

CHAPTER 18 • New

CHAPTER 19 • Existing

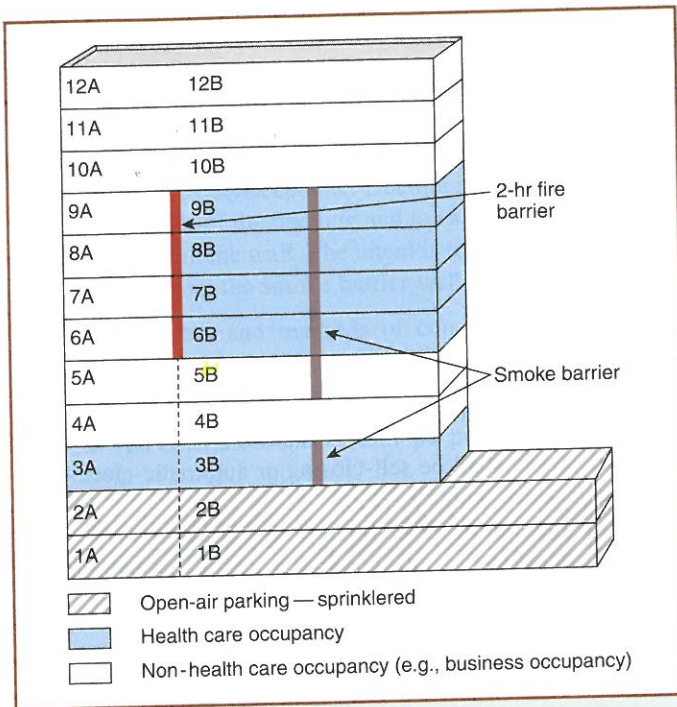


Exhibit 18/19.83 Smoke barriers for new health care occupancy buildings.

- Floors 10 through 12 do not contain a health care occupancy and are located above the health care occupancy — per 18.3.7.2(1), they do not require smoke barriers.
- Floors 6B through 9B are health care occupancy floors used for inpatient sleeping or treatment — per 18.3.7.1(1), they must be subdivided by smoke barriers.
- Floors 6A through 9A do not contain a health care occupancy and are separated from the health care occupancy by 2-hour fire resistance-rated barriers complying with the provisions of 7.2.4.3, applicable to horizontal exit fire barriers — per 18.3.7.2(2), they do not require smoke barriers.
- Floor 5 does not contain a health care occupancy and does not meet 18.3.7.2(3), because it is not more than one story below the health care occupancy — per 18.3.7.1(2), it must be subdivided by smoke barriers if it has an occupant load of 50 or more persons. If Floor 5 housed mechanical equipment only and was separated from Floor 6 by 2-hour fire resistance-rated construction, smoke barriers would be exempted by 18.3.7.2(4).
- Floor 4 does not contain a health care occupancy and is more than one story below the health care

occupancy — per 18.3.7.2(3), it does not require smoke barriers.

- Floor 3 is a health care occupancy floor used for inpatient sleeping or treatment — per 18.3.7.1(1), it must be subdivided by smoke barriers.
- Floors 1 and 2 are used as an open-air parking structure and are protected by a supervised automatic sprinkler system — even though floor 2 is located immediately below a health care occupancy floor, 18.3.7.2(5) exempts these floors from the smoke barrier requirement.

For existing health care occupancies, the introductory portion of 19.3.7.1 requires smoke barriers only for the purpose of subdividing stories having sleeping rooms for more than 30 patients. Subdivision is not required on treatment floors (provided that there are no sleeping rooms), regardless of floor area or number of patients. Patient bed capacity is to be used to determine the number of patients per story (see 19.3.7.2).

Paragraphs 18.3.7.1(3) and (4) and 19.3.7.1(1) do not present criteria related to whether smoke barriers are required in a building. Rather, they specify dimensional criteria for smoke compartments where the presence of smoke barriers is required by 18.3.7.1(1) and (2) or the introductory portion of 19.3.7.1. The maximum area of any smoke compartment created by subdividing the floor cannot exceed 22,500 ft² (2100 m²). If the compartment were perfectly square, the maximum area would measure 150 ft × 150 ft (46 m × 46 m). However, to provide the facility and designer with flexibility in the arrangement of smoke compartments, the arbitrary 150 ft (46 m) length and width limits of earlier editions were replaced in 1991 by a 200 ft (61 m) travel limitation from any point in the smoke compartment to a door in the smoke barrier [see 18.3.7.1(4) and 19.3.7.1(1)]. Smoke compartments must be designed so that a person is able to reach a smoke barrier door within a distance of travel of 200 ft (61 m) from any point in a compartment, measured along the natural path of travel in accordance with 7.6.1. However, the travel limitation is exempted by 19.3.7.1(2) for existing smoke compartments where neither the length nor width of the smoke compartment exceeds 150 ft (46 m).

In Exhibit 18/19.84, the construction of one smoke barrier divides the floor into two smoke compartments. If either smoke compartment — one consisting of the combination of areas A and B and the other consisting of area C — exceeds 22,500 ft² (2100 m²) or re-