



## TOWN OF PONCE INLET

# FIRE PREVENTION DIVISION

OFFICE OF THE FIRE MARSHAL

### Introduction

Extension cords provide a convenient method of bringing temporary AC power to a device that is not located near a power outlet. But, if not used properly, extension cords lead to electrical shock hazards, equipment damage, and fire hazards. In addition, improper cord selection can lead to use of an undersized extension cord resulting in an overheated cord and insufficient voltage delivered to the device. This condition can result in a device or cord failure and fire.

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 involves fractures, lacerations, contusions, or sprains from people tripping over extension cords. CPSC also estimates that about 3,300 residential fires originate in extension cords each year, killing 50 people and injuring about 270 other. The most frequent causes of such fires are short circuits, overloading, damage, and/or misuse of extension cords.

### Most Common Inappropriate Use of Extension Cords and Power Strips

- Used as permanent wiring.
- Using unapproved extension cords.
- Overloading power capabilities of the extension cord/power strip during temporary use.
- Daisy chaining or piggy-backing (plugging one extension cord into another and another, etc.)
- Extension cords shall not be used to power heat-producing appliance such as coffee makers, toaster ovens and portable heaters.
- Extension cords/power strip's shall not be concealed, covered, or run through moist environments.
- Use of an extension cord or power strip without the three-pronged ground plug.
- Use of an extension cord or power strip that is damaged.
- Use of a single outlet multi-plug adapter located at the outlet to power multiple devices.

### Guidelines for the Appropriate Use of Extension Cords and Power Strips

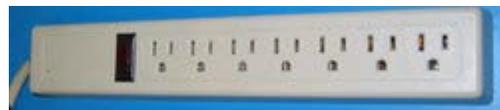
- Shall be approved and listed (UL, FM, etc.)
- Extension cords shall be used on a temporary basis only (no more than 90 days)
- Extension cords must be the physical size of or greater than the physical size of the power cord it provides electricity to.

- Shall be a three-pronged ground type and shall only be plugged into a grounded three-prong outlet.
- Follow the manufacturer's instructions for plugging an appliance into a receptacle outlet.
- Power strips shall only be used if provided with an integrated circuit breaker rated higher than all devices plugged/powerd by the power strip.

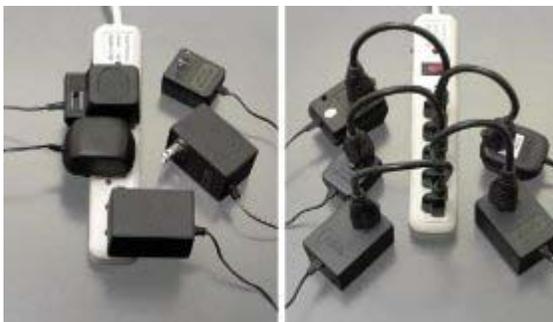
### Relocatable Power Taps (RPT)

There are two types of RPTs. The first type is commonly referred to as a "power strip" or "power cord." Power strips/cords are Listed by Underwriter Laboratories under the product category Relocatable Power Taps (RPT). The second type of relocatable power tap is commonly referred to as a "surge protector" or "surge suppressor." These devices are provided with transient voltage surge suppression (TVSS) and are Listed by Underwriter Laboratories both as a Relocatable Power Taps (RPT) and as a Transient Voltage Surge Suppressors. Both power strips/cords and surge protectors/suppressors are variations of an extension cord.

The main purpose of a power strip is to provide multiple outlets for you to plug-in things that require electricity. Most power strips have an On/Off indicator light. In addition, power strips can be equipped with an integral circuit breaker. The circuit breaker, or fuse, protects the power strip against excessive loads. If you draw too much current because you plug in too many devices or one big appliance like a heater then the fuse or circuit breaker will open. This prevents the power strip from overheating that can result in a fire. All power strips used in a commercial application must be equipped with an internal circuit breaker.



Power strips are commonly used in offices to provide multiple receptacles to office equipment. Power strips are also used to provide power to equipment such as computers, printers, cell phones, and Ipod/MP3 devices. They are generally priced under \$10.



Due to their size, it is often difficult to plug more than two or three AC adaptors into a power strip. Mini extension cords are available to facilitate AC adaptor connections to the power strip receptacles. These mini extension cords are allowed.

A surge protector looks very similar to a power strip because it also provides multiple outlets, but their main purpose is to provide protection from power surges. Surge protectors should have an indicator light on them that tells you the surge protection component is working. Some also have phone and

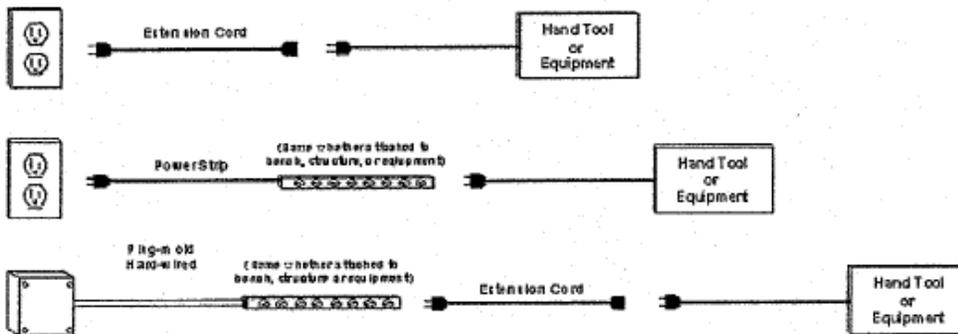


cable jacks. Surge protectors/suppressors are used to protect sensitive electronic equipment such as computers, monitors, scanners and printers from transient over-voltages. Surge protectors are generally priced between \$20-\$170, depending on the level of surge suppression the unit can provide and the time it takes for the unit to react to a surge.

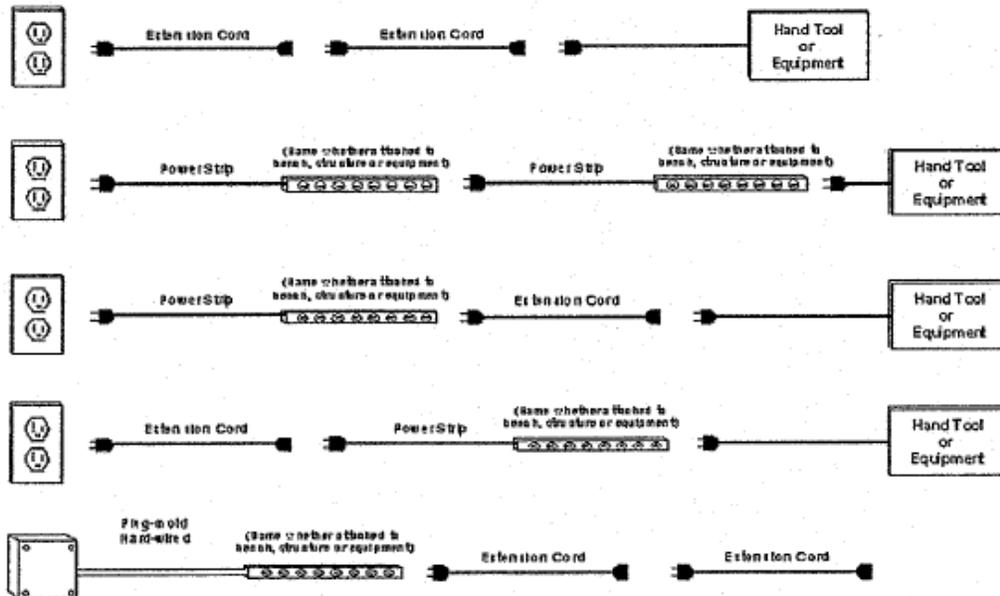
Surge control is important because even small surges or spikes can eventually destroy or affect the performance of expensive electronic equipment. Damage can occur either instantaneously or over time as smaller surges that cause the gradual deterioration of internal circuitry. This gradual deterioration is often referred to as “electronic rust.”

Below is a diagram of acceptable and unacceptable uses of extension cords and multi-plug adaptors.

Acceptable combinations of extension cords and power strips.



Unacceptable (Daisy-chain) combinations of extension cords and power strips.



## **What does the Fire Code say?**

NFPA 1 - 11.1.5.3.1-5

Extension cords shall be plugged directly into an approved receptacle, power tap, or multiplug adapter and shall, except for approved multiplug extension cords, serve only one portable appliance. The ampacity of the extension cords shall not be less than the rated capacity of the portable appliance supplied by the cord. The extension cords shall be maintained in good condition without splices, deterioration, or damage. Extension cords and flexible cords shall not be affixed to structures; extend through walls, ceilings, or floors, or under doors or floor coverings; or be subject to environmental or physical damage. Multi-plug adapters shall not be connected onto an extension cord, multi-plug adapter or another power tap.

Multi-plug surge-protection devices may be used as needed for low amperage electronic appliances, such as computer equipment, televisions, stereos, radios and similar devices. They must be UL-approved (or by a similar nationally recognized testing laboratory) and contain an integral circuit breaker. These devices are not designed for and are not to be used for refrigerators, microwaves, coffee pots, hot plates toaster ovens, electric motors, and similar high amperage devices.

## **Fire Inspection**

If you were cited for improper use of an extension cord or for the improper use of a multi plug adaptor, the fire inspector observed a violation of the allowable use of these devices. This brochure should clarify why the fire inspector felt that the device was unsafe. If you still have questions regarding extension cords or multi-plug adapters, please feel free to contact the Fire Marshal at (386) 322-6703.

Respectfully,

Derek George, Lieutenant / Fire Marshal