

Extension and Power Strip Safety-No electrical shocks, burns or fires at Tufts!

Extension cord, power strip, power tap, multi tap or surge protector devices provide an important method of bringing temporary power to electrical devices that need to be used in areas not located near a wall outlet. UL approved and correctly sized extension cords are only allowable in the workplace as temporary wiring not to exceed 90 days. The U.S. Consumer Product Safety Commission (CPSC) estimates that each year, about 4,000 injuries associated with electric extension cords are treated in hospital emergency rooms. About half the injuries involve fractures, lacerations, contusions, or sprains from people tripping over extension cords. In addition, CPSC also estimates that about 3,300 residential fires each year, killing 50 people and injuring about 270 others. The most frequent causes of electrical fires are short circuits, overloading, damage, and/or misuse of extension cords, power strips, power taps and surge protectors.

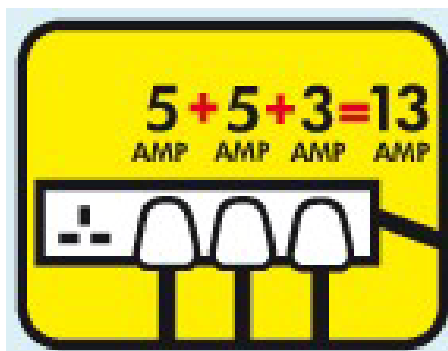
The most common cause of fires from extension cord, power strip, power tap or surge protector is primarily due to improper use and overloading, especially when cords have multiple outlets such as power strip and surge protectors. Recently, two Manhattan fires that occurred within two days, leaving one person dead and another seriously burned as a result of overloaded power strips. Cords and strips get hot enough “glowing red” to ignite cloth, paper, carpet etc. and start fires.

Most light duty extension cords are only rated for a maximum of ten amps or 1200 watts and most multitap (strip cord / power strip and surge protectors) are rated at 15 amps (1875 watts). Overloading can occur when multiple devices are plugged into one cord or when cords are “daisy chained” (plugging multiple extension cords together) or when the connected equipment is drawing more amps than the power strip is rated to handle.

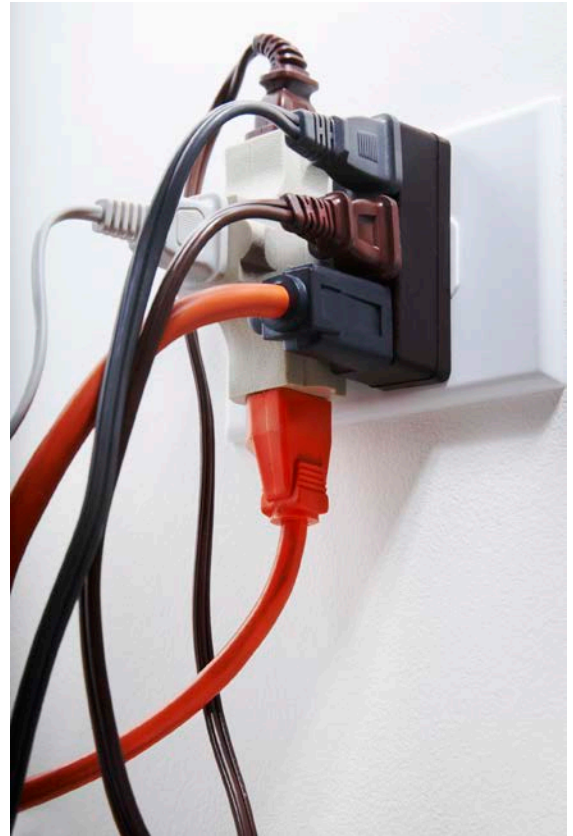
The use of unapproved extension cords is a violation of both OSHA and National Fire Protection Association codes. The OSHA Code of Federal Regulations (29CFR1910.303 (a)) states that conductors and equipment are acceptable for use only if they are approved by recognized laboratories (such as Underwriters Laboratory, Factory Mutual, etc.). Approved extension cords are only allowable in the workplace as temporary wiring, and for no more than 90 days. Beware of cheap devices, they often do not meet safety standards and are illegally labelled.

Add it up!

If your device, equipment, instrument or tool that it uses eight amps at 125 volts, then its wattage rating will be 1000W (8A x 125V = 1,000W). Additionally, if you are going to use an extension cord or a power strip or surge protector with two or more connected devices, you must add together the total wattage ratings for all used on the cord even if the other device is idle or not in full operation (has the potential of turning on to full load). Do not use a cord that has a lower rating than the equipment to be plugged in – check all manufacture’s labels.



Let’s look at a typical office equipment power strip, power tap or surge protector rating and see how quickly it adds up: NOTE: The total should not exceed the rated capacity of the extension cord, power strip, power tap or surge protector you are using, also assume full load of the equipment; a printer example. There is an idle listing and a printing amperage – assume the printing amperage. The following is a good use of a power strip



*PLEASE DISPLAY ON COMMUNITY BOARDS OR SHARE WITH ANYONE WHO WOULD BE INTERESTED



Computer	2.0 amps	250 watts
LCD Monitor	1.5 amps	190 watts
Speakers	0.12 amps	15 watts
Desk lamp	0.32 amps	40 watts
Scanner	1.2 amps	150 watts
<u>Printer (Printing)</u>	<u>9.4 amps</u>	<u>1,175 watts</u>
Total	14.54amps	1,820 watts

Never use extensions or power strips for space heaters, refrigerators, microwave ovens, toaster ovens.

- Don't use extension cords as substitutes for permanent wiring- temporary use only.
- Purchase cords approved by an independent testing laboratory, such as Underwriters Laboratories (UL), MET, ETL or Canadian Standards Association (CSA).
- Never use a cord that feels hot or is damaged in any way. Touching even a single exposed strand can give you an electric shock or burn.
- Replace cords with cracks, cuts and damaged insulation. Typically, repair is not cost effective and can only be done by a qualified electrician.
- Power cords should never be nailed, stapled, or taped to the desk, wall, ceiling, baseboard, or another object.
- When unplugging a cord, pull on the plug, not the cord(yes, bend over)
- Unplug extension cords when not in use.
- Do not run extension cords through walls, doorways, under carpets, ceilings or floors. If cord is covered, heat cannot escape, which may result in a fire hazard.
- Don't coil equipment or extension cords while they're in use. Uncoil extension cords before use so that heat can escape.
- Avoid using extension cords when possible. If you must use an extension cord, select one that is rated for the full load amps of the connected equipment or tool. If more than one device is being connected to an extension cord, add the individual amp ratings of the devices together and confirm that it does not exceed the amp rating of the cord.
- Use a three-wire extension cord only. Do not use "cheaters" or 2-wire adaptors to connect to two prong outlets. This defeats the purpose of a three-prong plug and could lead to an electrical shock. Never force a plug into an outlet if it doesn't fit.
- Use exterior rated cords outside use (see label). Do not use indoor extension cords outdoors.
- GFCIs or GFCI pig tail is required for outdoor extension cord use.
- Do not extend extension cords by plugging into another. Overloading can occur when multiple devices are plugged into one cord or when cords are "daisy chained".



Never use extensions or power strips for space heaters, refrigerators, microwave ovens, toaster ovens

References

National Fire Protection Association <http://www.nfpa.org>
 Consumer Product Safety Commission, Extension Cords Fact Sheet <http://www.cpsc.gov/cpsc/pub/pubs/16.html>
 Consumer Product Safety Commission, Safety Tips <http://www.cpsc.gov/tips.html>
 Electrical Safety Foundation International, Indoor Electrical Safety Check <http://www.esfi.org/esfilib/indoorsafety.pdf>
 ISHN <http://www.ishn.com/articles/99614-two-nyc-fires-in-two-days-caused-by-overloaded-power-strips>