

Chapter 8 - Trenching and Excavation

Excavation Operations

The most serious hazard of trenches is cave-in due to improper shoring and sloping of the trench. Other injuries are caused by work activities performed in the trench. These hazards include accidents due to falling materials, machinery, and exposure to noxious gases. Electrocution from utility lines or pipes, and slips and falls while climbing in and out of trenches are also potential hazards. Factors to consider before shoring or sloping are:

1. Determine the location of underground pipes, electrical, gas, sewage, or fuel lines before digging.
2. Trench depth: If the trench is 5 feet deep or more, it must be shored or sloped. If there is a possibility of soil movement, even shallower trenches have to be shored. If you have any doubt about it -- shore or slope the trench.
3. Running Soils: The more liquid the soil, the more you need to use additional types of shoring.
4. Changing Weather Conditions: Hard packed soil can become soupy and unstable after rain. Trenches, which are safely sloped or shored in dry weather, can be very dangerous in wet weather.
5. Heavy loads in the area: Don't park heavy equipment next to a trench. Nearby structures such as buildings, curbs, trees, and utility poles will exert stress on trench shoring.
6. Vibration: If you are digging a trench near a roadway or where other operations create vibration, make the shoring strong enough to withstand the added stress.
7. If a trench is 5 feet deep or more, work should be supervised by an individual knowledgeable about trench safety.
8. Always shore from the top down, and take it out from the bottom up.
9. Keep water away from trench banks.
10. Make sure electrical lines and cables are grounded, guarded or de-energized.
11. Make sure that shoring material is the right kind, in good condition, and free of defects.
12. Place soil removed from the trench at least 2 feet from the trench rim.
13. Always wear hard hats and other necessary protective equipment.
14. Notify your supervisor when you are working in a trench.
15. For easy, safe and quick exit, set exit ladders every 25 feet for trenches greater than 4 feet deep.
16. Post warning signs and rope off the areas that may be dangerous to the public and other employees.