

CHAPTER 18 • New

1. They limit the spread of fire and smoke.
2. They limit the number of occupants exposed to a single fire.
3. They provide for the horizontal relocation of patients by creating a safe area on the same floor level.

The smoke barrier requirements result in a floor's area being divided by a barrier into a minimum of two compartments. Although not stated in the *Code*, it would be desirable to subdivide health care facilities in such a way as to have separate banks of elevators in different smoke zones. If evacuation of the building becomes necessary, patients can first be moved horizontally to a temporary area of refuge and then be removed from the floor via elevators.

In new health care occupancies, the openings between the meeting edges of pairs of smoke barrier doors and between the doors and frames must be minimized to retard the transfer of smoke. Because 18.3.7.6(3) requires swinging doors to swing in directions opposite from each other, the protection at the meeting edge does not create a door-closing coordination problem and, therefore, is simple to provide. An overlapping astragal plate on the leading edge of one of the doors will usually suffice for compliance with 18.3.7.8(4).

Dampers are not required in ducted penetrations of smoke barriers in new health care occupancies, as addressed in 18.3.7.3(2). This exemption anticipates that automatic sprinklers will limit fire size and that duct systems will also inhibit the transfer of smoke. This exemption does not prohibit the installation of smoke dampers, nor does it permit the omission of the smoke damper if the damper is required for other reasons. For example, if the building has a smoke control system that needs a smoke damper at the smoke barrier, such a damper must be installed. An automatic-closing damper, activated by a smoke detector, would be required to protect a transfer grille.

Exhibit 18/19.86 shows a cross-corridor door opening in a smoke barrier for which Exhibit 18/19.87, Exhibit 18/19.88, and Exhibit 18/19.89 address penetrations of the smoke barrier in the above-ceiling space. Exhibit 18/19.87 shows wiring and pipe penetrations of the smoke barrier. Exhibit 18/19.88 shows a duct penetration protected by a smoke damper. Exhibit 18/19.89 shows a placard that reminds workers who access the above-ceiling space not to penetrate the smoke barrier.

CHAPTER 19 • Existing



Exhibit 18/19.86 Smoke barrier where penetrations are located above ceiling.

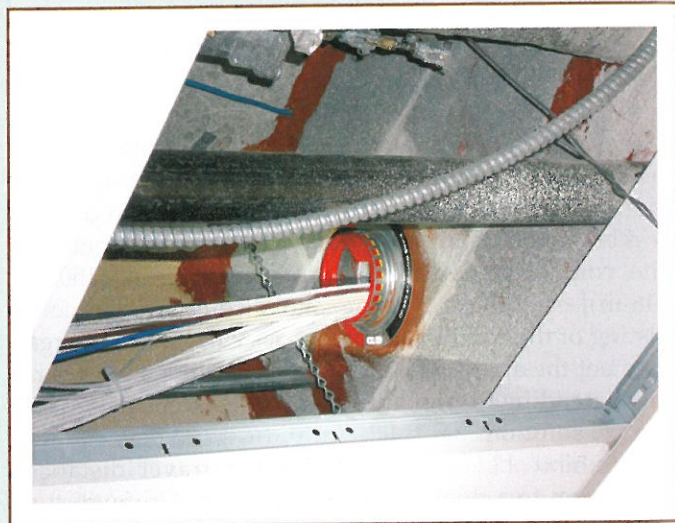


Exhibit 18/19.87 Wiring and pipe penetrations of smoke barrier above ceiling.

Note that, for existing smoke barriers, the combination fire/smoke dampers required in 8.5.5.2 are permitted to be omitted in engineered smoke control systems if the system design is such that a damper is not required at that point. Paragraph 19.3.7.3(2) also permits deletion of dampers in ducted penetrations of smoke barriers where compartments adjacent to the barrier are protected by automatic sprinklers (quick-response sprinklers in any smoke compartments used for patient sleeping). This exemption would not be