

## Trenches and Excavations

### Does this apply to me?

- If your work requires you to dig then the OSHA excavation standard applies.
- Even digging with a hand shovel is considered “excavating”.
- If you don’t dig but have workers who have to go into trenches to do work the standard applies too since they are exposed to trench hazards.

### What does this cover?

OSHA rules require that all workers should be protected from safety hazards while they are working in and around trenches and excavations. While the big concern is soil cave-in there are a lot of other hazards that OSHA has safety requirements for including:

**Moving equipment**—Workers on foot must be protected from being struck by moving equipment like excavators, skid steers, front end loaders and dump trucks. Back-up alarms must be working and signalmen might have to be used for backing equipment.

**Traffic**—If your work is near roads you will have to protect your workers and the public. If your company will be setting up any traffic cones/signs there is a guide for setting up a construction work zone called the Manual of Uniform Traffic Control Devices (MUTCD) and you can find it by going to the Federal Highway Administration <http://mutcd.fhwa.dot.gov/index.htm>. Your State might also have additional requirements.

**Electrocutions**—If working near powerlines it is important to either keep all equipment at least 10 feet away (elevated dump beds, excavator arms) or 20 feet if cranes are used to handle loads. Powerlines can also be de-energized or moved but just having the

power company place blanketing or barriers over the lines does not mean you can get closer than 10 feet.

**Confined Spaces**—Trenches can trap vapors, gases and fumes that might not be removed by natural ventilation like wind. Sewer gas is common in existing sewer systems where tie-in to new lines can result in workers being overcome by those gases.

**Fall hazards**—Workers can fall off of walkboards or ramps that are over trenches so you should use guardrails on those.

**Getting in and out**—Usually will require a ladder, especially if the trench is over 4 feet deep.

### What about cave-ins?

A cubic yard of dirt can weigh up to 3000 lbs. and workers can be seriously injured or killed even if they are not totally buried over their head. Think how hard it would be to breath with all that weight bearing down on you. And its not just those “deep” trenches or trenches in “bad” soil, as soon as you dig the dirt wants to move back in. That is why making sure protection is in place before anyone starts working is so important.

## What is allowed for protection from cave-ins?

The OSHA standard gives several choices for protecting workers from cave-ins:

- Sloping the sides
- Using shoring which pushes back against the side walls
- Using a trench box where the workers are always inside the protection of the box
- Having an engineer design the protection

## What else do I need to know?

OSHA also requires you to have a Competent Person available. This person will usually be a supervisor who has received special training on the OSHA standards, trenching hazards and knows what needs to be in place for worker protection. This Competent Person must know:

- What kind of soil is in the trench based on what OSHA calls Soil Type A, Type B or Type C
- How to match the cave-in protection with the soil Type
- All the other hazards on the job and should make sure all workers are protected

The Competent Person also has to have authority to stop the job and get all the workers out of any danger. This means that your company will have to have your own Competent Person if any of your workers have to enter trenches to work.

## What about training?

### Your Workers

All your workers need to know about the dangers of their work and especially those that are found in trenching work. Make sure you have told your workers not to go into any trench until the Competent Person has inspected it each day. They also need to know if any other protection is necessary like hi-visibility work vests for traffic.

### The Competent Person

You need to make sure whoever you are saying is your "Competent Person" has received the proper training. Most courses for "Competent Person in Trenching" courses will be up to 8 hours in length. There is a lot to cover and the person needs to know how to know if the soil is Type A, Type B or Type C and what cave-in protection needs to be in place. Don't skimp here, OSHA will ask questions to see if your "Competent Person" knows the answer.

## Where can I get more help?

The Hanover Risk Solutions website has additional information that you can review or use for worker training. Additional resources can also be found on the OSHA website and they even have a dedicated place just for trenching work at <http://www.osha.gov/SLTC/trenchingexcavation/index.html>



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