



TOOLBOX TALKS

Electrical Safety—Toolbox Talk # 8

General Construction Electrical Hazards

An electrocution occurs when enough electrical current flows through a person's body to cause death. Electrocution is a cause of death to a large number of construction workers each year.

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 goes outside 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 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 it with the flip of a switch. Do not get complacent about electrical safety. When you don't respect electricity, the results can be quite shocking.



This information has been developed by OSHA and its partners with the intent to assist employers, workers, and others as they strive to improve workplace health and safety. This information must be understood as a tool for addressing workplace hazards, rather than an exhaustive statement of an employer's legal obligations, which are defined by statute, regulations, and standards.

