

# ELECTRICAL SAFETY

Environmental Health and Safety



Electricity is an essential part of our daily routine. It provides energy for water heating, home heating and cooking, runs the fridge and helps to cool you down in summer, keeps the lights burning at night, and powers all your modern appliances. If electrical appliances are installed by experts and used wisely, electricity is a safe energy source. This brochure provides useful safety tips on electrical equipment and using electricity safely.

## WHY WORRY ABOUT ELECTRICITY?

Death. Electrocutions rank fourth (9 percent) in causes of industrial fatalities (behind traffic, violence and construction). The National Safety Council estimates 600 people die every year of electrical causes. Most of these accidents involve low voltage (600 volts or less). Electricity is an integral part of today's modern world, and sometimes it is easy to forget just how dangerous it can be. Given the correct circumstances, it can kill. But it can also shock you painfully, damage sensitive equipment and ignite combustible materials.

## THE BASIC RULES TO STAY SAFE ARE SIMPLE, ALWAYS:

- » Treat electricity with respect.
- » Look up and live to avoid contact with power lines.
- » Be extra careful using electricity in damp areas and outdoors.
- » Use the correct cords, cables and plugs, and keep them in good condition.
- » Use only licensed electricians for installations and repairs.
- » Use safety switches as additional protection against electrical shock.

## LOOK UP AND LIVE

Electrical fatalities can be caused by accidental contact with overhead power lines, so always "look up and live." Electricity can spark across

a gap, so stay well away from power lines, up to 275,000 volts may be present.

- » Never climb electrical towers or poles, or enter electrical substations; this is dangerous and can lead to severe burns or an electrical fatality.
- » Never park, store, transport or operate irrigation pipes, tip trucks, boat masts, radio aerials and cranes near or under power line.
- » Never fly kites or model airplanes near power lines; if one does become entangled, don't try to retrieve it, call the electricity distributor.
- » Always tell children not to climb trees near power lines.

## DON'T MIX WATER AND ELECTRICITY

Because water conducts electricity, water and electricity are a dangerous combination. Use extra caution when using electrical appliances near water or in damp areas.

- » Never touch appliances, switches, power points or lights with wet hands or a damp wash cloth.
- » Good ventilation, such as exhaust fans in kitchens, bathrooms and laundries prevents condensation building up on switches, appliances and power points.
- » Never use a portable electric heater in the bathroom.
- » Never leave portable electric appliances or extension cords close to a pool or pond, they could be splashed or fall into water.
- » If an appliance does get wet, switch it off at the power point, unplug it, dry it out and have it checked by a licensed electrical contractor.
- » Never wash or immerse appliances in water unless manufacturer's instructions allow it.

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## GFCI OUTLETS

GFCIs have likely saved hundreds of lives and prevented thousands of serious injuries in the last three decades. They should not be taken for granted, however; it is critical they be tested just as you would test your smoke alarm. It takes just ten seconds a month to protect yourself and your family.



Ground faults occur when the electrical current in an electrical appliance or other product stays outside the path where it should normally flow. If a person provides a path for the live current to the ground, he or she may be severely shocked or even electrocuted. GFCIs, detecting even a minimal difference between electricity flowing out of and returning to the device, act quickly to intercede and shut off the flow of electrical current through the circuit (and a person) helping to prevent injury or death.

## USING AND MAINTAINING APPLIANCES

Always read and follow the manufacturer's instructions on the use and maintenance of your electrical appliances. Never work on or interfere with electrical wiring and equipment. Use only a licensed electrician for installation and repairs.

- » A 'tingle' or shock from an electrical appliance is a warning - switch it off at the power supply and disconnect it. Label it to prevent others using it and report the incident to the EHS department.
- » Faulty equipment is a major cause of electrical fatalities, so check regularly for damage - if you suspect any faults, have them repaired by a licensed electrician.

» Before cleaning a portable electrical appliance, switch it off at the power point and unplug it. This ensures that the appliance is not energized.

» If food is stuck inside your toaster, switch it off at the power point and unplug it before attempting to clear the blockage.



» Always use the correct fuse wire, fuse cartridge or plug-in circuit breaker, to avoid overloads which might cause fire, a repeatedly blowing fuse signals a fault which should be checked by a licensed electrical contractor.

» Always strictly follow the manufacturer's instructions for electric blankets. Tie the tapes around the mattress to stop creasing. Blankets should be inspected yearly for damage, and tested every five years.

» If there is a power failure, switch off any heaters, electric kettles or cooking appliances which were working at the time, to avoid the possibility of starting a fire when the power comes back on.

## USING EXTENSION CORDS SAFELY

» Use extension cords only when necessary and only on a temporary basis.

» Ensure that the extension cord's wattage rating is at least as high as the tool or appliance plugged into it.

» If furniture or beds may be pushed against an extension cord where the cord joins the plug, use a special 'angle extension cord.'"



» Extension cords can cause tripping hazards. Do not run them across walkways, floors or areas where people walk or equipment is rolled.

» When using outdoor tools and appliances, use only extension cords equipped with an inline GFCI and labeled for outdoor use.

» Use polarized extension cords with polarized appliances.

» Insert plugs fully so that no part of the prongs are exposed when the extension cord is in use.

» When disconnecting cords, pull the plug rather than the cord itself.

» Replace cracked or worn extension cords with new, properly rated cords that bear the mark of a nationally recognized testing laboratory, safety closures and other safety features.



## DON'T BE SHOCKED: PREVENT ELECTROCUTION

» Use only three-wire (grounded) extension cords for appliances with three-prong plugs.

» Never remove the third (round or u-shaped) prong, which is a safety feature designed to reduce the risk of shock and electrocution.

» Electricity and water don't mix: if using an extension cord in a kitchen, bathroom, outdoors or in a potentially damp location, plug it only into a ground fault circuit interrupter (GFCI) outlet.

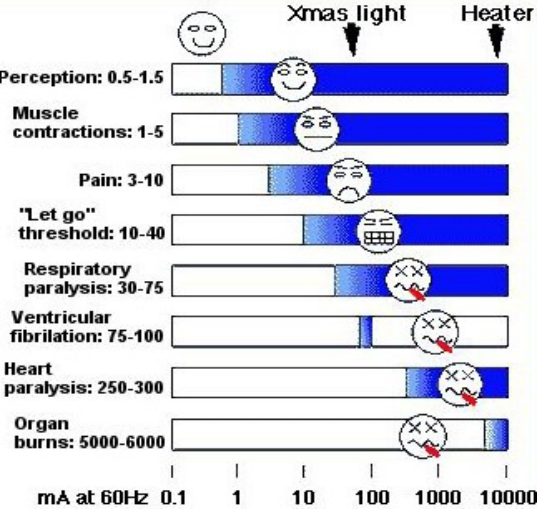


Do not let this happen to you!



### EFFECTS OF ELECTROCUTION ON YOUR BODY:

A small night-light with a 6-watt bulb draws .05 ampere, and even that small amount of current can be fatal. Here are some effects of current (in milli amps) passing through a 150 pound body (note that perception is only .5 to 1.5 milli amps):



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Special thanks to Eastern Washington University for providing the template.