



# WEEKLY SAFETY MEETING

## EXCAVATION

### American Public Works Association Uniform Color Code Underground Utility Markings

An excavation is any manmade cut, cavity, trench or depression in the earth that was formed by the removal of earth. **PRIOR TO EXCAVATING**, make sure that all underground utilities such as sewer lines, telephone lines, fuel, electrical power lines, and water lines have been identified and properly marked.

### Competent Person Responsibilities

A **competent person** will be assigned to each excavation in which employees **MUST** enter and work. The competent person will inspect the excavation and resolve any deficiencies or hazards before entry. A competent person will not be needed if employees **DO NOT** have to enter the excavation. Competent persons are employees who are capable of identifying existing and predictable hazards in the surrounding area, or working conditions which are unsanitary, hazardous, or dangerous to employees, and has been given the authority to take prompt corrective measures to eliminate them, including temporary shutdown, if required. In addition, competent persons are responsible for:

|  |  |
|--|--|
|  | <b>Red:</b> Electric Power Lines, Cables, Conduit and Lighting Cables  |
|  | <b>Yellow:</b> Gas, Oil, Steam, Petroleum or Gaseous Materials         |
|  | <b>Orange:</b> Communication, Alarm or Signal Lines, Cables or Conduit |
|  | <b>Blue:</b> Water, Irrigation and Slurry Lines                        |
|  | <b>Green:</b> Sewers and Drain Lines                                   |
|  | <b>Pink:</b> Temporary Survey Markings                                 |
|  | <b>White:</b> Proposed Excavation                                      |
|  | <b>Purple:</b> Reclaimed Water   |

### General Rules

- ✦ A cubic yard of soil weighs approximately 2700 lbs. or about as much as a mid-size automobile. A trench collapse may contain 3 to 5 cubic yards of soil.
- ✦ When employees are working in an excavation, materials, spoils and equipment **SHALL** be kept at least **2 feet** from the edge of the excavation.
- ✦ Employees **SHALL NOT** work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation.
- ✦ All excavations, openings, obstructions, and hazards created by employees **SHALL** be properly guarded to protect other employees and the general public.
- ✦ Employees are **NEVER** to be positioned under digging or lifting equipment as that exposes them to falling loads.
- ✦ When employees are required or permitted to cross over excavations, walkways or bridges with standard guardrails will be provided.
- ✦ A trench should be opened in lengths in which work can be completed and the trench closed at the end of the day.
- ✦ When trenches have to be left open overnight, they **SHALL** be covered with suitable materials and/or barricaded during non-working hours.
- ✦ Barrier protection or immediate backfilling will be provided for any unattended or remotely located excavation.
- ✦ Barriers should be placed at least **6 feet away** from edge of excavation if possible.

### Access and Egress

- ✦ Ladders, ramps or other safe means of access or egress for any excavation deeper than **4 feet** is required. Whatever safe means of egress is used, it will be located at intervals with no more than 25 feet of lateral travel distance from employees.
- ✦ An earth ramp may be considered a safe mean of egress only if employees are able to walk the ramp in an upright manner when entering or exiting the trench.
- ✦ Ladders **MUST** extend at least **3 feet** above the top of the excavation and be anchored securely on the top and bottom.

### Hazardous Atmospheres

The air quality **MUST** be tested with a calibrated air monitor before and during occupancy of an excavation **4 feet** or deeper where an oxygen-deficient or flammable atmosphere exists or could reasonably be expected to exist or when controls are used to protect employees from a hazardous atmosphere.

### Trench Shoring/Shield Systems

- ✦ When shoring or shield systems are used, the system installation process **SHALL** progress as the excavation progresses and should follow as closely as possible to the equipment performing the excavation.
- ✦ Employees and subcontractors will be protected from the hazard of cave-in when entering or exiting the areas protected by the shields.
- ✦ Employees and subcontractors are not allowed in the shield when it is being installed, removed or moved vertically.
- ✦ Trenches **5 feet deep** or greater require a protective system unless the excavation is made entirely in stable rock. If less than 5 feet deep, a competent person may determine that a protective system is not required.
- ✦ Trenches **20 feet deep** or greater require that the protective system be designed by a registered professional engineer or be based on tabulated data prepared and/or approved by a registered professional engineer in accordance with 1926.652 (b).
- ✦ All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½ :1.

Meeting Date: \_\_\_\_\_  
Supervisor: \_\_\_\_\_

Trainer: \_\_\_\_\_  
Location: \_\_\_\_\_

**Attendees: (Please print clearly)**

|       |       |       |
|-------|-------|-------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |



# WEEKLY SAFETY MEETING

## EXCAVATION QUIZ

- According to the uniform code, match the utility color with the correct description:
 

|   |           |       |   |
|---|-----------|-------|---|
|  | a. Red    | _____ | Temporary Survey Markings                               |
|  | b. Yellow | _____ | Water, Irrigations & Slurry Lines                       |
|  | c. Orange | _____ | Sewers and Drain Lines                                  |
|  | d. Blue   | _____ | Electric Power Lines, Cables Conduit & Lighting Cables  |
|  | e. Green  | _____ | Gas, Oil, Steam, Petroleum or Gaseous Materials         |
|  | f. Pink   | _____ | Proposed Excavation                                     |
|  | g. White  | _____ | Communication, Alarm or Signal Lines, Cables or Conduit |
|  | h. Purple | _____ | Reclaimed Water   |
- An excavation is any manmade cut, cavity, trench or depression in the earth that was formed by the removal of earth. True or False?
- It doesn't make any difference if we locate utilities or not, the heavy equipment operator will hit them anyway. True or False?
- When employees are working in an excavation, materials, spoils and equipment **SHALL** be kept at least \_\_\_\_\_ feet from the edge of the excavation.
- Where oxygen deficiency or hazardous atmosphere exists or could reasonably be expected, atmospheres must be tested before employees enter and during occupancy of an excavation deeper than \_\_\_\_\_ feet.
- When trenches have to be left open overnight, they **MUST** be barricaded. True or False?
- A trench collapse may contain 3 to 5 cubic yards of soil, which could weigh as much as a small automobile. True or False?
- Trenches \_\_\_\_\_ feet deep or greater require a protective system unless the excavation is made entirely in stable rock.
- Trenches \_\_\_\_\_ feet deep or greater require that the protective system be designed by a registered professional engineer or be based on tabulated data prepared and/or approved by a registered professional engineer in accordance with 1926.652 (b)
- Employees and subcontractors are not allowed in the shield when it is being installed, removed or moved vertically. True or False?
- Ladders, ramps or other safe means of access or egress must be provided every \_\_\_\_\_ feet or any excavation deeper than \_\_\_\_\_ feet.
- Ladders must extend \_\_\_\_\_ feet above the top of the excavation for easy egress.
- A competent person must be provided to inspect the trench/excavation \_\_\_\_\_ entry.
- Daily inspections are required to be recorded on the Winger Trench & Excavation Safety Checklist. True or False?
- Soil classification must be performed. Typically, the soil we work in is Class C and must be sloped or use a trench box. True or False?
- Employees must be removed from a trench or excavation immediately if hazards are found. True or False?



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

Trained by: \_\_\_\_\_

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

Trained by Signature: \_\_\_\_\_

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

Location: \_\_\_\_\_