

TOOLBOX TALK #30

TRENCHING AND EXCAVATION SAFETY- CHANGING CONDITIONS

It is clearly written into all of the standards that an evaluation must be performed by a competent person to verify that protective structures and controls are in place to prevent a collapse and protect workers. The standard also clearly states that the evaluation must be performed any time conditions change on the site, such as after a thunderstorm, the time of year in which daily temperatures may change from 70 degrees one day to 30 degrees the next and is accompanied by freezing and thawing. These are critical times because it creates voids in the ground. The water, moisture, freezing and going from a solid back to a liquid can drastically change how a trench will react.



For anyone who has never witnessed the sheer force of a trench collapse, they are devastating. There are a couple of videos out there, such as one from Oregon OSHA where they actually caught on video a collapse while someone was inside; luckily, he jumped. These videos show the amount of soil that comes down. A helpful training tip is to take a standard milk crate, which are generally one cubic foot. Put a trash can bag inside and fill it with soil from your location. Put it on your lap. It will weigh about 80 to 100 pounds depending on the type of soil. This is about how much a cubic foot of soil weighs. Now figure there are 27 of these in a cubic yard (roughly the size of a backhoe bucket). A cubic yard would weigh roughly 2700 pounds or the equivalent of a car sitting on your chest. By having that cubic foot of soil on your lap, you begin to realize how much weight that actually is!

Unfortunately, in a lot of cases when there is a trench collapse, we are doing more recovery than rescue. Workers must understand the magnitude. Many say that you don't need to protect a trench until it is more than 5 feet deep. That is wrong. Every trench must be evaluated.

Let's look at a typical municipal worker. Many water and sewer lines are about 4 feet underground. If a worker has to lay on their back to weld underneath a pipe or make a fitting, is 4 feet too much? Do we not need to protect the worker because the standard does not say we do? A competent person must evaluate what protection is needed no matter the depth.