



Standard Building Code, 1997

*Excerpts of the Standard Building Code, 1997
For Head-of-Wall Joint Systems, Vertical Shafts, and Wallbacking*

704.2 Interior wall and partition fire separation requirements

704.2.1 General

704.2.1.1 This section shall apply to the fire separation requirements of interior wall and partitions for the various occupancies and types of construction. Partitions of higher fire resistance rating required by other sections of this code may also serve to meet the requirements of this section.

704.2.1.2 All partitions enclosing vertical openings such as stairways, utility shafts and elevator shafts, which are required to have a fire resistance rating, shall extend from floor to floor or floor to roof. These walls shall be continuous through all concealed spaces such as the space above a suspended ceiling. The supporting structure shall have a fire resistance rating equal to or greater than the fire resistance rating required for vertical enclosure. Where the openings are offset at intermediate floors, the offset and floor construction shall be of construction having a fire resistance of not less than that required for the enclosing partitions.

704.2.1.3 All other partitions required to have a fire resistance rating shall extend from the top of the floor below to the ceiling above and shall be *securely attached* thereto. Where said ceiling is not a part of an assembly having a fire resistance rating at least equal to that required for the partition, the partition shall be constructed tight against the floor or roof deck above.

705.7 Fire Resistant Joint Systems

705.7.1 General. Joints installed in or between fire resistant walls, fire resistant floor or floor/ceiling assemblies and fire resistant roof or roof/ceiling assemblies shall be protected by an approved fire resistant joint system designed to resist the passage of fire for a time period not less than the required fire resistance rating of the wall, floor, or roof in or between which it is installed. Fire resistant joint systems shall be installed and tested in accordance with 705.7.

Exception: Fire resistant joint systems shall not be required for joints in the following locations:

1. Floors within a single dwelling unit.
2. Floors where the joint is protected by a shaft enclosure in accordance with 705.2.
3. Floors within atriums where the space adjacent to the atrium is included in the volume of the atrium for smoke-control purposes.
4. Floors within malls.
5. Floors within open parking structures.
6. Mezzanine floors.
7. Walls which are permitted to have unprotected openings.

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705.7.2 Fire Test. Fire resistant joint systems shall be tested in accordance with ASTM E 119 under the following conditions:

1. Joint systems shall be installed full height in wall assemblies and full length in floor and roof assemblies.
2. Floor and roof assemblies shall be tested with a minimum positive pressure differential of 0.01 inch of water column (2.5 Pa).
3. Wall assemblies shall be tested with a minimum positive pressure differential of 0.01 inch of water column (2.5 Pa) measured at the mid-height of the wall assembly.
4. Joint systems shall contain a splice. For wall assemblies the splice shall be located above the mid-height of the wall assembly.
5. Joint systems shall be tested at the maximum joint width for which they are designed. Joint systems designed to accommodate movement shall be expanded to the maximum joint opening width for which they are intended to function.
6. Joint systems designed to be loadbearing shall be loaded to the maximum design load in accordance with their intended application.
7. Joint systems designed to accommodate movement shall be preconditioned by cycling between the minimum and the maximum joint opening width for which they are intended to function for the number of cycles specified in Table 705.7 in accordance with ASTM E 1399.
8. Asymmetrical wall joint systems shall be tested in accordance with 701.2.4 and

PRECONDITIONING CYCLES FOR FIRE RESISTANT JOINT SYSTEMS	
Type of Joint System	Number of Cycles
Expansion/Contraction	500
Seismic	100
Wind Sway	500

705.7.3 Installation. Fire resistant joint systems shall be securely installed in or on the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to resist the passage of fire and hot gases.

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705.7.4 Walls. The protection of joints in fire resistant walls shall comply with the requirements of 705.7.

705.7.5 Floors and roofs. The protection of joints in fire resistant floors and roofs shall comply with the requirements of 705.7.

Vertical Shafts

705.2.2 Shaft enclosures. All openings through a floor and penetrations through a floor shall be protected by a shaft enclosure in accordance with 705.2.3.

705.2.3 Shaft enclosure construction.

705.2.3.1 Fire resistance. The fire resistance rating of shaft enclosures shall be in accordance with table 705.1.2 and not less than the floor assembly penetrated, but the rating need not exceed 2 hours.

705.2.3.2 Construction type. Shaft enclosures shall be noncombustible materials in Type I, II, and IV construction and may be of combustible materials in Types III, V, and VI construction.

705.2.3.4 Enclosure at the top

705.2.3.4.1 A shaft that does not extend to or through the underside of the roof deck of the building shall be enclosed at the top with construction of the same fire resistance as the topmost floor penetrated by the shaft, but not less than the rating required for the shaft enclosure.

Backing Requirements for Hand Rails, Grab Bars, Shower and Tub Seats

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1110.9.3 Grab bar and seat reinforcement. Where walls are located so as to permit installation for grab bars and seats complying with Sections 4.17.4, 4.21.4, 4.22.4 or 4.23.3 of CABO/ANSI

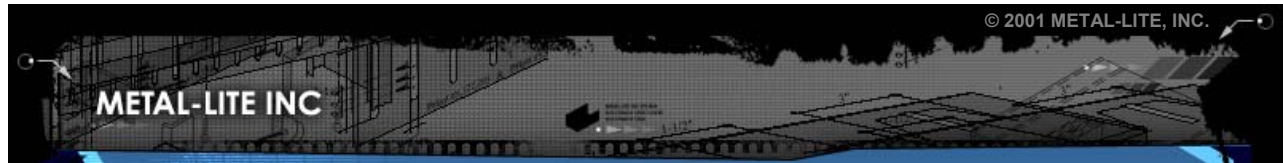
A117.1, reinforcement shall be provided for the installation of grab bars and seats meeting those requirements.

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REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA) CODE

Federal register/Vol. 56, No. 144/Friday, July 26, 1991 final rule

Section 36.401 implements the new construction requirements of ADA. The act includes a failure to design and construct facilities for first occupancy later than 30 months after the date of enactment (i.e., after January 26, 1993).

Paragraph 36.401 (A) (1) restates the general requirement for accessible new construction. "*Any public accommodation or other private entity responsible for design and construction must ensure that facilities conform to this requirement*".

4.26 Handrails, grab bars and tub and shower seats.

4.26.3 Structural strength.

- (1) Bending stress in a grab bar or seat induced by the maximum bending moment from the application of 250 LBF shall be less than the allowable stress for the material of the grab bar or seat.
- (2) Shear stress induced in a grab bar or seat by the application of 250 LBF shall be less than the allowable shear stress for the material of the grab bar or seat. If the connection between the grab bar or seat and its mounting bracket or other support is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stresses, which shall not exceed the allowable shear stress.
- (3) Shear force induced in a fastener or mounting device from the application of 250 LBF shall be less than the allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.
- (4) Tensile force induced in a fastener by a direct tension force of 250 LBF plus the maximum moment from the application of 250 LBF shall be less than the allowable withdrawal load between the fastener and the supporting structure.

Wall reinforcement for the future installation of grab bars and handrails shall be installed around toilets, bathtubs, shower stalls and where grab bars are provided. The reinforcement shall be of sufficient length to meet the requirement of the grab bar and handrail installation specified herein. The reinforced wall shall be capable of supporting at least a 250-pound point load.

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