

Excavations

Cave-ins and slough-offs are a major cause of deaths in the construction industry each year. Excavations must be properly shored or cut back to an acceptable angle of repose; otherwise, there will be a constant threat of a cave-in and the associated chance of injury or loss of life. A qualified person must be involved in planning and having a safe excavation project.

Guide for Discussion

Before Excavation

- Review Underground utilities located? (Checked with local utility companies or property owner.)
- Any overhead hazards (i.e., falling rock, soil, or other materials or equipment)?
- Will there be any heavy equipment operating in the near proximity of the excavation?
- Estimated depth required for the excavation?
- How many people will work inside the excavation?
- Is there an escape plan for those inside the excavation to cover a possible cave-in or slide?
- Has there been a soil analysis? This will help determine the type of shoring to provide or the angle of repose needed.

Steps to Take to Provide a Safe Excavating Operation

- Always shore or cut back the opening adequately.
- Any opening with a depth of five feet or more requires shoring or be cut back.
- Never store excavated or other materials closer than two feet from the edge of the excavation.
- Inspect the excavation daily. This must be done by a competent person.
- Access ladders must be provided every twenty-five foot in excavations of four (4) foot or more in depth.
- Review escape procedures with all personnel who may have cause to be in the excavation.

Additional Discussion Notes:

Instructor Note: Review the additional discussion points for specific application to the job at hand. For example, let the crew know who is the “Competent Person.” Explain what the Competent Person is required to do (see below). This reinforces the training and is a further sign of your commitment to have a safe and healthy workplace.

Additional Discussion Points: A competent person must inspect the site daily. This includes both excavation and the surrounding area.

Inspection Points include but are not limited to:

- Possible cave-in's.
- Failure of protective systems and equipment.
- Hazardous atmosphere.
- Other hazardous conditions (i.e., following rain or man-made condition such as blasting). Adequate protection must be provided against falling objects such as dirt, rock, equipment or other materials for workers.
- A warning system should be used to alert equipment operators of the edge of an excavation.
- Employees exposed to public vehicle movement must wear warning vests.
- Alternative is suitable garment made of reflectorized or high-visibility material.
- A guardrail system is recommended especially if there are walkways or bridges crossing over an excavation.
- During excavation operations, special care must be taken to insure no employee is under a load handled by digging or lifting equipment.

Employees should not be permitted to work in excavations where water has accumulated without adequate precautions.

Adequate precautions include but are not limited to:

- Diversion dikes, ditcher or other means to prevent surface water from entering an excavation and to provide drainage to nearby areas.
- While an excavation is open, underground installations such as utilities must be protected, supported or removed as necessary to safeguard excavation workers.
- Adjacent structures must be supported to prevent possible collapse.
- Employees should not enter an excavation greater than four (4) feet in depth without a competent person testing the atmosphere.
- Testing takes place where oxygen deficiency or a hazardous atmosphere exists or is believed to exist.
- Emergency rescue equipment must be readily available. This equipment must be attended when hazardous atmospheric conditions may develop or exist.

Remember: Unlike most accidents, the cave-in of an excavation usually can be predicted if closely watched. It is, therefore, critical that a competent person keeps a close eye on any excavation. Everyone should be removed from the excavation area should it appear to be unstable.

Attendees:

NOTE: Always promote a discussion on any of the topics covered in the Tool Box Talks. Should any question arise that you cannot answer, don't hesitate to contact your Employer.