

Utility repairs, water line breaks, sewer repairs, and public works projects often require employees to enter trenches and excavations. In December 2025, a city employee tragically died in a cave-in while performing utility trench operations. Recognized industry best practices generally call for a protective system when trenches reach **5 feet or greater in depth**, unless the excavation is made entirely in stable rock.

Protective systems may also be necessary at shallower depths when conditions indicate a potential for cave-in. Understanding the differences between **shoring**, **shielding**, and **sloping** is critical to selecting and properly using the appropriate protective system.

1

Shoring Prevents Cave-Ins. Shoring uses support systems to hold trench walls in place and resist soil movement. Examples include hydraulic, pneumatic, timber, and aluminum shoring systems. Unlike shielding, shoring is designed to prevent a collapse.



2

Shielding Protects Workers. Shielding systems, commonly called trench boxes or trench shields, are designed to protect employees if a cave-in occurs. They do not prevent soil movement, but create a protected work area for employees inside the trench. Employees should remain within the protected area while exposed to cave-in hazards.



3

Sloping & Benching Require Space. Sloping and benching con'gure trench walls to reduce the potential for collapse. The appropriate con'guration depends on soil and site conditions. Because municipal excavations often occur in roadways, utility corridors, easements, and congested work zones, adequate space may not be available. In these situations, shoring or shielding may be a more practical solution.

4

Know When Protection is Needed. Recognized industry best practices generally call for employees to be protected from cave-ins when excavations reach **5 feet or greater**, unless the excavation is entirely in stable rock. Excavations **20 feet or deeper** should have protective systems designed or approved by a registered professional engineer.



5

Keep Materials and Equipment Away From the Edge: Keep spoil piles, materials, and equipment at least 2 feet from the trench edge to reduce the risk of falling objects and added pressure on trench walls. Never allow equipment to operate too close to the edge or over employees working in the trench.

LEARN MORE WITH THESE ADDITIONAL RESOURCES:

- Texas Department of Insurance - [Excavation and Trenching Safety Training Program](#)
- Texas Department of Insurance - [Excavation and Trenching Safety Workplace Program](#)
- TML Risk Pool – Safe Backhoe Operations - [Safe Backhoe Operations TIPS.pdf](#)