Crowley Fire Department

Fire Marshal's Office

201 E. Main Street

Crowley, Texas 76036
Phone (817) 297-2201 ext: 5020 email: FireMarshal@ci.crowley.tx.us

Subject: Adopted requirements for the installation, inspection & testing of Smoke Detection Devices in Air Duct Systems.

Reference: N.F.P.A. 72, 2019 Edition – Chapters:

- 17 – Installation of Initiating Devices
- 14 – Inspections, Testing & Maintenance

The following are excerpts from the referenced and adopted N.F.P.A. standard describing the minimum requirements for the installation, inspection, testing, and commissioning of smoke detection devices in air duct systems.

Chapter 17 Initiating Devices

17.7.5.5.1 Detectors shall be listed for the purpose for which they are being used.

17.7.5.5.2* Air duct detectors shall be installed in such a way as to obtain a representative sample of the airstream.

17.7.5.5.3 This installation shall be permitted to be achieved by any of the following methods:

(1) Rigid mounting within the duct

(2) Rigid mounting to the wall of the duct with the sensing element protruding into the duct

(3) Installation outside the duct with rigidly mounted sampling tubes protruding into the duct

(4) Installation through the duct with a projected light beam

17.7.5.5.4 Detectors shall be mounted in accordance with the manufacturer's published instructions and shall be accessible for cleaning by providing access doors or panels in accordance with NFPA 90A, *Standard for the Installation of Air- Conditioning and Ventilating Systems*.

Most Common Method for Installation

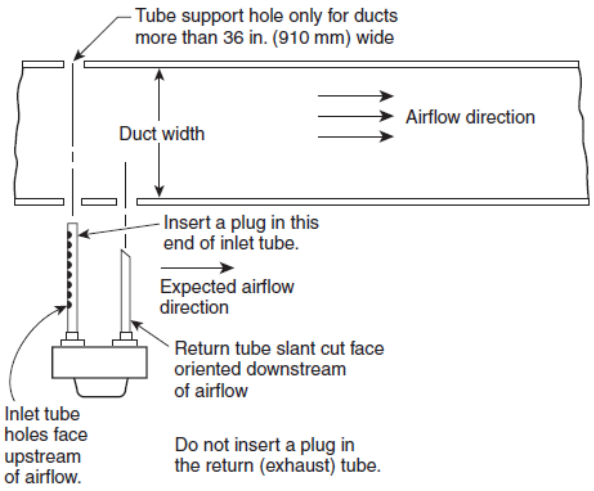

FIGURE A.17.7.5.5.2(b) Inlet Tube Orientation.

17.7.5.5.7 Detectors shall be listed for operation over the complete range of air velocities, temperature, and humidity expected at the detector when the air-handling system is operating.

Chapter 14 Inspection, Testing, and Maintenance

14.1 Application.

14.1.1 The inspection, testing, and maintenance of systems, their initiating devices, and notification appliances shall comply with the requirements of this chapter.

14.4 Testing.

14.4.1 Initial Acceptance Testing.

14.4.1.1 All new systems shall be inspected and tested in accordance with the requirements of Chapter 14.

14.4.3.2* Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing – Section 17 Initiating devices

(7)(a) Smoke Detectors Functional Test, in other than one-and two-family dwellings. Test smoke detectors in place to ensure smoke entry into the sensing chamber and alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into the sensing chamber can be used.

(8) Smoke Detectors Sensitivity Testing, in other than one-and two-family dwellings, system detectors.
Perform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:

(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 when its sensitivity is outside its listed sensitivity range

(5) Other calibrated sensitivity test method approved by the authority having jurisdiction

(7)(e) Duct Type - In addition to the testing required in Table 14.4.3.2(g)(1) and Table 14.4.3.2(h), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.

The System Sensor testing and maintenance guide to provide further clarification for compliance with Table 14.4.3.2(h) can be obtained @ www.systemsensor.com

Or via the following hyperlink Duct Smoke Detector Testing and Maintenance Guide - System Sensor