

Electricity powers our daily lives, but ignoring its dangers can lead to on-the-job injuries or death. The water content in the human body makes it an efficient conductor of electricity when it seeks a path to the ground.

Electric shock can kill a worker regardless of voltage level. A shock's severity is measured by the amount of current flowing through the body, the length of time the body is in contact with the current, and the path the current takes through the body. Avoid electric shock by following safe work practices for electric power tools, appliances, light fixtures, and machinery.

Safety Precautions

Personal Protective Equipment

- Wear rubber-soled shoes and the correct insulating safety gloves when operating power tools, replacing fuses, or working where you could get an electric shock. Use rubber floor matting when it's available.

Power Sources

- Inspect power cords regularly and replace them when damaged. Never tape or splice a damaged cord. The insulation covering most cords is easy to damage. In construction, the Occupational Safety and Health Administration's (OSHA) standard, 29 *Code of Federal Regulations* (CFR) 1926.405(a)(2)(ii)(J), says to use required three-wire type cords designed for hard or extra-hard use.
- Ground all power supply systems, electrical circuits, and electrical equipment. Never remove the grounding wire on a three-pronged cord or attach ungrounded, two-prong adapter plugs to three-pronged cords or tools.
- Do not overload circuits. Be sure to use circuit-breakers or fuses with the correct protection rating.
- Always use ground fault circuit interrupters (GFCIs), devices that interrupt the flow of electricity within as little as 1/40 of a second. They can prevent electrocution in wet areas, such as bathrooms, kitchens, sinks, or outdoors. Follow the manufacturers' testing procedures to make sure GFCIs are working properly.
- Always disconnect a power source before repairing electrical equipment.
- Do not assume you have unplugged an electrical device – check to be sure.

Tools and Equipment

- Use tools and equipment according to manufacturer instructions.
- Inspect equipment and tools before using them. Remove defective tools from service, such as those with frayed cords, missing prongs, or cracked casings. Do not repair tools yourself. Attach "Do Not Use" tags to defective tools to let others know not to use them. Place them in an area set aside for broken equipment, and report defects to a supervisor.
- Never use electric appliances or tools near water.
- Use double-insulated tools (those with non-metallic cases) but remember, you can still be shocked if water enters the tool's housing. If a double-insulated tool is dropped into water, disconnect the power source before you reach for it.
- Clean and inspect tools when you are done with them.

Voltage Classifications for Rubber Gloves			
Tag Color	Class	Proof Test Voltage AC/DC	Max. Usage Voltage AC/DC
Beige	00	2,500/10,000	500/750
Red	0	5,000/20,000	1,000/1,500
White	1	10,000/40,000	7,500/11,250
Yellow	2	20,000/50,000	17,000/25,500
Green	3	30,000/60,000	26,500/39,750
Orange	4	40,000/70,000	36,000/54,000

Working Outside

- Look up to locate overhead power lines, which are uninsulated. Do not let aluminum paint rollers, saws, dump truck beds, and other equipment touch power lines. Stay at least 10 feet away from overhead lines, and use only nonconductive wood or fiberglass ladders when working near lines. Keep the base of fiberglass ladders clean and dry.
 - Before you dig, always call 8-1-1 to have utility companies mark buried electrical lines.
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