

EXCAVATION & TRENCHING: BASICS

Excavation and trenching can present a number of potential fatal hazards. Cave-ins are perhaps the most common, but other hazards include drowning, inhalation of toxic fumes, explosions, and electrocution due to contact with underground utilities. These hazards must be addressed before beginning any excavation or trenching work. OSHA requires that a competent person be present at all excavations greater than 4 feet deep to ensure that appropriate safeguards are taken during excavation and that employees do not enter excavations unless the excavations have been properly prepared, inspected, and employees are properly protected.

Inspections:

- Inspections should occur on a daily basis by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions.
- Should occur prior to start of work and as needed throughout shift
- Should be made after every rainstorm or other hazards increasing occurrence, such as a vehicle or other equipment approaching edge of excavation.

Access and Egress:

- A stairway, ladder or ramp shall be located in excavations that are 4 feet or more in depth so as to require no more than 25 feet of lateral travel for employees
- Structural ramps used in place of steps shall be provided with cleats or other non-slip treatments on the top surface to prevent slipping.

Public and Employee Safeguards:

- Use barricades to create a controlled access zone to ensure that no one approaches edge of excavation and falls.
- Provide proper ventilation for employees in excavation to prevent heat stress and build-up of hazardous atmospheres.



- Atmosphere in excavations shall be tested before employees enter excavations greater than 4 feet, when oxygen deficiencies (less than 19.5% oxygen) or other hazardous atmospheres exist or could reasonably be expected to exist.
- Material, equipment, and soil must be at least 2 feet from the edge of the excavation.
- Employees exposed to public traffic shall be provided with and shall wear warning vest marked with or made of highly visible material.
- Employees shall not work in excavations in which there is water or where water is accumulating.
- Use retaining devices, such as a trench box, which extends above the top of the trench to prevent equipment and spoils from falling back into the excavation.