



Extension Cord Safety – Important Facts to Remember!



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Improper use of easily overloaded, unapproved extension cords can present a serious fire safety hazard in the workplace and home. In fact, misuse of extension cords led to a significant fires in offices and residential areas in 2012. According to the National Fire Protection Association, fires related to electrical distribution equipment, such as extension cords, peak in the winter and were the fourth leading cause of fire deaths in the United States between 2007 and 2011. 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 10 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.

Safety Measure – Surge Protectors/Power Strips

Surge Protectors are designed to trap the voltage that exceeds those limits. Excessive voltage occurs due to power spikes. When these spikes occur for a sufficient duration, this activates the trapping device, a Metal Oxide Varistor (MOV), located in the surge protector. The MOV is the heart of surge suppressors. The role of the MOV is to divert surge current. However, MOVs wear out with use. As more surges are diverted, the life span of the MOV shortens, and failure becomes imminent. There is no forewarning or visual indications given, just failure. And while failing, they can reach very high temperatures, and actually start fires.

Most surge protectors will continue to function as a power strip, even though the surge trap mechanism may have been destroyed by the power spike. This presents two possible dangers:

- 1) If another power surge should occur, it can damage the equipment or appliances that are plugged into this surge protector.
- 2) If sufficient voltage passes through the surge protector due to a second power spike, a resistant short may have been formed, allowing heating to occur and a fire to ignite.

When buying this equipment, look for a surge protector with an indicator light that tells you if the protection components are functioning. All MOVs will burn out after repeated power surges. Without an indicator light, you have no way of knowing if your protector is still functioning properly. Unfortunately due to manufacturing differences, the light may be “on” or “off” during proper operation. It is important to review the operating instructions provided with the surge protector.

USE ONLY SURGE PROTECTORS OR POWER STRIPS THAT HAVE AN INTERNAL CIRCUIT BREAKER.

Response Time

Surge protectors don't kick in immediately; there is a very slight delay as they respond to the power surge. A longer response time tells you that your computer (or other equipment) will be exposed to the surge for a greater amount of time. Look for a surge protector that responds in less than one nanosecond.

Visually inspect all surge protectors or power strips on a regular basis to ensure that they are not damaged or showing signs of wear or damage.

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Safety Measure

Surge Protectors/Power Strips

Do's and Don'ts

- ✓ During the visual inspection, ensure that the plug is fully engaged in their respective outlets.
- ✓ The surge protector or power strips should always have either a polarized plug with one of the blades being larger than the other one or a three-prong grounded plug.
- ✓ Never use a three to two prong adapter to power the unit.
- ✓ Surge protectors or power strips should have a cord of no more than 6 feet in length.
- ✓ When the surge protector or plug strip is not in use, unplug the cord from the power source.
- ✓ Do not locate a surge protector or power strip in any area where the unit would be covered with carpet, furniture, or any other item that will limit or prevent air circulation.
- ✓ Do not locate a surge protector in a moist environment.
- ✓ Use a name-brand product from a reputable source. Low-quality or counterfeit power strips may contain wiring that isn't adequate to carry the load.
- ✓ Place power strips where there is plenty of air circulation to disperse heat.
- ✓ Do not attempt to plug grounded (threeprong) cords into ungrounded (two-slot) outlets.
- ✓ Keep all non-critical electrical items unplugged until you need to use them.

Inappropriate Use of Extension Cords

- ✓ Using as permanent wiring.
- ✓ Using inexpensive or 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.
- ✓ Do not bind, kink, or knot electrical cords.
- ✓ Never run cords under rugs or where chairs can roll over them.



Common Hazard

Using an extension cord or power strip to run more electrical equipment

While solving the problem of too few outlets, you may create another – an overloaded circuit! Overloaded circuits can cause an electrical fire because of the additional electrical current running through the outlet, which is more than it was designed to handle. When this happens, the wiring or the outlet will overheat and potentially create an electrical fire.

What to look for:

- Outlet or wall is warm to touch
- Outlet is discolored
- Circuit breakers frequently trip or fuses frequently blow
- A burnt smell of insulation

What to do:

Have a licensed electrician install additional circuits where needed along with more outlets to eliminate the use of extension cords.



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