Engulfment Safety

In many worksite situations, workers are at risk for engulfment hazards. Engulfment results when a worker is buried by materials such as soil, sand, gravel, sawdust, seed, grain or flour. Engulfment can also include liquid such as water or a chemical.

Engulfment causes bodily harm when the material has enough force on the body to cause injury or death by constriction, crushing, or strangulation. Respiratory hazards associated with engulfment includes suffocation from breathing in a fine substance that fills the lungs or from drowning in a liquid.

Trenches or excavation pits at construction sites pose an engulfment hazard when a cave-in or soil collapse engulf a worker. Trenches or open pits should have an adequate number of exit ladders, daily safety inspections, and should include safety engineering such as proper shoring trench boxes and sloping.

Piles of loose granular materials pose an engulfment hazard if they shift or slide. Workers should not stand, climb, or walk on piles of materials without safety equipment like a hoist with a boatswain's chair or a body harness. The hoist operator should pay out and retrieve excess line to maintain reasonable tautness. The hoist should be able to stop and hold any expected load including the impact of a fall.

Containers can be dangerous if workers need to enter them for maintenance or repair, or if they need to work over them to load or unclog materials. Containers include storage bins, silos, vats, tanks, bunkers, and hoppers. The dangers involved include entering or falling into a confined space, a hazardous atmosphere, and/or engulfment by the materials.

Each container type at a site should be evaluated to determine if it is a confined space. Open containers should have a railing and toe board around them. If there is no railing, there should be a grate or walkway with railings. If work is necessary over an open container without railings or a grate, workers should wear safety harnesses with retrieval lines.

Workers should not enter a container unless they are wearing a retrieval harness. They should have a co-worker on the outside of the container and a reliable form of communication between them. Use of lock out, tag out protocols should be enforced to ensure that mechanical moving parts like augers do not activate and materials do not shift underneath the worker.

Let's be safe out there!