



Installation of Anchored Earth Retention and Micropiles

What are some of the hazards?

Some the most dangerous hazards an employee faces when working on an anchored earth retention or micropile project include:

- Silica dust
- Excavation cave-ins
- Struck by and caught in between situations
- Heavy equipment operation
- Contact with overhead and underground utilities
- Cement grout

How can you reduce or eliminate hazards in Anchored Earth Retention and Micropile construction?

The following safe work practices may reduce or eliminate the risk of injury or illness for Anchored Earth Retention and Micropile construction workers:

Silica Dust Exposure – Since soil or rock drilling is necessary when installing an anchored earth retention system or micropiles, employee exposure to silica dust is possible. Dust control measures such as water injection, water misting, and/or dust collection, and use of respiratory protection by employees are necessary when dusty conditions are present.

Excavation Cave-ins – When employees are working in excavations, a competent person must inspect conditions at the site on a daily basis and as frequently as necessary during the progress of work to assure that the hazards associated with excavations are eliminated before workers are allowed to enter.

Equipment – Many accidents and fatalities involve equipment such as drill rigs, backhoes, front end loaders, grout pumps and mixers, hydraulic tensioning jacks. To help prevent accidents, inspect and maintain equipment according to manufacturer's recommendations, use machine guarding, employ clear hand signals, have back-up alarms, keep within the recommended load ratings and use trained and authorized operators.

Personal Protective Equipment – Using personal protective equipment (PPE) such as personal and passive fall protection, high visibility vests, eye and hearing protection, hard hats, gloves, boots, goggles, respiratory protection, and face shields could significantly reduce injuries.

Utility Location – All above ground utilities such as power lines must be located and a minimum clearance distance of 10 feet shall be maintained at all times, for voltages up to 50,000V. Greater distances shall be maintained as the voltage increases. Notify the local power company BEFORE any activity that must take place closer than the minimum 10- foot clearance, and either de-energize, or move the lines so contact is prevented.

Always “Call before You Drill”. It is the responsibility of each contractor and subcontractor to contact the local Utility Locate Service Center or “Call Before You Dig” system. Underground utilities such as electric, natural gas, petroleum products, water, communications, and sewers must be physically located and then protected (support, re-locate, or removal) to avoid any accidental contact, prior to any drilling activity.

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Additional Ways You Can Improve Anchored Earth Retention and Micropile installation Safety

You can start by increasing your awareness of Anchored Earth Retention and Micropile installation hazards and making a conscious effort to prepare for emergency situations including fires, equipment accidents, electrical shocks from equipment and wires, and chemical exposures.

Minimize hazards by carefully selecting the products you buy to ensure that you provide good tools and equipment.

Ensure that equipment operators read and follow instructions in equipment operator’s manuals. Inspect equipment routinely for problems that may cause accidents.

Educate your employees on Anchored Earth Retention and Micropile installation hazards and train them on safe behaviors and emergency procedures. Conduct daily Pre-Task meetings to reinforce positive safety behavior and correct negative behaviors or conditions that have been identified.

Create a comprehensive Site-Specific Hazard Analysis which includes a detailed Utility Damage Prevention Plan to ensure active participation of the Project Team (Owner, General Contractor, Utilities, and your company), to prevent accidental contact with a utility.

Hold weekly “tool box” safety talks to continue employee safety education and training.

Create a danger zone and keep un-authorized people away from the drilling activities.

Review and follow instructions in Safety Data Sheets (SDS) and on labels that come with chemical products and communicate information on these hazards to your workers.