

## LOSS CONTROL TOPIC

### ELECTRICAL SAFETY

The National Safety Council estimates that over 600 people die each year in the United States from electrocution and over 7,600 are injured. Most of these fatalities and injuries are from electrical voltages below 600 volts. The U.S. Fire Administration estimates that over 9% of all building fires have electrical causes.

There are some hazards that can be found in the office environment that are frequent causes of electrical injuries and fires:

#### **Faulty, improperly maintained or overloaded electrical systems.**

These are more frequently found in older buildings, but are also present in new structures. An electrical system that is being stressed beyond its original design limits can overheat, causing fires and electrical shorts to occur. The frequent tripping of circuit breakers is a red flag warning to get the electrical system checked by a master electrician.



An overheated and burned out circuit box

## Lack of proper circuits

The lack of enough accessible outlets/circuits that have the correct amperage to handle the loads placed on them can cause dangerous overload situations when multiple cords are plugged into outlets. This is often seen in office workstations where multiple devices, such as; computers, monitors, printers, faxes, etc. are all plugged into one outlet.

An overloaded receptacle catches fire



## Improperly grounded or ungrounded outlets and equipment.

Two prong outlets should never be used in an office environment. Only three prong receptacles and power cords are acceptable.



*An improper solution to an ungrounded receptacle*

Ground Fault Circuit Interrupter (GFCI) receptacles should be used, at a minimum, wherever contact with water is possible.

*A proper GFCI receptacle*



### **Improperly placed electrical cords**

Electrical wires or extension cords should never be placed in traffic areas or under rugs. The constant compression caused by pedestrians and equipment can cause the failure of insulation and the exposure of live wires. The solution is to have a qualified electrician add enough capacity to allow the proper placement of receptacles. At a minimum, cord protectors should be used to bridge traffic areas.



*Cord protector example*

## Warning signs

There are some warning signs to look for that can indicate the presence of a dangerous electrical environment:

- Frequent tripping of circuit breakers or blown fuses
- Discolored or warm electrical outlets
- Flickering lights
- A persistent acrid burning smell
- A tingling sensation when touching electrical equipment or appliances

## Source Materials

National Electrical Installation Standards [www.neis.org](http://www.neis.org)

National Electrical Contractors Association [www.necanet.org](http://www.necanet.org)

OSHA [www.osha.gov/electrical](http://www.osha.gov/electrical)

U.S. Fire Administration [www.usfa.dhs.gov](http://www.usfa.dhs.gov)

*These guidelines are intended to offer general suggestions for follow up and discussion and should not be considered a substitution for professional advice. You are strongly urged to seek the services of a professional master electrician in these areas.*

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