

December 1, 2021
For immediate Release

RE: Power strips in Healthcare Facilities (CMS)

Due to a recent influx of power strips being purchased and put into use by healthcare facilities across the state of Kansas we at the Office of the State Fire Marshal wanted to put out this memorandum to help educate healthcare facilities before making these costly expenditures. As the use of power strips in healthcare facilities has become more widespread, their misapplication has also become increasingly prevalent. Because of the ways misused power strips can endanger patients and staff, strict regulations have been developed to govern how and where they are used. Failure to follow regulations can increase the risk of inflicting injury upon patients, staff, and visitors.

There are (3) types of power strips for use in patient or resident care rooms of healthcare facilities.

- **UL1363** – For use in a patient or resident room where patients or residents are intended to be examined or treated. The UL1363 is not to be used for Patient Care Rated Electrical Equipment (PRCEE), and can only be used outside of the patient care vicinity – which is defined as: a space, within a location intended for the examination and treatment of patients, extending 1.8 m (6 ft) beyond the normal location of the bed, chair, table, treadmill, or other device that supports the patient during examination and treatment and extending vertically to 2.3 m (7 ft 6 in.) above the floor.

Note: No mechanical equipment can be plugged into a power strip including electronic beds, lift chairs and in most cases oxygen concentrators. Additionally, no electrical equipment may be plugged into a power strip where the manufacturer's recommendation states the power cord plug is to be plugged into a fully functioning AC wall outlet. (See photo below). UL1363 power strips in the patient care vicinity may not be used for non-PRCEE (eg., personal electronics) except for long-term care resident rooms where there is no PRCEE in use.

- Power strips for use with "Patient Care Rated Electrical Equipment" must meet UL1363A or UL60601-1 standards. Examples of Patient Care Rated Electrical Equipment: (blood pressure monitor, CPAP, vacuum pumps, computer)
- **UL1363A** - Power strips intended for use with rack-, table- or pedestal-mounted medical equipment. The power strips must be permanently attached to the medical equipment assembly and require a tool for removal. They also require dual circuit breakers and hospital-grade plugs and receptacles. Requirements: (a) Can be used inside or outside the Patient Care Vicinity. (b) Require permanent mounting (not removable without a tool) to mobile medical equipment platforms, such as IV poles and crash carts. (c) Require dual breakers. (d) Include hospital-grade plug and receptacles.
- **UL60601-1** – Electrical equipment appliance that is intended to be used for diagnostic, therapeutic, or monitoring purposes in a patient care vicinity. Requirements: (a) Can be used inside or outside the patient care vicinity. (b) Protect patients and staff in the event of a single fault (c) Include splash-


resistant receptacle covers that require a tool for access to prevent use of receptacles by unqualified personnel. (d) Include hospital-grade plug and receptacles. (e) Typically power medical or computer equipment. Note: In non-patient care rooms, power strips must meet other UL Standards.

... into the wall outlet. The unit is double insulated to guard against electric shock.

WARNING
Ensure the mains power cord is fully inserted into the concentrator connector (230 volt units) and the power cord plug is completely inserted into a fully functioning AC wall outlet. Failure to do so may cause an electrical safety hazard.

NOTE— (only 120 volt units) The plug on the Drive DeVilbiss oxygen concentrator has one blade wider than the other. To reduce the risk of electric shock, this plug is intended to fit in a wall outlet only one way. Do not attempt to defeat this safety feature.

NOTE— To check your oxygen concentrator and accessories for proper operation; 1. Check the output flow by placing the end of the nasal cannula under the surface of a half-full cup of water and look for the bubbles. 2. Check the system for leaks by bending the nasal prongs over and squeeze tight to stop the flow of oxygen. Look at the flow



Common Installation-Related Code Violations

Daisy-Chaining: Interconnecting power strips violates Occupational Safety and Health Administration (OSHA) regulations and the National Electrical Code (NEC) because it can cause overloads and fires. Extension cords also fall under this category. There is no provision for using an extension cord in a healthcare environment.

Improper Routing: Routing cords through walls, ceilings, floors, windows or similar openings is prohibited.

Overloading: Power strips are designed to be used with several low-amperage loads, such as desktop computers and peripherals. Power strips must not be connected to high-amperage loads, such as refrigerators, space heaters, microwave ovens or air conditioners that are likely to overload the strip.

Improper Labeling: Power strips without the proper agency certification sticker are unacceptable.

Improper Mounting: Power strips must not be mounted with Velcro®, double-sided tape, duct tape, zip ties, etc.

Improper Plug Connection: The power strip cord and device cords must not be hanging out of receptacles. Power strips and devices must not be suspended from the power cord.

Signs of Thermal Distress: Power strips, plugs or cords that are hot to the touch, melted, burned, frayed, scorched or discolored are unacceptable.

Signs of Damage or Neglect: Power strips, cords and components should not be dirty, stained, crushed, cut, broken, kinked, warped, knotted, twisted, loose, frayed or otherwise damaged.

Improper Environmental Conditions: The power strip must not be installed in a moist environment or a location with excessive heat or limited air circulation.

Improper Grounding: The power strip must not have its grounding pin/wire removed or connected to an adapter that defeats grounding.

Tripping Hazards: The power strip must not be installed in a location where it may impede the safe movement of patients and staff.

Improper Application: Power strips must be used for the applications they are designed and approved for. For example, a power strip with a UL 1363 rating and hospital-grade plug and receptacles can be used in some areas of a healthcare facility, but it cannot be used in the Patient Care Vicinity. (See **Purpose**.)

If you have further questions, please email us at prevention@ks.gov