
9. Return energy isolating device to normal position, restoring energy to machine

## I PURPOSE

To protect all construction employees from the hazards associated with concrete and masonry construction operations performed in workplaces.

## II DEFINITIONS

Bull Float - a tool used to spread out and smooth concrete.

Formwork - the total system of support for freshly placed or partially cured concrete, including the mold or sheeting (form) that is in contact with the concrete as well as all supporting members including shores, reshores, hardware, braces, and related hardware.

Lift slab - a method of concrete construction in which floor, and roof slabs are cast on or at ground level and, using jacks, lifted into position.

Limited access zone - an area alongside a masonry wall, which is under construction, and which is clearly demarcated to limit access by employees.

Precast concrete - concrete members (such as walls, panels, slabs, columns, and beams) which have been formed, cast, and cured prior to final placement in a structure.

Reshoring - the construction operation in which shoring equipment (also called reshores or reshoring equipment) is placed, as the original forms and shores are removed, in order to support partially cured concrete and construction loads.

Shore - a supporting member that resists a compressive force imposed by a load.

Vertical slip forms - forms which are jacked vertically during the placement of concrete.

Jacking operation - the task of lifting a slab (or group of slabs) vertically from one location to another (e.g., from the casting location to a temporary (parked) location, or from a temporary location to another temporary location, or to its final location in the structure), during the construction of a building/structure where the lift-slab process is being used.

## III REFERENCES

29 CFR 1926, Subpart Q

Concrete and Masonry Construction

## IV PROCEDURES

### General Requirements

No construction loads will be placed on a concrete structure or portion of a concrete structure unless the employer determines, based on information received from a person who is qualified in structural design, that the structure or portion of the structure is capable of supporting the loads.

All protruding reinforcing steel, onto and into which employees could fall, will be guarded to eliminate the hazard of impalement.

No employee (except those essential to the post-tensioning operations) will be permitted to be behind the jack during tensioning operations.

Signs and barriers will be erected to limit employee access to the post-tensioning area during tensioning operations.

No employee will be permitted to ride concrete buckets.

No employee will be permitted to work under concrete buckets while buckets are being elevated or lowered into position.

To the extent practical, elevated concrete buckets will be routed so that no employees, or the fewest number of employees, are exposed to the hazards associated with falling concrete buckets.

No employee will be permitted to apply a cement, sand, and water mixture through a pneumatic hose unless the employee is wearing protective head and face equipment.

### Equipment and Tools

#### Bulk cement storage

Bulk storage bins, containers, and silos will be equipped with the following:

1. Conical or tapered bottoms; and
2. Mechanical or pneumatic means of starting the flow of material.

No employee will be permitted to enter storage facilities unless the ejection system has been shut down, locked out, and tagged to indicate that the ejection system is not to be operated.

#### Concrete mixers

Concrete mixers with one cubic yard (.8 m<sup>3</sup>) or larger loading skips will be equipped with the following:

1. A mechanical device to clear the skip of materials; and
2. Guardrails installed on each side of the skip.

## **Power concrete trowels**

Powered and rotating type concrete troweling machines that are manually guided will be equipped with a control switch that will automatically shut off the power whenever the hands of the operator are removed from the equipment handles.

## **Concrete buggies**

Concrete buggy handles will not extend beyond the wheels on either side of the buggy.

## **Concrete pumping systems**

Concrete pumping systems using discharge pipes will be provided with pipe supports designed for 100 percent overload.

Compressed air hoses used on concrete pumping system will be provided with positive fail-safe joint connectors to prevent separation of sections when pressurized.

## **Concrete buckets**

Concrete buckets equipped with hydraulic or pneumatic gates will have positive safety latches or similar safety devices installed to prevent premature or accidental dumping.

Concrete buckets will be designed to prevent concrete from hanging up on top and the sides.

## **Tremies**

Sections of tremies and similar concrete conveyances will be secured with wire rope (or equivalent materials) in addition to the regular couplings or connections.

## **Bull floats**

Bull float handles, used where they might contact energized electrical conductors, will be constructed of nonconductive material or insulated with a nonconductive sheath whose electrical and mechanical characteristics provide the equivalent protection of a handle constructed of nonconductive material.

## **Masonry saws**

Masonry saws will be guarded with a semicircular enclosure over the blade.

A method for retaining blade fragments will be incorporated in the design of the semicircular enclosure.

## **Cast-in-place concrete**

Formwork will be designed, fabricated, erected, supported, braced and maintained so that it will be capable of supporting without failure all vertical and lateral loads that may reasonably be anticipated to be applied to the formwork. Formwork which is designed, fabricated, erected, supported, braced and maintained in conformance with the Appendix to this section will be

deemed to meet the requirements of this paragraph.

Note: Drawings or plans, including all revisions, for the jack layout, formwork (including shoring equipment), working decks, and scaffolds, will be available at the project site.

## **Shoring and reshoring**

All shoring equipment (including equipment used in reshoring operations) will be inspected prior to erection to determine that the equipment meets the requirements specified in the formwork drawings.

Shoring equipment found to be damaged such that its strength is reduced to less than that required by Cast-in-Concrete Operations will not be used for shoring.

Erected shoring equipment will be inspected immediately prior to, during, and immediately after concrete placement.

Shoring equipment that is found to be damaged or weakened after erection, such that its strength is reduced to less than that required by Cast-in-Concrete Operations will be immediately reinforced.

The sills for shoring will be sound, rigid, and capable of carrying the maximum intended load.

All base plates, shore heads, extension devices, and adjustment screws will be in firm contact, and secured when necessary, with the foundation and the form.

Eccentric loads on shore heads and similar members will be prohibited unless these members have been designed for such loading.

Whenever single post shores are used one on top of another (tiered), the employer will comply with the following specific requirements in addition to the general requirements for formwork:

1. A qualified designer will prepare the design of the shoring and an engineer qualified in structural design will inspect the erected shoring.
2. The single post shores will be vertically aligned.
3. The single post shores will be spliced to prevent misalignment.
4. The single post shores will be adequately braced in two mutually perpendicular directions at the splice level. Each tier will also be diagonally braced in the same two directions.

Adjustment of single post shores to raise formwork will not be made after the placement of concrete.

Reshoring will be erected, as the original forms and shores are removed, whenever the concrete is required to support loads in excess of its capacity.

## **Vertical slip forms**

The steel rods or pipes on which jacks climb or by which the forms are lifted will be:

1. Specifically designed for that purpose; and
2. Adequately braced where not encased in concrete.

Forms will be designed to prevent excessive distortion of the structure during the jacking operation.

All vertical slip forms will be provided with scaffolds or work platforms where employees are required to work or pass.

Jacks and vertical supports will be positioned in such a manner that the loads do not exceed the rated capacity of the jacks.

The jacks or other lifting devices will be provided with mechanical dogs or other automatic holding devices to support the slip forms whenever failure of the power supply or lifting mechanism occurs.

The form structure will be maintained within all design tolerances specified for plumbness during the jacking operation.

The predetermined safe rate of lift will not be exceeded.

## **Reinforcing steel**

Reinforcing steel for walls, piers, columns, and similar vertical structures will be adequately supported to prevent overturning and to prevent collapse.

Employees will take measures to prevent unrolled wire mesh from recoiling. Such measures may include, but are not limited to, securing each end of the roll or turning over the roll.

## **Removal of formwork**

Forms and shores (except those used for slabs on grade and slip forms) will not be removed until the employer determines that the concrete has gained sufficient strength to support its weight and superimposed loads. Such determination will be based on compliance with one of the following:



1. The plans and specifications stipulate conditions for removal of forms and shores, and such conditions have been followed, or
2. The concrete has been properly tested with an appropriate ASTM standard test method designed to indicate the concrete compressive strength, and the test results indicate that the concrete has gained sufficient strength to support its weight and superimposed loads.

Reshoring will not be removed until the concrete being supported has attained adequate strength to support its weight and all loads in place upon it.

## **Precast concrete**

Precast concrete wall units, structural framing and tilt-up wall panels will be adequately supported to prevent overturning and to prevent collapse until permanent connections are completed.

Lifting inserts which are embedded or otherwise attached to tilt-up precast concrete members will be capable of supporting at least two times the maximum intended load applied or transmitted to them.

Lifting hardware will be capable of supporting at least five times the maximum intended load applied or transmitted to the lifting hardware.

No employee will be permitted under precast concrete members being lifted or tilted into position except those employees required for the erection of those members.

## **Lift-slab construction operations**

Lift-slab operations will be designed and planned by a registered professional engineer who has experience in lift-slab construction. Such plans and designs will be implemented by the employer and will include detailed instructions and sketches indicating the prescribed method of erection. These plans and designs will also include provisions for ensuring lateral stability of the building/structure during construction.

Jacks/lifting units will be marked to indicate their rated capacity as established by the manufacturer.

Jacks/lifting units will not be loaded beyond their rated capacity as established by the manufacturer.

Jacking equipment will be capable of supporting at least two and one-half times the load being lifted during jacking operations and the equipment will not be overloaded. For the purpose of this provision, jacking equipment includes any load bearing component which is used to carry

out the lifting operation(s). Such equipment includes, but is not limited, to the following:

- |                   |                       |                |
|-------------------|-----------------------|----------------|
| - threaded rods   | - lifting attachments | - lifting nuts |
| - hook-up collars | - T-caps              | - shearheads   |
| - columns         | - footings            |                |

Jacks/lifting units will be designed and installed so that they will neither lift nor continue to lift when they are loaded in excess of their rated capacity.

Jacks/lifting units will have a safety device installed which will cause the jacks/lifting units to support the load in any position in the event any jack/lifting unit malfunctions or loses its lifting ability.

Jacking operations will be synchronized in such a manner to ensure even and uniform lifting of the slab. During lifting, all points at which the slab is supported will be kept within 2 inch of that needed to maintain the slab in a level position.

If leveling is automatically controlled, a device will be installed that will stop the operation when the 2 inch tolerance is exceeded or where there is a malfunction in the jacking (lifting) system.

If leveling is maintained by manual controls, such controls will be located in a central location and attended by a competent person while lifting is in progress. In addition to meeting the definition of "Competent person" employee must be experienced in the lifting operation and with the lifting equipment being used.

The maximum number of manually controlled jacks/lifting units on one slab will be limited to a number that will permit the operator to maintain the slab level within specified tolerances, but in no case will that number exceed 14.

No employee, except those essential to the jacking operation, will be permitted in the building/structure while any jacking operation is taking place unless the building/structure has been reinforced sufficiently to ensure its integrity during erection. The phrase "reinforced sufficiently to ensure its integrity" used in this paragraph means that a registered professional engineer, independent of the engineer who designed and planned the lifting operation, has determined from the plans that if there is a loss of support at any jack location, that loss will be confined to that location and the structure as a whole will remain stable.

Under no circumstances, will any employee who is not essential to the jacking operation be permitted immediately beneath a slab while it is being lifted.

For the purpose of this section, a jacking operation begins when a slab or group of slabs is lifted and ends when such slabs are secured (with either temporary connections or permanent connections).

When making temporary connections to support slabs, wedges will be secured by tack welding, or an equivalent method of securing the wedges to prevent them from falling out of position.

Lifting rods may not be released until the wedges at that column have been secured.

A certified welder, familiar with the welding requirements specified in the plans and specifications for the lift-slab operation will perform all welding on temporary and permanent connections.

Load transfer from jacks/lifting units to building columns will not be executed until the welds on the column shear plates (weld blocks) are cooled to air temperature.

Jacks/lifting units will be positively secured to building columns so that they do not become dislodged or dislocated.

Equipment will be designed and installed so that the lifting rods cannot slip out of position or the employer will institute other measures, such as the use of locking or blocking devices, which will provide positive connection between the lifting rods and attachments and will prevent components from disengaging during lifting operations.

## **Limited Access Zone Masonry construction**

A limited access zone will be established whenever a masonry wall is being constructed and bracing is not utilized.

The limited access zone will conform to the following:

1. The limited access zone will be established prior to the start of construction of the wall.
2. The limited access zone will be equal to the height of the wall to be constructed plus four feet, and will run the entire length of the wall.
3. The limited access zone will be established on the side of the wall, which will be un-scaffolded.
4. The limited access zone will be restricted to entry by employees actively engaged in constructing the wall. No other employees will be permitted to enter the zone.
5. The limited access zone will remain in place until the wall is adequately supported to prevent overturning and to prevent collapse.
6. All masonry walls over eight feet in height will be adequately braced to prevent overturning and to prevent collapse unless the wall is adequately supported so that it will not overturn or collapse. The bracing will remain in place until permanent supporting elements of the structure are in place.

## V CHECKLIST ITEMS

Guard all protruding reinforcing steel to which employees could be injured.

Employee will not be permitted under concrete buckets while they are being hoisted.

Employees must wear eye protection when dispensing cement, sand and water mixture through a pneumatic hose.

All equipment and tools must meet the requirements of this section and be used accordingly.

Formwork must be designed, fabricated, erected, supported, braced and maintained and capable of supporting all vertical and lateral loads that might be applied to it.

All shoring and reshoring equipment must be inspected prior to erection to ensure it meets the formwork drawings.

Erected shoring equipment must be inspected immediately prior to, during and immediately after concrete placement.

When single post shores are used one on top of another (tiered) the specific requirements of the section will be followed.

Whenever concrete is required to support load in excess of its capacity, reshoring will be erected prior to original forms and shores being removed.

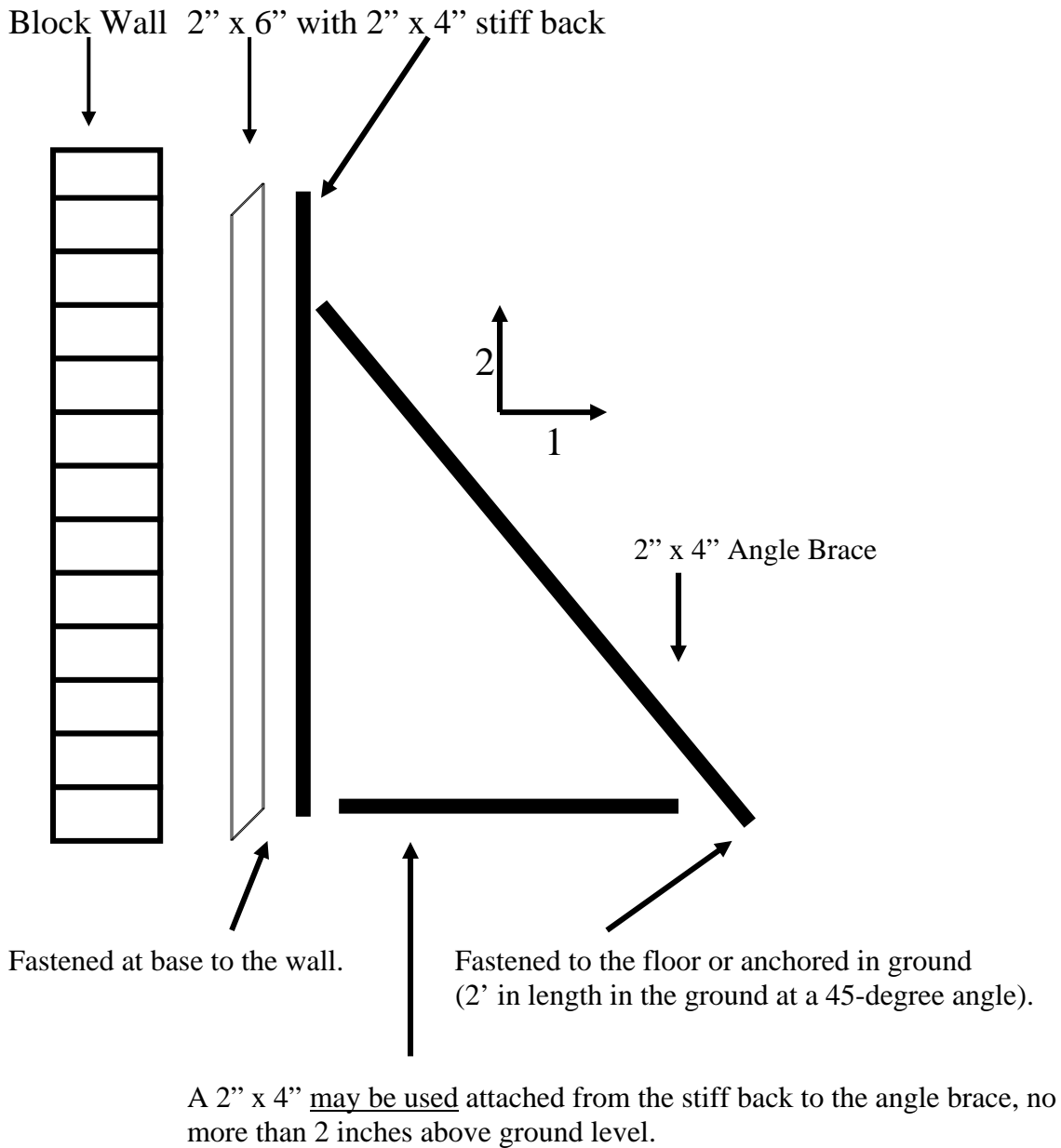
Measures will always be taken to prevent unrolled coiled wire mesh from coiling.

Do not remove forms and shores until it has been determined that the concrete has gained sufficient strength to support its weight and imposed loads.

Whenever a masonry wall is being constructed, a limited access zone will be established in accordance with this section.

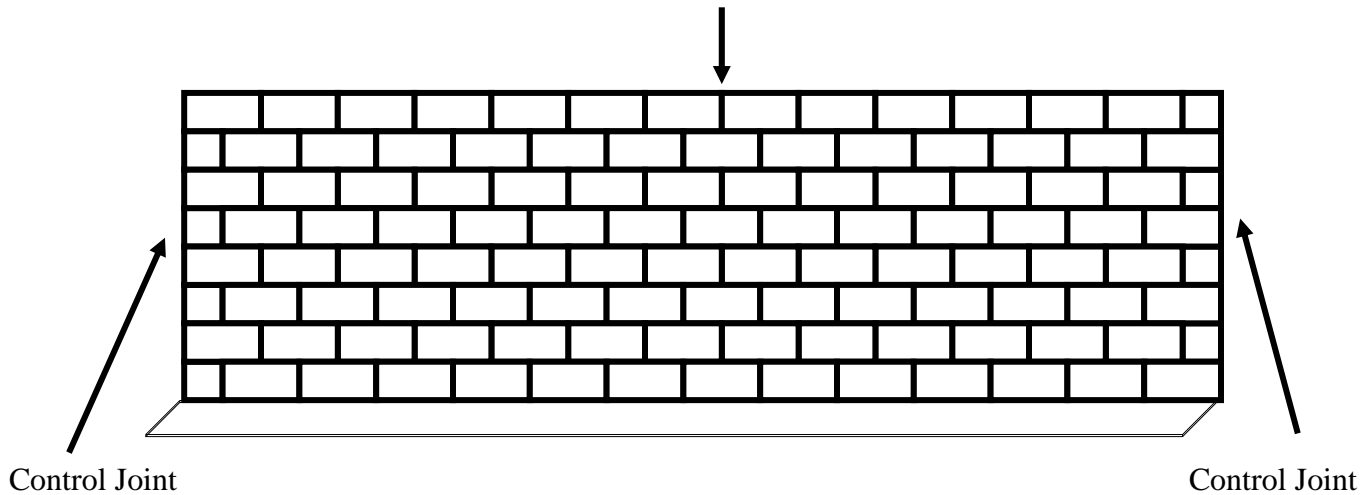
All masonry walls over eight feet high will be adequately braced and the bracings remain in place until permanent supporting elements of the structure are in place.

## Both sides of the wall must be braced.



## CMU Bracing Requirements

CMU Wall



When CMU walls have control joints, the spacing between two control joints is considered a separate wall and needs to be braced separately.

Bracing must be at least (.2 times the total length) from the control joint.

Example: If the total length of the wall is 25 feet (then  $.2 \times 25 \text{ feet} = 5 \text{ feet}$ ).

Then the first and last brace will be placed at least 5 feet from the control joints.

**Walls must be braced at two locations on each side of the wall, at a minimum.**

Bracing must remain in place until the CMU walls are tied in horizontally (i.e. to floor joists, roof joists, interior walls, etc.).

Interior walls that are not exposed to a wind load do not need to be braced.

Maximum Unbraced Height of CMU Walls*		
CMU Thickness	Hollow or UngROUTed CMU	Solid or Rebar Reinforced and Core-Filled (24" to 48" Centers)
8"	8' - 0"	12' - 0"
10"	10' - 6"	14' - 6"
12"	12' - 10"	16' - 10"

Maximum Height Allowed Above Top of Brace*		
CMU Thickness	Hollow or UngROUTed CMU	Solid or Rebar Reinforced and Core-Filled (24" to 48" Centers)
8"	4' - 8"	6' - 8"
10"	6' - 8"	8' - 8"
12"	8' - 8"	10' - 8"

Maximum Spacing Between Braces*			
Wall Height	Horizontal Spacing 8" CMU	Horizontal Spacing 10" CMU	Horizontal Spacing 12" CMU
10' or Less	38' - 0"	42' - 0"	46' - 0"
15' or Less	20' - 8"	24' - 8"	28' - 8"
20' or Less	13' - 5"	17' - 5"	21' - 5"
25' or Less	9' - 6"	13' - 6"	17' - 6"

If wall height exceeds 25', contact your Project Manager.

**\* For sustained wind speeds less than 40 MPH or gusts of 55 MPH. If sustained winds exceed 40 MPH or gusts of 55 MPH, evacuate restricted access zone wall height, plus 4 feet.**

## 6-inch Block Wall Bracing Requirements

**Note:** Walls that are less than 20' in length are permitted to have one brace on each side of the wall centered.

**Note:** Walls that are greater than 20' in length - see Control Joint Details #1 and #2.

**Note:** A brace can never exceed more than 10' from the end of a control joint or 20' from the corner of the block wall.

**Note:** See detail sheet Page 5 for bracing design.

Bracing Requirements for a 6" Block Wall Using a 2" x 4" Brace.				
Wall Height	Kicker Required	Stop Block Height on Vertical Member	Length of Brace	Maximum Spacing Between Braces
Between 8 and 10 feet	No	7 feet	8 feet	43 feet
Between 10 and 12 feet	No	8 feet	9 feet	25 feet
Between 12 and 14 feet	No	9 feet 6 inches	10 feet 6 inches	15 feet
Between 14 and 16 feet	No	11 feet	12 feet	10 feet
Between 16 and 18 feet	<b>Yes</b>	12 feet	13 feet 6 inches	15 feet
Between 18 and 20 feet	<b>Yes</b>	13 feet 6 inches	15 feet	11 feet
Between 20 and 22 feet	<b>Yes</b>	15 feet	16 feet 6 inches	8 feet
<b>Note:</b> Wall heights over 22' require design by a Professional Engineer - see your Project Manager.				

Bracing Requirements for a 6" Block Wall Using a 2" x 6" Brace.				
Wall Height	Kicker Required	Stop Block Height on Vertical Member	Length of Brace	Maximum Spacing Between Braces
Between 8 and 10 feet	No	7 feet	8 feet	50 feet
Between 10 and 12 feet	No	8 feet	9 feet	50 feet
Between 12 and 14 feet	No	9 feet 6 inches	10 feet 6 inches	50 feet
Between 14 and 16 feet	No	11 feet	12 feet	39 feet
Between 16 and 18 feet	<b>Yes</b>	12 feet	13 feet 6 inches	50 feet
Between 18 and 20 feet	<b>Yes</b>	13 feet 6 inches	15 feet	44 feet
Between 20 and 22 feet	<b>Yes</b>	15 feet	16 feet 6 inches	33 feet
<b>Note:</b> Wall heights over 22 feet require design by a Professional Engineer - See your Project Manager.				

## 8-inch Block Wall Bracing Requirements

**Note:** Walls that are less than 20 feet in length are permitted to have one brace on each side of the wall centered.

**Note:** Walls that are greater than 20 feet in length - see Control Joint Details #1 and #2.

**Note:** A brace can never exceed more than 10 feet from the end of a control joint or 20 feet from the corner of the block wall.

**Note:** See detail sheet page 5 for bracing design.

Bracing Requirements for an 8" Block Wall Using a 2" x 4" Brace.				
Wall Height	Kicker Required	Stop Block Height on Vertical Member	Length of Brace	Maximum Spacing Between Braces
Between 8 and 10 feet	No	7 feet	8 feet	45 feet
Between 10 and 12 feet	No	8 feet	9 feet	26 feet
Between 12 and 14 feet	No	9 feet 6 inches	10 feet 6 inches	15 feet
Between 14 and 16 feet	No	11 feet	12 feet	10 feet
Between 16 and 18 feet	<b>Yes</b>	12 feet	13 feet 6 inches	16 feet
Between 18 and 20 feet	<b>Yes</b>	13 feet 6 inches	15 feet	12 feet
Between 20 and 22 feet	<b>Yes</b>	15 feet	16 feet 6 inches	9 feet
<b>Note:</b> Wall heights over 22 feet require design by a Professional Engineer - see your Project Manager.				

Bracing Requirements for an 8" Block Wall Using a 2" x 6" Brace.				
Wall Height	Kicker Required	Stop Block Height on Vertical Member	Length of Brace	Maximum Spacing Between Braces
Between 8 and 10 feet	No	7 feet	8 feet	50 feet
Between 10 and 12 feet	No	8 feet	9 feet	50 feet
Between 12 and 14 feet	No	9 feet 6 inches	10 feet 6 inches	50 feet
Between 14 and 16 feet	No	11 feet	12 feet	41 feet
Between 16 and 18 feet	<b>Yes</b>	12 feet	13 feet 6 inches	50 feet
Between 18 and 20 feet	<b>Yes</b>	13 feet 6 inches	15 feet	46 feet
Between 20 and 22 feet	<b>Yes</b>	15 feet	16 feet 6 inches	35 feet
<b>Note:</b> Wall heights over 22 feet require design by a Professional Engineer - see your Project Manager.				



# 10-inch Block Wall Bracing Requirements

**Note:** Walls that are less than 20 feet in length are permitted to have one brace on each side of the wall centered.

**Note:** Walls that are greater than 20 feet in length - see Control Joint Details #1 and #2.

**Note:** A brace can never exceed more than 10 feet from the end of a control joint or 20 feet from the corner of the block wall.

**Note:** See detail sheet Page 5 for bracing design.

Bracing Requirements for a 10" Block Wall Using a 2" x 4" Brace.				
Wall Height	Kicker Required	Stop Block Height on Vertical Member	Length of Brace	Maximum Spacing Between Braces
Between 8 and 10 feet	No	7 feet	8 feet	50 feet
Between 10 and 12 feet	No	8 feet	9 feet	28 feet
Between 12 and 14 feet	No	9 feet 6 inches	10 feet 6 inches	17 feet
Between 14 and 16 feet	No	11 feet	12 feet	12 feet
Between 16 and 18 feet	<b>Yes</b>	12 feet	13 feet 6 inches	50 feet
Between 18 and 20 feet	<b>Yes</b>	13 feet 6 inches	15 feet	12 feet
Between 20 and 22 feet	<b>Yes</b>	15 feet	16 feet 6 inches	10 feet
<b>Note:</b> Wall heights over 22 feet require design by a Professional Engineer - see your Project Manager.				

Bracing Requirements for a 10" Block Wall Using a 2" x 6" Brace.				
Wall Height	Kicker Required	Stop Block Height on Vertical Member	Length of Brace	Maximum Spacing Between Braces
Between 8 and 10 feet	No	7 feet	8 feet	50 feet
Between 10 and 12 feet	No	8 feet	9 feet	50 feet
Between 12 and 14 feet	No	9 feet 6 inches	10 feet 6 inches	50 feet
Between 14 and 16 feet	No	11 feet	12 feet	44 feet
Between 16 and 18 feet	<b>Yes</b>	12 feet	13 feet 6 inches	50 feet
Between 18 and 20 feet	<b>Yes</b>	13 feet 6 inches	15 feet	48 feet
Between 20 and 22 feet	<b>Yes</b>	15 feet	16 feet 6 inches	36 feet
<b>Note:</b> Wall heights over 22 feet require design by a Professional Engineer see - your Project Manager.				

# 12-inch Block Wall Bracing Requirements

**Note:** Walls that are less than 20 feet in length are permitted to have one brace on each side of the wall centered.

**Note:** Walls that are greater than 20 feet in length - see Control Joint Details #1 and #2.

**Note:** A brace can never exceed more than 10 feet from the end of a control joint or 20 feet from the corner of the block wall.

**Note:** See detail sheet Page 5 for bracing design.

Bracing Requirements for a 12" Block Wall Using a 2" x 4" Brace.				
Wall Height	Kicker Required	Stop Block Height on Vertical Member	Length of Brace	Maximum Spacing Between Braces
Between 8 and 10 feet	No	7 feet	8 feet	50 feet
Between 10 and 12 feet	No	8 feet	9 feet	31 feet
Between 12 and 14 feet	No	9 feet 6 inches	10 feet 6 inches	19 feet
Between 14 and 16 feet	No	11 feet	12 feet	12 feet
Between 16 and 18 feet	<b>Yes</b>	12 feet	13 feet 6 inches	19 feet
Between 18 and 20 feet	<b>Yes</b>	13 feet 6 inches	15 feet	13 feet
Between 20 and 22 feet	<b>Yes</b>	15 feet	16 feet 6 inches	10 feet
<b>Note:</b> Wall heights over 22 feet require design by a Professional Engineer - see your Project Manager.				

Bracing Requirements for a 12" Block Wall Using a 2" x 6" Brace.				
Wall Height	Kicker Required	Stop Block Height on Vertical Member	Length of Brace	Maximum Spacing Between Braces
Between 8 and 10 feet	No	7 feet	8 feet	50 feet
Between 10 and 12 feet	No	8 feet	9 feet	50 feet
Between 12 and 14 feet	No	9 feet 6 inches	10 feet 6 inches	50 feet
Between 14 and 16 feet	No	11 feet	12 feet	46 feet
Between 16 and 18 feet	<b>Yes</b>	12 feet	13 feet 6 inches	50 feet
Between 18 and 20 feet	<b>Yes</b>	13 feet 6 inches	15 feet	46 feet
Between 20 and 22 feet	<b>Yes</b>	15 feet	16 feet 6 inches	38 feet
<b>Note:</b> Wall heights over 22 feet require design by a Professional Engineer - see your Project Manager.				

## **I. PURPOSE**

This section establishes safety practices, means, methods, operating procedures and guidelines for the use of mechanized equipment.

## **II DEFINITIONS**

Mechanized Equipment - equipment which uses a motor to operate or move to perform its duties.

ROPS - (Roll Over Protective Structure) such as roll bars or cages.

## **III REFERENCES**

29 CFR 1926.600	Equipment
29 CFR 1926.601	Motor Vehicles
29 CFR 1926.602	Material Handling Equipment
29 CFR 1926.603	Pile Driving Equipment

## **IV PROCEDURES**

### General Requirements –

All equipment will have an operating reverse audible alarm when it has an unclear view to the rear, seat belts used (when equipped with ROPS), all glass intact, no riders allowed at any time on equipment, have only trained operators in control at all times, and be shut off during refueling.

### Front End Loader –

- Seatbelts will be worn at all times.
- Equipment will be used only for its intended purpose.
- All safety devices will be in place.
- A guard will be in place to protect operator's hand from pinch points if the equipment is or scissors type.

### Excavation Equipment –

- All earth moving equipment will have a brake system capable of stopping and holding the equipment fully loaded.
- All buckets and blades will be lowered to ground or locking pins in place when the operator is not at controls.

- All buckets and blades will be blocked to prevent loss of hydraulics while being repaired.
- All equipment will have an audible front horn.

## **Lift Truck –**

- Lift trucks will have rated capacity clearly posted on the vehicle so to be clearly visible by the operator.
- Angle indicator will be provided.
- Outriggers will always be used as provided.
- Only qualified employees will operate such equipment.

## **Rough Terrain Lifting Equipment –**

- Seat belts will be provided on all lifting equipment that has roll over protection cover.
- An enclosed cage will be provided to protect the operator from materials slipping off lift and falling backwards.
- A brake system will be capable of stopping and holding the equipment fully loaded. Only qualified employees will operate such equipment.

## **Fork Lift –**

- Equipment will be used only for its intended purpose.
- All safety devices will be in place.
- No steering or spinner knobs will be attached to the steering wheel.
- Roll over protection structures will be installed on the equipment and overhead installed to protect the operator from falling objects.
- All equipment will meet the applicable requirements of ANSI B56.1-1969 Safety Standards for Powered Industrial Trucks.
- Only qualified employees will operate such equipment.

## **Aerial Lift – (extendable and articulating boom platforms)**

- Lift controls will be tested each day prior to use to determine that such controls are in safe working condition.
- Only authorized persons will operate an aerial lift.
- Belting off to an adjacent pole, structure, or equipment while working from an aerial lift will not be permitted.
- Employees will always stand firmly on the floor of the basket, and will not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.
- A harness will be worn and a lanyard attached to the boom or basket when working from an aerial lift.
- Boom and basket load limits specified by the manufacturer will not be exceeded.

- The brakes will be set and when outriggers are used, they will be positioned on pads or a solid surface.
- Wheel chocks will be installed before using an aerial lift on an incline provided they can be safely installed.
- An aerial lift truck will not be moved when the boom is elevated in a working position with employees in the basket, except for equipment, which is specifically designed for this type of operation.
- The insulated portion of an aerial lift will not be altered in any manner that might reduce its insulating value.

#### Piling Equipment –

- The pile driver will be firmly supported on heavy timber sills or substantial cribbing, and securely guyed at all times, except where a crane is used for supporting the hammer.
- A competent person will inspect all pile driving equipment before being placed in service and daily thereafter.
- Defects will be corrected immediately except that repair will not be made to any steam or air equipment while in operation or under pressure.
- Hose for steam or air hammer will be securely lashed to the hammer.
- Shut-off valves located within easy reach of the operator will control steam or airlines.
- When work is stopped, the hammer will be lowered to rest on the ground, chocked or blocked and secured.
- Preparation of the piles will be done at a distance greater than the length of the longest pile.

#### Trucks –

- Motor vehicles as covered by this part are those vehicles that are operated within an off highway project site not open to public traffic.
- All vehicles will have or be equipped with the following: brakes, parking brakes and emergency brake system; brake lights in operable condition; when visibility conditions warrant - 2 head lights and 2 tail lights in operable condition; an operable front horn; operable back up alarm; windshields and power wipers; all cracked or broken glass repaired; defogging or defrosting units in areas where defogging or defrosting of windshields is necessary; cab shields or canopy protection if the haulage is loaded by cranes, backhoes, loaders, etc.; means to secure tools when transported in the same compartment as employees.
- Vehicles used to transport employees will have firmly secured seats and adequate seats for employees; seatbelts and anchorage to meet the requirements of 49 CFR Part 571.
- DOT, Federal Motor Safety DOT Motor Safety Standard will be installed in all motor vehicles. Operating levers controlling hoisting or dumping devices on haulage bodies will be equipped with a latch or other device to prevent accidental tripping of the mechanism.
- The trip handles for the tailgates of dump trucks will be arranged, in dumping, so that employees are clear.

- All rubber tire motor vehicles will be equipped with fenders or mud flaps if the vehicle is not designed with fenders.
- All vehicles will be checked at the beginning of shift for defects and repairs will be made prior to vehicles being put into service.

All motorized vehicles operated on the highway exposed to public requires the following: operable back up alarm; drivers required to have proper Commercial Drivers License and a copy of that License given to the company; a Medical card on the driver's person and a copy of the Medical card given to the employer.

## **V TRAINING**

The employer will provide training programs at the safety orientation, through Toolbox Safety Talks and through special training programs.

At a minimum, training will consist of the following: safe performance of work tasks, operation of a specific piece of equipment, manufacturers' recommendations, routine maintenance inspections per specifications, and special safety procedures required by that piece of equipment.

## **VI CHECKLIST ITEMS**

- Equipment with obstructed view to rear will be equipped with reverse alarm.
- Equipment will be equipped with seat belts if equipment has roll over protection.
- All glass will be intact.
- Operator will be trained on the equipment they are operating.
- Equipment will be shut down when refueling.
- No riders at any time on equipment.

## I PURPOSE

According to the National Safety Council approximately 35 million lost workdays occur each year due to nonfatal injuries. The direct and indirect costs of occupational injuries are estimated to be 47 billion dollars per year. The outcome of occupational injuries depends not only on the severity of the injury, but also the rendering of first aid care. Prompt, properly administered first aid care can mean the difference between life and death, rapid recovery or permanent disability. In the case of employee illness or injury, Lantz Construction Company wants the employee to receive immediate attention and the best possible care.

## II POLICY

Although it is highly encouraged that employees provide first aid to other employees in need, every employee must understand providing first aid is not a requirement or part of any employee's job assignment. ALL INJURIES MUST IMMEDIATELY BE REPORTED TO SITE SUPERVISOR or SUPERINTENDENT.

## III DEFINITIONS

First Aid: the immediate care given to an injured or suddenly ill person. First aid does not take the place of proper medical treatment. It consists only of furnishing temporary assistance until competent medical care, if needed, is obtained or until the chance for recovery without medical care is assured.

### Automated External Defibrillators (AEDs):

Automated external defibrillators (AEDs) are small, portable, battery-operated device capable of detecting life-threatening conditions of the heart that can be corrected with defibrillation. AEDs are widely available, safe, effective, portable, and easy to use. They provide the critical and necessary treatment for sudden cardiac arrest (SCA) caused by ventricular fibrillation, the uncoordinated beating of the heart leading to collapse and death. According to the American Heart Association, SCA leads to death resulting from the sudden, abrupt loss of heart function in a person who may or may not have diagnosed heart disease.

## IV REFERENCES

29 CFR 1926.23      First Aid and Medical Attention  
29 CFR 1926.50      Medical Services and First Aid

**V PROCEDURES**

- (1) The employer will ensure the availability of medical personnel for advice and consultation on matters of occupational health.
- (2) Provisions will be made prior to commencement of the project for prompt medical attention in case of serious injury.
- (3) In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the project site and is available for the treatment of injuries to employees, a person who has a valid certificate in first-aid training from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence, will be available at the project site to render first aid.
- (4) First-aid supplies approved by a competent person will be easily accessible when required.
- (5) The First-aid kit will consist of materials approved by the consulting physician in a weatherproof container with individual sealed packages for each type of item. The contents of the first aid will be checked at least weekly on each job to ensure that the expended items are replaced.
- (6) Proper equipment for prompt transportation of the injured person to a physician or hospital, or a communication system for contacting necessary ambulance service, will be provided.
- (7) The telephone numbers of the physicians, hospitals, or ambulances will be posted in a conspicuous location.
- (8) Where the eyes or body of any person may be exposed to injuries such as corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body will be provided within the work area for immediate emergency use.

The construction regulation for medical services and first aid at 1926.50(b) requires that provisions must be made prior to commencement of the project for prompt medical attention in case of serious injury. The phrase “reasonably accessible” emphasizes the desirability of prompt assistance when an injury or illness occurs.

Conditions at each workplace must be evaluated to ensure that First Aid supplies are adequate and meet anticipated needs. Only minor first aid can be administered on the projects, except in the case of dire emergencies or where loss of life is eminent. Only persons holding current, valid first aid certificate can administer treatment. Injured persons cannot be removed or transported from the project except by local rescue squads or ambulance services, if available.



First aid and CPR is not part of any employees job assignment or duties; however, every employee is encouraged to provide first aid to other employees in need.

## **First Aid Supplies**

Project Superintendents are responsible for the type, amount and maintenance of the first aid supplies needed at their particular job site. These supplies need to be stored in a convenient area available for emergency access. These first aid supplies may be kept in company vehicles.

## **Blood borne Pathogens**

29 CFR 1910.1030- "Bloodborne Pathogens"- is the Federal Standard covering employees with an occupational exposure to blood or other potentially infectious materials.

Definitions:

Occupational Exposure: reasonably anticipated skin, eye, mucous membrane or parental contact with blood or other potentially infectious materials that may result from the performance of an employees duties.

Potentially Infectious Material: means human body fluids such as semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids. Any unfixed tissue or organ (other than intact skin) from a human (living or dead). HIV- containing cell or tissue cultures, organ cultures, and HIV or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Although the construction industry was exempted from the bloodborne pathogens standard shortly after it was issued Lantz Construction Company wants to provide some protection by requiring some rules during the administering of first aid.

## **Universal Precautions**

Individuals infected with HBV or HIV may not show symptoms and may not even know they are infectious. For that reason, all human blood and body fluids should be considered infectious, and precautions should be taken to avoid contact.

When an injury occurs, first aid providers can protect themselves and others against bloodborne pathogens by following these steps:

1. Wears appropriate PPE, such as gloves.
2. If you have been trained in the correct procedures, use absorbent barriers to soak up

blood or other infectious materials.

3. Clean the spill area with an appropriate disinfecting solution, such as diluted bleach.
4. Discard contaminated materials in an appropriate waste disposal container.

## If you have been exposed to blood or body fluids:

1. Use soaps and water to wash the parts of your body that have been contaminated.
2. If the exposure happens while at work, report the incident to your supervisor. Otherwise, contact your personal physician. Early action can prevent the development of hepatitis B and enable affected workers to track potential HIV infection.

The best protection against bloodborne disease is using the safeguards described above. By following these guidelines, an individual can decrease their chance of contracting bloodborne illness.

## **VI TRAINING**

Assessment of successful completion of the first aid training program should include instruction observation of acquired skills and written performance assessments. First aid skills and knowledge should be reviewed every two years.

## **VII CHECKLIST ITEMS**

Coordination will be made to provide prompt medical attention in case of emergency prior to commencement of all projects.

When medical facilities are not reasonably accessible, a person must be available who has a valid certification in first aid and CPR.

First-aid supplies will be available on all work sites. A competent person must approve first-aid supplies.

Emergency notification numbers such as ambulance and fire service, hospital and physician will be conspicuously posted on all job sites.

When employees are working around corrosives, eye wash and shower facilities must be provided.

**SPECIAL ADDENDUM**  
**Automated External Defibrillator**

**Introduction**

Approximately 890 deaths from coronary heart disease occur outside of the hospital or emergency room every day. Most of these deaths are due to the sudden loss of heart function or sudden cardiac death.<sup>1</sup> In 2001 and 2002, there were 6628 workplace fatalities reported to OSHA; 1216 from heart attack, 354 from electric shock, and 267 from asphyxia. A number of these victims, up to 60 percent, might have been saved if automated external defibrillators (AEDs) were immediately available. Chances of survival from sudden cardiac death diminish by 7 – 10 percent for each minute without immediate CPR or defibrillation. After 10 minutes, resuscitation rarely succeeds. An AED is an electronic device designed to deliver an electric shock to a victim of sudden cardiac arrest. Ventricular fibrillation may be restored to normal rhythm up to 60 percent of the time if treated promptly with an AED, a procedure called defibrillation.

OSHA does not have standards specific to automated external defibrillators (AEDs). However, exposures to first-aid hazards are addressed in specific standards for the general industry.

# LANTZ CONSTRUCTION COMPANY

## AED POLICY

An automated external defibrillator (AED) is used to treat victims who experience sudden cardiac arrest (SCA). It is only to be applied to victims who are unconscious, not breathing normally and showing no signs of circulation, such as abnormal breathing, coughing and movement. The AED will analyze the heart rhythm and advise the operator if a shock-able rhythm is detected. If a shockable rhythm is detected, the AED will charge to the appropriate energy level and advise the operator to deliver a shock.

### Responsibilities: Director of Safety

Coordination of training for emergency responders Coordinating equipment and accessory maintenance  
Revision of this policy as required Monitoring the effectiveness of this system Communication with the Medical Director on issues related to the emergency response program, including post-event reviews. Post event documentation

### Medical Control:

The medical advisor for the AED at Lantz Construction Company is \_\_\_\_\_ The medical advisor of the AED program is responsible for:

Writing the necessary prescription(s) for use of the AED. Providing medical direction for use of the AED.  
Reviewing and approving guidelines for emergency procedures related to use of AEDs and CPR. Evaluation of post-event review forms and digital files downloaded from the AED.

### Authorized AED Users:

Any company employee who has successfully completed the required training.

Any trained employee who has successfully completed an approved CPR + AED training program within the last (2) years and has a current course completion card. Any volunteer responder who is acting as a "Good Samaritan."

### Employee Responsibilities:

Activating the internal emergency response system and providing prompt basic life support including AED and first aid according to training and experience. Understanding and complying with the requirements of this policy. Following the more detailed procedures and guidelines for a medical emergency.

### Volunteer Responder Responsibilities:

Anyone can, at their discretion, provide voluntary assistance to victims of medical emergencies. The extent to which these individuals respond shall be appropriate to their training and experience. These responders are encouraged to contribute to emergency response only to the extent that they are comfortable. The emergency

medical response of these individuals may include CPR, AED or medical first aid.

#### Front Desk Personnel Responsibilities:

Receiving emergency medical calls from internal location(s). •Contacting the external community 911 response team (EMS) if required. Deploying the internal employees to the location of the emergency via PA system. Assigning someone to direct EMS personnel to the site of the medical emergency. Contacting Lantz Construction Company's Director of Safety as soon as possible. Contacting Lantz Construction Company's President as soon as possible.

#### Equipment:

The AED and first aid emergency care kit will be brought to all medical emergencies. The AED should be used on any person who is at least 8 years of age and displays ALL the symptoms of cardiac arrest. The AED will be placed only after the following symptoms are confirmed:

Victim is unconscious and or; Victim is not breathing

#### Location of AED:

AED is located on the wall just right of the office personnel mailboxes.

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Each AED will have one set of defibrillation electrodes connected to the device and one spare set of electrodes with the AED. One resuscitation kit will be connected to the handle of the AED. This kit contains two pair latex-free gloves, one razor, one set of trauma shears, and one facemask barrier device.

#### Initial Training:

Employees must complete training adequate to provide basic first aid, CPR and AED. Training will be provided on site. AED training course must be one approved by the state Department of Health or successful completion of training that is site specific to Lantz Construction Company. Employees will also be trained in universal precautions against blood borne pathogens.

#### Volunteer Responders:

These responders will possess various amounts of training in emergency medical response and their training may be supplied by sources outside of the company. Volunteer responders can assist in emergencies, but must only participate to the extent allowed by their training and experience. Volunteer responders may have training adequate to administer first aid, CPR and use of the AED.

#### Refresher Training:

Employees will renew first aid and AED training every two years.

Volunteer responders should obtain documented renewal training at least once every two years. Volunteer responders are encouraged to periodically refresh their AED skills. This can be accomplished through training provided by Lantz Construction Company or any state approved CPR + AED course.

Medical Response Documentation: Internal Post Event Documentation: It is important to document each use of the medical emergency response system.

An incident report will be completed by the Director of Safety anytime the AED has been utilized.

External Post Event Documentation: Medical emergencies involving the use of an AED require special documentation.

Any and all patient information generated during AED use must be collected into the patient's confidential medical file.

A copy of AED use information shall be presented to the medical director of the AED program and the county E-Systems.

Equipment Maintenance: All equipment and accessories necessary for support of medical emergency response shall be maintained in a state of readiness. Specific maintenance requirements include:

The facility phone operator shall be informed of changes in availability of emergency medical response equipment. If equipment is withdrawn from service, the operator shall be informed and then notified when equipment is returned to service.

The Director of Safety shall be responsible for completing regular equipment maintenance as outlined in the manufactures recommendations.

Following use of emergency response equipment, all equipment shall be cleaned and/or decontaminated as required by the Director of Safety

If contamination includes body fluids, the equipment shall be disinfected according to procedure.

System Verification and Review: The medical emergency response system is ultimately successful if necessary medical assistance is provided to victims in a timely and safe manner. Since actual use of this system procedure is expected to be very infrequent, other measures of effectiveness are required.

Annual System Assessment: Once each calendar year, the Director of Safety or their designee shall conduct and document a system readiness review. This review shall include review of the following elements:

Training records

Equipment operation and maintenance records

Monthly System Check: Once each calendar year, the Director of Safety or their designee shall conduct and document a system check. These records shall be retained according to the manufactures established guidelines. This check shall include review of the following elements:

Emergency kit supplies

AED battery life

AED operation and status

AED defibrillator pads

Post Event Review:

Following each use of the AED, or if a volunteer responder uses an AED, a review shall be conducted to learn from the experience. The Director of Safety shall conduct and document the post event review. All key

participants in the event shall participate in the review. Included in the review shall be the identification of actions that went well and the collection of opportunities for improvement as well as critical incident stress debriefing. A summary of the post event review shall be presented to Lantz Construction Company's management team.

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## Understanding OSH Act and OSHA

Under the Occupational Safety and Health Act of 1970 (the Act), the Occupational Safety and Health Administration (OSHA) is authorized to conduct workplace inspections to determine whether employers are complying with standards issued by the Agency for safe and healthful workplaces. OSHA also enforces Section 5(a)(1) of the Act, known as the General Duty Clause, which requires that every working man and woman must be provided with a safe and healthful workplace.

The Act reads:

### Duties

Sec. 5:

(a) Each employer-

(1) will furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) will comply with occupational safety and health standards promulgated under this Act.

(b) Each employee will comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

### Applicability of This Act

Sec. 4:

(a) This Act will apply with respect to employment performed in the workplace in a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, Guam, the Trust Territory of the Pacific Islands, Wake Island, Outer Continental Shelf Lands defined in the Outer Continental Shelf Lands Act, Johnston Island, and the Canal Zone. The Secretary of the Interior will, by regulation, provide for judicial enforcement of this Act by the courts established for areas in which there are no United States district courts having jurisdiction.

### Inspections and Investigations

Sec. 8:

(a) In order to carry out the purposes of this Act, the Secretary, upon presenting appropriate credentials to the owner, operator, or agent in charge, is authorized-

(1) to enter without delay and at reasonable times any factory, plant, establishment, construction site, or other area, workplace or environment where work is performed by an employee of an employer; and

(2) to inspect and investigate during regular working hours and at other reasonable times, and within reasonable limits and in a reasonable manner, any such place of employment and all pertinent conditions, structures, machines, apparatus, devices, equipment and materials therein, and to question privately any such employer, owner, operator, agent or employee.

Compliance officers represent OSHA and are expected to demonstrate their knowledge and expertise in the safety and health field in a courteous and professional manner. Prior to the inspection, the compliance officer becomes familiar with as many relevant facts as possible about the workplace, such as the inspection history of the establishment, the nature of the business, and the particular standards likely to apply. This preparation provides the compliance officer with a knowledge of the potential hazards and industrial processes that may be encountered and aids in selecting appropriate personal protective equipment for protection against these hazards during the inspections.

When the OSHA compliance officer arrives at the establishment, he or she displays official credentials and asks to meet an appropriate employer representative. Employers should always ask to see the compliance officer's credentials.

An OSHA compliance officer carries U.S. Department of Labor credentials bearing his or her photograph and a serial number that can be verified by calling the nearest OSHA office.

OSHA compliance officers may not collect a penalty at the time of inspection or promote the sale of a product or service at any time; anyone who attempts to do so is not an OSHA compliance officer and the FBI or local law enforcement officials should be contacted immediately.

## **Opening Conference**

In the opening conference the compliance officer explains how the establishment was selected and determines whether it will be subject to a comprehensive safety inspection. The compliance officer also will ascertain whether an OSHA-funded consultation program is in progress or whether the facility is pursuing or has received an inspection exemption; if so, the inspection may be terminated.

The compliance officer explains the purpose of the visit, the scope of the inspection, and the standards that apply. The employer may be given copies of applicable safety and health standards. The employer will be given a copy of any employee complaint that may be involved (with the employee's name deleted, if the employee has requested anonymity).

The employer is asked to select an employer representative to accompany the compliance officer during the inspection.

An authorized employee representative also is given the opportunity to attend the opening conference and to accompany the compliance officer during the inspection. If the employees are represented by a recognized bargaining agent, the agent ordinarily will designate the employee representative to accompany the compliance officer. Similarly, if there is a plant safety committee, the employee members of that committee will designate the employee representative (in the absence of a recognized bargaining agent). Where neither employee group exists, the employee representative may be selected by the employees themselves, or the compliance officer may determine if any employee suitably represents the interest of other employees. Under no circumstances may the employer select the employee representative for the walk-around.

The Act does not require that there be an employee representative for each inspection. However, where there is no authorized employee representative, the compliance officer must consult with a reasonable number of employees concerning safety and health matters in the workplace.

## **Walk Through Inspection**

After the opening conference, the compliance officer and accompanying representatives proceed through the establishment to inspect work areas for safety or health hazards. The compliance officer determines the route and duration of the inspection. While talking with employees, the compliance officer makes every effort to minimize any work interruptions. The compliance officer observes safety and health conditions and practices; consults with employees privately, if necessary; takes photos and instruments readings; examines records, collects air samples, measures noise levels, surveys existing engineering controls; and monitors employee exposure to toxic fumes, gases, and dusts.

An inspection tour may cover part or all of an establishment, even if the inspection resulted from a specific complaint, fatality or catastrophe.

Trade secrets observed by the compliance officer will be kept confidential. An inspector who releases confidential information without authorization is subject to a \$1,000 fine and/or one year in jail.

Employees are consulted during the inspection tour. The compliance officer may stop and question workers, in private, about safety and health conditions and practices in their workplaces. Each employee is protected, under the Act, from discrimination for exercising his or her safety and health rights.

OSHA places special importance on posting and record keeping. The compliance officer will inspect records of deaths, injuries and illnesses, which the employer is required to keep. He or she will check to see that a copy of the totals from the last page of OSHA No. 200 has been posted and that the OSHA workplace poster (OSHA 2203), which explains employees' safety and health rights, is prominently displayed. Where records of employee exposure to toxic substances and harmful physical agents have been required, they are also examined for compliance with the record keeping requirements.

The compliance officer also explains that while the following items are not required for all OSHA standards, they should be recorded to accurately monitor and assess occupational hazards.

(1) Initial and periodic monitoring, including the date of measurement, for operations involving exposure; sampling and analytical methods used and evidence of their accuracy; number, duration, and results of samples taken; type of respiratory protective devices worn; and name, social security number, and the results of all employee exposure measurements. This record should be kept for 30 years.

(2) Employee physical/medical examinations, including the name and social security number of the employee; physician's written opinions; any employee medical complaints related to exposure to toxic substances; and information provided to the examining physician. These records should be maintained for the duration of employment plus 30 years.

(3) Employee Training. These records should be kept for one year beyond the last date of employment of that employee.

The compliance officer also explains the requirements of the Hazard Communication Standard. Under that rule, manufacturing employers must establish a written, comprehensive hazard communication program which includes provisions for container labeling, material safety data sheets, and an employee training program. The program must contain a list of the hazardous chemicals in each work area and the means the employer will use to inform employees of the hazards of non-routine tasks. Some State-Plan States requires additional information be included on the list of hazardous chemicals.

During the course of the inspection the compliance officer will point out to the employer any unsafe or unhealthful working conditions observed. At the same time, the compliance officer will discuss possible corrective action if the employer so desires.

Some apparent violations detected by the compliance officer can be corrected immediately.

When they are corrected on the spot the compliance officer records those corrections to help in judging the employer's good faith in compliance. Even though corrected, the apparent violations may still serve as the basis for a citation and, if appropriate, a notice of proposed penalty.

An inspection tour may cover part or all of an establishment even if the inspection resulted from a specific complaint, fatality or catastrophe.

## **Closing Conference**

After the inspection tour, a closing conference is held between the compliance officer, the employer, and the employer's representative. It is a time for free discussion of problems and needs; a time for frank questions and answers.

The compliance officer will also give the employer a copy of *Employer Rights and Responsibilities Following an OSHA Inspection*, and then briefly discuss the information in the booklet and answer any questions.

The compliance officer discusses with the employer all unsafe or unhealthful conditions observed during the inspection and indicates all apparent violations for which a citation and a proposed penalty may be issued or recommended. The employer is also informed of appeal rights. The compliance officer will not indicate any specific proposed penalties. Only the OSHA area director has that authority and only after having received a full report.

During the closing conference, the employer may wish to produce records to show compliance efforts and to provide information which can help OSHA determine how much time may be needed to abate an alleged violation.

When appropriate, more than one closing conference may be held. This is usually necessary when health hazards are being evaluated or when laboratory reports are required.

A closing discussion will be held with the employees or their representative if requested, to discuss matters of direct interest to employees. The employee's representative may be present at the closing conference.

The compliance officer explains that OSHA area offices are full-service resource centers that inform the public of OSHA activities and programs, such as new or revised standards, including

the status of proposed standards, comment periods, or public hearings; provide technical experts and materials, including courses offered at the OSHA Training Institute; refer callers to other

agencies and professional organizations as appropriate; and promote effective safety and health programs through voluntary protection programs and expanded employer abatement assistance efforts.

If an employee representative does not participate in either the opening or the closing conference held with the employer, a separate discussion is held with the employee representative, if requested, to discuss matters of direct interest to employees.

## **Inspection Results**

After the compliance officer reports findings, the area director determines if citations will be issued and if penalties will be proposed.

## **Citations**

Citations inform the employer and employees of the regulations and standards alleged to have been violated and of the proposed length of time set for their abatement. The employer will receive citations and notices of proposed penalties by certified mail. The employer must post a copy of each citation at or near the place a violation occurred for three days or until the violation is abated, whichever is longer.

## **Penalties** (In Accordance with Section 17 of the Act)

In order to determine the amount of a penalty, the violation itself must first be categorized. Violations can be classified as serious, other-than-serious, willful, repeat, or failure to abate. Once a violation is classified, the severity of the violation and the probability of an injury or illness occurring as a result of the violation may be considered in order to determine a “base penalty” amount. The base penalty may then be adjusted downward when factors such as size, good faith, and violation history of the employer are considered.

The adjustment factors used by OSHA include:

**Size Adjustment Factor**-The base penalty will be reduced 60 percent for employers with one to 25 workers; 40 percent for employers with 26 to 100 workers; and 20 percent for employers with 101 to 250 workers. Employers with more than 250 workers will not get a penalty reduction for size.

**Good Faith Adjustment**-There may be up to an additional 25 percent reduction for evidence that the employer is making a good faith effort to provide good workplace safety and health. In

order to qualify for the full 25 percent “good faith” reduction, an employer must have a written and implemented safety and health program such as is described in OSHA’s voluntary “Safety and Health Management Guidelines,” and the program should include programs required under the OSHA standards such as Hazard Communication, Lockout/Tagout, or safety and health

programs for construction required in 1926.20.

**History Adjustment-**An additional 10 percent reduction can be given if the employer has not been cited by OSHA for any serious, willful, or repeat violations in the past three years.

The Act reads:

## **Penalties**

Sec. 17:

Any employer who willfully or repeatedly violates the requirements of section 5 of this Act, any standard, rule, or order promulgated pursuant to this Act, may be assessed a civil penalty of not more than \$70,000 for each violation, but not less than \$5,000 for each willful violation.

Any employer who has received a citation for a serious violation of the requirements of section 5 of this Act, of any standard, rule, or order promulgated pursuant to section 6 of this Act, or of any regulations prescribed pursuant to this Act, will be assessed a civil penalty of up to \$7,000 for each such violation.

Any employer who has received a citation for a violation of the requirements of section 5 of this Act, of any standard, rule, or order promulgated pursuant to section 6 of this Act, or of regulations prescribed pursuant to this Act, and such violation is specifically determined not to be of a serious nature, may be assessed a civil penalty of up to \$7,000 for each such violation.

Any employer who fails to correct a violation for which a citation has been issued under section 9 (a) within the period permitted for its correction (the period will not begin to run until the date of the final order of the Commission in the case of any review proceeding under section 10 initiated by the employer in good faith and solely for delay or avoidance of penalties), may be assessed a civil penalty of not more than \$7,000 for each day during which such failure or violation continues.

Any employer who willfully violates any standard, rule, or order promulgated pursuant to section 6 of this Act, or of any regulations prescribed pursuant to this Act, and that violation caused death to any employee, will, upon conviction, be punished by a fine of not more than \$10,000 or by imprisonment for not more than six months, or by both; except that if the conviction is for a violation committed after a first conviction of such person, punishment will be by a fine of not more than \$20,000 or by imprisonment for not more than one year, or by both.

Any person who gives advance notice of any inspection to be conducted under this Act, without authority from the Secretary or his designees will, upon conviction, be punished by a fine of not

more than \$1,000 or by imprisonment for not more than six months, or both.

Whoever knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to this Act will, upon conviction, be punished by a fine of not more than \$10,000 or by imprisonment for not more than six months, or both.

Any employer who violates any of the posting requirements, as prescribed under the provisions of this Act will be assessed a civil penalty of up to \$7,000 for each violation.

A serious violation will be deemed to exist in a place of employment if there is a substantial probability that death or serious physical harm could result from a condition which exists, or from one or more practices, means, methods, operations, or processes which have been adopted or are in use, in such place of employment unless the employer did not, and could not with the exercise of reasonable diligence, have know of the presence of the violation.

## **Appeals by Employers**

When issued a citation and notice of proposed penalty, an employer may request an informal meeting with OSHA's area director to discuss the case. Employee representatives may be invited to attend the meeting. The area director is authorized to enter into settlement agreements that revise citations and penalties to avoid prolonged legal disputes and that result in quicker hazard abatement.

## **Informal Conference and Settlement**

Before deciding whether to file a Notice of Contest, you may request an Informal Conference with the OSHA Area Director to discuss the Citation and Notification of Penalty. You may use this opportunity to:

- (1) Obtain a better explanation of the violations cited.
- (2) Obtain a more complete understanding of the specific standards, that apply.
- (3) Negotiate and enter into an Informal Settlement Agreement.
- (4) Discuss ways to correct the violations.
- (5) Discuss problems with the abatement dates.
- (6) Discuss problems concerning employee safety practices.
- (7) Resolve disputed citations and penalties.
- (8) Obtain answers to any other questions you may have.

You are encouraged to take advantage of the opportunity to have an Informal Conference if you foresee any difficulties in complying with any part of the citation. Please note; however, that an



Informal Conference will neither extend the 15 working day Notice of Contest period nor take the place of the filing of a written notice if you desire to contest. Employee representative(s) have the right to participate in any Informal Conference or negotiations between the Regional Administrator or Area Director and the employer.

If you agree that the cited violations do exist, but you have a valid reason for wishing to extend the abatement date(s), you may discuss this with the Area Director in an Informal Conference. He or she may issue an amended citation, which changes the abatement date prior to the expiration of the 15 working day period without your filing a Notice of Contest. If you do not contest within 15 days, your citation will become a final order. After this occurs, the OSHA Area Director may continue to provide you with information and assistance on how to abate the hazards cited in your citation. However, he or she may not amend or change any citation or penalty, which has become a final order. The Area Director may only advise you on abatement methods or extend the time you need to abate the violation.

## **How to Contest**

If you wish to contest any portion of your citation, a written Notice of Contest must be submitted within 15 working days after receipt of the citation and notice of penalty even if you have orally stated your disagreement with a citation, penalty or abatement date during a telephone conversation or an informal conference.

The Notice of Contest must clearly state what is being contested...the citation, the penalty, the abatement date, or any combination of these factors. In addition, the notice should state whether all the violations on the citation, or just specific violations, are being contested. (For example, "I wish to contest the citation and penalty proposed for items 3 and 4 of the citation issued December 30, 1997.")

Your contest must be made in good faith. A contest filed solely to avoid your responsibilities for abatement or payment of penalties will not be considered a good-faith contest.

A proper contest of any item suspends your obligation to abate and pay until the item contested has been judicially resolved. If you contest only the penalty, you must still correct all violations by the dates indicated on the citation. If only some items on the citation are contested, the other

items must be corrected by the abatement date and the corresponding penalties paid within 15 days of notification.

After you file a Notice of Contest, your case is officially in litigation. If you wish to settle the case, you may contact the OSHA Area Director who will give you the name of the attorney for OSHA handling your case. All settlements of contested cases are negotiated between you and the attorney according to the rules of procedure of the Occupational Safety and Health Review

Commission.

# Lantz Construction Company      Personal Protective Equipment

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## I.      PURPOSE

This section is designed to provide guidance on the use of Personal Protective Equipment (PPE) most commonly used for protection of the head, eyes, ears, and feet.

## II.     DEFINITIONS

Personal Protective Equipment (PPE) - Includes devices and clothing designed to be worn or used for the protection or safety of an individual while in potentially hazardous areas or performing potentially hazardous operations.

## III.    REFERENCES

29 CFR 1926, Subpart E	Personal Protective and Life Saving Equipment
29 CFR 1910, Subpart I	Personal Protective Equipment
ANSI Z89.1-1969	Safety Requirements for Industrial Head Protection
ANSI Z87.1-1968	Eye and face protection
ANSI Z41-1991	Men ' s safety-toe footwear

## IV.    PROCEDURES

### General Requirements

All attempts will be made to protect personnel from job site hazards by controlling or eliminating the hazards. Personal Protective Equipment (PPE) should not be used as a substitute for engineering controls and/or work practices. The PPE should be used in conjunction with these controls to provide for employee safety and health in the workplace. The basic element of any management program for PPE is an in-depth evaluation of the equipment needed to protect against the hazards at the workplace.

Lantz Construction Company will evaluate Company practices and exposures, and set standard operating procedures for training personnel regarding the protective limitations of PPE, and its proper use and maintenance. If hazards cannot be controlled or eliminated completely, then the last attempt at protecting employees would be the use of personal protective equipment. These requirements also apply to supervisors and management personnel when visiting work sites and **ALL** visitors while they are in hazardous areas.

Retraining will be conducted when the workplace changes making the earlier training obsolete, the type of PPE changes or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding.

### Hazard Assessment

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Assessment of the workplace will be conducted by the project superintendent to determine if hazards that require the use of PPE are present, or are likely to be present. Specific hazards or the likelihood of hazards occur that cannot always be engineered out or controlled by work practices. In such cases the project superintendent must select the PPE most suitable for protection from the identified hazards.

## **Head Protection**

Prevention of head injuries is a very important aspect of Lantz Construction Company's Safety and Health Program. Head injuries are most frequently caused by falling or flying objects, which may occur when working below other employees who are using tools and materials that could fall. Head injuries are also caused by bumping the head against a fixed object. Head protection, in the form of protective hard hats, must do two things (i) resist penetration, and (ii) absorb the shock of a blow. This is accomplished by making the shell of the hat of a material hard enough to resist the blow, and by utilizing a shock-absorbing lining composed of headband and crown straps to keep the shell away from the wearer's skull. Protective hats are also used to protect against electrical shock.

All project sites have been designated as hard hat areas and require their use at all times. Employees will strictly follow these instructions, failure to do so may result in disciplinary action that may include termination.

## **Selection**

Each type and class of head protectors is intended to provide protection against specific hazardous conditions. An understanding of these conditions will help in selecting the right helmet/hard hat for the particular situation.

Protective helmets are made in the following types and classes:

- ◆ Type 1- Helmets with full brim, not less than 13 inches wide.
- ◆ Type 2- Brim-less helmets with a peak extending forward from the crown.

For industrial purposes, three classes are recognized:

- ◆ Class A - General service, limited voltage protection.
- ◆ Class B - Utility service, high voltage helmets.
- ◆ Class C - Special service, no voltage protection.

**Class A** - helmets are intended for protection against impact hazards. They should be used in industrial facilities where potential head injury exists.

**Class B** - utility service helmets protect the wearer's head from impact and penetration by falling or flying objects and from high-voltage shock and burn.

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**Class C** - helmets are designed specifically for lightweight comfort and impact protection. This class is usually manufactured from aluminum and offers no dielectric protection. Class C helmets are used where there is no danger from electrical hazards or corrosion. They are also used where there is a possibility of bumping the head against a fixed object. Materials used in helmets should be water-resistant.

Each helmet consists essentially of a shell and suspension. Ventilation is provided by a space between the headband and the shell. Each helmet should be accompanied by instructions explaining proper method of adjusting and replacing the suspension and headband. Each wearer should be able to identify the type of helmet by looking inside the shell for the manufacturer, American National Standards Institute (ANSI) designation and class.

Headbands are adjustable in various size increments. When the headband is adjusted to the right size, it provides sufficient clearance between the shell and the headband. The removable or replaceable sweatband should cover at least the forehead portion of the headband. The shell should be of one-piece, seamless construction and design to resist the impact of a blow from falling material. The internal cradle of the headband and sweatband forms the suspension. Any part that comes into contact with the wearer's head must not be irritating to normal skin.

Lantz Construction Company does not allow employee-owned PPE to be used on job sites.

## **Inspection and Maintenance**

It is the employee's responsibility to inspect the hard hat before each use. The hard hat should be turned in for replacement if:

- Tears or cuts appear in the strap or webbing of the suspension.
- Cracks, gouges or concentric rings appear in the shell.
- The shell becomes brittle.
- The shiny surface has turned chalky or dull.

Manufacturers should be consulted with regard to paint or cleaning materials for their helmets because some paints and thinners may damage the shell and reduce the level of protection by physically weakening it or negating electrical resistance.

A common method of cleaning shells is dipping the helmet in water containing a good detergent for at least a minute. Shells should be scrubbed and rinsed in clear water. After rinsing, the shell should be visually inspected for any signs of dents, cracks, penetration, or other damage that might reduce the degree of safety originally provided.

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Helmets should not be stored or carried on the rear-window shelf of an automobile because sunlight and extreme heat may adversely affect the degree of protection.

Hard hats must always be replaced when they have withstood an impact or penetration.

## **Eye and Face Protection**

The Occupational Safety and Health Administration (OSHA) require eye and face protective equipment where there is a reasonable probability of preventing injury when such equipment is used. Lantz Construction Company provides a type of protector suitable for specific work to be performed and employees must use the protectors.

Suitable eye and face protectors are provided to protect employees from conditions such as, but not limited to, flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, potentially injurious light radiation, or a combination of these. Such equipment includes safety glasses, chemical goggles, face shields, welding goggles, and welding face shields. Protectors must meet the following minimum requirements:

- Provide adequate protection against the particular hazards for which they are designed.
- Is reasonably comfortable when worn under the designated conditions.
- Fit snugly without interfering with the movements or vision of the wearer.
- Be durable.
- Be easily cleanable and capable of being disinfected.
- Be kept clean and in good repair.
- Every protector will be distinctly marked to facilitate identification only of the manufacturer.

Every employee should use equipment with filter lenses that have a shade number appropriate for the particular work in which they are engaged, such as welding and cutting operations, for protection from injurious light radiation.

<i>Welding Operation</i>	<i>Shade No.</i>
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# Lantz Construction Company      Personal Protective Equipment

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Shielded metal-arc welding--1/16, 3/32, 1/8, 5/32-inch electrodes	10
Gas-shielded arc welding (nonferrous)--1/16, 3/32, 1/8, 5/32-inch electrodes	11
Gas-shielded arc welding (ferrous)--1/16, 3/32, 1/8, 5/32-inch electrodes	12
Shielded metal-arc welding: 3/16, 7/32, 1/4-      inch electrodes 5/16, 3/8-inch electrodes	12 14
Atomic hydrogen welding	10-14
Carbon arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, 6 inches and over	5 or 6
Gas welding (light) up to 1/8 inch	4 or 5
Gas welding (medium) 1/8 inch to 2 inch	5 or 6
Gas welding (heavy) 2 inch and over	6 or 8

All project sites require the use of safety eyewear at all times. Employees will strictly follow these instructions, failure to do so may result in disciplinary action that may include termination.

## Selection

Each eye, face, or face-and-eye protector is designed for a particular hazard. In selecting the protector consideration should be given to the kind and degree of hazard, and the protector should be selected on that basis. Where a choice of protectors is available and the degree of protection required is not an important issue, worker comfort may be a deciding factor.

A written hazard assessment is an important part of any PPE assessment. Most PPE required jobs have been assessed and signed by the assessor.

# **Lantz Construction Company      Personal Protective Equipment**

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Persons using corrective spectacles and those who are required by OSHA to wear eye protection must wear face shields, goggles, or spectacles of one of the following types:

- ◆ Spectacles with corrective lenses providing optical correction.
- ◆ Goggles worn over corrective spectacles without disturbing the adjustment of the spectacles.
- ◆ Goggles that incorporate corrective lenses mounted behind the protective lenses.

Goggles are manufactured in several styles for specific uses such as protecting against dusts and splashes, and in chippers, welders, and cutters models.

Safety spectacles require special frames. Combinations of normal “street clothes” frames with safety lenses are not in compliance.

Many hard hat and non-rigid helmets are designed with integrated face and eye protective equipment.

Design, construction, tests, and use of eye and face protection purchased must be in accordance with ANSI Z87.1

## **Fit**

Someone skilled in the procedure should do fitting of goggles and safety spectacles. Only qualified optical personnel should fit prescription safety spectacles.

Selected PPE must be fitted to each affected employee.

## **Inspection and Maintenance**

It is essential that the lenses of eye protectors be kept clean. Continuous vision through dirty lenses can cause eye strain - often an excuse for not wearing the eye protectors.

Daily inspection and cleaning of the eye protector with soap and hot water, or with a cleaning solution and tissue, is recommended.

Safety eyewear that has been previously used should be disinfected before being issued to another employee.



# Lantz Construction Company      Personal Protective Equipment

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## **Ear Protection**

Exposure to high noise can cause hearing loss impairment. It can create physical and psychological stress. There is no cure for noise-induced hearing loss, so the prevention of excessive noise exposure is the best way to avoid this type of hearing damage. Specifically designed protection is required, depending on the type of noise encountered and the auditory condition of employee.

A professional should individually fit pre-formed or molded earplugs. When properly inserted, they work as well as most molded earplugs.

Some earplugs are disposable, to be used one time and then thrown away. The non-disposable type should be cleaned after each use for proper protection.

Earmuffs need to make a perfect seal around the ear to be effective. Glasses, long sideburns, long hair, and facial movements, such as chewing, can reduce protection.

Personal Protective Equipment (PPE) is provided by Lantz Construction Company, and must be used if feasible engineering controls fail to reduce sound levels to the levels specified by 29 CFR 1926.52 - Occupational Noise Exposure.

Minimum hearing protection requirements should include the following:

- ◆ Hearing protection is available to all employees and must be worn in areas where the eight-hour Time-Weighted Average (TWA) sound level equals or exceeds 85 decibels, A-weighted (dBA).
- ◆ The employee's supervisor should enforce the wearing of hearing protection by all affected employees.
- ◆ Several kinds of protectors are available to employees, thus allowing for personal preference and proper fit.
- ◆ All persons entering posted areas are required to wear hearing protection in accordance with the posted warning.

## **Hand, Wrist and Arm Protection**

The prevention of hand, wrist and arm injuries is very important to Lantz Construction Company. When hazards cannot be controlled completely or eliminated entirely, the use of personal protective equipment may be required.

Employees of Lantz Construction Company are encouraged to wear the appropriate protection for their hands, wrist and arms during their day to day activities. At a minimum, the following guidelines shall be followed:

TASK	<b><u>REQUIRED</u></b> PERSONAL PROTECTIVE EQUIPMENT	RECOMMENDED
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# Lantz Construction Company      Personal Protective Equipment

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Demolition work (except steel)	Leather or leather palm glove	leather palm glove w/ safety cuff
Demolition work (steel)	Leather or leather palm glove with safety cuff	Kevlar <sup>®</sup> & leather w/ safety cuff
Concrete work	---	14" PVC coated or Nitrile
Handling steel roof panels	Leather or leather palm glove with safety cuff	Kevlar <sup>®</sup> & leather w/ safety cuff
Welding (Stick & ARC)	14" leather welding gloves	---
Wood working (non-finishing)	---	Leather or leather palm glove
* This list does not encompass every task but addresses some of the higher risk jobs		

## **Foot and Leg Protection**

For protection of feet and legs from falling or rolling objects, sharp objects, molten metal, hot surfaces, and wet slippery surfaces, workers should use appropriate foot guard, safety shoes or boots, and leggings. Leggings protect the lower leg and feet from molten metal or welding sparks.

Aluminum alloy, fiberglass, or galvanized steel foot guards can be worn over regular work shoes.

Safety shoes should be sturdy and have an impact-resistant toe. In some instances metal insoles protect against puncture wounds. **All employees are required to wear ANSI approved steel toe boots at all times.** Safety shoes must conform to ANSI Z41-1991 standards. The inner lining of safety shoes are stamped with ANSI Z41 identification mark.

## **V.      TRAINING**

Lantz Construction Company will provide training programs at the safety orientation, through Toolbox Safety Talks, and through special training programs.

All PPE training will be documented.

## **VI.     CHECKLIST ITEMS**

All attempts will be made to protect personnel from job hazards by controlling or eliminating the hazards whenever possible.

If hazards cannot be controlled or eliminated, the next attempt at protecting personnel from job hazards will be to limit their exposure to those hazards by adjusting work schedules or tasks.

If hazards cannot be controlled or eliminated and employee schedules cannot be adjusted, then the last attempt at protecting employees should be the use of personal protective equipment.

# **Lantz Construction Company      Personal Protective Equipment**

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The basic personal protective equipment required for all fieldwork include a hard hat, safety glasses, and protective steel toed boots.

Confirm that PPE is ANSI approved and appropriate for designation and class: check the fit, conduct inspection of the condition, and ensure maintenance.

Ear protection: Required when engineering controls or management controls fail to maintain hazard at acceptable levels.

Foot and leg protection: Safety Shoes must conform to ANSI Z41-1991 standards.

## I PURPOSE

This section provides policies and procedures that are necessary for the use, maintenance and storage of respirators and the practical safeguarding of employees involved in using respirators during construction work.

## II DEFINITIONS

Air-Purifying Respirator - A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Atmosphere-Supplying Respirator - A respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Canister or Cartridge - A container with a filter, sorbent, or catalyst, or combination of these items, which removes specific constraints from the air passed through the container.

Employee Exposure - Exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

End-of-Service-Life Indicator (ESLI) - A system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Escape-Only Respiratory - A respirator intended to be used only for emergency exit.

Fit Factor - A quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit Test - The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit test (QLFT) and Quantitative fit test (QNFT) ).

High Efficiency Particulate Air (HEPA) Filter - An atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

IDLH - Immediately Dangerous to Life and Health.

Negative Pressure Respirator (tight fitting) - A respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen Deficient Atmosphere - An atmosphere with an oxygen content below 19.5% by volume.

PA - Program Administrator

Physician or Other Licensed Health Care Professional (PLHCP) - An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him/her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by 29 CFR 1910.134(e) *Medical Evaluation*.

Positive Pressure Respirator - A respirator in which the pressure inside the respirator inlet covering exceeds the ambient air pressure outside the respirator.

Powered Air-Purifying Respirator (PAPR) - An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Qualitative Fit Test (QLFT) - A pass/fail test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative Fit Test (QNFT) - An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Self-Contained Breathing Apparatus - An atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Service Life - The period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

Supply-Air Respirator (Sar) or Airline Respirator - An atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

User Seal check - An action conducted by the respirator user to determine if the respirator is properly seated on the face.

## III REFERENCES

29 CFR 1910.134	Respiratory Protection
42 CFR Part 84	Respiratory Protective Devices
DHHS (NIOSH) Pub. No. 87-116	NIOSH Guide to Respiratory Protection.

## IV PROCEDURES

### **Program Administration**

Management will assign responsibility and authority for the administration of Lantz Construction Company Respiratory Protection Program (RPP) to a suitably trained employee titled as the Program Administrator (PA).

It is the responsibility of the PA to ensure that all work activities are assessed for compliance with Occupational Safety and Health Administration (OSHA) guidelines for respiratory protection. Where possible, the PA will make recommendations to management for engineering or administrative controls to correct excessive exposures where they occur. Only when such administrative or engineering controls are not feasible or while they are being instituted will Lantz Construction Company turn to the use of respirators for protection.

Respiratory equipment is provided to all affected employees at no cost.

A further responsibility of the Program Administrator is to ensure that those employees, who are expected to use respirators, either routinely or in the event of an emergency, are properly trained in accordance with this Program.

### **Written Procedures**

Written procedures have been established and adopted by Lantz Construction Company for the selection and use of respirators for every job function requiring respiratory protection, but for which administrative or engineering controls are not feasible. The following topics are covered in this program:

- A. Guidelines for medical surveillance and evaluation of workers.
- B. Guidance for selection of the approved respirator(s) for protection against particular hazards:
- C. Detailed instructions for training workers in proper use of the respirator(s) assigned to them, including respirator fit testing:
- D. Detailed maintenance procedures for:

- cleaning and disinfecting
  - drying
  - inspection
  - repair or replacement of worn or defective parts
  - storage
- E. Administrative procedures for:
- Purchase of approved or accepted respirators.
  - Control of inventory of spare parts, new respirators, and respirators ready for re-issue after maintenance.
  - Issuance of respirators appropriate for the specific hazard(s).
  - Guidance of supervisory personnel in continued surveillance of respirator use.
- F. Instructions for respirator use during emergencies.
- G. Procedures for evaluating the effectiveness of the respirator program.

At a minimum Lantz Construction Company will follow guidelines as provided in Appendix A of 29 CFR 1910.134 (Fit Testing Procedures). However, it is our intention to make maximum use of instructional guidelines provided to us by the manufacturers of the respirators we purchase, particularly in the case of fit testing procedures. Lantz Construction Company will adopt the manufacturer's recommendations verbatim.

## **Medical Surveillance**

It is the policy of Lantz Construction Company to ensure that all employees are physically capable of performing the functions required by their jobs. Toward this end, we have adopted the following policies relative to the medical surveillance of employees who are expected to use respiratory protective equipment.

No employee will be assigned to a task that requires the use of a respirator, unless it has been determined that the person is physically able to perform under such conditions.

A physician will determine what physiological and psychological conditions are pertinent for the wearing of different types of respirators. The medical evaluation will be performed in accordance with OSHA and NIOSH guidelines.

The examining physician will determine the suitability of the worker to use respiratory protection. A certificate of medical suitability, signed by the examining physician, will be included in the employee's confidential permanent record.

## Medical Evaluation

The following are the minimum requirements for a medical evaluation to determine the employee's ability to use a respirator.

1. Lantz Construction Company will provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace.
2. Lantz Construction Company may discontinue an employee's medical evaluations when the employee is no longer required to use a respirator.
3. Lantz Construction Company will identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire.
4. The medical evaluation will obtain the information requested by the questionnaire in Sections 1 and 2, Part A of Appendix C.
5. Lantz Construction Company will ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions 1 thru 8 in Section 2, Part A of Appendix C or whose initial medical examination demonstrates the need for a follow-up medical examination.
6. The follow-up medical exam will include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.
7. The medical questionnaire and examination will be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire will be administered in a manner that ensures that the employee understands its contents.
8. Lantz Construction Company will provide the employee with an opportunity to discuss the questionnaire and examination results with the PLHCP.
9. The following information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee's ability to use a respirator:
  - A. The type and Weight of the respirator to be used by the employee;
  - B. The duration and frequency of respirator use (including use for rescue and escape).



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- C. The expected physical work effort.
  - D. Additional protective clothing and equipment to be worn.
  - E. Temperature and humidity extremes that may be encountered.
10. Any supplemental information provided previously to the PLHCP regarding an employee need not be provided for a subsequent medical evaluation if the information and the PLHCP remain the same.
11. The employer will provide the PLHCP with a copy of the written respiratory protection program and a copy of this section.

**Note:** If Lantz Construction Company replaces a PLHCP, Lantz Construction Company must ensure that the new PLHCP obtains this information, either by providing the documents directly to the PLHCP or having the documents transferred from the former PLHCP to the new PLHCP. However, OSHA does not expect employers to have employees medically reevaluated solely because a new PLHCP has been selected.

12. In determining the employee's ability to use a respirator, Lantz Construction Company will obtain a written recommendation regarding the employee's ability to use the respirator from the PLHCP. The recommendation will provide only the following information:
- A. Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace condition in which the respirator will be used, including whether or not the employee is medically able to use the respirator.
  - B. The need, if any for follow-up medical evaluations.
  - C. A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.
13. If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, the employer will provide a PAPR if the PLHCP's medical evaluation finds that the employee can use such a respirator; if a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the employer is no longer required to provide a PAPR.
14. At a minimum, Lantz Construction Company will provide additional medical evaluations for the following conditions:

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- A. An employee reports medical signs or symptoms that are related to ability to use a respirator.
- B. A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee needs to be reevaluated.
- C. Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation.
- D. A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in substantial increase in the physiological burden placed on an employee.

## **Respirator Selection**

### **1. General Requirements:**

- A. Respirators supplied by Lantz Construction Company will be NIOSH-certified respirators. Lantz Construction Company will evaluate the workplace for respiratory hazards, identify relevant workplace and user factors, and base respiratory selection on these factors. When evaluating respiratory hazards in the workplace, this evaluation will include a reasonable estimate of employee exposure to respiratory hazard(s) and identification of the contaminants chemical state and physical form. When the employee exposure can not be identified or estimated, the atmosphere will be considered IDLH.
- B. Respirators will be selected from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.
- C. Respirator will be selected and provide based on the respiratory hazards(s) to which the worker is exposed and workplace and user factors that affect respirator performance and reliability.
- D. All respirators selected must be NIOSH-certified and be use in compliance with the conditions of its certification.

### **2. Respirators for atmospheres that are not IDLH.**

- A. Respirator will be provided that will protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements under routine and reasonably foreseeable emergency situations.

B. For protection against gases and vapors:

1. The respirator will be an atmosphere-supplying respirator.
2. An air-purifying respirator which is equipped with an end-of-service-life indicator (ESLI).

C. For protection against particulates:

1. The respirator will be an atmosphere-supplying respirator.
2. An air-purifying respirator equipped with a filter certified by NIOSH under 30 CFR part 11 as a high efficiency particulate air (HEPA) filter or an air-purifying respirator equipped with a filter certified for particulates by NIOSH under 42 CFR part 84.
3. For contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers, an air-purifying respirator equipped with any filter certified for particulates by NIOSH.

3. Respirators for IDLH atmospheres:

A. The following respirators will be used by employees in IDLH atmospheres:

1. Full facepiece pressure demand SCBA certified by NIOSH for minimum service life of thirty minutes.
2. A combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

B. Respirators provided only for escape from IDLH atmospheres will be NIOSH-certified for escape from the atmosphere in which they will be used.

C. All oxygen-deficient atmospheres will be considered IDLH.

## **Fit Testing**

At a minimum Lantz Construction Company will follow guidelines as provided in Appendix A of 29 CFR 1910.134 (Fit Testing Procedures). However, it is our intention to make maximum use of instructional guidelines provided to us by the manufacturers of the respirators we

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purchase, particularly in the case of fit testing procedures. Lantz Construction Company will adopt the manufacturer's recommendations verbatim.

## **Inspection and Maintenance**

In order to ensure the highest levels of operating efficiency and effectiveness, all respiratory protective equipment will be routinely inspected for defects and cleanliness, in accordance with its frequency of use.

At a minimum, all respirators used in daily operations will be inspected before and after each use.

Equipment reserved for emergency use will be inspected on the first working day of each month.

Our respiratory program administrator will maintain inspection records for a minimum of three years. See Appendix B for Respirator Inspection Record Sheet.

Respirators, which show signs of wear or decay will be removed from service until such time as they can either, be repaired or replaced.

Employees cannot wear tight-fitting face pieces if the seal is broken because of facial hair, glasses, etc.

Lantz Construction Company requires that the respiratory protection maintenance program consist of at least the following:

- A. Inspection for defects (including a leak check).
- B. Routine cleaning and disinfecting.
- C. Repair and/or replacement as required.
- D. Proper and sanitary storage of equipment.

## **Inspection, Part Replacement, and Repair**

Each respirator will be inspected regularly before and after each use.

The user immediately prior to each use will inspect the respirator, to ensure that it is in proper working condition will inspect each respirator.

Routinely used air-purifying respirators should be checked as follows before and after each use:

- A. Examine the facepiece for:
  - 1. Excessive dirt.
  - 2. Cracks, tears, holes or physical distortion of shape from improper storage.

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3. Inflexibility of rubber facepiece (stretch and knead to restore flexibility).
  4. Cracked or badly scratched lenses in full facepieces.
  5. Incorrectly mounted full facepiece lenses, or broken or missing mounting clips.
  6. Cracked or broken air-purifying element holder(s), badly worn threads or missing gasket(s) if required.
- B. Examine the head straps or head harness for:
1. Breaks.
  2. Loss of Elasticity.
  3. Broken or malfunctioning buckles and attachments.
  4. Excessively worn serration's on head harness, which might permit slippage (full facepieces only).
- C. Examine the exhalation valve for the following after removing its cover:
1. Foreign material, such as detergent residue, dust particles or human hair under the valve seat.
  2. Cracks, tears or distortion in the valve body, particularly in the sealing surface.
  3. Improper insertion of the valve body in the facepiece.
  4. Cracks, breaks or chips in the valve body, particularly in the sealing surface.
  5. Missing or defective valve cover.
  6. Improper installation of the valve in the valve body.
- D. Examine the air-purifying element for:
1. Incorrect cartridge, canister or filter for the hazard.
  2. Incorrect installation, loose connections, missing or worn gasket or cross threading in the holder.
  3. Expired shelf life date on the cartridge or canister.
  4. Cracks or dents in the outside case of the filter, cartridge or canister, indicated by the absence of sealing material, tape, foil, etc., over the inlet.
- E. If the device has a corrugated breathing tube, examine it for:
1. Broken or missing end connectors.
  2. Missing or loose hose clamps.
  3. Deterioration, determined by stretching the tube and looking for cracks.
- F. Examine the harness of a front or back mounted gas mask for:
1. Damage or wear to the canister holder, which may prevent its being held in place.

2. Broken harness straps for fastening.

## **Storage**

Respirators will be stored in a manner that will protect them against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals.

Respirators will be stored to prevent distortion of rubber or other elastomeric parts. They will not be stored in such places as lockers and toolboxes unless they are protected from contamination, distortion, and damage.

## **V TRAINING**

Each respirator wearer will be provided formal annual training, which will include the topics, listed below:

1. Lantz Construction Company will ensure that each employee can demonstrate knowledge of at least the following:
  - A. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
  - B. What the limitations and capabilities of the respirator are.
  - C. How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
  - D. How to inspect, put on and remove, use, and check the seals of the respirator.
  - E. What the procedures are for maintenance and storage of the respirator.
  - F. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
  - G. The general requirements of this section.
2. The training will be conducted in a manner that is understandable to the employee.
3. Lantz Construction Company will provide the training prior to requiring the employee to use a respirator in the workplace.
4. When Lantz Construction Company is able to demonstrate that a new employee has received training within the last 12 months that addresses the elements specified in this section, it is not required to repeat such training provided that, the employee can demonstrate knowledge of these element(s). Previous training not repeated initially by Lantz Construction Company must be provided no later than 12 months from the date of the previous training.
5. Retraining will be administered annually, and when the following situations occur:

- A. Changes in the workplace or the type of respirator render previous training obsolete.
  - B. Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill.
  - C. Any other situation arises in which retraining appears necessary to ensure safe respirator use.
6. Employees who wear respirators when such use is not required by this section, will be provided the basic advisory information on respirators, as presented in Appendix D of this section.
7. Employees must leave the area to wash, change cartridges, or if they detect break-through or resistance.

## **VI RECORD KEEPING AND CERTIFICATION**

Training records on all such employees will be maintained by the Program Administrator, and updated as necessary.

Upon termination of a trained employee, that employee's training records will be maintained for the duration of employment plus thirty (30) years, as part of Lantz Construction Company's permanent business records.

### Training Records will include the following:

- A. Names of training attendants
- B. The dates of the training sessions.
- C. The contents or a summary of the training sessions.
- D. The Name and Signature of the person conducting training.

Records of medical evaluation must be retained for duration of employment plus 30 years and made available in accordance with 29 CFR 1910.1020.

Fit test records will be retained for respirator users until the next fit test is administered.

- A. The name or identification of the employee tested;
- B. Type of fit test performed;
- C. Specific make, model, style, and size of respirator tested;
- D. Date of test; and
- E. The pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTs.

A written copy of the current respirator program will be maintained by the Program Administrator and retained by the employer.

## **VII CHECKLIST ITEMS**

Management must assign a suitably trained employee as the Program Administrator (PA).

PA must assess all work activities to determine if respiratory protection is needed.

PA must evaluate written program and revise the written program at least annually.

Employer must select a PLHCP to perform medical evaluations.

Employer must provide copy of written respiratory protection program to PLHCP.

Medical evaluations must be completed before employee is fit-tested or required to use respirator.

Employer must provide questionnaire, Sections 1 and 2, Part A of Appendix C to employee.

Employee must complete questionnaire before visiting the PLHCP.

Employer must receive a written recommendation from PLHCP that employee is able to use respirator.

A sufficient number of respirator models and sizes must be provided to employee for their selection of the respirator that correctly fits.

All respirators provided must be NIOSH-certified.

All employees who wear respirators must be fit-tested on every respirator they wear.

Fit-test must be administered by a competent person who is knowledgeable in the OSHA requirements and manufacturing recommendations.

All respirators must be inspected regularly before and after each use.

**Information for Employees Using Respirators When Not Required in Accordance With 29 CFR 1910.134**



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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.

Date\_\_\_\_\_

Employees Printed Name\_\_\_\_\_

Employees Signature\_\_\_\_\_

**Purpose:**

It is the intent of Lantz Construction Company's Return-To-Work (RTW) Program to provide temporary modified-duty for employees who are partially disabled due to a work related illness or injury. Each department will attempt to accommodate employees who cannot perform the basic duties of their job. This policy provides guidelines for administering a modified duty program to limit the number of lost workdays an injured or ill employee may incur by providing meaningful work of a restricted or limited nature.

Lantz Construction Company shall make every effort to bring ill or injured employees back to work as long as this will not cause any harm to the employee, others, or company property. Lantz Construction Company shall strive to assist the employee to return to his or her former position, and to cooperate in the employee's rehabilitation.

**Scope:**

Lantz Construction Company will provide temporary transitional duty whenever possible for a period of up to (30) calendar days to determine the degree of improvement. An extension in excess of (30) days may be allowed on a case-by-case basis, when recovery is incomplete. Such extensions will be reviewed every (14) calendar days thereafter and modified work may continue to be provided in cases where improvement continues.

**Objectives:**

The objectives of Lantz Construction Company's Return-To-Work Program are to:

- Allow the employee to remain in the work force and resume productive employment as soon as possible.
- Enable the worker to gradually overcome medical restrictions through a transitional period of modified-duty or work reconditioning assignments.
- Comply with all applicable parts of the Americans with Disabilities Act (ADA) and with all appropriate parts of the Family and Medical Leave Act (FMLA).
- Comply with all applicable state laws.

**Type of Work:**

Lantz Construction Company will provide temporary transitional duty whenever possible and practical, and will cooperate in every way possible to provide regular duties on a limited basis, modified duty, and/or special assignments for the recovering employee. Whenever possible, attempts will be made to allow the employee to remain in his or her original classification or job function with modified duties.

Special assignments and/or modified duties in addition to regular duties will be determined by the Director of Safety and by the supervisor of the department in which the employee will be working after taking into consideration the employee's medical restrictions.

Lantz Construction Company maintains the right to assign employees on modified duty to any job within the facility that will not exceed their restrictions and they are capable of doing. Modified duties may not be desirable to the employee.

Employees on modified duty may be assigned to work on any shift at the discretion of the company. While modified duty employees may not be able to work or be assigned to work a full-time schedule, in no case shall modified duty employees work overtime.

Lantz Construction Company's Director of Safety will supervise all employees undergoing rehabilitation and/or modified duty. When these employees are assigned to their regular departments, they will report to the supervisor in that department under the direction of the Director of Safety. Employees undergoing rehabilitation who are not working in their regular departments will be given work assignments by the operations department with guidance from the Director of Safety.

On evening shifts, night shifts, and weekends, modification of job duties may be made at any time by the supervisor of the employee who has reported an injury.

**Program Extension:**

An extension in excess of up to (30) days may be allowed on a case-by-case basis, when recovery is incomplete. Such extensions will be reviewed every (14)

calendar days thereafter and modified work may continue to be provided in cases where improvement continues.

**Medically Unable to Report:**

Any person who is unable to report for work due to an injury or illness, whether that injury or illness occurred in the workplace or not, must check in with their superintendent at least (1) hour prior to the start of work. The injured employee may be asked to produce appropriate medical documentation on his or her condition to verify there has or has not been a change in their physical status as it affects returning to work. At the discretion of Lantz Construction Company the employee may be asked to see a physician that Lantz Construction Company designates.

**Compensation and Benefits:**

Restricted duty employees will be compensated at their current rate.

**Employee's Responsibilities:**

The employee shall be responsible to report all job-related injuries and any medical restrictions to the Director of Safety and to their immediate Supervisor. The employee shall keep the Director of Safety and their Supervisor informed of any change in job-related restrictions.

The employee shall adhere to all medical advice and directives as prescribed by the treating physician, nurse, or other medically qualified professional. The employer should question any medical directives which may not be clearly understood. Failure to adhere to any medical restrictions may result in disciplinary action

The employee shall not perform any activity which is not in accord with job-related restrictions, both on and off the job. If the employee feels that tasks have been assigned which violate these restrictions, he or she should immediately inform his or her Supervisor. Failure to adhere to any work-related medical restrictions may result in disciplinary action.

**Doctor's Appointments:**

Lantz Construction Company's notification policy regarding doctor's appointments will also apply to employees undergoing rehabilitation. If the employee requires follow-up treatment or a doctor's appointment which cannot be scheduled during his or her non-working time, Lantz Construction Company shall compensate the employee for any straight-time lost from work due to said treatment or appointment; provided that the employee must have given Lantz Construction Company sufficient and reasonable prior notice that such treatment or appointment could not be scheduled during non-working time, in which case Lantz Construction Company shall have the right to attempt to change the employee's treatment or appointment to non-working time and, if able to do so, the employee shall not be entitled to compensation if the employee chooses nevertheless to keep the treatment or appointment on working time.

**Failure to Participate:**

Employees who are assigned to modified duty are expected to keep medical appointments and participate in follow-up rehabilitation treatment as necessary. Failure of the employee to participate in medical and rehabilitation treatment may be considered a violation of work rules and may result in disciplinary action.

**Medical Reevaluation:**

Employees who have sustained a lost time accident shall be re-evaluated by a company designated physician within (7) days of their last examination to determine whether their modified duty status should be continued.

**Supervisor's Responsibilities:**

The Supervisor for the area that the injured employee is assigned for modified duty shall ensure that the employee is complying with job-related restrictions as noted on the modified duty form.

Supervisors directing modified duty employees shall assign those employees to jobs which can accommodate their restrictions. If no jobs are available within your department, contact the Director of Safety to discuss options or arrange for departmental transfer.

Each supervisor should compile and maintain a list of departmental job duties that meet light duty requirements. This list should be updated yearly and a copy given to all superintendents.

**Program Coordination:**

The Director of Safety will coordinate the Return-To-Work Program. This includes the responsibility to review and update the program as needed to ensure that it meets the needs of Lantz Construction Company and its employees.

Decisions regarding the appropriateness of modified duty and contacts with the affected employee, the employee's supervisor, labor representatives, and medical personal shall be made by the Director of Safety and operations management.

The Director of Safety and or operations management will arrange for temporary work assignment for modified duty employees where no appropriate work is available within the employee's regular department.

The Director of Safety will be the primary contact with all physicians and medical professionals, and shall provide information on an injured employee's current job description, the modified duty policy, and the types of modified duty which are available.

The Director of Safety will also provide such physicians with periodic updates and any change of status relating to the modified duty program. If additional information is requested by medical professionals, such as job descriptions for a specific ill or injured employee, the Director of Safety shall provide such additional information.

The Director of Safety and or Workman's Compensation representative shall schedule all employees' medical appointments as necessary, and keep all necessary and appropriate records.

**I POLICY**

During conventional roofing/flooring operations, it is the policy of Lantz Construction Company, for employees who are conducting operations on any (roof/floor) with a greater than 4/12 pitch be protected from falling by the use Personal Fall Arrest System, Guardrails, Slide-Guards, Scaffolding or Safety Nets.

**II PROCEDURES**

The Project Superintendent will be responsible for the preparation and implementation of the Roof/Floor plan.

The Project Superintendent will notify the Safety Director at least 1 week prior to the start date of roofing operations.

A copy of this Roofing/Floor Plan will be available for review at all times on the project site.

Employees will not be allowed to work underneath areas where roofing operations are being preformed.

**Protection from Falling Objects**

When employees are potentially exposed to falling objects, in addition to wearing hard hats, each employee will be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toe boards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy or massive to be contained or deflected by any of the above-listed measures, or the above listed protections are impractical, Lantz Construction Company will place these objects away from the edge of the surface from which they could fall and will secure those materials as necessary to prevent their falling.

Where there is a danger of tools, materials, or equipment falling from the work surface/ location and striking employees, sub-contractors or by-standers below, the following provisions apply:

The area below the working surface/location to which objects can fall will have a physical barricade and appropriate signage applied to indicate the danger of falling objects. No person will be permitted to enter this barricaded area without first obtaining the superintendent's approval. This would include but is not limited too employees, sub-contractors, by-standers or owners.

All employees involved in the Roof/Floor Plan will read and sign the plan before beginning

roofing/flooring operations.

Only employees engaged in and those essential to the roofing/flooring operation will be allowed within the work area.

Mechanical equipment will not be used or stored in areas where roofing/flooring operations are being utilized.

All skylights and roof openings will have covers over them in areas where employees are using Roofing/Flooring Plan. Covers must be able to support two (2) times the maximum possible weight that could be applied.



**Roofing/Flooring Plan  
High Slope (>4/12)  
Lantz Construction Company**

This Roofing/Flooring Plan is specific for the following project.

Location of Job: \_\_\_\_\_

Date Plan Prepared or Modified: \_\_\_\_\_

Plan Prepared By: \_\_\_\_\_

Plan Approved By: \_\_\_\_\_

Plan Supervised By: \_\_\_\_\_

During conventional roofing/flooring operations, it is the policy of Lantz Construction Company, for employees who are conducting operations on any (roof/floor) with a greater than 4/12 pitch be protected from falling by the use Personal Fall Arrest System, Guardrails, Scaffolding or Safety Nets.

Below is the description and necessary information to safety and successfully complete the listed roofing/flooring operations.

This Roofing/Flooring Plan will be utilizing a Personal Fall Arrest System, Guardrails, Scaffolding, Safety Nets or a combination of any or all of these.

**(Check all that apply)**

<input type="checkbox"/>	Personal Fall Arrest System
<input type="checkbox"/>	Guardrails
<input type="checkbox"/>	Scaffolding
<input type="checkbox"/>	Safety Nets

Each employee will be trained in these procedures and requirements before starting roofing/flooring operations. Each employee will strictly adhere to them except when doing so would expose the employee to a greater hazard. The employee is to notify the Project Superintendent of any concern regarding safe roof operations prior to continuing a questionable procedure.

Revised: 7/1/12  
Reviewed: 7/1/10

The following trained workers will be allowed to participate in this roofing/flooring operation.

**PRINT**

**SIGNATURE**

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For Diagrams

**I POLICY**

During conventional roofing/flooring operations, it is the policy of Lantz Construction Company, for employees who are conducting operations on any (roof/floor) with a 4/12 pitch or less, to be protected from falling by the use of a Personal Fall Arrest System, if feasible. Safety Monitoring and/or Warning Line System may be used if a fall arrest system is not feasible or is deemed by a competent person to create more hazards by implementing.

A Safety Monitoring System can be used by itself, but only when the width of the roof/floor is less than 50 feet at its greatest dimension.

The Warning Line System will be constructed as the roof decking operation is taking place if possible.

At any time the pitch of a roof is greater than 4/12, employees will be protected from falling by one of the following: Personal Fall Arrest System, Guardrails, Slide-Guards, Scaffolding or Safety Nets.

**II PROCEDURES**

The Project Superintendent will prepare the Safety Monitoring/Warning Line.

The Project Superintendent will notify the Safety Director at least 1 week prior to the start date of roofing operations.

A copy of the Safety Monitoring/Warning Line Plan will be available for review at all times on the project site.

Employees will not be allowed to work underneath areas where roofing operations are being preformed.

**Protection from Falling Objects**

When employees are potentially exposed to falling objects, in addition to wearing hard hats, each employee will be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toe boards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy or massive to be contained or deflected by any of the above-listed measures, or the above listed protections are impractical, Lantz Construction Company will place these objects away from the edge of the surface from which they could fall and will secure those materials as necessary to prevent their falling.

Where there is a danger of tools, materials, or equipment falling from the work surface/ location and striking employees, sub-contractors or by-standers below, the following provisions apply:

The area below the working surface/location to which objects can fall will have a physical barricade and appropriate signage applied to indicate the danger of falling objects. No person will be permitted to enter this barricaded area without first obtaining the superintendent's approval. This would include but is not limited too employees, sub-contractors, by-standers or owners.

The perimeter will be fully marked by a warning line. (See note page 13B-3.)

All employees involved in the Safety Monitoring/Warning Line Plan will read and sign the plan before beginning roofing operations.

Only employees engaged in and those essential to the roofing operation will be allowed within the area where employees are protected by a Safety Monitoring System.

Mechanical equipment will not be used or stored in areas where Safety-Monitoring Systems are being used.

All skylights and roof openings will have covers over them in areas where employees are using the warning line and safety monitoring plan.

**Safety Monitoring/Warning Line Plan**  
**Lantz Construction Company**

This Safety Monitoring/Warning Line Plan is specific for the following project.

Location of Job: \_\_\_\_\_

Date Plan Prepared or Modified: \_\_\_\_\_

Plan Prepared By: \_\_\_\_\_

Plan Approved By: \_\_\_\_\_

Plan Supervised By: \_\_\_\_\_

A safety monitor(s) will be utilized at all times until sheathing operations and or leading edge operations have been completed.

A Safety Monitor is also required at anytime an employee is performing work within 6 feet of the outside edge/leading edge without the use of a Personal Fall Arrest System, Safety Nets, and/or Guard Rail System.

The safety monitor will comply with the following requirements.

- The safety monitor will be competent to recognize fall hazards.
- The safety monitor will warn employees when it appears the employee is unaware of a fall hazard or is performing an unsafe operation.
- The safety monitor will be on the same walking/working surface and within visual sighting distance of the employees being monitored.
- The safety monitor will be close enough to communicate verbally with all employees engaged in roofing operations and with those working within 6 feet of the leading edge.
- The safety monitor will not have any other responsibilities that would take his/her attention away from the monitoring function.
- The safety monitor will have the authority to stop work of employees at any time a hazardous condition arises. (i.e. employee too close to the leading edge, employee leaning over the leading edge, high winds, etc...)
- *The safety monitor will be visually distinguishable from all other employees engaged in roofing operations such as (i.e. a different colored hard hat, an orange vest, etc...)*

The following trained workers will be authorized safety monitors:

Printed Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Signature: \_\_\_\_\_

The warning line will be erected at the same time roof decking operations are taking place. The warning line will remain in place until all roof operations are completed:

- Be at least 6 feet from the roof edge.
- As sheathing operations move up and along the roof/floor, the warning line will be erected around the perimeter of the roof at least 6 feet from the edge. (See note at bottom of the page.)
- A point of access will be installed to include a path from the leading edge marked in the same manner as the warning line system to gain access inside the warning line.
- Rope, wire, or chain will be used for warning lines and have a minimum tensile strength of 500 pounds.
- The warning line will be at least 34 inches high at its lowest point, and no higher than 39 inches.
- The warning line will be flagged at least every 6 feet with a highly visible material.
- Warning line stanchions will be capable of withstanding a force of 16 pounds applied in a horizontal direction without tipping.
- The warning line will be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over. Using screw eyelets in stanchions can accomplish this.

**NOTE: When erecting exterior wood framed walls only a painted line 6 feet from the perimeter will be clearly marked prior to any wall erection activities instead of a warning line. A top rail or guardrail system will be installed once the wall is secured in place**

Each employee will be trained in these procedures and requirements before starting roofing/flooring operations. Each employee will strictly adhere to them except when doing so would expose the employee to a greater hazard. The employee is to notify the Project Superintendent of any concern regarding safe roof operations prior to continuing a questionable procedure.

The following trained workers will be allowed to participate in roofing operations.

PRINTED NAME	SIGNATURE
_____	_____
_____	_____
_____	_____

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## I PURPOSE

To provide safe work practices when erecting, dismantling and working from scaffolds.

## II DEFINITIONS

Brace - means a rigid connection that holds one scaffold member in a fixed position with respect to another member, or to a building or structure.

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

Concentric - having a common center, a common axis. Forces generated on the inner sides (center) of the scaffold.

Eccentric - located elsewhere than at the geometrical center. Forces generated on the outer sides of the scaffold (i.e. cantilevered loads).

Equivalent - means alternative designs, materials or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

Fabricated frame scaffold (tubular welded frame scaffold) - means a scaffold consisting of a platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.

Guardrail system - means a vertical barrier, consisting of, but not limited to, toprails, midrails, toeboards, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.

Maximum intended load - means the total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

Platform - means a work surface elevated above lower levels. Platforms can be constructed using individual wood planks, fabricated planks, fabricated decks, and fabricated platforms.

Qualified Person - means one who, by possession of a recognized degree, certificate, or professional standing, or who, by extensive knowledge, training, and experience, has



successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

Scaffold - means any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage) used for supporting employees or materials or both.

Supported Scaffold - means one or more platforms supported by outrigger beams, brackets poles, legs, uprights, posts, frames, or similar rigid support

Walkway - means a portion of a scaffold platform used only for access and not as a work level.

### III REFERENCES

29 CFR 1926, Subpart L      Scaffolds

### IV PROCEDURES

#### General Use

Scaffolds and scaffold components will not be loaded in excess of their maximum intended loads or rated capacities, whichever is less.

The use of lean-to scaffolds is prohibited.

A competent person will inspect scaffolds and scaffold components for visible defects before each work shift, and after any occurrence which could affect a scaffold's structural integrity. A scaffolding inspection tag will be completed and attached by the competent person after every inspection. In addition, tags must be used when defective equipment or unsafe conditions are found.

Any part of a scaffold damaged or weakened will be immediately repaired or replaced, braced to meet those provisions, or removed from service until repaired.

Scaffolds will not be moved horizontally while employees are on them, unless they have been designed by a registered professional engineer specifically for such movement.

For mobile scaffolds, employees will heed the following:

1. Manual force used to move the scaffold will be applied as close to the base as practicable,

but not more than 5 feet (1.5 m) above the supporting surface.

2. Power systems used to propel mobile scaffolds will be designed for such use. Forklifts, trucks, similar motor vehicles or add-on motors will not be used to propel scaffolds unless the scaffold is designed for such propulsion systems.
3. Scaffolds will be stabilized to prevent tipping during movement.
4. Employees will not be allowed to ride on scaffolds unless the following conditions exist:
  - a. The height to base width ratio of the scaffold during movement is 2:1 or less, unless the scaffold is designed and constructed to meet or exceed national recognized stability test requirements such as those listed in Appendix "A" of 29 CFR 1926, Subpart L.
  - b. Outrigger frames, when used, are installed on both sides of the scaffold;
  - c. When power systems are used, the propelling force is applied directly to the wheels, and does not produce a speed in excess of 1 foot per second.
  - d. No employee is on any part of the scaffold, which extends outward beyond the wheels, casters, or other supports.

Scaffolds will not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines than as follows:

<i>Insulated Lines Voltage</i>	<i>Minimum Distance</i>	<i>Alternatives</i>
Less than 300 volts	3 feet (0.9 M)	
300 volts to 50 kv	10 feet (3.1 M)	
More than 50 kv	10 feet (3.1M) plus 4.0 inches (10 cm) for each 1 kv over 50 kv.	2 times the length of the line insulator, but never less than 10 feet (3.1 m).

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Revised: 08/12  
Reviewed: 07/12

<i>Uninsulated Lines Voltage</i>	<i>Minimum Distance</i>	<i>Alternatives</i>
Less than 50 kv	10 feet (3.1 M)	
More than 50 kv	10 feet (3.1 M) plus 4.0 inches (10 cm) for each 1 kv over 50 kv.	2 times the length of the line insulator, but never less than 10 feet (3.1 m).

Scaffolds and materials may be closer to power lines than specified above where such clearance is necessary for performance of work, and only after the utility company, or electrical system operator, has been notified of the need to work closer and the utility company, or electrical system, has de-energized the lines, relocated the lines, or installed protective coverings to prevent accidental contact with the lines.

Scaffolds will be erected, moved, dismantled, or altered only under the supervision and direction of a competent person qualified in scaffold erection, moving, dismantling or alteration. Only experienced and trained employees selected for such work by the competent person will perform such activities.

Employees will be prohibited from working on scaffolds covered with snow, ice, or other slippery material except as necessary for removal of such materials.

Where swinging loads are being hoisted onto or near scaffolds, such that the loads might contact the scaffold, tag lines or equivalent measures to control the loads will be used.

Work on or from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system or wind screens. Windscreens will not be used unless the scaffold is secured against the anticipated wind forces imposed.

Debris will not be allowed to accumulate on platforms.

Makeshift devices, such as but not limited to boxes and barrels, will not be used on top of scaffold platforms to increase the working level height of employees.

Ladders will not be used on scaffolds to increase the working level height of employees.

Platforms will not deflect more than 1/60 of the span when loaded.

To reduce the possibility of welding current arcing through the suspension wire rope when performing welding from suspended scaffolds, the following precautions will be taken, as applicable:

## Capacity

Each scaffold and scaffold component will be capable of supporting, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it, except the following:

1. Direct connections to roofs and floors, and counterweights used to balance adjustable suspension scaffolds, will be capable of resisting at least 4 times the tipping movement imposed by the scaffold operating at either the rated load of the hoist, or 1.5 (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater.
2. Each suspension rope, including connecting hardware, used on adjustable suspension scaffolds will be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope.
3. Each suspension rope, including connecting hardware, used on adjustable suspension scaffolds will be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope with the scaffold operating at either the rated load of the hoist, or 2 (minimum) times the stall load of the hoist, whichever is greater.
4. The stall load of any scaffold hoist will not exceed 3 times its rated load.

Scaffolding will be designed by a qualified person and will be constructed and loaded in accordance with that design.

## Scaffold Platforms

Each platform on all working levels of scaffolds will be fully planked or decked between the front uprights and the guardrail supports.

Each platform unit will be installed so that the space between adjacent units and the space between the platform and the uprights is no more than 1 inch.

Each scaffold platform and walkway will be at least 18 inches (46 cm) wide.

The front edge of all platforms will not be more than 14 inches (36 cm) from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used.

The maximum distance from the face for outrigger scaffolds will be 3 inches (8 cm).

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Reviewed: 07/12

Each end of a platform unless cleated or otherwise restrained by hooks or equivalent means, will extend over the centerline of its support at least 6 inches (15 cm.).

Each end of a platform 10 feet or less in length will not extend over its support more than 12 inches (30 cm.).

Each platform greater than 10 feet in length will not extend over its support more than 18 inches (46 cm.).

On scaffolds where scaffold planks are abutted to create a long platform, each abutted end will rest on a separate support surface.

On scaffolds where platforms are overlapped, the overlap will occur only over supports, and will not be less than 12 inches (30 cm.).

Wood platforms will not be covered with opaque finishes, except that platform edges may be covered or marked for identification. Platforms may be coated periodically with wood preservatives, fire-retardant finishes, and slip-resistant finishes; however, the coating may not obscure the top or bottom wood surfaces.

Scaffold components manufactured by different manufacturers will not be intermixed unless the components fit together without force and the user maintains the scaffold's structural integrity. Scaffold components manufactured by different manufacturers will not be modified in order to inter-mix them unless a competent person determines the resulting scaffold is structurally sound.

Scaffold components made of dissimilar metals will not be used together unless a competent person has determined that galvanic action will not reduce the strength of any component.

## **Access to Scaffolds**

When scaffold platforms are more than 2 feet above or below a point of access, portable ladders, hook-on ladders, attachable ladders, stair towers, stairway-type ladders, ramps, walkways, or similar surface will be used.

Cross-braces will not be used as a means of access.

## **Portable, hook-on and attachable ladders:**

- Will be positioned so as not to tip the scaffold;
- Will be positioned so that their bottom rung is not more than 24 inches above the scaffold supporting level;
- When used on a supported scaffold more than 35 feet high, will have rest platforms at 35-foot maximum vertical intervals;
- Will be specifically for use with the type of scaffold used;

- Will have a minimum rung length of 11-1/2 inches; and
- Will have uniformly spaced rungs with a maximum spacing between rungs of 16-3/4 inches.

## **Stairway-type ladders:**

- Will be positioned such that their bottom step is not more than 24 inches above the scaffold supporting level;
- Will be provided with rest platforms at 12 foot maximum vertical intervals;
- Will have a minimum step width of 16 inches, except that mobile scaffold stairway-type ladders will have a minimum step width of 11-1/2 inches; and
- Will have slip-resistant treads on all steps and landings.

## **Ramps and walkways:**

- Will have guardrail systems which comply with 29 CFR 1926, Subpart M;
- Will not be inclined more than a slope of one (1) vertical to three-(3) horizontal (20 degrees above the horizontal).
- Steeper than one (1) vertical in eight (8) horizontal, the ramp or walkway will have cleats not more than fourteen (14) inches apart which are securely fastened to the planks to provide footing;

## **Integral prefabricated scaffold access frames:**

- Will be specifically designed and constructed for use as ladder rungs.
- Will have a rung length of at least 8 inches.
- Will not be used as work platforms when rungs are less than 11-1/2 inches in length, unless each affected employee uses fall protection, or a positioning device.
- Will be uniformly spaced within each frame section.
- Will be provided with rest platforms at 35-foot maximum vertical intervals on all supported scaffolds more than 35 feet.
- Will have a maximum spacing between rungs of 16-3/4 inches. Non-uniform rung spacing caused by joining end frames together is allowed, provided the resulting spacing does not exceed 16-3/4 inches.

## **Supported Scaffolds**

Scaffolds with a height to base width (including outrigger supports, if used) ratio of more than 4 to 1 will be restrained from tipping by guying, tying, bracing, or equivalent means, as follows:

1. Guys, ties, and braces will be installed at locations where horizontal members support both inner and outer legs.

2. Guys, ties, and braces will be installed according to the scaffold manufacturer's recommendations or at the closes horizontal member to the 4:1 height and be repeated vertically at locations of horizontal locations:
  - Every 20 feet (6.1 m) or less thereafter for scaffolds 3 feet (0.91 m) wide or less.
  - Every 26 feet (7.9 m) or less thereafter for scaffolds greater than 3 feet (0.91 m) wide.
3. The top guy, tie or brace of completed scaffold will be placed no farther than the 4 to 1 height from the top. Such guys, ties and braces will be installed at each end of the scaffold and at horizontal intervals not to exceed 30 feet (9.1 m) (measured from one end [not both] towards the other).
4. Ties, guys, braces, or outriggers will be used to prevent the tipping of supported scaffolds and all circumstances where an eccentric load, such as a cantilevered work platform, is applied or is transmitted to the scaffold.

Supported scaffold poles, legs, posts, frames, and uprights will bear on base plates, mudsills or other adequate firm foundation.

Footings will be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.

Unstable objects will not be used to support scaffolds or platform units.

Unstable objects will not be used as working platforms.

Front-end loaders and similar pieces of equipment will not be used to support scaffold platforms.

Forklifts will not be used to support scaffold platforms.

Supported scaffold poles, legs, posts, frames, and uprights will be plumb and braced to prevent swaying and displacement.

## **Falling Object Protection**

In addition to wearing hardhats each employee on a scaffold will be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects.

When the falling objects are too large, heavy or massive to be contained or deflected by any of

the above-listed measures, the employer will place such potential falling objects away from the edge of the surface from which they could fall and will secure those materials as necessary to prevent their falling.

Where there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, the following provisions apply:

1. The area below the scaffold to which objects can fall will be barricaded, and employees will not be permitted to enter the hazard area; or
2. A toeboard will be erected along the edge of platforms above lower levels for a distance sufficient to protect employees below or;
3. Where tools, materials, or equipment are piled to a height higher than the top edge of the toeboard, paneling or screening extending from the toeboard or platform to the top of the guardrail will be erected for a distance sufficient to protect employees below; or
4. A guardrail system will be installed with openings small enough to prevent passage of potential falling objects; or
5. A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects will be erected over the employees below.

## **Tubular Welded Frame Scaffolds**

When moving platforms to the next level, the existing platform will be left undisturbed until the new end frames have been set in place and braced prior to receiving the new platforms.

Frames and panels will be braced by cross, horizontal, or diagonal braces, or combination thereof, which secure vertical members together laterally. The cross braces will be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, level, and square. All brace connections will be secured.

Frames and panels will be joined together vertically by coupling or stacking pins or equivalent means.

Where uplift can occur which would displace scaffold end frames or panels, the frames or panels will be locked together vertically by pins or equivalent means.

## Brackets used to support cantilevered loads will:

1. Be seated with side-brackets parallel to the frames and end-brackets at 90 degrees to the



frames.

2. Not be bent or twisted from these positions.
3. Be used only to support personnel, unless the scaffold has been designed for other loads by a qualified engineer and built to withstand the tipping forces caused by those other loads being placed on the bracket-supported section of the scaffold.

Scaffolds over 125 feet (38.0 m) in height above their base plates will be designed by a registered professional engineer, and will be constructed and loaded in accordance with such design.

## **Mobile Scaffolds**

Scaffolds will be braced by cross, horizontal, or diagonal braces, or combination thereof, to prevent racking or collapse of the scaffold and to secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds will be plumb, level, and squared. All brace connections will be secured.

Scaffold casters and wheels will be locked with positive wheel and/or wheel and swivel locks, or equivalent means, to prevent movement of the scaffold while the scaffold is used in a stationary manner.

Platforms will not extend outward beyond the base supports of the scaffold unless outrigger frames or equivalent devices are used to ensure stability.

Where leveling of the scaffold is necessary, screw jacks or equivalent means will be used.

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

Before a scaffold is moved, each employee on the scaffold will be made aware of the move.

When moving mobile scaffolds, employees will follow the procedures set forth in the "General Use" section, of this section.

## **Aerial Lifts**

### **General Requirements**

Aerial lifts include the following types of vehicle-mounted aerial devices used to elevate personnel to job-sites above ground:

1. Extendable boom platforms
2. Aerial ladders
3. Articulating boom platforms
4. Scissors lifts

A combination of any such devices.

Aerial equipment may be made of metal, wood, fiberglass reinforced plastic (FRP), or other material; may be powered or manually operated; and are deemed to be aerial lifts whether or not they are capable of rotating about a substantially vertical axis.

Aerial lifts may be “field modified” for uses other than those intended by the manufacturer provided the modification has been certified in writing by the manufacturer or by any other equivalent entity, such as a nationally recognized testing laboratory, to be in conformity with all applicable provisions of ANSI A92.2-1969 and this section and to be at least as safe as the equipment was before modification.

## **Specified Requirements:**

### **Ladder Trucks and Tower Trucks**

Aerial ladders of ladder trucks and tower trucks will be secured in the lower traveling position by the locking device on top of the truck cab, and manually operated device at the base of the ladder before the truck is moved for highway travel.

### **Extensible and Articulating Boom Platforms**

Lift controls will be tested each day prior to use to determine that such controls are in safe working condition.

Only authorized persons will operate an aerial lift.

Belting off to an adjacent pole, structure, or equipment while working from an aerial lift will not be permitted.

Employees will always stand firmly on the floor of the basket, and will not sit or climb on the edge or railing of the basket. The use of planks, ladders, or other devices from the work position is not permitted.

Employees will be protected from falling by one of the following methods:

1. Employees using aerial lifts must be protected from falling by a body harness and lanyard worn as a positioning device or, in some cases, a personal fall arrest system.

Boom and basket load limits specified by the manufacturer will not be exceeded.

The brakes will be set and when outriggers are used, they will be positioned on pads or a solid surface. Wheel chocks will be installed before using an aerial lift on an incline provided they can be safely installed.

An aerial lift truck will not be moved when the boom is elevated in a working position with men in the basket, except for equipment which is specifically designed for this type of operation.

## **Scissors Lifts**

Only persons trained in lift use and safety are authorized to operate lifts.

All lifts should be equipped with an operating manual that is stored in a weather resistant compartment. It is the employee's responsibility to read and understand the operating manual.

Surrounding project site inspection should include recognition of obstructions, measurement of distances to electrical conductors, and observation of and stability of operating surface.

Unattended machines should have platforms/baskets lowered, engines shut off, parking brake engaged and key removed.

Protective and safety devices must be in place and in proper working order. Any alteration of protective and safety devices is strictly prohibited.

Keep climbing and standing surfaces clear of debris, materials, and equipment.

Visually inspect and test the operation of the lift equipment each day before using it. Follow the manufacturer's guidelines found in the operating manual.

Review the operating instructions before using. Not all machines are alike.

All fall protection must be in place before starting lift equipment.

If more than one person is occupying the lift, one person should be the designated operator. Alert fellow employees in the area that you are starting the lift. Operate controls smoothly. Avoid sudden stops, starts or turns.

Keep both feet on the platform at all times.

Never sit or climb through railings.  
Do not use ladders, planks, or steps to gain additional height.  
Do not exceed rated capacity and keep weight equally distributed.  
Face in the direction of travel.

## V TRAINING

The employer will provide training programs at the safety orientation, through Toolbox Safety Talks, on-the-job training, and through special training programs.

Training will include hazards (fall, electrical, falling objects), fall protection, use and load capacity.

Retraining will be required whenever an employee shows a lack of knowledge about working on or near scaffolding. In addition, retraining will occur whenever disciplinary action has been taken against an employee in regards to scaffolding.

## VI CHECKLIST ITEMS

Scaffolds will have guardrails or other means of conventional fall protection when the platform height is equal to or greater than 6-feet measured from the scaffold's base whenever possible.

Cross bracing may be used as only one part of the guardrail system depending upon the intersecting point of the cross bracing above the platform.

- Cross bracing can be used as a **midrail** if the intersecting point of the brace is at or above 20 inches or at or below 30 inches measured from the platform.
- Cross bracing can be used as a **toprail** if the intersecting point of the brace is at or above 38 inches or at or below 48 inches measured from the platform.

Scaffolds will not be loaded in excess of their intended loads or rated capacities.

The use of shore or lean-to scaffolds is prohibited.

Inspect scaffolds for visible defects.

Damaged or defective scaffolds, or scaffold parts, will be removed from service immediately.

Scaffolds will not be moved, used or altered where any parts might come closer to exposed and energized power lines in accordance with this section.

Scaffolds must be erected, moved, dismantled or altered under the direct supervision of a competent person.

Do not work on scaffolds covered with snow, ice or other slippery material.

Debris will not be allowed to accumulate on platforms.

Ladders will not be used on scaffolds to increase height.

All platforms will be fully planked or decked between uprights.

All scaffold platforms will have a guardrail system unless employees are provided with personal fall arrest systems.

Proper access must be maintained in accordance with this section.

All supported scaffolds must be restrained from tipping by guying, tying, bracing, or equivalent means in accordance with this section.

Each employee on a scaffold, above lower levels, will be protected from falling.

Employees working below scaffolds will be protected from falling objects in accordance with this section.

Employees using aerial lifts must be protected from falling by a body harness and lanyard worn as a positioning device or, in some cases, a personal fall arrest system.

Only employees trained in the use of lifts will operate lifts.

All lifts should be equipped with operating manual stored in a weather resistant compartment.

Keep both feet on lift platform at all times.

Never sit or climb railings.

## I PURPOSE

This section establishes safety practices, means, methods, operating procedures and guidelines for the use of, and care for ladders and stairways.

## II DEFINITIONS

Beams - The side rails of the ladder where the rung attaches.

Locks - A mechanical device that is used to secure the ladder at a specific height when extended.

Feet - A pad attached to the end of the ladder side-rail which allows it to rest on a flat surface.

Rungs - The crosspiece of a ladder between the beams or rails.

Extension Ladder - Ladder that is made of two or more sections which allows the length to be adjusted as needed.

Tread - The horizontal part of a step, which is used to climb.

Riser - The vertical space between the stair treads.

Step Ladder - Self supporting, foldable, portable ladder, non-adjustable in length, with flat steps.

## III REFERENCES

29 CFR 1926.1050 Stairways and Ladders  
29 CFR 1926.1052 Stairways  
29 CFR 1926.1060 Training

## IV PROCEDURES

### General Requirements

A stairway or ladder will be used when there is a break in elevation of 19 inches or more, or where there is no ramp, runway or hoist provided. Stairways and ladders will be inspected on a regular basis for any defects. All personnel will be trained on the use of stairways and ladders. All areas of the stairways and ladders, including the top and bottom, will be kept clear of debris and from hazards. All ladders and stairways will be installed so that employees can step directly onto a guarded landing.

## Stairways

All stairways that are greater than or equal to 30 inches in height or have 4 or more risers will be equipped with a stair-rail system on both sides. The stair-rail will be installed at the height of 36 to 37 inches from the front edge of the tread to the top rail, a midrail half the distance between the surface of the tread and the top rail. The riser height and tread depth will be in equal size respectively, no variation of more than 1/4 inch.

All parts of the stair-rail system will be constructed of at least 2 x 4 inch wood materials and will be free of nails and other hazards. The top rail of the stair-rail system will not extend past the bottom upright post.

## Ladders

Inspect all ladders before each use. Defective and/or damaged ladders will be tagged and removed from service immediately. All damaged and defective ladders will be returned to the maintenance shop for repairs. Ladders will be repaired in accordance with the manufacturers recommendations.

When selecting a ladder for use, first read the label to determine the ladder type. The following are the ladder types and the weight they can support:

- Type 1A - extra-heavy duty industrial ladder: 300 lbs.
- Type 1 - heavy-duty industrial ladder: 250 lbs.
- Type 2 - medium duty commercial ladder: 225 lbs.
- Type 3 - light duty household ladder: 200 lbs.

Remember, when choosing a ladder, it has to hold your weight plus the weight of any tools and materials.

Ladders must be used only for the purpose for which they were designed.  
Personnel will always ascend and descend ladders facing the rungs of the ladder.

All ladders will be tied, blocked or secured to prevent displacement.

Ladders will be installed at a working pitch of 4 vertical and 1 horizontal. This means that for every 4' in height, the base of the ladder will be 1 foot out at the base.

All ladders will be equipped with the appropriate feet.

Ladders will never be tied together to extend the length.

All ladders will not be coated with any opaque covering (paints, varnish, stain, etc.) and all labels will be in place.

The side rails will extend at least 3 feet above the landing surface and tied off when a ladder is used to gain access to an area.

No employee will move a ladder while it is occupied.

Only ladders with nonconductive side rails will be used around energized electrical equipment.

Never place ladders on boxes, barrels or other unstable bases to obtain height.

Tools and equipment should not be carried while ascending and descending ladders.

If it necessary to place a ladder in a doorway, the door must be locked or barricaded and warning signs posted. When ladders are erected in areas with pedestrian or vehicle traffic, the areas must be barricaded.

Only one person should be on a ladder at a time.

While working from a ladder keep both feet on the rungs.

Ladders will not be moved, shifted, or extended while occupied.

Ladders will not be used in a horizontal position as platforms, runways or scaffolds.

When not in use, ladders must be stored lying down or tied off in an upright position.

Ladder rungs must be uniformly spaced or meet OSHA/ANSI specifications.

## **Step Ladders**

No employee will use the backside of a stepladder.

Make sure the ladder is fully opened with the spreaders locked and set level on all four feet.

Do not use stepladders as a straight ladder.

Do not climb, stand or sit on the top two rungs.

Do not place tools or materials on steps, rungs, or platforms.



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Stepladders must be tied off when used close to the edge of an elevated platform or floor opening.

## **Straight and Extension Ladders**

Extension ladders should have positive stops to ensure safe overlap of the sections. The overlap needed depends on the total length of all sections measured along the side rails:

- ladders up to 32 feet long: 3 feet overlapped
- ladders from 32 to 36 feet: 4 feet overlapped
- ladders from 36 to 48 feet: 5 feet overlapped
- ladders over 48 feet: 6 feet overlapped

When using extension ladders, have a co-worker help to raise and lower the ladder.

Never raise or lower the extension ladder with the fly section extended.

When extending the ladder, be sure to secure or foot the ladder firmly before extending it.

After the extension section has been raised to desired height, locks should be engaged and extension ropes secured to a rung on the base section.

Always use the right set-up angle or pitch. The distance from the foot of ladder to the base of what it is leaning against should be one-fourth of the distance from the ladders top support to its bottom support.

The ladder will extend 3 feet above the working surface and be adequately tied off.

Do not work from the top three rungs of any straight or extension ladder.

## **V TRAINING**

The employer will provide training programs through Toolbox Safety Talks, on-the-job training, and special training programs.

## **VI CHECKLIST ITEMS**

Ladders or stairways will be provided at any break in elevation of 19 inches or more.

Stairways  $\geq 30$ " high or  $\geq 4$  riser high will be equipped with a stair-rail or guardrail system.

Area at top and bottom of stairway and ladder will be clean of debris.

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Ladders will be at a 4-1 angle.

Ladders will be tied, blocked or secured.

Ladders and stairways will be inspected on a regular basis.

Defects will be repaired immediately.

## I PURPOSE

This section establishes safe practices and methods of operation for welding and cutting procedures.

## II DEFINITIONS

Cylinder - A container that is used to store gases.

Valve - A device used to regulate the flow of gas.

Torch - A portable device that mixes and burns fuel and oxygen to cut or weld material.

Electrode - A metallic rod that is heated through an electric charge to connect metal together.

## III REFERENCES

29 CFR 1926.350	Gas Welding and Cutting
29 CFR 1926.351	Arc Welding and Cutting
29 CFR 1926.352	Fire Prevention

## IV PROCEDURES

### General Requirements

ANY HOT WORK PERFORMED OUTSIDE OF DESIGNATED WELDING AREAS REQUIRES A COMPLETED HOT WORK PERMIT PRIOR TO ENGAGING IN ANY HOT WORK PROCESS.

Only employees that are trained in the use of welding and cutting equipment are to perform this type of work. A shield shall be placed to protect other employees from direct ray of the arc. When welding and cutting, employees shall be aware of the metals and coatings they are heating and protect themselves and others from exposure to toxic fumes and contaminants. Mechanical ventilation systems or local exhaust systems shall be used to provide proper ventilation, if needed. Oxygen shall not be used to provide ventilation. Respirators shall be used, when needed, to protect employees from fumes and contaminants.

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Employees will check with the owner of the facility in which welding and cutting is to be performed to obtain a hot work permit.

Any employee needing a hot work permit and the owner is unable to provide one will notify the Safety Director.

NOTE: if welding cannot be conducted safely, the welding and cutting shall not be performed.

## **Gas Welding and Cutting**

All caps shall be in place when transporting, moving or storing cylinders.

Cylinder shall not be moved by use of slings. Valve protection caps shall not be used to lift cylinders.

Cylinders shall not be intentionally dropped, struck, or permitted to strike each other violently.

Cylinders shall be secured at all times by use of a cylinder truck or device to steady the cylinders.

Only warm water shall be used to thaw frozen cylinders loose.

Oxygen and gas cylinders shall be stored at least 20 feet apart or separated by barriers 5 feet in height and have 2 hour fire rating.

Regulators and hoses shall be removed from cylinders before transporting cylinders.

While in use, cylinders shall be secured on a truck or cart with chain or other steadying device to keep cylinders from being knocked over.

When cylinders are empty, when work is finished, or when cylinders are being moved, the cylinder valve must be closed.

Compressed gas cylinders shall always be stored upright, at all times.

All compressed cylinders shall be kept, as far as possible, away from actual welding operations so that sparks, slag or flame can not reach them. When this is impractical, fire resistant shields shall be provided.

Cylinders shall be placed so that they will not become part of electrical circuit.

Compressed cylinders shall not be taken into confined spaces.

Damaged or defective cylinders shall not be used.

All hoses, gauges, torches or valves that are defective shall be repaired at once or removed from service.

Before connecting any regulator to a cylinder, the valve of the cylinder shall be open slightly and closed immediately, “cracking”, to clear the valve of dust or dirt.

Before removing any regulator from the cylinder, the valve shall always be closed and the gas released from the regulator.

When lighting torches, only an approved device is allowed. No matches or lighters shall be used.

## **Arc Welding and Cutting**

No cables with any defects or splices within 10 feet of the holder shall be used.

All housing frames on all welding machines shall be grounded.

All grounding connections shall be inspected to ensure grounding.

When electrode holders are left unattended, the rod shall be removed.

## **Fire Prevention**

All combustibles shall be moved from the point of operations at least 35 feet.

When combustibles can not be removed from the point of operations, covers, guards or shields shall be used to protect the combustibles.

When welding around areas that have material that is not fire proof, a fire watch shall be set in place.

A suitable fire extinguisher shall be next to the welder before start of work begins.

When welding or cutting on drums, containers, or hollow structures, the employee shall fill with water or thoroughly clean and test the structure for toxic or flammable substances.

Any person assigned to a Fire Watch will be trained on how to use a fire extinguisher. At a minimum the individual will follow the acronym P.A.S.S.

A fire watch shall be maintained at least a half an hour after the welding or cutting operation was completed.

## **V TRAINING**

The employer will provide training to employees as needed to perform their duties under this section.

## **VII CHECKLIST ITEMS**

Only trained employees are to use welding equipment.

Is a welding shield to prevent arc flashes present?

Inspect all equipment prior to use.

No defects on ends of arc welder cables are allowed within 10 feet.

Damaged and/or defective equipment shall not be used.

Handling, transporting and storing of compressed cylinders shall be done in accordance with this section.

Fire extinguisher must be present at welding area.

# **Lantz Construction Company    PEMB/STEEL ERECTION**

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Revised: 04/12  
Reviewed: 04/12

## **I.      PURPOSE**

This section establishes guidelines on means, methods, and safe practices for Pre Engineered Metal Building (PEMB) and Structural Steel in construction.

## **II.     POLICY**

Lantz Construction Company is dedicated to the protection of its employees from on the project injuries. All employees of Lantz Construction Company have the responsibility to work safely on all projects. Only employees who are specifically trained in PEMB/Steel Erection and fall protection requirements are allowed to perform this type of work.

It is also the policy of Lantz Construction Company for employees to use conventional and or non-conventional fall protection (guardrail systems, personal fall arrest system, safety nets, safety monitoring fall protection plans, etc.) at all times when 6' feet above a lower level. Lantz Construction Company will provide all safety-related equipment to perform these operations.

Beam clamps, or other means of conventional fall protection are to be used at all times when on a horizontal steel member (such as on a rafter to install purlins) on which the employee has to work and the fall hazard is greater than 6 feet.

The Competent Person is to determine if any of the following options are possible:

- Can employees work out of aerial lifts or aerial baskets to install structural steel, purlins, and or rafters?
- Can the purlins be installed to the rafters while on the ground and set by crane?
- Can the purlins be installed in a manner, which will allow the connector to install the purlin at the high point of the rafter and work down slope using the beam clamp?

All leading edges will be protected by some type of conventional or non-conventional fall protection system.

All fully decked permanent floor areas will have a guardrail system installed.

## **III.    DEFINITIONS**

Column - A load carrying vertical member that is part of the primary skeletal framing system. Columns do not include posts.

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

# **Lantz Construction Company    PEMB/STEEL ERECTION**

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Connector – An employee placing and connecting structural members and/or components or is working with hoisting equipment, above ground level.

Controlled Decking Zone (CDZ) – An area in which certain work (for example, initial installation and placement of metal decking) may take place without the use of guardrail systems, personal fall arrest systems, fall restraint systems, or safety net systems) and where access to the zone is controlled.

Controlling Contractor – The prime contractor, general contractor, construction manager or any other legal entity which has the overall responsibility for the construction of the project, and its planning, quality and completion.

Critical lift – A lift that (1) exceeds 75 percent of the rated capacity of the crane or derrick, or (2) requires the use of more than one crane or derrick.

Decking Hole – A gap or void more than 2 inches in its least dimension and less than 12 inches in its greatest dimension in a floor, roof or other walking/working surface.

Erection Bridging – The bolted diagonal bridging that is required to be installed prior to releasing the hoisting cables from steel joists.

Fall Restraint System – A fall protection system that prevents the user from falling in any direction. The system is comprised of a body harness, along with an anchorage, connectors, and other necessary equipment. The other components typically include a lanyard, and may include a lifeline and other devices.

Girt – (In systems-engineered metal buildings) means a “Z” or “C” shaped member formed from sheet steel spanning between primary framing and supporting wall material.

Leading Edge – The unprotected side and edge of a floor, roof, or formwork for a floor or other walking/working surface (such as deck) which changes location as additional floor, decking, roof or formwork sections are placed, formed or constructed.

Metal Decking – A commercially manufactured, structural grade, cold rolled metal panel formed into a series of parallel ribs; for this section, this includes metal floor and roof decks, standing seam metal roofs, and other metal roofs.

Opening – A gap or void 12 inches or more in its least dimension, in a floor, roof, or other walking/working surface. (I.e. skylights, smoke domes, elevator shafts, stairwells etc.)

Personal Fall Arrest System - a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.



# **Lantz Construction Company    PEMB/STEEL ERECTION**

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Purlin – A “Z” or “C” shaped member formed from sheet steel spanning between primary framing and supporting roof material.

Qualified Person – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

Steel Erection – The construction, alteration, or repair of steel buildings, bridges and other structures, including the installation of metal decking and all planking during the process of erection.

Steel Joist – An open web, secondary load carrying member of 144 feet or less, designed by the manufacturer, used for the support of floors and roofs. This does not include structural steel trusses or cold-formed joists.

Structural Steel – A steel member, or a member made of a substitute material (such as, but not limited to, fiberglass, aluminum or composite members). These members include, but are not limited to, steel joists, joist girders, purlins, columns, beams, trusses, splices, seats, metal decking, girts, and all bridging, and cold formed metal framing which is integrated with the structural steel framing of a building.

Systems Engineered Metal Building – (**Pre-Engineered Metal Building PEMB**) A metal, field assembled building system consisting of framing, roof and wall coverings. Typically, many of these components are cold-formed shapes. These individual parts are fabricated in one or more manufacturing facilities and shipped to the job site for assembly into the final structure. The engineering design of the system is normally the responsibility of the systems engineered metal building manufacturer.

Unprotected sides and edges - any side or edge (except at entrances to points of access) of a walking/working surface, e.g., floor, roof, ramp, or runway where there is no wall or guardrail system at least 39 inches (1.0 m) high.

Walking/Working surface - any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

## **IV      REFERENCES**

29 CFR 1926, Subpart R	Steel Erection
16VAC25-145-10-50	Fall Protection for Subpart R - Steel Erection
29 CFR 1926, Subpart M	Fall Protection
29 CFR 1926, Subpart N	Cranes, Derricks, Hoists, Elevators, and Conveyors

# **Lantz Construction Company    PEMB/STEEL ERECTION**

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## **V      PROCEDURES**

### **Site Layout and General Requirements**

#### **Site Layout**

The Controlling Contractor must ensure the work site is prepared for the steel contractor and the following conditions met prior to the erection of steel:

- There are adequate access roads into and around the project site for the maneuvering and placement of all items associated with the steel erection (i.e. cranes, delivery trucks, forklifts, etc).
- Any areas where materials are to be stored will be properly graded and have adequate drainage to prevent swamping of materials or equipment.

#### **General Requirements**

Steel will not be erected until the Steel Contractor has received written notification of the following items from the Controlling Contractor:

- The concrete footings piers and or walls that the column will be attached to has reached at least 75% of the intended design strength or a Professional Engineer has determined that there is sufficient bearing strength to withstand the imposed loads of the steel.
- If any repairs, replacements or field modifications to the anchor bolts were made, a Professional Engineer shall approved the changes in writing.

Before commencing steel operations at the beginning of each work shift, all equipment used in erection activities will be inspected for damage and or defects (i.e. crane, slings, wire rope, forklift, etc). 29 CFR 1926.251 will be used to inspect all rigging equipment and 29 CFR 1926.550 will be use for inspecting cranes.

If cranes are to be used in a multiple lift then the requirements of 29 CFR 1926.753(e) must be adhered to, and any multiple or critical lift will need prior approval from the Safety Director of the Steel Contractor.

At no time will anyone be allowed to work under any suspended load or be below the travel area of the suspended load unless:

- The employee(s) are engaged in the initial connection of the steel.
- The employee(s) are necessary to hook or unhook the load.

#### **Systems-Engineered Metal Buildings (Pre-Engineered Metal Buildings) (PEMB)**

Each structural column will be anchored by a minimum of four anchor bolts.

# **Lantz Construction Company    PEMB/STEEL ERECTION**

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In girt and eave strut to frame connections where girts and or eave struts share a common connection holes, at least one bolt on each end will be installed and wrench tight. A device provided by the manufacture can be used if it protects the girt or eave strut from being displaced. Steel joists/rafters will be fully bolted and tightened prior to:

- Releasing the hoisting equipment.
- Allowing an employee to work from the steel joist/rafter.
- Placing a construction loads on the steel joist/rafter.

Lantz Construction Company employees are to use beam clamps at all times while installing purlins 10 feet above a fully decked lower level. The only time that a purlin may be used as an anchorage point is if the Safety Director of the steel contractor approves of it in writing, in advance of the purlin installation, and all connectors have read and signed the fall protection plan.

When conducting roofing/flooring operations the requirements of Lantz Construction Company's written fall protection program (Section 13 of the Written Safety and Health Program) must be followed.

**NOTE:** Any decking hole more than 2 inches in its least dimension and less than 12 inches in its greatest dimension should not be cut until the actual penetration will be filled by (duct work, pipe, HVAC material etc.) or must have a cover installed.

**NOTE:** Any opening (i.e. elevator shafts, stairwells, skylights etc.) must have a cover installed over the opening(s).

**NOTE:** Covers must be installed over skylights where the skylight is not capable of supporting twice the weight of the employees, equipment, and materials that may be imposed on it at any one time.

## **Structural Steel Assembly**

At heights greater than 10 feet either a personal fall arrest system or a fall restraint system will be used for connectors when NOT in the act of connecting.

**NOTE:** A qualified person will ensure that fall restraint systems are adequate.

At no time, will there be four floors or 48 feet of unfinished bolting or welding above the foundation or the uppermost permanently secured floor.

A fully planked or decked floor or nets will be maintained within two stories or 30 feet which ever is less directly under any erection work being preformed unless the structure has only one floor. (i.e. atriums, stadiums, etc.)

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Shear connectors (such as headed steel studs, steel bars, steel lugs, etc.) will be attached to the top flanges of beams, joists, or beam attachments so that they project vertically or horizontally resulting in a tripping or fall hazard after that level has been decked.

Erection bridging will be installed prior to releasing the hoisting cables from the steel joists. Effective July 18, 2006 all skeletal structural steel that will be walked upon by erectors will have an anti slip coating as outlined in 1926.754 (c)(3).

Metal decking bundles will be placed only on framing members. At the end of each workshift each bundle of metal decking whether on the ground or on the structure will be secured so that it will not become displaced.

Holes in the metal decking will not be cut until immediately prior to being permanently filled with the equipment or structure needed or intended to be placed there.

Metal decking, when placed, will be laid tightly and secured as soon as possible to prevent accidental displacement.

## **Columns and Beams**

Each column will be anchored by a minimum of 4 anchor bolts or rods and set on a level surface intended for column support.

Before releasing the hoisting line, at least two wrench tight bolts per attaching point will be installed.

Perimeter columns will extend a minimum of 48 inches above finished floor to permit the installation of perimeter safety cables prior to the erection of the next tier of columns.

- The perimeter columns will have holes or other devices in or attached to the perimeter columns at or between 42 to 45 inches above the finished floor and also at the midpoint above finished floor.

**NOTE:** Fall protection provided by the steel erector will remain in the area where the steel erector has completed their operations so that it may be used by other trades that will be conducting work in those locations, if the following conditions are met:

- The controlling contractor has requested that the steel erector leave the fall protection system in place.
- The controlling contractor has inspected and accepted control and responsibility for the fall protection system.

**The erection of open web steel joists will follow the requirements and guidelines of 29 CFR 1926.757.**

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## **Protection from Falling Objects**

When exposed to falling objects, in addition to wearing hard hats, each employee will be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy or massive to be contained or deflected by any of the above-listed measures, Lantz Construction Company will place such potential falling objects away from the edge of the surface from which they could fall and will secure those materials as necessary to prevent their falling.

Where there is a danger of tools, materials, or equipment falling from the work surface/ location and striking employees below, the following provisions apply:

1. The area below the working surface/location to which objects can fall will be barricaded, and employees will not be permitted to enter the hazard area.
2. A toeboard will be erected along the edge of the platforms more than six feet above lower levels for a distance sufficient to protect employees below.
  - When toeboards are used, they must be capable of withstanding, without failure, a force of at least 50 pounds (222n) applied in any downward or horizontal direction at any point along the toeboard.
  - Toeboards must be at least 3 1/2 inches high from the top edge of the toeboard to the level of the walking/working surface.
3. Where tools, materials, or equipment are piled to a height higher than the top edge of the toeboard, paneling or screening extending from the toeboard or platform to the top of the guardrail will be erected from a distance sufficient to protect employees below.
4. A guardrail system will be installed with opening small enough to prevent passage of potential falling objects.
5. A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects will be erected over the employees below. Canopies must be installed between the falling object hazard and the employees.

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## **Fall Protection Systems**

**Personal Fall Arrest System (PFAS)** - Personal fall arrest systems will be provided at a 6 foot fall hazard. Employees will be trained in the proper use of PFAS or body harnesses and components. Body harnesses and components will be inspected before each use. These will be removed from service if found to be defective. A lanyard will connect body harnesses not more than 6 feet in length or retractable type lanyard. Lifelines will be attached to a point capable of supporting 5000 pounds per person. All hooks will be double locking. When using a body harness, the lanyard will be adjusted so as to not allow the employee to fall more than 6 feet. Body Belts are not authorized and are prohibited to be used by employees.

**Covers** - Covers for holes in floors, roofs and other walking/working surfaces, will meet the following requirements:

- All covers must support, without failure, at least two times the maximum intended weight that might be imposed on the cover.
- All covers will be secured from accidental displacement by wind and other employees.
- All covers will be marked or color coded to warn of the hazards of falling through holes if removed. Mark covers using the words “COVER” or “HOLE”.

**NOTE:** The use of alternative fall protection, such as Fall Protection Plan, Controlled Access Zone, Warning Line and Safety Monitoring system, are authorized only after all the other conditions of the work site have been analyzed and it has been determined that the use of conventional fall protection is infeasible or creates a greater hazard. Before implementing an Alternative Fall Protection System, the Project Superintendent will notify the Safety Director

**Controlled Decking Zones (CDZ) are not permitted.**

## **Control Lines**

A. When used to control access to areas where leading edge and initial securement of metal deck and other operations connected with leading edge work are taking place, the work area is defined by a control line or by any other means that restricts access.

1. A control line is erected not less than 6 feet (1.8 m) nor more than 90 feet (27.4 m) from the leading edge;
2. Control lines extend along the entire length of the unprotected or leading edge and are approximately parallel to the unprotected or leading edge; and

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3. Control lines are connected on each side to a guardrail system, wall, stanchion or other suitable anchorage.

B. Control lines consist of ropes, wires, tapes, or equivalent materials, and supporting stanchions as follows:

1. Each line is rigged and supported in such a way that its lowest point (including sag) is not less than 39 inches (1.0 m) from the walking/working surface and its highest point is not more than 45 inches (1.3 m) from the walking/working surface.

2. Each line has a minimum breaking strength of 200 pounds (90.8 kg).

## **VI.    TRAINING**

All employees involved in the erection of steel will be trained on:

- Fall hazards
  - The recognition and identification of fall hazards.
  - The use and operation of all the types of fall protection in use on the site to include perimeter safety cables.
  - The correct procedures for inspecting any fall protection in use.
  - The procedure for installing covers over holes and openings.
- Erection sequence
  - Their designated responsibility in the erection sequence (i.e. ground man, crane operator, connector, etc.)
  - The nature of the hazards of the work they are performing and the result of not following the proper procedures or working together as a team.
  - The proper installation techniques, and work practices they are to use while performing their designated responsibility.

## **VII.   CHECKLIST ITEMS**

Each column will be anchored by a minimum of 4 anchor bolts or rods and set on a level surface intended for column support.

Beam clamps, or other means of conventional fall protection are to be used at all times when on a horizontal steel member (such as on a rafter to install purlins) on which the employee has to work and the fall hazard is greater than 10 feet.

Steel will not be erected until the steel contractor has received written notification to proceed from the controlling contractor:

All equipment will be inspected before use.

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At no time, will there be four floors or 48 feet of unfinished bolting or welding above the foundation or the uppermost permanently secured floor.

A fully planked or decked floor or nets will be maintained within two stories or 30 feet which ever is less, directly under any erection work being preformed.

Covers must be secured and marked with “COVER” or “HOLE”.

Lanyard(s) will be adjusted as not to allow more than a 6-foot fall.