



DAISY CHAINING

INTRODUCTION

The Occupational Safety & Health Administration standards (OSHA), Underwriters' Laboratories (UL) and the National Fire Protection Administration (NFPA 70) National Electrical Code, specific to the use and application of cord connected electrical power strips (also referred to as re-locatable power taps or RPT).

The main hazard associated with multiple power strips (also known as re-locatable power taps – RPT as defined by Underwriters' Laboratories) is fire. Electrical fires can result from overloading the circuit or damaged to the insulation of the cord or device. The UL listing for re-locatable power taps (RPT) states “cord-connected RPT is not intended to be connected to another cord-connected RPT”.

As the employer, we must legally comply with the Occupational Safety and Health Administration (OSHA) statutes.

Part Number: 1910
Part Title: Occupational Safety and Health Standards
Subpart: S
Subpart Title: Electrical
Standard Number: 1910.303



29 CFR 1910.303(b) (2)

Installation and use: Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling.

If a power strip or cord-connected RPT is connected or “daisy chained” to another power strip or cord-connected RPT – it violates the UL listing and is not in compliance with OSHA standard 29 CFR 1910.303(b) (2).

A recent OSHA standard of interpretation references and confirms the application of the UL listing and the OSHA specific standard noted above.



Recommended Safe Work Practices

All devices, RPT and appliances must have UL or equivalent rating

- 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.
- During the visual inspection, ensure that the plug is fully engaged in their respective wall 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 and/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.
- If you notice that a cord or plug is excessively warm, review how much power draw, size of wiring and plug to ensure proper use.
- The RPT has any signs of damage – immediately remove from service.

REFERENCES

Underwriters Laboratories (UL)

1.1 These requirements cover cord-connected, re-locatable power taps rated 250 V AC or less and 20 A AC or less. A re-locatable power tap (RPT) is intended only for indoor use as an extension of a grounding alternating-current branch circuit for general use.

1.7 A cord-connected RPT is not intended to be connected to another cord-connected RPT

Link: [Re-locatable Power Taps \(RPT\) – UL 1363](#)



Occupational Safety & Health Administration (OSHA)

29 CFR 1910.303(b) (2)

Installation and use: Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling.

OSHA Standard of Interpretation - 11/18/2002

Link: [Compliance requirements for re-locatable power taps or "power strips."](#)

NFPA 70 - National Electrical Code® 2008 Edition

Commercial Load Calculations

210.21 Outlet Devices.

Outlet devices shall have an ampere rating that is not less than the load to be served and shall comply with 210.21(A) and (B).

220.3 (B) (9)

Number of Receptacles per Circuit

The maximum number of receptacle outlets permitted on a commercial or industrial circuit depends on the circuit ampacity. To calculate that number, divide the VA rating of the circuit by 180VA for each receptacle strap.

Number of Receptacles Per Circuit
Section 220.3(B)(9)

15A, 120V Circuit Breaker

360 VA 360 VA 360 VA

180 VA per Receptacle (strap)

360 VA 360 VA

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Determine how many receptacles on 15A breaker.

Total circuit load in VA, on a 15A breaker:
 120V circuit breaker = Volts x Amps
 120V x 15A = 1,800 VA load permitted
 Each receptacle (strap) = 180 VA
 1,800 VA load/180 VA per strap = **10 receptacles**