



## Coffee Break Training - Fire Protection Series

### Fire Alarms & Detection: Batteries for Fire Alarm Secondary Power

No. FP-2012-22 May 29, 2012

**Learning Objective:** The student shall be able to summarize the installation requirements for batteries used as secondary power sources for fire alarm systems.

Storage batteries provide one method of fire alarm system secondary power as required by National Fire Protection Association (NFPA) 72, National Fire Alarm and Signaling Code®. (See Coffee Break Training 2012-21 for alternatives.)

Storage batteries must be located so that the equipment, including overcurrent devices, is not adversely affected by escaping battery gases that could result in corrosion of critical electrical components. The batteries must be protected against excessive load current by overcurrent devices.

Batteries should also be mounted in a way that protects them from physical damage. If they are not located inside the fire alarm control unit (panel), the batteries and their charger location must be permanently identified at the control unit.

The batteries must be equipped with devices that will keep them fully charged under all conditions of normal operation. Adequate facilities must be provided to recharge batteries within 48 hours after fully charged batteries have been subject to a single discharge cycle.

Once they are fully charged, the charge rate to sustain the full charge must be arranged so it does not damage the battery. Charging units can be “float” or “trickle” devices. Float chargers are equipped with electronics that allow the device to cycle on and off. This is when the charger is connected to the battery for a long period. The device automatically turns off when the battery is fully charged and turns on again when the battery’s charge lowers. With a trickle charger, a slow, steady stream of low-voltage electricity recharges the battery. Trickle chargers, however, are not equipped with the on/off feature of the float charger. Electricity continues to flow until the trickle charger is removed.

The batteries must be protected from excessive charging current by overcurrent devices or by automatic current-limiting design of the float or trickle charger. The charging equipment must provide either integral meters or readily accessible terminal facilities for the connection of portable meters for measuring the battery voltage and charging current.

When they are installed, batteries are supposed to be marked with the month and year of manufacture using the month/year format to enable the inspector to determine the battery’s age to compare it to the manufacturer’s life cycle recommendations.

For additional information, refer to NFPA 72.



These batteries provide secondary power for the fire alarm system. They should be installed in accordance with NFPA 72.



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