

## 19. Excavating and Trenching

- 19.01. Prior to excavating, obstructions that may create a hazard to employees shall be removed and or supported.
- 19.02. Utility companies shall be contacted, advised of the proposed work, and asked to establish the location of underground installations.
- 19.03. To ensure employee safety, the competent person shall ensure that during excavating work in trenches there is:
  - 19.03.01. Appropriate access and egress for personnel and or equipment such as stairs, ramps and ladders so as to require no more than 25 feet of lateral travel for employees in trenches four (4) feet or more deep.
  - 19.03.02. PPE shall be worn by affected employees to include hard hats, hearing protection, safety glasses, torso, hand and foot protection.
  - 19.03.03. No spoil pile or equipment within two (2) feet of the edge of the excavation.
  - 19.03.04. Employee protection from vehicular traffic such as barricades, ground guides for operators of equipment with a limited view.
  - 19.03.05. No exposure to:
    - 19.03.05.01. Falling loads
    - 19.03.05.02. Engulfment
    - 19.03.05.03. Water accumulation
    - 19.03.05.04. Hazardous materials
    - 19.03.05.05. Chemical exposure
  - 19.03.06. No danger from collapse. Shoring, a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation.
  - 19.03.07. Shoring is not required for trenches less than five (5) feet deep if an examination by a competent person determines the soil has no potential for collapse.
- 19.04. For excavations greater than 20 feet in depth, protective systems, which may include shoring, shall be designed by a registered professional engineer.
- 19.05. There are other methods of protection from cave-ins such as sloping or benching the adjacent ground according to specific criteria dependent on the soil conditions, weather, and adjacent structures.
- 19.06. Barricades and “spotters” monitoring proper distances are methods to prevent mobile equipment from falling into the excavation. Ground guides shall be used if the equipment operator does not have a clear view of the edge. If possible, the grade should slope away from the excavation.
- 19.07. If there is potential for a hazardous atmosphere air quality monitoring and or testing shall be required and completed per regulations.

- 19.08. Emergency rescue equipment (breathing apparatus, safety harness, rescue line, and a basket stretcher) shall be available when applicable.
- 19.09. When a hazardous atmosphere does exist, appropriate respiratory protection shall be used and a rescue plan developed which includes having an attendant outside the hazardous area with appropriate equipment and training. Refer to the Confined Space procedures.
- 19.10. Protective Systems
  - 19.10.01. Except when an excavation is made entirely in stable rock or it is less than 5 feet in depth and a competent person finds no indication of potential cave-in, employees in an excavation will be protected from cave-in by protective systems designed in accordance with regulation.
  - 19.10.02. All employees involved with excavating are to review these standards and understand, in general terms:
    - 19.10.02.01. Knowledge that goes into employee protection during excavating projects.
    - 19.10.02.02. The types of soils and how to identify them on the job site.
    - 19.10.02.03. The soil condition (specifically moisture content) and how that impacts on stability during excavations.
    - 19.10.02.04. The absolute need for a competent person to be on site at all times during excavating work in order to visually inspect and manually test soil conditions as work progresses to maintain a safe excavation site.
- 19.11. Daily Inspections
  - 19.11.01. Prior to work and as needed throughout the shift, a competent person shall conduct inspections of excavations, adjacent areas and protective systems to find evidence of a developing cave-in situation; failure of protective systems; hazardous atmosphere; or other hazardous conditions.
  - 19.11.02. After any rainstorm or event which is suspect to affect the safety of employees within an excavation, inspection shall be made by a competent person before any activity can proceed.
- 19.12. Excavation Fall Protection
  - 19.12.01. Walkways shall be provided where employees or equipment are required or permitted to cross over excavations. If these walkways are 6 feet or more above a lower level, guardrails shall be installed and used.