



ELECTRICAL SAFETY

Electrical energy helps to make our world more comfortable and convenient.

Electricity is taken for granted because it does so many things easily and dependably. Home electrical systems provide energy to heat, cool, cook, drive power tools, and perform other useful functions.

However, this energy can start fires, cause electrical shock, or kill. The more you understand about electricity, the safer you'll be.

Some things besides wires and cables can conduct electricity. For instance, metal is a good conductor and must be insulated to keep electricity from leaking or spilling over as it travels.

Sometimes insulation breaks down due to wear, rough use, or because of aging. When this happens, anyone contacting the conductor may get shocked. Shock happens when electrical current leaks through insulation and passes through your body to the ground. Any shock is dangerous to your body, and the seriousness of the shock depends on the contact between the leaking current and the ground. Wet hands or standing in water often causes a stronger shock and possible serious injury or death.

Normally, the human body is not a very good conductor of electricity. If you ever feel a "tingle" from an electrical source, consider it a warning of pending danger. Immediately disconnect the equipment involved until it has been checked by an expert, repaired, or replaced. Death from electrical shock usually results from a disruption in the rhythmic beating of the heart.

In very high voltage shock, death can result. Cramping of chest muscles causes breathing to stop. Most shock deaths occur when electricity flows through the body, by way of the chest, to the earth or grounded metal object.

Aside from the physical separation of electrical conductors and/or insulation, residential electrical service may include Ground Fault Circuit Interrupters (GFCIs). A GFCI constantly monitors current flowing in a circuit to sense any loss of current. If the current flowing in a circuit through two circuit conductors differs by a very small amount, the GFCI instantly interrupts the current flow to prevent a lethal amount of electricity from reaching the person. The person may feel a painful shock, but will not be electrocuted.

Double-insulated appliances do not need to be grounded and offer approximately the same protection as grounded appliances. Double insulation is a design and manufacturing method that assures that no exterior, exposed part of an appliance can become electrically "HOT".

To keep electrically safe, do not alter or bypass safety devices, and strictly follow the latest codes when making changes in house wiring. Make sure that the work done by you or your electrician meets local codes or the National Electrical Code of the National Fire Protection Association. Occasionally test ground-fault circuit interrupters to check for proper operation based upon manufactures specifications.

Electrical cords are a primary cause of home fires. The most common factors are cracked or broken plugs, frayed or exposed insulation, and overloads from accommodating too many appliances. Never place an extension cord under a rug. Insulation wear may occur which is hidden under the rug and combustible carpet material could ignite. Knotting or twisting cords may break the wire or insulation. Cords should not contact a steam pipe, appliance, or any other object that becomes hot, since the insulation may become scorched and may crack. Frequently inspect cords for worn places or any signs of defect. Replace any defective cords. Never use extension cords in place of permanent wiring. Do not put them through holes in walls, ceiling, or floors.

Never run extension cords through doorways or windows. Keep all electrical appliances out of the bathroom. If you must use electrical appliances in the bathroom, place them where they cannot be reached from the tub and where they will **not** fall into a tub, lavatory, toilet, or shower. Do **not** use appliances when they are damp, unless they are designed for such purposes. Do **not** operate them when you are damp.