

Section 13.2.5 or 13.2.6, acoustical tile or lay-in panel ceilings shall be designed and constructed in accordance with this section.

13.5.6.2.1 Seismic Design Category C Acoustical tile or lay-in panel ceilings in structures assigned to Seismic Design Category C shall be designed and installed in accordance with ASTM C635, ASTM C636, and ASTM E580, Section 4—Seismic Design Category C.

13.5.6.2.2 Seismic Design Categories D through F Acoustical tile or lay-in panel ceilings in Seismic Design Categories D, E, and F shall be designed and installed in accordance with ASTM C635, ASTM C636, and ASTM E580, Section 5—Seismic Design Categories D, E, and F as modified by this section.

Acoustical tile or lay-in panel ceilings shall also comply with the following:

- a. The width of the perimeter supporting closure angle or channel shall be not less than 2.0 in. (50 mm). Where perimeter supporting clips are used, they shall be qualified in accordance with approved test criteria. In each orthogonal horizontal direction, one end of the ceiling grid shall be attached to the closure angle or channel. The other end in each horizontal direction shall have a 0.75 in. (19 mm) clearance from the wall and shall rest upon and be free to slide on a closure angle or channel.
- b. For ceiling areas exceeding 2,500 ft² (232 m²), a seismic separation joint or full height partition that breaks the ceiling up into areas not exceeding 2,500 ft² (232 m²), each with a ratio of the long to short dimension less than or equal to 4, shall be provided unless structural analyses are performed of the ceiling bracing system for the prescribed seismic forces that demonstrate ceiling penetrations and closure angles or channels provide sufficient clearance to accommodate the anticipated lateral displacement. Each area shall be provided with closure angles or channels in accordance with Section 13.5.6.2.2.a and horizontal restraints or bracing.

13.5.6.3 Integral Construction

As an alternate to providing large clearances around sprinkler system penetrations through ceilings, the sprinkler system and ceiling grid are permitted to be designed and tied together as an integral unit. Such a design shall consider the mass and flexibility of all elements involved, including the ceiling, sprinkler system, light fixtures, and mechanical (HVAC)

appurtenances. Such design shall be performed by a registered design professional.

13.5.7 Access Floors

13.5.7.1 General

The weight of the access floor, W_p , shall include the weight of the floor system, 100 percent of the weight of all equipment fastened to the floor, and 25 percent of the weight of all equipment supported by but not fastened to the floor. The seismic force, F_p , shall be transmitted from the top surface of the access floor to the supporting structure.

Overturning effects of equipment fastened to the access floor panels also shall be considered. The ability of “slip on” heads for pedestals shall be evaluated for suitability to transfer overturning effects of equipment.

Where checking individual pedestals for overturning effects, the maximum concurrent axial load shall not exceed the portion of W_p assigned to the pedestal under consideration.

13.5.7.2 Special Access Floors

Access floors shall be considered to be “special access floors” if they are designed to comply with the following considerations:

1. Connections transmitting seismic loads consist of mechanical fasteners, anchors satisfying the requirements of Appendix D of ACI 318, welding, or bearing. Design load capacities comply with recognized design codes and/or certified test results.
2. Seismic loads are not transmitted by friction, power actuated fasteners, adhesives, or by friction produced solely by the effects of gravity.
3. The design analysis of the bracing system includes the destabilizing effects of individual members buckling in compression.
4. Bracing and pedestals are of structural or mechanical shapes produced to ASTM specifications that specify minimum mechanical properties. Electrical tubing shall not be used.
5. Floor stringers that are designed to carry axial seismic loads and that are mechanically fastened to the supporting pedestals are used.

13.5.8 Partitions

13.5.8.1 General

Partitions that are tied to the ceiling and all partitions greater than 6 ft (1.8 m) in height shall be