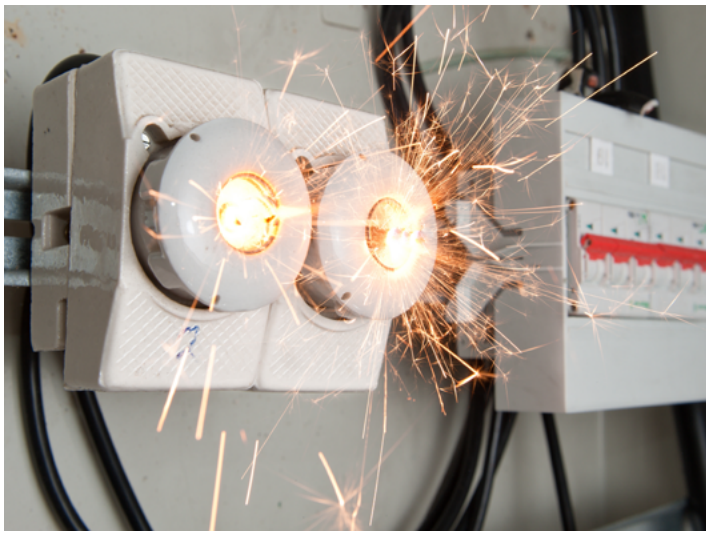
# Electric Shock

**A 5-Minute Safety Training Aid**

HS99-154F (03-21)



Electricity powers our daily lives but ignoring its dangers can lead to on-the-job injuries or death. When an electric current passes through a portion of the body, an electric shock occurs. It can result in no injury or burn both internal and external tissue, causing organ damage or even death.

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.

Employees can prevent electric shock by following these safe practices when working with electric power tools, appliances, light fixtures, and machinery.

## Safe Work Practices

- **Wear Personal Protective Equipment (PPE)**
  Wear rubber-soled shoes and insulated safety gloves when operating power tools, replacing fuses, or working with any device that could give an electric shock. Use rubber floor matting, if available.

| 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 |

## Power Sources

- **Inspect Power Cords**
  Check power cords regularly and replace any that are frayed or have damaged insulation covers. Never tape or splice damaged cords. The Occupational Safety and Health Administration's standard, 29 Code of Federal Regulations 1926.405(a)(2)(ii)(J), requires that extension cords used with portable electric tools and appliances "shall be of three-wire type and shall be designed for hard or extra-hard usage."
- **Ground All Power Supply Systems**
  Ensure that all electrical equipment, electrical circuits, and power supply systems are grounded. Never remove the grounding wire on a three-pronged cord. Also, never attach an ungrounded, two-prong adapter plug to a three-pronged cord or tool.
- **Do Not Overload Circuits**
  Ensure that all circuit-breakers or fuses have the correct rating.
- **Always Use Ground Fault Circuit Interrupters (GFCIs)**
  GFCIs 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. Always follow the manufacturers' testing procedures to make sure GFCIs are properly working.
- **Disconnect Electrical Equipment from Its Power Source Before Repairs**
  Never assume the electrical device has been unplugged. Check to make sure.

## Tools & Equipment

- **Follow Manufacturers' Instructions**
  To avoid electrical shock, always use tools and equipment as intended and as outlined in the manufacturer's instructions.
- **Inspect Tools Before Use**
  Ensure that all tools are in good working order before use. Remove from service any defective tool with a frayed cord, missing prongs, or a cracked casing. Attach a "Do Not Use" tag to the damaged tool. Set it aside and report it to a supervisor. Allow only a qualified electrician to complete repairs.

## Tools & Equipment

- **Never Use Electric Appliances or Tools Near Water.**
  Avoid all liquids when using electrical devices. Even the water content in the human body can make an efficient conductor of electricity when it seeks a path to the ground.
- **Use Double-Insulated Tools**
  Tools with non-metallic cases and a manufacturer's label that says "double-insulated" means the insulation is inside the tool. This insulation protects the user from shock if water enters the tool's housing. If a double-insulated tool is dropped into water, disconnect the power source before reaching for it.
- **Keep Tools and Equipment Clean**
  Clean and inspect tools after each use. Liquids, such as grease, oil, and solvents left on tools and equipment can result in electric shock.

## Working Outside

- **Look for Overhead Power Lines**
  Do not let aluminum paint rollers, saws, dump truck beds, and other equipment touch power lines. Stay at least 10 feet away from power lines and use only non-conductive wood or fiberglass ladders when working near utility lines. Keep the base of fiberglass ladders clean and dry.
- **Call 811 Before Digging**
  Many power lines are buried underground. Always contact a utility locator service or the Texas Railroad Commission at 811 at least two full business days before digging.

TDI Safety @ Work Division of Workers' Compensation

**www.txsafetyatwork.com**
**1-800-252-7031, Option 2**

*The Texas Department of Insurance,*
*Division of Workers' Compensation (DWC)-Workplace Safety*
P.O. Box 12050
Austin, TX 78711-2050