

Topics for discussion:

- Sampling
- Excavations/Trenches
- Scaffolds
- Electrical Safety
- New Directive for Residential Construction

OSHA Region V



Sampling for:

- Hexavalent Chrome
- Lead
- Silica
- Noise

Where do you find Hexavalent Chromium?

- **Welding on stainless steel or Cr(VI) painted surfaces**
- **Construction**
 - **Portland Cement**
 - **Paint removal from bridges**



Where do you find Lead?

- **Paint removal from Bridges**
- **Demolition / Rehab of old Buildings**



Where do you find Silica?

- **Tuck Pointing**
- **Brick Mason Saw Operation**
- **Interior/Exterior Building Demo**
- **Cutting Expansion joint in concrete**



Where do you find Noise Hazards?

- **Jack Hammer**
- **Equipment Operators**
- **Mason Saw Operator / Mixer**



Excavation / Trench Safety



Do you know the answers to these questions?

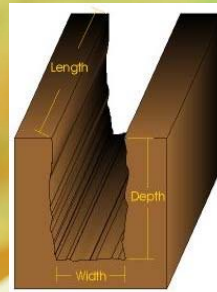
- 1- What is an Excavation?
- 2- What is a Trench?
- 3- What is the maximum allowable slope for?
 - Stable Rock
 - Type A Soil
 - Type B Soil
 - Type C Soil
- 4- What is the maximum depth allowed before you are required to have the dig engineered?

What is an Excavation

OSHA defines an Excavation as "...a wider excavation (in relation to its height) made below the surface of the ground. The depth is less than the width.



What is a Trench

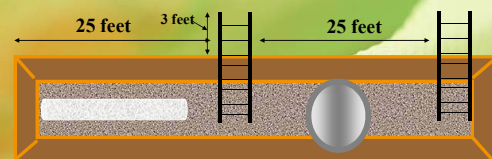


- OSHA defines a trench as "...a narrow excavation (in relation to its length) made below the surface of the ground. The depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet..."

1926.651 (c) Access and Egress

1. Trenches 4 feet or more in depth.
2. Spacing between ladders or other means not more than 25 feet laterally.
3. Ladders secured and extend a minimum of 36 in. above the landing.

Ladder Placement



Ramp, ladder or stairs required at 4 feet or deeper

Keep spoil pile 2 feet from edge of excavation.

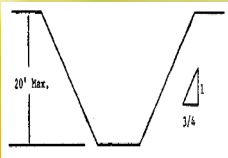


Maximum Allowable Slope for a trench or excavation greater than 5 foot

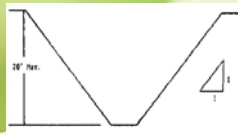
- Stable Rock Vertical (90 degrees)
- Type A Soil $\frac{3}{4} : 1$ (53 degrees)
- Type B Soil 1:1 (45 degrees)
- Type C Soil $1 \frac{1}{2} : 1$ (34 degrees)

Maximum of 20 Foot Dig

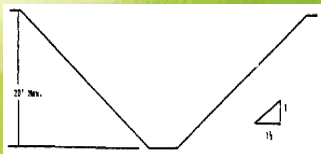
Type A Soil



Type B Soil



Type C Soil



Test Equipment and Methods for Testing Soil

- Pocket Penetrometer
- Shear vane (torvane)
- Thumb Penetration Test
- Dry Strength Test
- Plasticity Test
- Visual test

Competent Person

A person who has the training in and is knowledgeable about, soil analysis, the use of protective systems, and the requirements of the standard, and *has the authority to eliminate the hazards promptly.*

1926.451 General Requirements For Scaffolding



1926.451 General Requirements For Scaffolding

- **1926.451(e)(1)** Each employee on a scaffold more than 10 feet (3.1 m) above a lower level shall be protected from falling to that lower level.



Number #1 1926.451 General Requirements For Scaffolding

- **1926.451(e)(2)** Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mud sills or other adequate firm foundation.



Wiring Methods, Components, and Equipment For General Use

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Wiring Methods, Components, and Equipment For General Use.

- **1926.405(a)(2)(ii)(I)** Flexible cords and cables shall be protected from damage. Sharp corners and projections shall be avoided. Flexible cords and cables may pass through doorways or other pinch points, if protection is provided to avoid damage.



Wiring Methods, Components, and Equipment For General Use

- **1926.405(b)(1)** Conductors entering boxes, cabinets, or fittings shall be protected from abrasion, and openings through which conductors enter shall be effectively closed. Unused openings in cabinets, boxes, and fittings shall also be effectively closed.



Wiring Methods, Components, and Equipment For General Use

- **1926.405(b)(2)** Covers and canopies. All pull boxes, junction boxes, and fittings shall be provided with covers. If metal covers are used, they shall be grounded. In energized installations each outlet box shall have a cover, faceplate, or fixture canopy. Covers of outlet boxes having holes through which flexible cord pendants pass shall be provided with bushings designed for the purpose or shall have smooth, well-rounded surfaces on which the cords may bear.



General Electrical Requirements

- **1926.403(b)(2)** Installation and use. Listed, labeled, or certified equipment shall be installed and used in accordance with instructions included in the listing, labeling, or certification.



Wiring Design For Protection

- **1926.404(b)(1)(i)** General. The employer shall use either ground fault circuit interrupters as specified in paragraph (b)(1)(ii) of this section or an assured equipment grounding conductor program as specified in paragraph (b)(1)(iii) of this section to protect employees on construction sites. These requirements are in addition to any other requirements for equipment grounding conductors.



Wiring Design For Protection

- **1926.404(b)(1)(ii)** Ground-fault circuit interrupters. All 120-volt, single-phase 15- and 20-ampere receptacle outlets on construction sites, which are not a part of the permanent wiring of the building or structure and which are in use by employees, shall have approved ground-fault circuit interrupters for personnel protection. Receptacles on a two-wire, single-phase portable or vehicle-mounted generator rated not more than 5kW, where the circuit conductors of the generator are insulated from the generator frame and all other grounded surfaces, need not be protected with ground-fault circuit interrupters.



Wiring Design For Protection

- **1926.404(f)(6)** Grounding path. The path to ground from circuits, equipment, and enclosures shall be permanent and continuous.



New Directive for Residential Construction

Part 1 Directive

- Effective June 16, 2011
- OSHA has issued a directive rescinding the Interim Fall Protection Compliance Guidelines for Residential Construction (STD 03-00-001)

What is Residential?

- The end-use is to have people live in their home, i.e., a dwelling/apartment AND
- The structure being built must be constructed using traditional wood frame construction materials and methods.
 - Metal Studs
 - Masonry



Residential? NO! (most instances)

- Churches
- Nursing Homes
- Banks
- Hotels



Nursing Homes



Banks



Hotels

Low Sloped Roofs (less than 4/12 pitch)

- Other fall protection measures may be used to the extent allowed under other provisions of 29 CFR 1926.501(b) addressing specific types of work. For example, 1926.501(b)(10) permits the use of warning lines and safety monitoring systems during the performance of roofing work on low-sloped roofs.



Sloped Roofs



Slide guards with guardrails for sheathing



No Fall Protection



Fall Protection Plan

- 1926.502(k)
- See Appendix E in OSHA Subpart M
- ANSI Z359.2 – Minimum Requirements for a Comprehensive Managed Fall Protection Program



Fall Protection Program

- Written Plan showing it is not feasible
- Plan must be specific to the site it is used on
- Can be used for repetitive use for a particular style/model house if ALL issues related to fall protection are addressed

Infeasible

- A written, site-specific fall protection plan is required.
- *And documents*, in that plan, the reasons why conventional fall protection systems are infeasible or why their use would be a greater hazard.

Slides Guards?

- Before: Alternative measures such as slide guards acceptable
- Now: Prove that the use of conventional fall protection is infeasible or created a greater hazard
- Proof is via written fall protection plan



Wall Walking

- Many contractors are using safety devices that attach to the wall to avoid working on the top plate.
- Not anticipated to be exempt under fall protection plan.



This is dangerous and other methods can be used.



Work off ladders and scaffolds if possible.

Top Plate

- The worker has to get on the top plate to give leverage and assist the center man with the large truss.

Due to the many configurations of residential designs it will be evaluated on a case by case basis.



Fall Restraint

- OSHA allows the use of an effective fall restraint system in lieu of a personal fall arrest system.
- To be effective, a fall restraint system must be rigged to prevent a worker from reaching a fall hazard and falling over the edge.
- See ANSI Z359.3-2007 for more on restraint systems.

Most fall restraints are impractical in residential. Workers can easily slide off the roof.

Do not accept a restraint system without calling the OSHA regional office.



How to Comply



How to Comply



Attached to top chord using factory supplied hex head fasteners.

The attachment ring is used to fit all common size snaphooks and carabiners.



Using fastener package #0711, the Universal can be installed directly to the sheathing or over existing roofing without attaching to a top chord.

Installs quickly with our #0712 double nail fastener package, making it just as easy to remove.

How to Comply



How to Comply



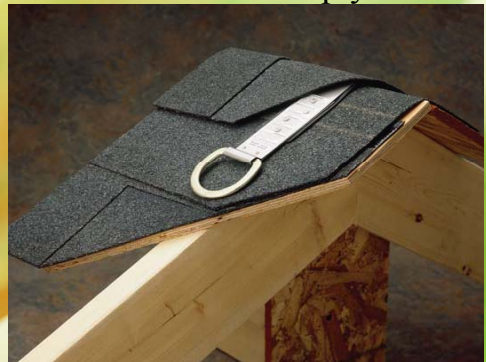
How to Comply



How to Comply



How to Comply



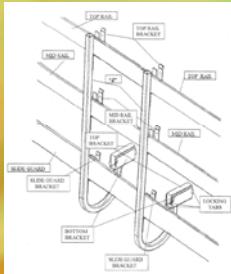
How to Comply



How to Comply



How to Comply



How to Comply



Floor Openings

- Many falls occur through openings where stair openings exist



Violation: Floor opening with no guardrails.

Floor Opening Abatement

Violation: 4' x 8' sheets of plywood covering a stairway opening to the basement of a house. Only four nails hold the two covers. The cover is not marked.



No Violation: Guardrails used

Truss Bracing

- Trusses have to have horizontal and **diagonal** bracing to prevent a truss collapse.
- Cited 5(a)(1) per Truss Plate Institute Guidelines

