



Slope It, Shore It, Shield It. Trench and Excavation Safety

A trench is a narrow channel (up to 15 feet wide), generally deeper than it is wide, made below the surface of the ground. An excavation is any man-made hole or trench that is made by removing earth. Any way you look at it, these activities are among the most dangerous in utility maintenance or construction. According to Occupational Safety and Health Administration (OSHA) reports, In 2022, thirty-five people died in trench and excavation accidents, making it one of the deadliest years in a decade. In fact, 2022 experienced twice as many fatalities as 2021. Almost every death could have been prevented using safety equipment made to prevent such tragedies. Local government employees have close calls every year. Use the information below to ensure that you make it out alive.

Call Before You Dig

- **811** is the national call-before-you-dig phone number.
- Anyone who plans to dig should call 811 or go to their [state 811 center's website](#) a few business days before digging to request that the approximate location of buried utilities be marked with paint or flags to help avoid damage.
- Anyone who encounters underground utilities should stop work, notify one call, and consult with a supervisor. If you suspect you've damaged a gas line, call the fire department, contact the owner of the line, and notify the Texas Railroad Commission.

The Role of the Competent Person

OSHA defines a knowledgeable (competent) person as someone capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authority to take prompt corrective measures.

Trench or Excavation Requirements

- A competent person should be present during trenching and excavating activities.
- Protective systems must be considered in any trench or excavation more than 5 feet deep.
- Trenches deeper than four feet must have a way to get in and out (usually a ladder) for every 25 feet of horizontal travel within the trench.
- Please review the vast resources available from TMLIRP, OSHA, the Texas Department of Insurance – Division of Workers' Compensation, and others to learn about requirements, training, and protective systems.

How to Secure a Trench or Excavation

- **Sloping** means slanting the soil away from the trench. The degree to which the soil must be sloped depends on the type of soil.
- **Benching** is cutting back soil in a step-like fashion. This method should be used only with cohesive soils, and it is not an option for Type C soil.
- **Shoring** means using support systems, such as hydraulic cylinders, to create a barrier between workers and trench walls.
- **Shielding** uses a system, such as trench boxes (plates used to brace the sides of the trench), to protect workers from cave-ins.

Additional Resources

- [TDI Workplace Safety Videos](#)
- [TMLIRP Online Learning Center Courses: Excavation Safety, Trenching and Excavation Safety](#)
- [TMLIRP Sample Safety Manual](#)
- [TMLIRP Excavation Documentation Guide](#)
- [TMLIRP Multimedia Library](#) Trenching Shoring Excavation DVDs
- Visit the [TMLIRP Resource Library](#) for more safety resources
- <https://www.osha.gov/sites/default/files/publications/osha2226.pdf> (OSHA Pamphlet on Trenching and Excavation Safety)