

Trench and Excavation Safety

Trench collapses, or cave-ins, are the **leading hazard** in excavation work. Safe trenching helps **prevent** falls, falling loads, hazardous atmospheres, and incidents involving mobile equipment.

Trench Safety Measures

Trenches 5 feet or deeper require a protective system unless dug in stable rock. For **trenches less than 5 feet**, a competent person must decide if protection is needed.

Trenches 20 feet or deeper must have a protective system designed or approved by a registered professional engineer, as required by OSHA 1926.652(b) and (c).

Competent Person

Before workers enter a trench, a competent person **must inspect it daily** and after any condition changes to ensure safety. This person is **trained** to identify hazards, determine soil types, select protective systems, and has the authority to correct issues immediately.

Access and Egress

- Keep heavy equipment and spoils at least 2 feet from trench edges
- Locate underground utilities before digging
- Test for atmospheric hazards in trenches over 4 feet deep
- Inspect trenches daily, at the start of each shift, after storms, and after conditions change
- Never work under suspended loads
- Wear high visibility clothing when near traffic



Protective Systems

- **Benching**: a method of protecting workers from cave-ins by cutting the sides of an excavation into horizontal steps. Benching is not allowed in Type C soil.
- **Sloping**: involves cutting back the trench wall at an angle inclined away from excavation.
- **Shoring**: requires installing aluminum hydraulic or other types of supports to prevent soil movement and cave-ins.
- **Shielding**: protects workers by using trench boxes or supports to prevent cave-ins. Designing these systems can be complex, as factors like soil type, trench depth, moisture, weather, nearby loads, and site activity must all be considered.

OSHA standards require that employers provide workplaces free of recognized hazards. The employer must comply with the trenching and excavation requirements of **29 CFR 1926.651 and 1926.652**.

