



GOALS

This safety session should teach employees to:

- Be aware of basic trenching and excavating safety precautions.

Applicable Regulations: 29 CFR 1926.650-652



1. Safety rules and plans help prevent excavation accidents.

- The Occupational Safety and Health Administration (OSHA) requires employers to identify an excavation's hazards and create a safety plan to protect workers.
 - Plans may cover soil and water issues, utilities, hazardous atmospheres, etc.
 - Identifying hazards and creating safety plans is usually part of all excavating stages, from project bid to the actual work shifts.
- Many excavations are also considered confined spaces, with added OSHA rules.

2. Safety precautions are required before work begins in a hazardous excavation.

- A "competent" person inspects the excavations before any workers enter.
 - A competent person is one with the experience to identify hazards and precautions and the authority to take necessary corrective measures.

3. Most excavations must have systems to protect against cave-ins.

- Ways to prevent cave-ins include sloping the sides, benching the sides with steps, installing support systems, or using trench boxes.
 - The type of system chosen depends on soil and other factors.
 - It must meet OSHA design criteria and be able to handle potential loads.
- Cave-in prevention systems may not be needed for excavations entirely in stable rock or less than 5 feet (ft) deep if a competent person says there's no cave-in potential.

4. Excavation planning requires many other protective measures.

They may include:

- Coordinating with utilities to protect workers and underground utility lines.
- Providing safe ramps, stairways, etc., for workers to use to get in and out of holes.
- Using barricades, stop logs, or other warnings if there's a risk that mobile equipment operators might reach the edge of the excavation.
- Testing the hole's atmosphere for contaminants and oxygen.
- Protecting against the hazards of water accumulation.
- Supporting adjoining buildings, walls, pavement, etc., if needed to ensure their stability.
- Removing or barricading loose rock or soil to keep it from falling into the hole.
- Providing walkways if employees or equipment will cross over excavations.
 - Walkways 6 ft or more above lower levels must have guardrails.

5. Use personal protective equipment to stay safe.

- Use assigned, fitted respirators if the hole has airborne hazards or too little oxygen.
- Use assigned harness systems for possible rescue from the hole.



— An available rescue service may be required while you work in the hole.

- Wear a high-visibility assigned warning vest or other clothes in traffic areas.
- Wear any assigned protective gear, including hard hats, sturdy footwear, etc.

6. Follow safety rules and precautions in and around an excavation.

- Stay away from vehicles that are loading and unloading.
 - Don't stand or work beneath a load handled by lifting or digging equipment.
- Use ventilation equipment to reduce hazardous concentrations in the hole.
- Don't work in an excavation that has, or is getting, water unless special safety precautions are in place.
- Keep excavated materials and equipment at least 2 ft from the edge of the hole.
 - You may need barriers to keep materials from falling or rolling in.
- Install support systems so they connect securely and won't slide or fall.
 - Don't exceed their load limits.
- Don't work on the face of a sloped or benched excavation when other employees are below unless they're fully protected.
- Don't get into a shield while it's being installed, moved, or removed.
- Remove support systems properly to prevent cave-ins or other accidents.
 - Use temporary supports while removing others.
 - Remove from the bottom up, backfilling as you go.

7. Follow what to do in an emergency.

- Know how to give, understand, and respond to an alarm.
- Leave the hole promptly and properly if you believe it's dangerous.
- Follow instructions and procedures for leaving an excavation.
- Don't attempt a rescue unless you're trained, equipped, and authorized to do so.
 - You may endanger yourself and add to the risks for the trained rescuers.

DISCUSSION POINTS:

Ask for specific examples of your excavation safety rules and why they're needed.

CONCLUSION:

- Excavating safety procedures can save lives.
- Safety rules and precautions, including proper personal protective equipment, can prevent cave-ins and other dangerous excavation accidents.

TEST YOUR KNOWLEDGE:

Have your employees take the Excavating Safety quiz. By testing their knowledge, you can judge their ability to understand how to perform these jobs safely, and whether they need to review this important topic again soon.



EXCAVATING SAFETY QUIZ

- 1. A competent person checks excavation holes daily before entry and takes action if safety problems are identified.**
a. True b. False
- 2. All cave-ins can be prevented by using a system that benches the sides of the excavation with steps.**
a. True b. False
- 3. Excavations must be tested for contaminants and oxygen levels before workers can enter.**
a. True b. False
- 4. Workers may have to wear respirators for work in an excavation if the hole contains:**
a. Contaminated air
b. Too little oxygen
c. Both a and b
- 5. To prevent loose rock or soil from falling into a hole, you might remove it or:**
a. Wet it
b. Keep an eye on it
c. Barricade it
- 6. You're not allowed to stand under equipment that's lifting or digging a load.**
a. True b. False
- 7. Excavated materials and equipment must be kept at least**
a. 2 inches from the edge of the hole.
b. 2 feet (ft) from the edge of the hole
c. 4 ft from the edge of the hole
- 8. The best way to install a shield is to stand inside it.**
a. True b. False
- 9. You should remove a support system from the bottom up.**
a. True b. False
- 10. Rescuing people from excavations is a job for:**
a. Any competent person
b. Any nearby person
c. Trained, assigned rescuers

When you have completed this quiz, turn it in to your supervisor.

Name: _____

Date: _____



ANSWERS TO EXCAVATING SAFETY QUIZ

1. a. True.
2. b. False. Other options, depending on factors like soil type, include sloping the sides, installing support systems, or using a shield.
3. a. True.
4. c. Both a, contaminated air, and b, too little oxygen.
5. c. Barricade it.
6. a. True.
7. b. 2 ft away from the edge of a hole.
8. b. False. Never stand inside a shield while it's being installed, moved, or removed.
9. a. True.
10. c. Trained, assigned rescuers.