Preventing Electrical Fires

Electricity is a powerful energy source. Treat it with caution!

There are hundreds of electrical fires in Massachusetts each year. They are usually among the top three causes of fire deaths and result in dozens of injuries and millions of dollars in damage.

Electric current is the power running along wires in our home and generates heat as it travels. The electrical current is like water running through a hose. The size of the cord can carry only so much electricity before it starts to overheat. The insulation on home wiring, fuses and other parts of the electrical system are all designed to carry a certain amount of electricity safely. The more electricity you draw along a cord, the more quickly it heats up. For instance, an appliance like a space heater draws a lot of current and must be plugged in with a properly designed cord.

Extension Cords and Power Strips

Extension cords and power strips are for temporary use only. The more electrical cords you connect together, the more trouble spots you have. The connection between an extension cord and an appliance cord does not have the same safety features (like fuses or circuit breakers) as those that are built into a wall outlet.

Potential Warning Signs and Hazards

Call the fire department immediately if you have any of these warning signs:

- Arcs, sparks or short circuits;
- Sizzling or buzzing sound;
- Odors, vague smell of something burning

Firefighters can use thermal imaging technology to see excessive heat inside walls.

Call a licensed electrician soon if you have any of these warning signs:

- Frequently blown fuses or tripped circuit breakers;
- Dim or flickering lights, bulbs that wear out too fast;
- Overheated plugs, cords or switches;
- Shock or mild tingle – more than normal static electricity;
- Loose plugs; or
- Unusually warm or faulty electrical outlets or switches.

Look around for these hazards in your home and correct them:

- *Overloaded electrical outlets–more than one appliance cord plugged into one wall outlet.*
- *Cords pinched behind furniture such as couches or bureaus.*

→

Department of Fire Services
www.mass.gov/dfs • (978) 567-3100

- *Overloaded power strips*. Power strips should only be used with a few low current devices such as electronics.
- *Lamps or fixtures with light bulbs higher than the recommended wattage*. Most lamps recommend 60 watts. Be careful where you use higher wattage bulbs.
- *Electrical cords underneath rugs, carpet or furniture*. Move them to reduce the risk of fire from overheating due to worn insulation.
- *Cords with frayed wires or cracked insulation*. Replace them with new ones having a certification label from an independent testing laboratory.
- *An extension cord that is not properly rated for the appliance it powers*. Typical "lamp cord" extension cords cannot carry the electrical current needed for appliances such as space heaters or air conditioners.
- *Check electrical cords periodically for cracks, damage, and wear*. Don't use an appliance or device with a damaged cord: replace it or have it professionally repaired.
- *Cords or wires that are nailed into place*. This can cause electrical shorts and arcing.
- *Indoor appliances and cords being used outdoors*.

Maintenance

Electrical wiring needs periodic maintenance and inspection. Have your electrical system examined by a licensed electrician every 10 years. All electrical work should be done by a licensed electrician who obtains a permit when required. The permit process protects homeowners by requiring that an inspector check that the work is done correctly.

Don't overload power strips. Use them only with a few low current devices such as electronics.

Arc Fault Circuit Interrupter (AFCI)

An arc fault circuit interrupter is designed to reduce the likelihood of fires. It responds to arcing and sparking within a circuit before the circuit breaker or fuse trips. The AFCI breaker trips to help prevent the fire from occurring in the first place.

The AFCI is installed at the electrical panel and doesn't look much different than a regular circuit breaker.

AFCIs are mostly found in newly built homes but can easily be installed in older homes equipped with circuit breakers.

Don't confuse the AFCI with GFCI. The devices serve different functions.

Ground Fault Circuit Interrupter (GFCI)

Installing Ground Fault Circuit Interrupter (GFCI) receptacles can reduce deaths from electrical shock in and around the home by two-thirds. GFCIs should be installed by a qualified electrician in places near water such as kitchen counters, bathrooms and other areas subject to moisture, including the outdoors.

Tips for Preventing Electrocutions and Shocks

- Read and follow instructions and safety tips provided with electrical appliances and equipment.
- Install plastic safety covers in unused electrical outlets to protect children from shock hazard.
- When unplugging a cord or appliance from an outlet, pull the plug not the cord. Pulling by the cord can cause damage to the wiring at the connection.
- Do not defeat polarized plugs (one prong larger than the other) or the ground prong.
- Always keep electrical appliances and cords away from water.