



# Extension Cords & Power Strips

Improper use of easily overloaded, unapproved extension cords can present a serious fire safety hazard in the workplace. In fact, misuse of extension cords led to a significant fire in an Executive Branch office building in 1998.

According to the National Fire Protection Association, electrical distribution equipment, such as extension cords, was the second leading cause of fire deaths in the U.S. between 1994 and 1998. The most common cause of fires from extension cords is due to improper use and/or overloading, especially when cords have multiple outlets. Most extension cords are only rated for a maximum of ten amps or 1200 watts. Overloading can occur when multiple devices are plugged into one cord or when cords are "daisy chained" (plugging multiple extension cords together).

The use of unapproved extension cords is a violation of both OSHA and National Fire Protection Association codes. The OSHA Code of Federal Regulations (29CFR1910.303 (a)) states that conductors and equipment are acceptable for use only if they are approved by recognized laboratories (such as Underwriters Laboratory, Factory Mutual, etc.). Approved extension cords are only allowable in the workplace as temporary wiring, and for no more than 90 days.

## Fast Facts About Extension Cords and Power Strips

### Approximate Damage Caused by Extension Cords Between 1994 and 1998\*

- 6900 fires
- 91 civilian deaths and 421 civilian injuries
- \$115.9 million in direct property damage per year between 1994 and 1998

\* Source: National Fire Protection Association

### Inappropriate Use of Extension Cords

- Using as permanent wiring
- Using unapproved extension cords
- Overloading power capabilities of the cord during temporary use
- Daisy chaining (plugging one extension cord into another and another, etc.)
- Using one surge protector/power strip to power another

### Basic Guidelines for the Appropriate Use of Extension Cords

- Cords must be properly approved (by Underwriters Laboratory, etc.)
- Approved cords must be for temporary use only (no more than 90 days)
- Extension cords may be used for remodeling and maintenance or repair of structures or equipment
- It is permissible to use extension cords to light holiday decorations

*Office of Compliance Safety and Health* **FAST FACTS**

**Examples of Improper Extension Cords and Power Strips**

To the right is a common example of improper extension cord usage. As seen in this photo from a Congressional facility, one extension cord is being used to power multiple devices. This cord is of the common household variety and not approved for this type of use.

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To the left is a burned and melted outlet found in a Congressional facility by the Office of Compliance on a fire safety inspection. This outlet is the result of electrical current overloading and an obvious safety hazard.

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Office of Compliance, July 2004

## Best Practices

The following best practices are provided to assist in establishing parameters for the safe use of common electrical appliances in the workplace.

### All Appliances

All appliances should be:

- ✓ Plugged directly into a permanent electrical outlet
- ✓ Removed immediately when there is any sign of damage to appliance components
- ✓ Operated according to the manufacturer's instructions
- ✓ Powered down and unplugged at the end of each workday
- ✓ Placed away from any portion of an exit
- ✓ Situated out of traffic areas as to avoid creating a tripping hazard

### Space Heaters

Anyone who has worked in an office environment knows it is difficult to heat and cool the workplace satisfactorily for every employee. Space heaters pose fire and electrical hazards and typically are not energy efficient. Space heaters placed near a building's heating, ventilating and air conditioning systems' (HVAC) thermostat will counteract the building's system which could cause an entire section of a building to become excessively hot or cold. Additionally, space heaters can overload and trip circuit breakers disrupting normal operations.

Heaters should:

- ✓ Have a high temperature-limiting device
- ✓ Have built-in tip over protection
- ✓ Be placed away from combustible materials (i.e. paper bins, desks, curtains, carpet)

Heaters should not:

- ✓ Have an open flame
- ✓ Produce carbon monoxide
- ✓ Be placed near building HVAC thermostats

### Coffee Pots and Microwaves

Ideally, coffee pots and micro-waves would be commercial grade and provided by the employer for use by all employees. This would assist in discouraging individuals from bringing these appliances from home. Coffee pots and microwaves should be:

- ✓ Located in central areas
- ✓ Placed away from combustible materials
- ✓ Situated on a laminated or metal surface
- ✓ Commercially rated (not labeled "Household Use Only")

### Extension Cords

Extension cords are frequently subject to physical damage, rapid wear and may be undersized for the electrical load so they should only be used for short-term use.

Flexible cords and cables should not be:

- ✓ Used as a substitute for the fixed wiring of a structure
- ✓ Affixed to structures
- ✓ Concealed behind walls, ceilings and floors