



Smoke Protection Features - Construction

In this issue, we look at the construction of smoke barriers and smoke partitions and the features one may encounter during an inspection. While smoke barriers and smoke partitions are constructed in accordance with the code in effect at the time of construction, they must be maintained in accordance with the applicable provisions of the 2020 Fire Code of New York State (FCNYS), and the 2020 Property Maintenance Code of New York State (PMCNYS).

The provisions of the 2020 FCNYS require smoke barriers (Section 709.2) and smoke partitions (Section 710.2) to be constructed of *“materials permitted by the building type of construction.”*

In general, the provisions of the 2020 FCNYS require smoke barriers (Section 709.4) and smoke partitions (Section 710.4 with some exceptions) to extend past the ceiling, through the concealed space, and terminate at the underside of the floor above, but not in all cases. In cases where the protection is not required to, and does not, continue through the adjacent concealed floor, floor-ceiling, or attic space, it need not be marked (Section 703.7). Depending on the code effective at the time of construction, and if there is access, smoke barriers and smoke partitions, as well as other fire-resistant or rated assemblies, will likely be permanently marked and identified in the concealed space (Section 703.7).

Although smoke barriers and smoke partitions are both *“installed to resist the passage of smoke to safeguard against the spread of fire and smoke within a building,”* (Section 701.1 of the 2020 FCNYS) there are differences in how they are constructed, where they are installed, and how and what they intend to protect.

Smoke Barriers. A smoke barrier is a wall, floor, or ceiling assembly, designed to restrict the movement of smoke (defined in Chapter 2 of the 2020 FCNYS and the 2020 Building Code of New York State [BCNYS]). Typical uses include, but are not limited to, being a component of, or associated with, the following:

- Smoke compartments that are part of a “defend-in-place” method of fire emergency response. Smoke compartments are commonly found in buildings, or portions thereof, that are Group I-2 occupancies.
- Areas of refuge within an accessible means of egress.
- Passive smoke control or smoke control systems using the pressurization method.
- Enclosures of atriums.
- Depending on how a space is configured, interior vertical openings in Group I-2 and I-3 occupancies (Section 1103.4.1 of the 2020 FCNYS).

Provisions for the construction of new smoke barriers that are found in the 2020 BCNYS include, but are not limited to, the following:

- Smoke barriers shall be constructed in accordance with Section 709
- Smoke barriers are required to have a 1-hour fire-resistance rating (except those constructed of minimum 0.10-inch-thick steel in Group I-3 buildings) (Section 709.3).
- Openings in smoke barriers *“shall be protected in accordance with Section 716”* (Section 709.5).
- Penetrations, joints, and duct and air transfer openings in smoke barriers shall comply with Sections 714, 715, and 717, respectively.
- The provisions for smoke barriers that are a component of a smoke control system are found in Section 909.5.

Smoke Partitions. A smoke partition is a wall assembly; they are only oriented vertically (defined in Chapter 2 of the 2020 FCNYS and the 2020 BCNYS). Typical uses include, but are not limited to, being a component of, or associated with the following:

- Corridor wall construction (Sections 407.3 of the 2020 BCNYS) and separation of care suites (407.4.4 of the 2020 BCNYS) in Group I-2 occupancies.
- Elevator lobbies where protection of the elevator hoistway opening is required (Section 3006.3 of the 2020 BCNYS).
- Depending on how a space is configured, interior vertical openings in Group I-2 and I-3 occupancies (Section 1103.4.1 of the 2020 FCNYS).

Provisions for the construction of new smoke partitions that are found in the 2020 BCNYS include, but are not limited to, the following:

- Smoke partitions shall be constructed in accordance with Section 710.
- They are not required to have a fire-resistance rating (Section 710.3).
- Openings in smoke partitions shall comply with Sections 710.5.1 and 710.5.2.
- Provisions for penetrations, joints, and duct and air transfer openings in smoke partitions are found in Section 710.

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