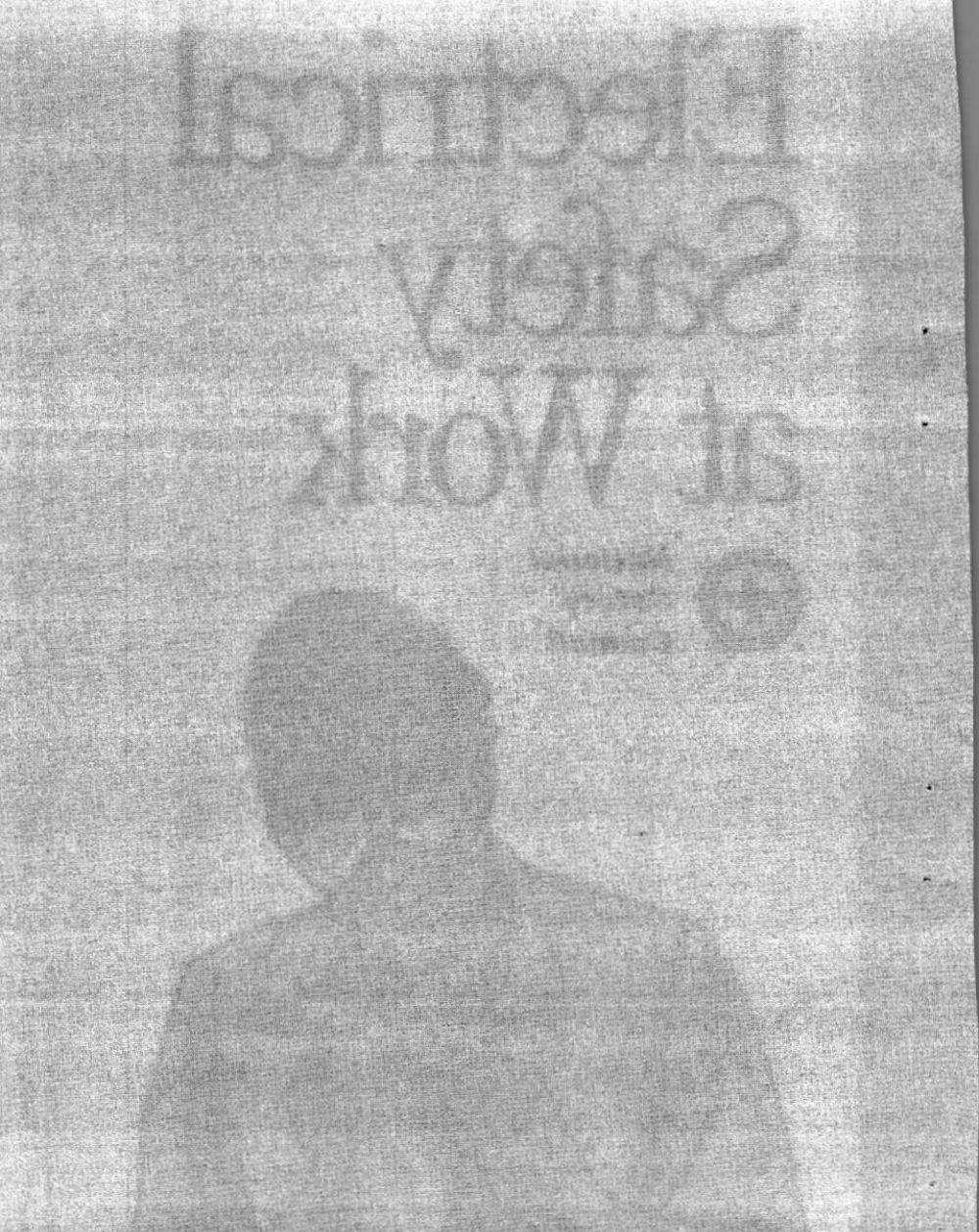
Electrical Safety at Work

National Safety Council



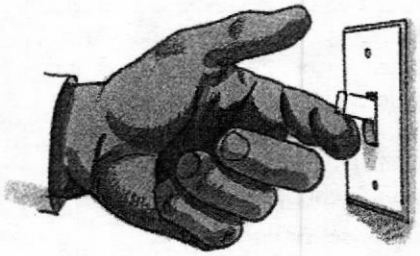
Electricity is silent energy

Electricity is nature's most versatile form of energy. Electrical power lights our homes, streets, offices and factories. It helps keep us warm in winter and cool in summer.

The power of electricity can be dangerous if it's not used correctly. Electrical energy can damage property and ignite fires. It can also hurt and even kill.

Sound safety practices can help minimize electrical hazards and cut down on the risk of accidents. The hazard of electrical energy can't be eliminated, but it can be controlled through education and engineering.

This booklet will show you how to be careful around electricity and how to use equipment the right way. Read this booklet carefully. Use what you learn to keep you and the people you work with safe from electrical harm.



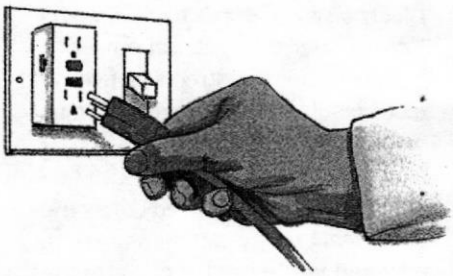
Electrical power lights our homes, streets, offices and factories.

Electricity can hurt!

What Causes Electric Shock?

You can get an electric shock if you touch a grounded surface and hazardous electrical equipment at the same time. The shock happens when current from the electrical equipment flows through your body to the ground.

What causes the shock is the flow of electric current, called amperage. Just a small amount of amperage can hurt or kill. For instance, a small night-light with a 6-watt bulb draws .05 ampere, and even that small amount of current can be fatal.



Use Ground Fault Circuit Interrupters.

How Electricity Hurts

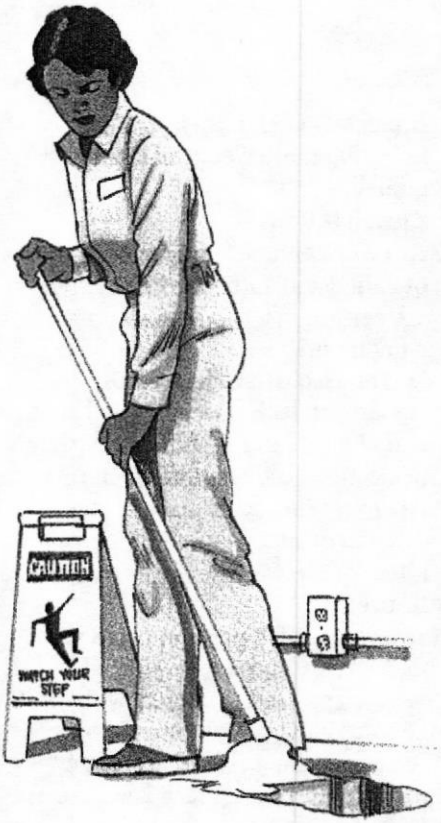
Electric current can injure you when it flows through your body. How serious the injury is depends on what part of your body receives the current. It also depends on how long the electric current flows. Here's how electric current can hurt:

- ☐ Breathing stops
- ☐ Nerve centers may be paralyzed temporarily
- ☐ Nerves and muscle tissues are burned
- ☐ Heart beat is interrupted, so blood stops circulating
- ☐ Internal bleeding begins

Types of Electrical Injuries

You can get hurt by electric current in many ways, including:

- ☐ Burns caused by electrical flashes or fires
- ☐ Injuries when machinery starts suddenly
- ☐ Falls from losing your balance when you get shocked



Wear rubber-soled shoes or boots on damp or wet surfaces.

Protecting yourself

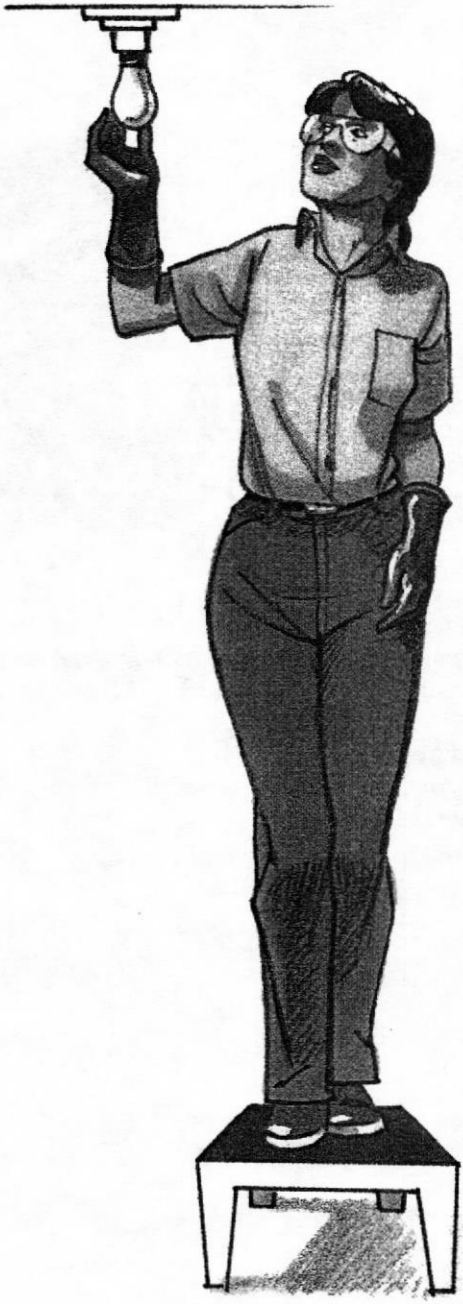
Protect yourself from injury by following these electrical safety guidelines.

Check It Out!

- ☐ Are you aware that only trained, qualified and authorized employees are permitted to work on electrical equipment?
- ☐ Has an electrician checked the equipment, tools, machines and lights to make sure they operate according to electrical code requirements?
- ☐ Are extension cords and appliance cords in good repair and properly rated for the way they're intended to be used?
- ☐ Are you using 3-prong receptacles for 3-prong plugs?
- ☐ Are you protecting circuits with Ground Fault Circuit Interrupters?
- ☐ Are you closing electrical control panels and covering receptacle boxes?
- ☐ Do you avoid touching water, damp surfaces, ungrounded metal and bare wires if you're not protected?
- ☐ Do you avoid working in and around wet or damp conditions, equipment and electrical currents that aren't grounded, and wires that aren't insulated?
- ☐ Do you use equipment and tools the way they're intended to be used?
- ☐ Do you report immediately any damaged or defective equipment, power hand tools or machinery?
- ☐ Are you looking for posted signs that identify electrical components and related hazards?

Wearing the Right Protection

- ☐ Don't wear metal jewelry that might make contact with electric current.
- ☐ Wear eye protection where required.
- ☐ Wear rubber-soled shoes or boots on damp or wet surfaces.
- ☐ Wear safety-approved rubber and leather gloves when you work with electricity.



Wear the right protection when you work with electricity.

Stop electrical fires cold!

The best way to handle an electrical fire is to stop it before it starts. Here's how you can stop fires cold:

Installation
Do you install electrical equipment the right way?

Check-Ups
Do you check equipment periodically to make sure it's working right?

Circuits, Wiring and Equipment
Do you have them checked to make sure they're in good repair and not overloaded?

Maintenance
Are the machines and equipment you work with maintained on a required basis? Are they clean and free from oil, dust and residue?

Communication
Do you report immediately any hazards, damaged and defective equipment, tools or machinery? Do you obey your company's safety rules?

Do you check equipment periodically to make sure it's working right?

Electrical safety checklist

Keep these safety pointers in mind to help you avoid damage and injury from electrical current.

- ☐ Read warning signs. They're posted to inform and protect you.
- ☐ Study the operation manual for tools and equipment before you use them, then follow instructions.
- ☐ Light your work safely with extension lamps that have nonconductive handles, sockets and guards.
- ☐ Take care of extension cords so they don't twist or break. Make sure they're out of the way, so they won't get walked on.
- ☐ Disconnect cords by grasping the plug. Don't yank them out.
- ☐ Watch for makeshift wiring that can cause shocks and fires.
- ☐ Follow lockout and tagout procedures before you begin repairs. Move the switch into the "Off" position. Test equipment with meters. Are you sure the circuit is dead?
- ☐ Use Ground Fault Circuit Interrupters.
- ☐ Choose battery-powered tools wherever possible, especially when you're working outside.
- ☐ Report immediately any defective or damaged equipment, machinery, tools or wiring to your supervisor.

Study the operation manual for tools and equipment before you use them, then follow instructions.

Hazard observation

Hazard observation is part of your job. Here's how you can check for electrical hazards.

Wiring

Are the connections and ground wires tight and free from breaks?

Insulation

Can you see worn spots or breaks that could cause shocks? Are the cords and extension cords in good shape?

Belts and Gears

Can you detect excess tension or binding that can cause a power overload?

Personal Protective Equipment

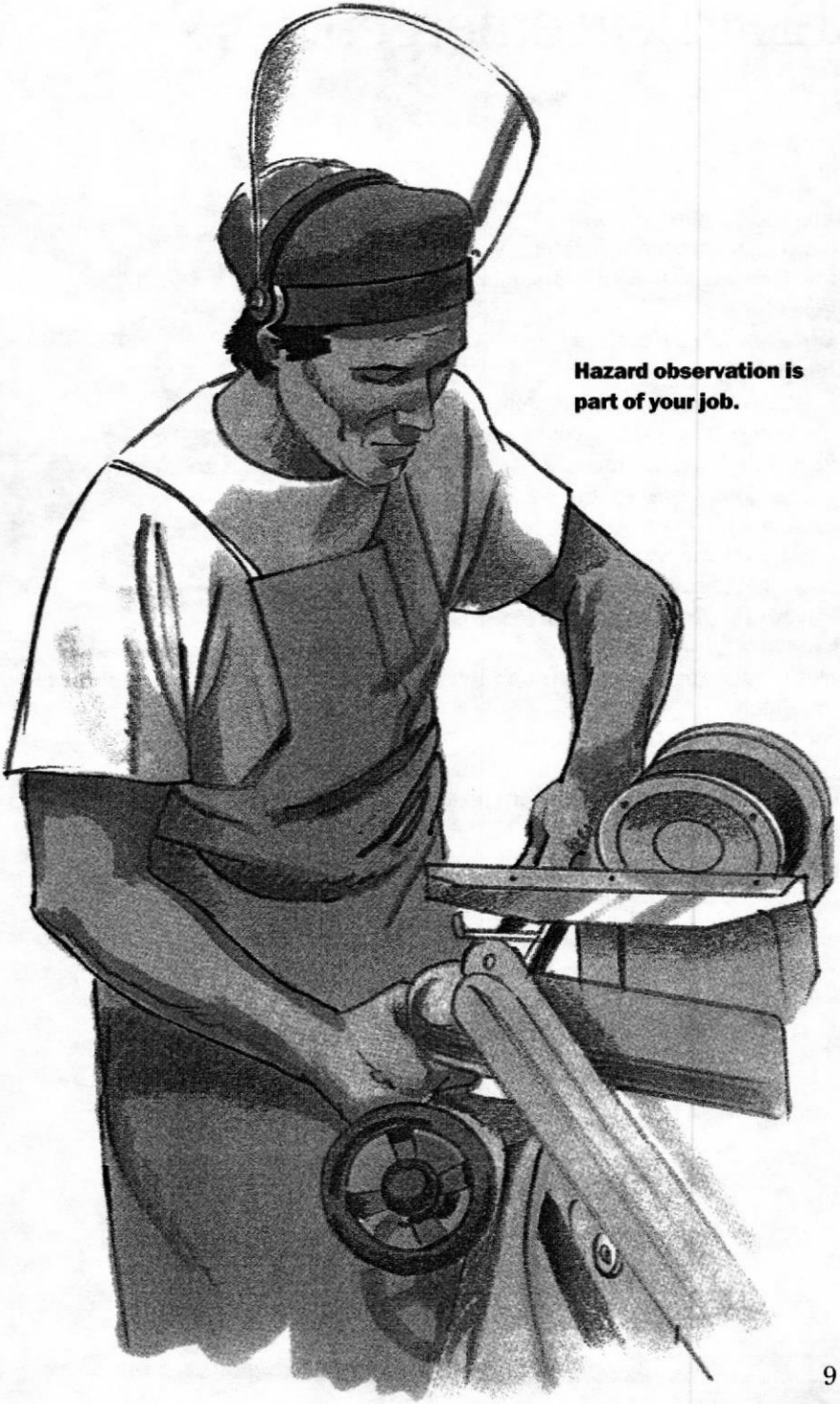
Are hand and foot protectors kept in good repair and readily available?

Machinery

Can you detect overloading, too much vibration or motor obstructions?

Equipment

Do equipment and power hand tools work properly? Are they free of defects or damage?



Hazard observation is part of your job.

Electrical emergencies

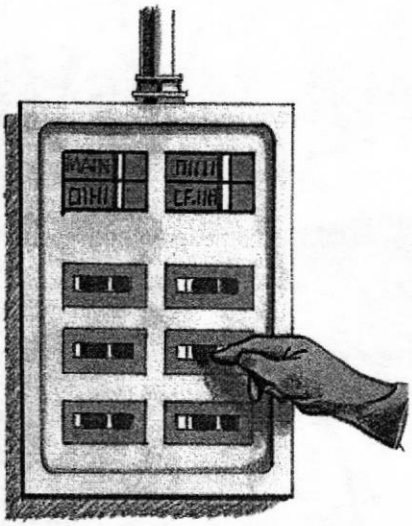
Electrical emergencies sometimes happen, no matter how careful you are. Here's how to handle an emergency:

Outdoor (High-Voltage) Electricity

- ☐ Contact the police and emergency medical service. Notify your supervisor, or follow the emergency instructions spelled out in your company policy.
- ☐ *Don't touch the person.* Don't try to use a tool to free the person.

Indoor (Low-Voltage/100 Volts) Electricity

- ☐ Don't touch anyone who has become grounded.
- ☐ Switch off power at the fuse or circuit-breaker box, or pull the plug.
- ☐ Call the electric company if you can't shut off the power.



Switch off power at the fuse or circuit-breaker box, or pull the plug.

Medical Help

Here's how you can help until aid arrives:

- ☐ Check for a heartbeat. If the person's heart has stopped, start CPR if you're trained.
- ☐ Begin mouth-to-mouth resuscitation if the person isn't breathing.
- ☐ Treat the person for shock. Keep the person lying down. If the person is unconscious, put him or her on their side to let fluids drain. Don't move the person if neck or spine injuries are possible. Cover the person to maintain body heat.

Contact the police and emergency medical service.

Electrical safety tips

Follow these instructions when you work around electricity.

- ☐ Make sure all electrical equipment is grounded.
- ☐ Use Ground Fault Circuit Interrupters.
- ☐ Use battery-powered tools wherever possible, especially when working outside.
- ☐ Examine all tools and personal protective equipment before you use them.
- ☐ Follow lockout and tagout procedures.
- ☐ Use machinery and tools the way they're designed to be used.
- ☐ Report unsafe machinery, tools and electric appliances. Don't use them until they've been repaired.

Remember

Electrical current can cause damage and injury and can be deadly. It's your job to stay safe when working with electricity!

Report unsafe machinery, tools and electric appliances. Don't use them until they've been repaired.

For Your Information

You may be interested in our other booklets. Ask about:

- ☐ Lifting & Carrying
- ☐ Back Care
- ☐ Confined Spaces
- ☐ Warehouse & Storage Safety
- ☐ Ladder Safety

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