Trenching and Shoring Meeting Kit

WHAT'S AT STAKE

Construction trenching for buried utilities, pipelines, water transport, and other activities may be hazardous. Trenches are usually deeper than they are wide, and the walls may become unstable and collapse on top of workers. Trench cave-ins occur when dirt, sand, and rocks collapse into the trench. These materials can engulf, injure, or kill workers in the trench.

WHAT'S THE DANGER

SPECIFIC TRENCHING AND SHORING HAZARDS FOR WORKERS

- Cave-ins or collapses that can trap or crush workers.
- Equipment is operated or soil and debris is stored too close to the excavation.
- Falling into the trench or excavation.
- Flooding or water accumulation.
- Exposure to a hazardous atmosphere (e.g., gas, vapour, dust, biological contaminants, or lack of oxygen).
- Contact with buried service lines such as electrical, natural gas, water, sewage, telecommunications, etc.
- Contact with overhead electrical lines.
- Slips, trips and falls as workers climb on and off equipment, or from inappropriate access and egress methods.
- Being struck by moving machinery, or by falling or flying objects.

TRENCH WORK FIRST STEP PROTECTION – THE QUESTIONS FOR WORKERS

Trenching

- Are proper barriers or guardrails in place to protect anyone or equipment falling into the excavation or trench?
- Has the air in the excavation been tested for low oxygen, and hazardous gasses and vapours?
- Is a safe means of entry and exit providing such as a sufficiently long and secured ladder placed at appropriate distances (within 25 feet of all workers)?
- Are cracks visible in the ground around the trench or excavation that may indicate soil movement?
- Are there any signs of water seeping into the trench or excavation?
- Are workers wearing appropriate PPE (e.g., hard hats, respirators, safety boots, hearing protection)?

- Are high visibility vests or clothing provided and worn by all exposed to vehicular traffic?
- Is first aid equipment available at the site?
- Are operators qualified to operate the heavy machinery or equipment?
- Does a competent person regularly inspect the excavation (at the start of each shift before work begins or after any event likely to have affected the strength or stability of the excavation)?
- Is there a competent person stationed at the surface of the trench to warn workers in the trench of danger and to provide emergency help?
- Is the trench a confined space, and are the requirements of the confined space program met?

Sloping

- Has the soil type been considered when determining the angle of the slope?
- Are they being sloped or benched back to a safe angle?

Timber Shoring

- Is the shoring equipment the right equipment as required for the depth of the trench or excavation and type of soil?
- Is the equipment damaged (e.g., cracked, crushed, split, or bowed)?
- Are there loose or missing cleats?
- Are the struts off level?

Trench Boxes

- Are the boxes damaged or have defects?
- Are the plates deformed, bent, have holes, or show other damage?
- Are the welds cracked, bent, or distorted?
- Are there damaged or missing struts?
- Are trench boxes shifting or settling to one side?

Hydraulic Shoring

1. Are there any visible leaks in hoses or cylinders?
2. Are there bent bases?
3. Is any equipment cracked, split, broken or cracked?

WHAT NOT TO DO DURING AN EXCAVATION?

- Do not enter an unprotected trench deeper than 1.2 meters (4 feet), or as specified in the legislation.
- Do not start digging before locating and de-energizing the buried services.
- Do not enter a trench before testing the air for hazardous gasses and vapours, or the lack of oxygen.
- Do not place the sections of pipes, piles of spoil, unused tools, and timber, and other materials within 1 metre from the trench’s edge.
- Do not rely on natural freezing to act as a method of soil stabilization.
- Do not work under suspended or raised loads and materials.

FINAL WORD

Proper safety training, proper excavation procedures, appropriate shoring systems, wear appropriate PPE, follow load-bearing guidelines, and maintaining a clean and organized worksite, safe and effective trenching and shoring environment for workers can be provided.