

Tips on Electrical Safety

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NIST

Home Dangers

Every year nearly 4,000 Americans die in home fires and more than 25,000 are injured. Electrical fires are one of the leading types of home fires. By following some simple rules on electrical safety you can reduce the likelihood of an electrical fire in your home.

Prevent electrical problems

Studies of electrical fires in homes show that many problems are associated with improper installation of electrical devices by do-it-yourselfers. Common errors that can lead to fires include the use of improperly rated devices such as switches or receptacles and loose connections at these devices. Both can lead to overheating and arcing that can start fires. Fires are still caused by people using the wrong size fuse or even putting a penny behind a fuse when they don't have a spare. These practices are very dangerous. The fuse is a safety device designed to limit the electricity carried by the circuit to a safe level. Electricity and water are a bad combination.

All electrical devices installed outdoors should be specially designed for outdoor use. Outdoor receptacles as well as those in kitchens, bathrooms, and anywhere else near water should be the ground fault circuit interrupting type (GFCI).



GFCI receptacles (right) can be identified by the "Test" and "Reset" buttons

Use Electrical Devices Safely

Light bulbs, especially the newer halogen types, get very hot and can ignite combustible materials that get too close. Clothing or towels should never be placed atop a lampshade and table lamps should not be used without a shade where they

might fall over onto a bed or sofa. Most light fixtures are labeled to show the brightest bulb that can be safely used in that fixture; too high a wattage bulb can cause the fixture to overheat and start a fire. Extension cords are a common cause of electrical fires. You must be careful to use only extension cords that are rated for the power used by the device they are powering. Extension cords should never be used as a long term solution to the need for another receptacle. Extension cords must never be run inside walls or under rugs or furniture. Extension cords can get warm in use and must be able to dissipate this heat or they can start a fire.

Maintain Electrical Safely

The insulation on electrical cords can become damaged by wear, flexing, or age. Do not use any cord that is stiff or cracked. Some clues that you may have an electrical problem are :

1. Flickering lights. If the lights dim every time you turn on an appliance that circuit is overloaded or has a loose connection.
2. Sparks. If sparks appear when you insert or remove a plug, they could be a sign of loose connections.
3. Warm electrical cord. If an electrical cord is warm to the touch, the cord is underrated or defective.
4. Frequent blown fuses or broken circuits. A fuse or circuit breaker that keeps tripping is an important warning sign of problems.
5. Frequent bulb burnout. A light bulb that burns out frequently is a sign that the bulb is too high a wattage for the fixture.

