



Work Zone Safety

In highway work zones, road workers are exposed to possible injury and death from moving construction vehicles and equipment, and—possibly the worst hazard—motorists. While motorists are navigating the work zone's signs, barrels, and lane changes, they are also driving fast, talking on their phones, texting, listening to music, and looking at GPS devices. Unfortunately, most drivers don't pay enough attention to what is going on in a work zone.

First things first: Stay visible. In a work zone, wear high-visibility safety clothes that meet the requirements of the American National Standard for High-Visibility Safety Apparel and Accessories. This standard was developed to provide guidelines for everyone in work zones. Keep in mind that while night work reduces traffic congestion and disruption, it increases the danger for workers and drivers. You want to be visible all of the time you're in a work zone.

Internal Traffic Control

- Understand and follow the internal traffic control plan. This plan describes and controls the movements of workers, vehicles, and equipment in the active construction area.
- Direct dump trucks into a channel, and keep workers on foot out of that area.
- If equipment has sensors to detect nearby workers, make sure the systems are turned on and working.
- Use back-up alarms that are at least 10 decibels louder than the background noise.

- If you're working at night, make sure there is sufficient lighting, but don't let work lights shine directly into traffic.
- Always stay on the non-traffic side of Jersey barriers and other barricades.

Traffic Control

- Check signs, barricades, cones, etc., each day to make sure they are positioned correctly.
- Use traffic control devices consistently throughout the work zone.
- Flaggers are critical. Every flagger must be trained and certified. Rules vary by state. Don't just grab the new guy or a truck driver and have him try to control traffic flow.
- Increase the size of the lateral buffer zone to reduce worker exposure to passing motorists.
- Install low-level transitional lighting in advance warning and termination areas to ease motorists' adjustment to changing lighting conditions.
- Watch for signs of near misses like skid marks, and Jersey barriers that have been moved or scraped. Report these warning signs to your supervisor so traffic flow can be re-evaluated.

SAFETY REMINDER

Even if you aren't in an "official work zone," cars can still kill you. Be very cautious anytime you work near traffic.

NOTES:

SPECIAL TOPICS /EMPLOYEE SAFETY RECOMMENDATIONS/NOTES:

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Avoid Electrocutation

An electrocution occurs when enough electrical current flows through a person's body to cause death. Electrocution is the number four cause of death among construction workers in the U.S.

Electricity is very safe as long as it only flows inside a circuit—through conductors, tools, lights, equipment, appliances, etc. If something goes wrong, electrical current can flow outside of the circuit. When electricity gets out of the circuit, bad things happen: shocks, equipment damage, arc flashes, and electrocutions. Consider these five electrical hazards on the jobsite:

1. Overhead power lines are very dangerous. The minimum clearance is 10 feet. As the voltage increases, so does the required clearance. Everything has to be kept clear of the lines, including tools, equipment, ladders, machines, scaffolds, taglines, and you. Assume that all overhead power lines are energized. They are not safe until the utility company de-energizes them. You should be able to see that the lines are grounded.

2. Extension cords are invaluable on a construction site, but you have to use them properly and carefully. Don't attach them to walls or 2x4s with nails or tie them up with bailing wire. Don't pull or drag them over rough or sharp objects like metal studs. Don't use them as ropes, even to lower the tool connected to the extension cord. Never remove a ground prong. Ground prongs allow leaking current from a damaged or malfunctioning tool to flow to

earth ground; without the ground prong, that current could flow through you and electrocute you.

3. Exposed electrical components in equipment, switchgear, and motor control centers can kill you in a heartbeat. Among electricians, the most serious concern is working near live wires. The best choice is to de-energize and lock out the circuit. Never work on energized equipment unless you are trained to do so and are wearing the necessary PPE. Many employers prohibit all work on live circuits. Know what rules apply to you.

4. Wet conditions increase the likelihood of electrocution because water conducts electricity much better than air. Avoid using electrical tools in wet areas or when you're standing in water. Keep extension cords out of puddles.

5. Using damaged tools and equipment can cause serious injury and death. Make sure electrical tools are connected properly and working correctly. If a tool creates a burning smell, gets hot, sparks, or frequently trips circuit breakers, there's something wrong. Remove damaged tools from service and tag them "DO NOT USE."

Electricity is everywhere and we expect to control it with the flip of a switch. Don't get complacent about electrical safety.

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SAFETY REMINDER

When you don't respect electricity, the results can be quite shocking.

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These instructions do not supersede local, state, or federal regulations.



Crushing Hazards

Some of the deadliest construction hazards are caught-in or crushing hazards. The best way to avoid crushing hazards is to make sure that you don't put yourself in a position where you're between two objects that could crush you. That sounds obvious, but construction workers frequently put themselves at risk.

Have you ever had a near miss similar to these crushing hazard examples?

- Someone steps into a crane's swing radius for "just a second" to pick up a dropped tool.
- A trench isn't properly shored, the walls cave in, and a worker gets buried under a ton of clay.
- A painter in an aerial lift moves the basket and inadvertently crushes himself between a beam and the guardrails on the basket.
- A worker's sleeve catches on a shaft coupling that's not guarded and his arm gets wrapped around the shaft.
- A carpenter ignores a back-up alarm and steps between a moving forklift and a bollard.
- A mechanic gets pinned under the blade of a bulldozer because he relied on the hydraulics and didn't block the blade.

Two simple rules will help you avoid crushing injuries. **One:** guard, block, or barricade places where you and your body parts should not be. **Two:** Train yourself to stay alert so you can identify and avoid dangerous locations.

Guard, block, or barricade. Machines must have guards that cover dangerous moving parts. If guards are missing, get them fixed or replaced. Never defeat a guard or bypass a safety switch. Block or brace machine parts so that they cannot fall or slowly settle down on you while you're doing maintenance work. This is part of lockout/tagout; follow LOTO rules to the letter. Barricade exclusion zones under crane operations and elevated work areas. Barricade the swing radius of every crane.

Stay alert, identify, and avoid. This rule is simple to understand but harder to implement. You have to build good habits. Train yourself to listen for and evaluate all of the sounds around you, like back-up alarms and the sound of a moving cement truck. Keep your head on a swivel all of the time you're on the jobsite. You have to watch your work and where you're going, but you also have to keep looking up and around so you see dangers around you. Then you have to take action to avoid dangerous locations. Walk around the conveyor or the power take-off instead of hopping over. Slow down and look before you walk through a doorway. Wait to get the operator's attention before crossing in front of a grader.

Crush the hazards, or the crushing hazards will crush you.

SAFETY REMINDER

Gloves, long sleeves, jewelry, and loose-fitting clothing can be hazardous if they are caught in moving parts.

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