



## **MONTHLY SAFETY BRIEF** **TRENCHING AND EXCAVATION SAFETY OVERVIEW**

In most cases, Hygieneering employees are not permitted to enter excavations but as consultants on many construction sites it is important to know the parts and hazards of trenches and excavations. This safety brief provides an overview of the main considerations with trench safety.

Excavation and trenching are among the most hazardous construction operations. OSHA defines an excavation as any man-made cut, cavity, trench, or depression in the earth's surface formed by earth removal. A trench is defined as a narrow underground excavation that is deeper than it is wide and is no wider than 15 feet (4.5 meters).

### **Types of Protective Systems**

There are different types of protective systems such as sloping, benching, shoring and shielding. Sloping involves cutting back the trench wall at an angle inclined away from the excavation. Benching uses a series of horizontal levels or steps. Shoring requires installing aluminum hydraulic or other types of supports to prevent soil movement and cave-ins. Shielding protects workers by using trench boxes or other types of supports to prevent soil cave-ins.

Designing a protective system can be complex because you must consider many factors: soil classification, depth of cut, water content of soil, changes due to weather or climate, surcharge loads (e.g., spoil, other materials to be used in the trench) and other operations in the vicinity.

### **Inspections**

OSHA standards require that trenches be inspected daily and as conditions change by a competent person prior to worker entry to ensure elimination of excavation hazards. A competent person is an individual who is capable of identifying existing and predictable hazards or working conditions that are hazardous, unsanitary, or dangerous to employees and who is authorized to take prompt corrective measures to eliminate or control these hazards and conditions.

### **Access and Egress**

OSHA requires safe access and egress to all excavations, including ladders, steps, ramps, or other safe means of exit for employees working in trench excavations 4 feet (1.22 meters) or deeper. These devices must be located within 25 feet (7.6 meters) of all workers.

### **General Trenching and Excavation Rules**

- Keep heavy equipment away from trench edges.
- Keep surcharge loads at least 2 feet (0.6 meters) from trench edges.
- Know where underground utilities are located.
- Test for low oxygen, hazardous fumes and toxic gases.
- Inspect trenches at the start of each shift.
- Inspect trenches following a rainstorm.
- Do not work under raised loads.



## TRENCHING AND EXCAVATIONS QUIZ

1. Which of the following is not a type of protective system for excavations and trenches?
  - a. Sloping
  - b. Benching
  - c. Dragging
  - d. Shoring
  - e. All of the above are considered protective systems
  
2. At what depth do you need a ladder or another safe means of exit for an excavation?
  - a. 2 Feet
  - b. 4 Feet
  - c. 6 Feet
  - d. 8 Feet
  
3. Which of the following should not be done at an excavation?:
  - a. Inspect trenches/excavations daily
  - b. Keep heavy equipment near the edge of the excavation/trench
  - c. Test for low oxygen
  - d. Identify the locations of utilities
  
4. A man made cut in the ground that is 12 feet deep and 20 feet wide would be called a trench.  
 True  
 False

**Instructor(s) – John Feller, CIH, CSP**

**SCORE: PASS / FAIL**

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Employee Signature

  
\_\_\_\_\_  
Supervisor Signature

\_\_\_\_\_  
Date