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Excavation & Trenching Safety

The excavator has made what used to be a daunting task—digging—much easier for construction workers.

However, these machines can be incredibly dangerous, especially if you are not aware of the risks.

Recognizing the risks of using an excavator and understanding the best ways to avoid them can help keep your workplace safe.

Common Excavation and Trenching Hazards:

Before we get into the ways you can avoid excavator accidents, it is important to identify the most common hazards.

Here are some common excavation and trench hazards:

Machine rollovers - machine rollovers can occur at any moment, especially if the operator is not following proper safety procedures.

Sometimes the ground beneath the machine will give out, causing a rollover.

Other causes include traveling too quickly, traveling on a too-steep slope, and traveling with the attachments improperly lowered.

Not using proper safety equipment increases the chances of serious injury or fatality due to a rollover.

The sudden movement of a rollover can eject an operator if they do not use safety belts/harnesses or even leave the cab door open.

An operator could put themselves at further risk if they attempt to exit the machine mid-roll over.

Contact with power lines:

While regulations dictate that machines must stay at least 20 feet away from nearby power lines, electrocution still kills many excavator operators.

Generally, contact occurs when operators fail to check if they have enough overhead clearance.

When a worker strikes a power line, they might panic and let go of the controls for a moment. When they attempt to touch the controls again or exit the machine, they get electrocuted.

Besides the operator, any worker who attempts to approach the electrified machine might get shocked as well.

Maintenance errors:

When operators fail to properly maintain their machines, they put themselves and those nearby at risk. Even a minor maintenance issue like a misplaced lock pin could make a heavy component come loose and crush someone.

In addition to misplaced components, unauthorized changes to the machine threaten its overall operational or structural integrity.

Trenching accidents:

Trenching accidents occur when the ground cannot support the changes in pressure caused by excavation. The weight of the machine can cause loose dirt to shift, which in turn can tip the machine.

Other trenching accidents result from improper trenching techniques or unskilled workers trying too complicated techniques. These can include attempting to straddle a trench or using the bucket arm to climb down the side of a trench.

In addition to trenching accidents, excavator use can lead to cave-ins, endangering the lives of nearby workers. Without proper trenching protection, the dirt can shift and collapse onto an unsuspecting worker.

Workers may be at risk if they enter a trench while excavation is still underway.

Falling debris:

Falling debris poses a significant risk to both the excavator operator and nearby pedestrians.

Material from a load could dislodge and strike workers or civilians located too close to the machine.

Likewise, the debris could strike an operator if they use an open cab excavator.

Buckets:

In addition to the falling debris, buckets can also pose a serious threat to safety and well-being.

An operator unaware of a nearby pedestrian could strike or crush them when turning or lowering the bucket arm.

An operator could also put themselves at risk by attempting to leave an active machine with the bucket arm lowered. A simple jostling of the controls can make the arm lower unexpectedly and crush anyone beneath it.