

19. EXCAVATION SAFETY

PLAN. PROTECT. PREVENT.



**CORPORATE SAFETY
TRAINING & CONSULTING**

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WHY THIS MATTERS

Excavation and trenching hazards can cause cave-ins, struck-by, falls, and damage to underground utilities.

Proper planning and protection save lives.

COMMON HAZARDS

- CAVE-INS**
Soil can collapse in seconds and bury workers.
- FALLS**
Falls in or around excavations can cause serious injury.
- STRUCK-BY**
Equipment or falling loads can strike workers.
- UTILITIES**
Striking underground utilities can cause explosion, fire, electrocution, or service outages.
- ATMOSPHERIC HAZARDS**
Water accumulation, poor visibility, or hazardous gases/vapors.

WRONG WAY ❌

- ❌ No protective system
- ❌ No safe access or egress
- ❌ Equipment too close to edge
- ❌ No utility check
- ❌ Spoil pile too close to edge

Unsafe conditions can lead to cave-ins, severe injury, or death.

RIGHT WAY ✅

- ✅ Use a protective system
- ✅ Safe access and egress
- ✅ Equipment at least 2 ft (600 mm) from edge
- ✅ Utilities located and marked
- ✅ Spoil pile at least 2 ft (600 mm) from edge

Plan ahead. Follow the rules. Go home safe.

BEFORE YOU DIG – FOLLOW THE STEPS

- 1 PLAN THE JOB**
Evaluate the site and soil conditions. Develop an excavation plan.
- 2 LOCATE UTILITIES**
Contact the utility locating service. Wait the required time. Respect markings.
- 3 CONTROL THE AREA**
Barricade the area. Keep unauthorized people and equipment out.
- 4 PROTECT WORKERS**
Use a protective system (shield, shoring, or sloping) for excavations 4 ft (1.2 m) or deeper or as required.
- 5 PROVIDE ACCESS**
Use a ladder, ramp, or stairs. Place within 25 ft (7.6 m) of workers.
- 6 MANAGE WATER**
Control surface water, groundwater, and atmospheric hazards.

REMEMBER

Soil can change. Weather can change. Conditions can change. Re-evaluate throughout the job.

DO'S – FOLLOW THESE

- ✅ Use a protective system (sloping, shoring, or shielding).
 - ✅ Keep equipment and vehicles at least 2 ft (600 mm) from the edge.
 - ✅ Keep spoil piles, materials, and loads at least 2 ft (600 mm) from the edge.
 - ✅ Inspect protective systems daily and after rainfall or other events.
 - ✅ Provide adequate lighting and ventilation.
 - ✅ Keep the area clean and free of debris.
 - ✅ Train workers on excavation hazards and procedures.
 - ✅ Have a competent person inspect and monitor.
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DON'TS – AVOID THESE

- ❌ Don't enter an excavation without proper protection.
 - ❌ Don't remove or alter protective systems without approval.
 - ❌ Don't undercut or overexcavate the bottom of a trench.
 - ❌ Don't ignore signs of potential cave-in (water seepage, cracks, falling soil).
 - ❌ Don't store heavy materials or equipment near the edge.
 - ❌ Don't work under a suspended load.
 - ❌ Don't allow unauthorized access.
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TYPES OF PROTECTIVE SYSTEMS

Use the right system for the soil type, excavation depth, and site conditions.

SLOPING

Excavation sides are sloped back at a safe angle.

SHORING

Supports installed to prevent soil movement.

SHIELDING

Trench box or shield protects workers.

DISCUSSION QUESTIONS

- 1 What are the main hazards of excavations?
 - 2 What protective systems can we use?
 - 3 How often should protective systems be inspected?
 - 4 What should you do if you see a hazardous condition?
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KEY TAKEAWAY

EXCAVATION SAFETY STARTS WITH PLANNING AND ENDS WITH EVERYONE GOING HOME SAFE.

- ✅ Plan the work.
- ✅ Protect workers.
- ✅ Control the area.
- ✅ Stay alert.
- ✅ Speak up.

REAL-LIFE EXAMPLE

A crew was working in a trench that was not properly supported. After heavy rain, the soil became saturated. A cave-in occurred, burying one worker up to his waist. Because the crew followed training and had a plan in place, they acted quickly, rescued the worker, and he recovered.

Good planning and protection prevent tragedies.



EXCAVATION CHECKLIST

<input checked="" type="checkbox"/> Utility locate completed and marked	<input checked="" type="checkbox"/> Spoil pile/location controlled
<input checked="" type="checkbox"/> Soil type identified	<input checked="" type="checkbox"/> Equipment set back
<input checked="" type="checkbox"/> Protective system selected and in place	<input checked="" type="checkbox"/> Water controlled
<input checked="" type="checkbox"/> Access/egress provided	<input checked="" type="checkbox"/> Daily inspection completed
<input checked="" type="checkbox"/> Atmospheric test (if required)	<input checked="" type="checkbox"/> Permit/plan reviewed

IN CASE OF AN EMERGENCY

- 1 Call for help immediately.
- 2 Do not enter an unstable excavation to attempt a rescue.
- 3 Alert emergency services.
- 4 Secure the area and prevent further collapse.

IF YOU SEE SOMETHING, SAY SOMETHING

Report unsafe conditions, near misses, or concerns to your supervisor. It could save a life.

SUPERVISOR SIGN-OFF
Discussed with crew by: _____

Date: _____

SAFETY MESSAGE
Protecting people in excavations takes planning, training, and teamwork. Safety is everyone's responsibility.

