

TRENCHING AND SHORING

Introduction

Excavation and trenching are extremely hazardous operations that expose employees to the possibility of serious injury or death. The greatest hazard associated with trenching is the cave-in of the surrounding soil on employees in the trench, the result often being fatal. Other hazards involved in trenching include falls, confined spaces, and exposure to underground utilities such as gas, steam and electricity. Employees involved in excavation operations must be knowledgeable about how to minimize these hazards.

Applicable Regulation

- 29 CFR 1926 Subpart P - Excavations

Summary of Requirements

- Before excavation, underground utilities must be located and marked; usually by calling "Blue Stake" services.
- Appropriate barricades, fences, protected walkways and signs must be provided to protect the public and prevent access.
- A competent person must be in charge of each excavation who is trained to identify hazardous conditions, soils and who has the authority to take corrective action. The competent person inspects excavations on a daily basis and after every rain.
- Employees must be protected from cave-ins by either employing adequate sloping or benching techniques or an adequate support (shoring) or protective (engineered) system, such as a trench box or pneumatic shoring.
- Stairs or ladders must be provided when employees enter excavations over 4 feet deep and no greater than 25 feet lateral travel distance.
- Employees must stay away from any equipment loading or unloading material at the trench. Excavated or other material must be retained 2 feet or more from the edge of the excavation.
- Employees must not enter or work in trenches with hazardous atmospheres without adequate controls.
- Employees must wear all required personal protective equipment including hardhats, safety footwear, gloves, eye protection, hearing protection and fall protection devices, as necessary.

Training

All designated supervisors acting as the competent person must attend the "Competent Person Training for Trench Construction" or OSHA 500 course and must demonstrate knowledge of the hazards associated with trenching and excavations. All other employees who perform work in excavations must be trained in safe work practices, use of personal protective equipment, procedures to be followed if a hazardous atmosphere exists and emergency procedures.

Reporting

For Arizona State University campuses, contact University Services to locate and mark underground electric, steam, gas, sewer, water mains and telecommunication lines.

University Services – Design & Construction Management (480) 965-5926

For locations off-campus, call the following based on location and utility. Call 48 hours before the excavation work is to begin.

Blue Stake Center (602) 236-1100 (for all utility notification)

CALL 9-1-1, after notifying 911 (ASU Police Department) notify ASU Environmental Health & Safety at (480) 965-1823 of an incident or injury and for emergency situations that include the injury or entrapment of a worker, the breaking of a gas line or the uncontrolled release of any other hazardous material.

Recordkeeping

Each department maintains records of employee training, documentation of daily trench inspections and any protective system designed by an engineer. A copy of protective systems designed by an engineer must be maintained on the job site at all times. Copies of all documentation must be maintained at each department for audit and OSHA compliance verification.

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