

EXCAVATION, TRENCHING AND SHORING SAFETY

Supplement to Standard Training Module

TRAINING REQUIREMENTS OVERVIEW

This standard Vivid training module provides a general overview of excavation and trenching safety. This module focuses on excavation and trenching in the construction industry. Although no particular training regimen is required by the OSHA construction industry standard, employees **should** receive information and training on excavation and trenching safety practices.

This training is intended for employees who work in and around excavation sites. It provides basic recognition of safety hazards, terminology, and controls/protective systems used to protect them. This module is not intended to train employees as competent persons in excavation.

In addition to this general overview, employees should receive facility-specific information. This additional training should cover:

- **What protective system(s) will be used to protect them**
- **Who the competent person is on that jobsite**
- **Specific work practices associated with the excavation**
- **Overview of the jobsite as to where the utility lines (and any other underground hazards) are located**
- **Scope of the project**
- **What to do in the event of an emergency**

Additional training beyond the scope of this module must be provided for individuals who are involved in the design and/or supervision of an excavation site.

The General Duty Clause requires an employer to “provide employment and a place of employment which are free from recognized hazards”. Employee training, appropriate to recognized workplace hazards, is anticipated to be a part of a facility’s overall safety and health program.

Frequency: Training **should** be provided to affected employees:

- Upon initial assignment of work
- When recognized hazards change, or new hazards are introduced into the workplace
- When new or modified processes, procedures, and/or equipment are introduced into the workplace

GENERAL OVERVIEW OF THE STANDARD

EXCAVATIONS– 29 CFR 1926.650-652

1. **PURPOSE:** To provide effective controls through appropriate engineering, work practices and procedures to work safely in and around excavations.
2. **SCOPE:** Applies to all excavations made in the earth's surface. Excavations are defined to include trenches.
3. **SURFACE ENCUMBRANCES & UNDERGROUND INSTALLATIONS:** Any surface and underground hazards shall be removed or supported, as necessary to safeguard employees.
4. **ACCESS AND EGRESS:** Requirements are stated for access and egress of excavation sites, based on the design and depth of the excavation. Requirements are reviewed for:
 - Ramps
 - Runways
 - Stairs/Steps
 - Ladders
5. **PROTECTION OF WORKERS:** Workers must be protected from a variety of hazards while working in and around excavations. Specific requirements are stated for:
 - Vehicular traffic
 - Exposure to falling loads
 - Use of warning system for mobile equipment
 - Hazardous atmospheres and emergency rescue equipment
 - Entering bell-bottom pier holes or other similar deep, confined footing excavations
 - Working in and around water accumulation
 - Stability of adjacent structures
 - Protection from loose rock or soil
6. **INSPECTIONS:** Daily inspections of the excavation site are required. A "competent" person shall make inspections. Inspections are required for:
 - Evidence of a situation that could result in cave-in
 - Indication of failure of protective system(s)
 - Hazardous atmospheres
 - Any other hazardous conditions

7. **FALL PROTECTION:** Requirements are stated for providing where employees or equipment are required or permitted to cross over excavations.
8. **PROTECTIVE SYSTEMS:** Each employee working in an excavation shall be protected from cave-ins by an adequate protective system designed according to the standard. The system shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied to the system. Some exceptions are outlined in the standard. Required protective systems include:
 - Sloping and benching systems
 - Shield systems
 - Shoring and other support systems

Several options for configurations are outlined for:

- Design specifications of protective systems
- Systems designed by a registered professional engineer
- Acceptable materials and equipment used in construction
- Specifications for documentation

REFERENCE MATERIALS

Publications: Trenching and excavation for Construction Industry can be downloaded at: www.osha-slc.gov/SLTC/trenchingexcavation/index.html

(Includes several links to the construction resource manual and other excavation/trenching information)

Websites

OSHA website:

www.osha.gov

Subpart P:

1926.650 (scope, application & definitions)

1926.651 (specific excavation requirements)

1926.652 (requirements for protective systems)

Appendix A (soil classifications)

Appendix B (sloping & benching)

Appendix C (timber shoring for trenches)

Appendix D (aluminum hydraulic shoring for trenches)

Appendix E (alternatives to timber shoring)

Appendix F (selection for protective systems)