



Ensuring Safety in Trenching Operations: Resources for Illinois Contractors

As spring marches towards Illinois, the grip of winter begins to loosen, thawing the ground. This signals the unofficial start of the construction season. Snow that melts throughout winter saturates the soil and re-freezes into it. Inundated soil can lead to trench cave-ins, increasing the risk of a fatality or injury. On average, 21 workers lose their lives each year in and around excavations. To help prevent these tragic incidents, OSHA inspectors will conduct more trench inspections nationwide, and visit excavation sites they observe during their daily duties.

Trenching and excavation are among the most hazardous tasks in the construction industry. Workers can face death or severe injuries within minutes if a trench caves in. Soil conditions can be unpredictable; factors like moisture, soil type, and nearby structures greatly affect stability.

Before workers enter a trench, a soil analysis should typically be performed to determine the best protective measures, such as sloping, benching, shoring, or shielding. A cubic yard of soil, measuring 3'x3'x3'—weighs about as much as a Volkswagen Beetle—around 3,000 pounds.

OSHA requires employers to designate a competent person who can recognize soil conditions and other hazards, and has the authority to address them. This individual must perform a thorough inspection daily, or whenever trench conditions change, to identify and eliminate potential dangers. OSHA's trenching standards specify that employers must use protective systems in trenches deeper than five feet and keep soil and other materials at least two feet away from the trench edge.

To prevent injuries during normal entry and exit of a trench or excavation at a job site, employers must provide ladders, stairways, ramps, or other safe means of egress. During an incident, a worker's life may depend on how quickly they can climb out.

Excavations can also create risks of hazardous atmospheres and water accumulation. If these conditions occur, workers might face suffocation, inhalation of toxic substances, burns, or drowning. It is crucial to plan in advance by contacting utilities (gas, electric, water, and sewage) to locate underground lines and assess their proximity to the planned excavation.



Testing for hazardous atmospheres is essential in conditions where risks are likely, such as when equipment is in use or work that could generate dangerous atmospheres is ongoing. This involves checking for low oxygen levels, hazardous vapors, and toxic gases, especially when gasoline engine-powered equipment is running.

Contractors and workers who think that using shoring equipment or sloping the site takes too long have never been part of a trench collapse rescue. These rescues are slow, methodical operations that require specialized equipment and teams, which are often in short supply and several miles away. Heavy machinery cannot be used because it could severely injure the victim instead of saving them. This means putting first responders inside a trench to hand-dig, which doesn't happen until the trench is made safe for their entry. Many trench rescue efforts become recovery efforts.

The Illinois On-Site Safety and Health Consultation Program has partnered with contractors for years to verify and update their trenching Job Hazard Analysis. While the Illinois Department of Labor will not complete the contractors' forms, we do provide free and confidential safety and health assistance to small and medium-sized businesses. Consultation services include on-site visits, air sampling, program support, and training, all of which help create a safer and healthier work environment and may also reduce your workers' compensation insurance costs. This program, offered at no cost by the State of Illinois, can give you the support and guidance needed to identify hazards, develop a hierarchy of controls, and establish a lasting safety and health program. Visit <https://worksafe.illinois.gov/> or contact Harry (Hap) Hileman with the Illinois Department of Labor at 217-993-2111 for more information.

