

RIXSON®

ASSA ABLOY

July 6, 2005

Re: Penetrations and Miscellaneous
Openings in Floor and Smoke Barriers

The specific paragraph regarding the above situation is NFPA 101, 6-3.6.1.

This paragraph refers to the space left for pipes, conduits and other building service equipment. The standard says that the space must be filled with material capable of maintaining the smoke resistance.

Most manufacturers of floor closers require the use of a cement case that goes into the floor itself and is cemented in place, making it a permanent part of the floor assembly. This completely fills the cavity left in the flooring material. Whether the cement case is installed at the time of the first pour, or is done later in the project with a type of quick dry cement, does not matter.

See attached.

(a) Door opening protectives shall have a fire protection rating of not less than 20 min where tested in accordance with NFPA 252, *Standard Methods of Fire Tests of Door Assemblies*, without the hose stream test.

(b) Fire windows shall comply with 6-2.3.2.2.

Exception No. 1: If a different fire protection rating for smoke barrier doors is specified by Chapters 8 through 31.

Exception No. 2: Latching hardware shall not be required on doors in smoke barriers where so indicated by Chapters 8 through 31.

6-3.4.3* Doors in smoke barriers shall be self-closing or automatic-closing in accordance with 5-2.1.8 and shall comply with the provisions of 5-2.1.

6-3.5 Smoke Dampers.

6-3.5.1 An approved damper designed to resist the passage of smoke shall be provided for each air-transfer opening or duct penetration of a required smoke barrier.

Exception No. 1: Ducts or air-transfer openings that are part of an engineered smoke control system in accordance with Section 7-3.

Exception No. 2: Ducts where the air continues to move and the air-handling system installed is arranged to prevent recirculation of exhaust or return air under fire emergency conditions.

Exception No. 3: Where the air inlet or outlet openings in ducts are limited to a single smoke compartment.

Exception No. 4: Where ducts penetrate floors that serve as smoke barriers.

Exception No. 5: Where specifically permitted by Chapters 8 through 31.

6-3.5.2 Required smoke dampers in ducts penetrating smoke barriers shall close upon detection of smoke by approved smoke detectors installed in accordance with NFPA 72, *National Fire Alarm Code*.

Exception No. 1: Duct detectors shall not be required where ducts penetrate smoke barriers above the smoke barrier doors and the door release detector actuates the damper.

Exception No. 2: Approved smoke detectors located within the ducts in existing installations.

6-3.5.3 Required smoke dampers in air transfer openings shall close upon detection of smoke by approved smoke detectors installed in accordance with NFPA 72, *National Fire Alarm Code*.

Exception: Where a duct is provided on one side of the smoke barrier, the smoke detectors on the duct side shall be in accordance with 6-3.5.2.

6-3.6 Penetrations and Miscellaneous Openings in Floors and Smoke Barriers.

6-3.6.1 Pipes, conduits, bus ducts, cables, wires, air ducts, pneumatic tubes and ducts, and similar building service equipment that pass through floors and smoke barriers shall be protected as follows:

(a) The space between the penetrating item and the smoke barrier shall

1. Be filled with a material capable of maintaining the smoke resistance of the smoke barrier, or

2. Be protected by an approved device designed for the specific purpose.

(b) Where the penetrating item uses a sleeve to penetrate the smoke barrier, the sleeve shall be solidly set in the smoke barrier, and the space between the item and the sleeve shall

1. Be filled with a material capable of maintaining the smoke resistance of the smoke barrier, or

2. Be protected by an approved device designed for the specific purpose.

(c) Where designs take transmission of vibration into consideration, any vibration isolation shall

1. Be made on either side of the smoke barrier, or

2. Be made by an approved device designed for the specific purpose.

6-3.6.2 Openings occurring at points where floors or smoke barriers meet the outside walls, other smoke barriers, or fire barriers of a building shall

(a) Be filled with a material capable of maintaining the smoke resistance of the floor or smoke barrier, or

(b) Be protected by an approved device designed for the specific purpose.

SECTION 6-4 SPECIAL HAZARD PROTECTION

6-4.1 General.

6-4.1.1* Protection from any area having a degree of hazard greater than that normal to the general occupancy of the building or structure shall be provided as follows:

(a) Enclose the area with a fire barrier having a 1-hr fire resistance rating in accordance with Section 6-2, without windows; or

(b) Protect the area with automatic extinguishing systems in accordance with Section 7-7; or

(c) Apply both (a) and (b) above where the hazard is severe or where otherwise specified by Chapters 8 through 31.

6-4.1.2 In new construction, where protection is provided with automatic extinguishing systems without fire-resistive separation, the space protected shall be enclosed to resist the passage of smoke, and doors shall be self-closing or automatic-closing and resist the passage of smoke.

Exception No. 1: Mercantile occupancy general storage areas and stockrooms protected by automatic sprinklers in accordance with Section 7-7.

Exception No. 2: Hazardous areas in industrial occupancies protected by automatic extinguishing systems in accordance with 28-3.2.

6-4.1.3 Doors in barriers required to have a fire resistance rating shall have a $\frac{3}{4}$ -hr fire protection rating and shall be self-closing or automatic-closing in accordance with 5-2.1.8.

6-4.2* Explosion Protection. Where hazardous processes or storage are of such a character as to introduce an explosion potential, an explosion venting or an explosion suppression system specifically designed for the hazard involved shall be provided.

6-4.3 Flammable Liquids and Gases.

6-4.3.1 The storage and handling of flammable liquids or gases shall be in accordance with the applicable standards: