

To: Users of System Sensor duct smoke detectors
From: Systems Application Engineers
Subject: NFPA 72, inspection, testing and maintenance

System Sensor recommends that all installations of smoke detection devices comply with the NFPA 72, Chapter 10, 2002 edition, which states:

Test Methods – Table 10.4.2.2

1. Systems Detectors

The detectors shall be tested in place to ensure smoke entry into the sensing chamber and an alarm response. Testing with smoke or listed aerosol acceptable to the manufacturer, or other means acceptable to the detector manufacturer, shall be permitted as one acceptable test method. Ensure that each smoke detector is within its listed and marked sensitivity range by testing using either:

- (a) A calibrated test method; or
- (b) The manufacturer's calibrated sensitivity test instrument; or
- (c) Listed control equipment arranged for the purpose; or
- (d) A smoke detector/control unit arrangement whereby the detector causes a signal at the control unit when its sensitivity is outside its acceptable sensitivity range; or
- (e) Other calibrated sensitivity test method acceptable to the authority having jurisdiction.

NOTE: The detector sensitivity cannot be tested or measured using any spray device that administers an unmeasured concentration of aerosol into the detector.

2. Single Station Detectors

The detectors shall be tested in place to ensure smoke entry into the sensing chamber and an alarm response. Testing with smoke or listed aerosol acceptable to the manufacturer, or other means acceptable to the detector manufacturer, shall be permitted as one acceptable test method.

4. Duct Type

Air duct detectors shall be tested or inspected to ensure that the device will sample the airstream. The test shall be made in accordance with the manufacturer's instructions.

5. Projected Beam Type

The detector shall be tested by introducing smoke, other aerosol, or an optical filter into the beam path.

10.4.3.2* Sensitivity of smoke detectors and single- and multiple-station smoke alarms in other than one- and two-family dwellings shall be tested in accordance with 10.4.3.2.1 through 10.4.3.2.6.

10.4.3.2.1 Sensitivity shall be checked within 1 year after installation.

10.4.3.2.2 Sensitivity shall be checked every alternate year thereafter unless otherwise permitted by compliance with 10.4.3.2.3.

10.4.3.2.3 After the second required calibration test, if sensitivity tests indicate that the device has remained within its listed and marked sensitivity range (or 4 percent obscuration light gray smoke, if not marked), the length of time between calibration tests shall be permitted to be extended to a maximum of 5 years.

10.4.3.2.3.1 If the frequency is extended, records of nuisance alarms and subsequent trends of these alarms shall be maintained.

10.4.3.2.3.2 In zones or in areas where nuisance alarms show any increase over the previous year, calibration tests shall be performed.

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10.4.3.2.4 To ensure that each smoke detector or smoke alarm is within its listed and marked sensitivity range, it shall be tested using any of the following methods:

- (1) Calibrated test method
- (2) Manufacturer's calibrated sensitivity test instrument
- (3) Listed control equipment arranged for the purpose
- (4) Smoke detector/control unit arrangement whereby the detector causes a signal at the control unit where its sensitivity is outside its listed sensitivity range
- (5) Other calibrated sensitivity test methods approved by the authority having jurisdiction

10.4.3.2.5 Detectors or smoke alarms found to have a sensitivity outside the listed and marked sensitivity range shall be cleaned and recalibrated or be replaced.

10.4.3* Testing Frequency. Testing shall be performed in accordance with the schedules in Table 10.4.3, except as modified in other paragraphs of 10.4.3, or more often if required by the authority having jurisdiction.

If you have any questions concerning System Sensor products or their application,
please contact Technical Services at 1-800-SENSOR2 (736-7672), extension 2.