

Excavation Safety: Preventing Hazards on the Job Site

Excavation work is a routine part of construction, but it presents serious risks. According to the Bureau of Labor Statistics, **97 trenching-related fatalities** occurred in the construction industry between 2013 and 2017—an average of 19 per year, with fatalities ranging from **10 in 2014 to 33 in 2016** (BLS, 2019). However, by following proper safety protocols, excavation work can be significantly safer.



Common Excavation Hazards

Excavation sites pose multiple dangers, including:

- **Cave-ins and collapses** – The most severe hazard, often leading to fatalities.
- **Water accumulation** – Increases the risk of drowning and weakens trench walls.
- **Falls into excavations** – Posing a risk to both workers and bystanders.
- **Utility strikes** – Hitting underground utilities can cause electrocution, gas leaks, or service disruptions.
- **Hazardous gases** – Toxic or oxygen-deficient atmospheres can develop in excavations.

Best Practices for Excavation Safety

1. Implement Protective Systems

- Follow OSHA's protective system requirements based on soil classification.
- Most excavated soil is classified as **"Type C,"** the least stable and most dangerous.
- Use **sloping, benching, shoring, or trench boxes** to prevent collapses.

2. Prevent Overhead and Underground Hazards

- Keep equipment and workers **away from the edges** to avoid falling objects.
- Always use the **"One Call" utility location service** before digging.
- Consult as-built drawings when available to avoid striking underground utilities.

3. Control Water Accumulation

- Use **pumps** to remove water and never allow workers in trenches where water is collecting.
- Inspect trenches regularly, especially after rain, to ensure stability.

4. Secure the Excavation Site

- Never leave an excavation **open and unprotected** when work is not in progress.
- Use **barricades, fencing, and signage** to prevent falls and vehicle accidents.

5. Test for Hazardous Atmospheres

- If there is a risk of **toxic gases or low oxygen levels**, perform gas testing.
- Pay special attention to **low areas where gases may accumulate** before workers enter.

Key Takeaway: Prioritize Safety to Prevent Excavation Fatalities

Excavation work can be extremely dangerous if proper precautions aren't taken. By implementing protective systems, preventing hazards, managing water accumulation, securing the site, and testing for hazardous atmospheres, workers can minimize risks and ensure a safer work environment. Always follow OSHA guidelines and conduct thorough safety assessments before starting excavation work.

SAFETY TRAINING SIGN IN SHEET

TRAINING TITLE	Are Trench Excavations Confined Spaces?		
DATE & TIME		LOCATION	
COMPANY		TRAINER	

NAME	SIGNATURE	PHONE