



Coffee Break Training - Fire Protection Series

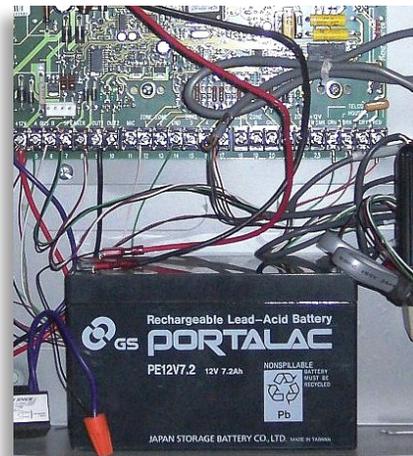
Fire Alarms & Detection: Fire Alarm System Battery Inspection and Tests: Part II

No. FP-2012-24 June 12, 2012

Learning Objective: The student shall be able to identify the inspections and tests needed to verify the performance of specific battery types used as fire alarm system secondary power supplies.

When secondary power for fire alarm systems is provided by batteries, the following tests should be conducted at the frequency recommended in National Fire Protection Association (NFPA) 72, *National Fire Alarm and Signaling Code*[®] to evaluate the condition of the battery and make changes as needed.

Battery Type	Required Periodic Tests	Performance
Primary battery (dry cell)	<ul style="list-style-type: none"> Load voltage 	Maximum load for a No. 6 primary battery may not exceed 2 amperes per cell. An individual (1.5 volt) cell should be replaced when a load of 1 ohm reduces the voltage below 1 volt.
Lead-acid	<ul style="list-style-type: none"> Charger 	Voltage should be 2.3 volts per cell ± 0.2 volts at 77 °F (25 °C) or as specified by the equipment manufacturer.
	<ul style="list-style-type: none"> Load voltage 	Battery should not fall below 2.05 volts per cell.
	<ul style="list-style-type: none"> Specific gravity 	Electrolyte results should fall within the range of the battery manufacturers, typically: <ul style="list-style-type: none"> 1.205-1.220 for regular lead-acid batteries. 1.240-1.260 for high-performance batteries.
Nickel-cadmium	<ul style="list-style-type: none"> Charger 	Charging current should be in accordance with the manufacturer's recommendations, but without specific guidance, 1/30 to 1/25 of the battery rating should be used.
	<ul style="list-style-type: none"> Load voltage 	Float voltage for the entire battery should be 1.42 volts per cell, nominal.
Sealed lead-acid	<ul style="list-style-type: none"> Charger 	Voltage should be 2.3 volts per cell ± 0.2 volts at 77 °F (25 °C) or as specified by the equipment manufacturer.
	<ul style="list-style-type: none"> Load voltage 	Battery performance should be in accordance with the manufacturer's specifications.



This sealed lead-acid battery must be subjected to periodic charger and load voltage tests.

Used with permission from NFPA 72, *National Fire Alarm and Signaling Code*[®], Copyright[®], National Fire Protection Association.

Fire alarm system tests and maintenance should be in accordance with the manufacturer's recommendations, so it is important for the service technician to have that documentation available for review and comparison; and to answer any questions the code official might present.



Eligible for Continuing Education Units (CEUs)
at www.usfa.fema.gov/nfaonline

For archived downloads, go to:

www.usfa.fema.gov/nfa/coffee-break/