

Trenching Safety

In the construction industry, excavation work such as trenching can be extremely hazardous. A trench is defined as a narrow excavation made below ground in which the depth is greater than the width, and the width is 15 feet or less.

The most common type of trenching accident, a cave-in, is also the most deadly. Cave-ins are usually the result of unsafe work practices such as: not using shoring, using inadequate shoring, excavating too close to a building or utility pole, misjudging the stability of the soil, vibrations caused by construction work, or weather conditions that change the soil around the excavation. Remember the following tips when working with trenches:

BEFORE YOU DIG...

- **Contact** all local utility companies as well as the owner of the property to find if there are any underground fixtures that may present a problem.
- **Remove** or secure any surface objects that may create a hazard, such as rocks, trees, poles and sidewalks.
- **Plan** for emergencies during trenching. Make sure you have emergency rescue equipment and trained rescue personnel on site.
- **Classify** the type of soil and rock deposits at the excavation site as either stable rock or type A, type B or type C soil. Soil classification must be made by using one visual and at least one manual analysis. Use the following definitions to help you type your soil:
 - stable rock**—natural solid mineral material that can be excavated with vertical sides and will stay intact while exposed
 - type A soil**—examples include clay, silty clay, sandy clay and clay loam
 - type B soil**—examples include silt, silty loam and sandy loam
 - type C soil**—examples include granular soils such as gravel, sand, loamy sand, submerged soil, soil from which water is freely seeping and submerged rock that is not stable

DURING TRENCHING...

- Always wear the proper personal protective equipment for the job.
- Know how and where to exit the trench. Remember, if a trench is 4 feet deep or greater, an exit must be provided within 25 feet of each worker.
- Keep trenching machines level to prevent undercutting the soil and keep the shoring as close as possible to the trenching machine.
- Pile excavated soil at least 2 feet from the edge of the trench.
- When there has been a change in weather, such as a heavy rain or thawing after a freeze, check with your supervisor before going into the trench. Trench walls that were safe when dry or frozen can collapse when saturated with water or thawed out.
- In excavations deeper than 4 feet or where hazardous atmospheres exist or could exist, the air must be tested before entry.
- Keep materials and equipment that could roll or fall into a trench at least 2 feet away from the edge.
- Before getting into any trench, make sure that the cross-bracing is in place and tight. Cross-bracing may be screw jacks, hydraulic jacks or cleated and rigidly jacked or wedged timbers.
- Make sure the sheeting that forms the walls of the shored trench extends at least 18 inches above the top of the trench.
- Use extra caution when walking around or moving equipment around trenches. Equipment or soil dropped into a trench could injure workers below.
- If equipment such as wheelbarrows and cement mixers must be used over a trench, be sure to provide extra vertical supporting members between the stringers of shoring.