



# SAFETY DIRECTOR BULLETIN



## EXCAVATION, TRENCHING & SHORING BEST PRACTICES

Working in trenches can be one of the most dangerous activities for public workers. Trenches can be hazardous due to their soil type, equipment operating too close to the trench edge, and spoils piles closer than two feet from the trench edge and weather conditions. When done correctly and safely, trenching operations can reduce worker exposure to cave-ins, falling loads, hazardous atmospheres, and hazards from mobile equipment. OSHA standards require that trenches and protective systems be inspected by a competent person before work begins each day and as conditions change.

A competent person is someone with the training, knowledge, and experience to identify conditions that can result in a trench cave-in, failures of protective systems, and other hazardous conditions. They must also have knowledge of the use of protective systems per 29 CFR 1926.651 Subpart P. The competent person must have the authority to take prompt, corrective action to eliminate existing and predictable hazards and stop work when required.

Cave-ins and trench collapses can occur for a variety of reasons including vibration from equipment, adjacent structures, weather conditions including freezing and thawing of soil, soil weight, addition or removal of water, and reduction in frictional and cohesive characteristics of the soil.

Protective measures include the use of sloping or benching, timber shoring, hydraulic or pneumatic shoring, and shielding/trench boxes.

### TRENCHING BY THE NUMBERS

- **2 feet** – minimum distance for spoils pile
- **2 feet** – hand digging only to locate underground utilities
- **3 feet** – ladder must extend above trench and be secured
- **4 feet** – confined space air sampling must be conducted
- **4 feet**- proper egress – ladder, ramp, etc.
- **5 feet** – protection system required (shoring, trench box, etc.)
- **6 feet** – fall protection required
- **20 feet or greater** – must be designed by a P.E.
- **25 feet** – maximum travel distance to egress



Remember to call in for a mark-out before beginning any excavation. Excavators are required by law to call 1-800-272-1000 between 3 and 10 days before starting a job. Remember to photograph the mark-outs before digging and hand dig within 2 feet of the mark-out. Excavators must immediately report any damage to underground utilities as a result of excavation.

Visit OSHA's [Trenching and Excavation Safety page](#) for additional information and resources.

There are several MSI resources available including an MSI LIVE Class titled “Excavation, Trenching & Shoring” and two MSI NOW training programs titled “Trench Safety Basics for Field Personnel” and “Trenching and Shoring Safety in Construction Environments”. Additional MEL resources consist of:

- [Trench Safety Poster](#)
- [Excavation Competent Person Documentation](#)
- [Excavating & Trenching Audit Checklist](#)
- [Excavation & Trenching Protective Support Systems](#)
- [Excavation Inspection Permit Checklist](#)
- [Excavation-Approximate Angle of Repose for Sloping the Sides of Excavations](#)
- [Excavations and Trenches Daily Inspection Checklist](#)
- [Excavation-Steps for Determining Soils Classification](#)