

## Codes Address Aspirating Smoke Detection

Aspiration detection systems must comply with the state, local, federal and National Fire Protection Association (NFPA) codes and standards, specifically, the NFPA 72 (National Fire Alarm Code), NFPA 75 “Standard for Protection of Computer and Data Processing Equipment,” and NFPA 76 “Standard for the Fire Protection of Telecommunications Facilities.” Ultimately, the Authority Having Jurisdiction (AHJ) will dictate fire protection requirements. Although aspiration systems must comply with codes, they are not required by code.

First, NFPA 72 requires smoke detector spacing in areas of high air movement to be reduced. This reduction is dependent on the rate at which air is circulated in the space.

If the aspiration detection system will be used to protect data processing equipment, NFPA 75 guidelines must be followed. NFPA 75 uses a prescriptive and performance-based approach that requires a server room to have a sprinkler system, fire detection and alarm, portable fire extinguishers and Emergency Power Off. Any other form of fire protection, such as a clean agent suppression system, is classified as an add-on.

NFPA 75 (8.2 Automatic Detection Systems) states that automatic detection equipment shall be installed to provide early warning of fire. The equipment used shall be a listed smoke detection-type system and shall be installed and maintained in accordance with NFPA 72.

The NFPA 76 “Standard for the Protection of Telecommunication Facilities” also uses a prescriptive and performance-based approach for protecting telecommunication facilities, where telephone, data, cellular, Internet and video services are rendered. The standard defines three levels of protection: (1) Very Early Warning Fire Detection; (2) Early Warning Fire Detection, which usually incorporates conventional spot-type detectors (ionization or photoelectric type); and (3) Standard Fire Detection.

This section also provides suggested design and installation requirements. Early and Very Early Warning detection systems, for example, can use sensors or ports with less spacing than normally required by NFPA 72.

This code specifies both the area coverage as well as the sensitivity of the detector. Presently, NFPA 76 requires that “every type of sensor and port installed in a space shall be limited to a maximum coverage area of 200 sq.ft. The exception is when two levels (high and low) of ports or sensors are provided; each level shall be limited to coverage of 400 sq.ft. or less per port or sensor.”