

fire resistance rating of the vertical opening and complying with all of the following:

- (a) The shutters shall close automatically and independently of each other upon smoke detection and sprinkler operation.
- (b) A manual means of operating and testing the operation of the shutters shall be provided.
- (c) The shutters shall be operated not less than once a week to ensure that they remain in proper operating condition.
- (d) The shutters shall operate at a speed not to exceed 30 ft/min (0.15 m/s) and shall be equipped with a sensitive leading edge.
- (e) The leading edge shall arrest the progress of a moving shutter and cause it to retract a distance of approximately 6 in. (150 mm) upon the application of a force not exceeding 20 lbf (90 N) applied to the surface of the leading edge.
- (f) The shutter, following the retraction specified in 8.6.9.7(3)(e), shall continue to close.
- (g) The operating mechanism for the rolling shutter shall be provided with standby power complying with the provisions of *NFPA 70, National Electrical Code*.

8.6.10 Mezzanines.

8.6.10.1 General. Multilevel residential housing areas in detention and correctional occupancies in accordance with Chapters 22 and 23 shall be exempt from the provisions of 8.6.10.2 and 8.6.10.3.

8.6.10.2 Area Limitations.

8.6.10.2.1 The aggregate area of mezzanines located within a room, other than those located in special-purpose industrial occupancies, shall not exceed one-third the open area of the room in which the mezzanines are located. Enclosed space shall not be included in a determination of the size of the room in which the mezzanine is located.

8.6.10.2.2 No limit on the number of mezzanines in a room shall be required.

8.6.10.2.3 For purposes of determining the allowable mezzanine area, the aggregate area of the mezzanines shall not be included in the area of the room.

8.6.10.3 Openness. The openness of mezzanines shall be in accordance with 8.6.10.3.1 or 8.6.10.3.2.

8.6.10.3.1 All portions of a mezzanine, other than walls not more than 42 in. (1065 mm) high, columns, and posts, shall be open to and unobstructed from the room in which the mezzanine is located, unless the occupant load of the aggregate area of the enclosed space does not exceed 10.

8.6.10.3.2 A mezzanine having two or more means of egress shall not be required to open into the room in which it is located if not less than one of the means of egress provides direct access from the enclosed area to an exit at the mezzanine level.

8.6.11 Concealed Spaces and Draftstops.

8.6.11.1 Any concealed combustible space in which building materials having a flame spread index greater than Class A are exposed shall be draftstopped as follows:

- (1) Every exterior and interior wall and partition shall be firestopped at each floor level, at the top story ceiling level, and at the level of support for roofs.

(2) Every unoccupied attic space shall be subdivided by draftstops into areas not to exceed 3000 ft² (280 m²).

- (3) Any concealed space between the ceiling and the floor or roof above shall be draftstopped for the full depth of the space along the line of support for the floor or roof structural members and, if necessary, at other locations to form areas not to exceed 1000 ft² (93 m²) for any space between the ceiling and floor, and 3000 ft² (280 m²) for any space between the ceiling and roof.

8.6.11.2 The requirements of 8.6.11.1 shall not apply where any of the following conditions are met:

- (1) Where the space is protected throughout by an approved automatic sprinkler system in accordance with Section 9.7
- (2)*Where concealed spaces serve as plenums
- (3) Where the installation is an existing installation

8.6.11.3 Draftstopping materials shall be not less than ½ in. (13 mm) thick gypsum board, 1³/₃₂ in. (12 mm) thick plywood, or other approved materials that are adequately supported.

8.6.11.4 The integrity of all draftstops shall be maintained.

8.6.11.5 In existing buildings, firestopping and draftstopping shall be provided as required by Chapters 11 through 43.

8.7 Special Hazard Protection.

8.7.1 General.

8.7.1.1* 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 by one of the following means:

- (1) Enclosing the area with a fire barrier without windows that has a 1-hour fire resistance rating in accordance with Section 8.3
- (2) Protecting the area with automatic extinguishing systems in accordance with Section 9.7
- (3) Applying both 8.7.1.1(1) and (2) where the hazard is severe or where otherwise specified by Chapters 11 through 43

8.7.1.2 In new construction, where protection is provided with automatic extinguishing systems without fire-resistive separation, the space protected shall be enclosed with smoke partitions in accordance with Section 8.4, unless otherwise permitted by one of the following conditions:

- (1) Where mercantile occupancy general storage areas and stockrooms are protected by automatic sprinklers in accordance with Section 9.7
- (2) Where hazardous areas in industrial occupancies are protected by automatic extinguishing systems in accordance with 40.3.2
- (3) Where hazardous areas in detention and correctional occupancies are protected by automatic sprinklers in accordance with 22.3.2

8.7.1.3 Doors in barriers required to have a fire resistance rating shall have a minimum ¾-hour fire protection rating and shall be self-closing or automatic-closing in accordance with 7.2.1.8.

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