

# TOWN OF JUPITER BUILDING DIVISION FIELD INSPECTION SERVICES

Friday September 24, 2010

## LOW VOLTAGE SMOKE ALARMS & DETECTORS

Revision 1.0

Updated to the FBC-R 2007 w/09 supplement

The following is quoted from the [Florida Building Code 2007, Residential, with the 2009 supplement](#).

**"R313.1 Smoke detection and notification.** All smoke alarms shall be listed in accordance with UL 217 and installed in accordance with the provisions of this code and the household fire warning equipment provisions of NFPA 72."

"Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms, shall be permitted. **The household fire alarm system shall provide the same level of smoke detection and alarm as required by this section for smoke alarms in the event the fire alarm panel is removed or the system is not connected to a central station.**"

When using a low voltage alarm system for the smoke detection requirements of NFPA 72, the Florida Building Code, Residential, requires that the low voltage smoke detector be able to provide the same detection and notification/alarm as the standard 120 volt hardwired-battery backup smoke alarm even when the alarm panel is removed or service to the central station is disconnected.

When the low voltage alarm panel is removed, the smoke detectors lose their primary source of power, their battery back up, their ability to detect smoke, and the ability to provide an audible alarm through out the entire system.

When a 120 volt hard wired-battery back up smoke alarm loses its primary 120 volt power source each individual smoke alarm will continue operate via its internal battery back up. The ability of the smoke detector to detect smoke and to produce an audible alarm remains intact through out the system.

In the event of battery failure within one of the smoke alarms the remaining alarms on the system will continue to operate.

An open circuit in the wiring of the low voltage system will result in the complete loss of smoke detection and alarm. With the 120 volt system an open circuit in the wiring will result in the loss of primary power and interconnection downstream from the open fault only and those downstream smoke alarms will continue to operate on their battery power providing both detection and notification.

The means test for these capabilities for the low voltage smoke detectors will be to remove a smoke detector from its mounting base, inspect for the presence of a battery back up and then press the test button to sound the alarm on that device.