LIME HAZARDS IN SOIL STABILIZATION

Rainfall is generally plentiful during late winter and early spring. Higher temperatures allow the ground to absorb the rain rather than freezing above ground. This eventually saturates the soil and can cause it to become very unstable. Soil can then flow easily and have little-to-no compressive strength. That means the soil won’t support weight, allowing objects to sink into it.

Wet, unstable soil can pose safety hazards during construction. One method of stabilization is the use of calcium hydroxide (commonly known as lime). This chemical, combined with the moisture in the soil, will make a firm, concrete-like mixture that will stabilize the soil.

While the use of lime is sometimes necessary, it comes with its own set of health and safety hazards. The OSHA Safety Data Sheet lists the following hazards when using lime:

- Lime is a dry, powdery substance that can produce significant dust. This dust can be a severe irritant to the skin and the mucus membranes of the eyes, mouth and lungs. Keep skin covered as much as possible (including face, neck and wrists).
- Lime dust can remove the skin’s natural oils, causing cracked skin. In severe cases, over prolonged periods of time, this can lead to open fissures of the skin and severe bleeding.
- Eye irritation from lime dust can cause intense watering of the eyes. Prolonged exposure can potentially cause lesions and even blindness.
- Inhaling lime dust may lead to irritation of breathing passages, coughing and sneezing.
- If ingested, lime can cause pain, vomiting, bleeding, diarrhea, a drop in blood pressure, collapse, and in prolonged cases, it can cause a perforation of the esophagus or stomach lining.
- Almost all varieties of lime powder contain some crystalline silica dust as well, which may result in respiratory disease, including silicosis, pneumoconiosis and pulmonary fibrosis.

Lime has many beneficial uses in construction but we must handle it with care. Avoid contact with skin; use the appropriate respirator; and wash well after any exposure. This is the best defense against the hazards lime can cause.