



Coffee Break Training - Fire Protection Series

Inspection Techniques: Attachment Plugs

No. FP-2010-22 June 1, 2010

Learning Objective: The student shall be able to identify the electrical code requirements for attachment plugs.

Today's illustration is an example of a shortcut that could lead to a serious injury or fire problem—inserting two cables into an energized outlet with exposed conductors. A person touching the two wires could be electrocuted; in a flammable environment, the exposed conductors could result in a fire or explosion.

This particular cable pair was connected illegally to a stationery generator installation. This hazard is often seen with flexible, temporary cords that are attached to portable devices or equipment.

To prevent electrical dangers, flexible cords for portable devices or appliances must be equipped with an attachment plug. According to National Fire Protection Association (NFPA) 70, *National Electrical Code*[®], the commonly named “plug-in” is correctly identified as an “attachment plug,” which is a “device, that by insertion into a receptacle, establishes a connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle.”

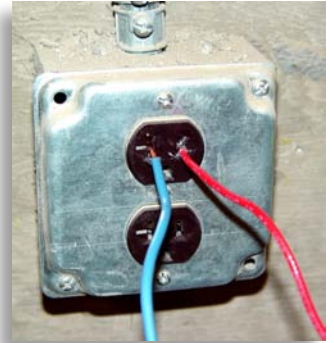
All attachment plugs, cord connectors, and flanged surface devices* (inlets and outlets) must be listed and marked with the manufacturer's name or identification and voltage and ampere ratings.

Attachment plugs and cord connectors must be constructed so that there are no exposed current-carrying parts except the prongs, blades, or pins. The cover for wire terminations must be a part that is essential for the operation of an attachment plug or connector.

Attachment plugs must be installed so that their prongs, blades, or pins are not energized unless inserted into an energized receptacle or cord connectors.

A flanged surface inlet shall be installed such that the prongs, blades, or pins are not energized unless an energized cord connector is inserted into it.

For additional information, refer to NFPA 70, *National Electrical Code*[®].



This pair of conductors is missing its required attachment plug. Photo courtesy of Keith Heckler, Rockville Fire Department, MD.

* “Flanged surface devices” are receptacles that commonly are recessed-mounted. The automatic battery charger receptacle on fire or emergency medical apparatus is a typical example.

