DSA IR 16-12

GRAB BAR DESIGN AND CONNECTIONS: 2019 CBC

Disciplines:	Structural, Access	**History:**	12/31/2019

Division of the State Architect (DSA) documents referenced within this publication are available on the DSA Publications webpages.

PURPOSE: This Interpretation of Regulations (IR) clarifies the loading and strength requirements for grab bars and their connections used on construction projects under DSA's jurisdiction.

SCOPE: This IR is applicable to DSA acceptance of grab bars installed in accessible toilet compartments, shower stalls and other locations.

1. DESIGN REQUIREMENT: Grab bars shall be designed to resist a single concentrated load of 250 LBS applied in any direction at any point on the grab bar such as to produce the maximum load effect.

2. ACCEPTANCE:

2.1 Grab bars connected to structural walls, such as wood framed walls, metal stud partition walls, CMU, concrete or any other material covered by the code or a standard: in these cases, connection with screws, bolts, anchors, etc. to wall studs, blocking, CMU, concrete, etc. can be easily calculated using the standards for the respective materials. Code compliance for the wall capacity is also determined as for any other attachment to it. DSA will review the case where load is applied to the grab bar, as per Section 1 above.

2.2 Grab bars connected to a prefabricated partition wall made of a material or having a construction not covered in the code (for example ½" thick wall made of two sheet metal or aluminum panels with a filler between them, solid polymer panels, etc.): in these cases, the capacity of the screwed connection of the grab bar to wall shall be determined through testing by an independent laboratory, as an 'alternate material or method of construction' per California Administrative Code (CAC) Section 4-304; also refer to DSA *IR A-5: Acceptance of Products, Materials, and Evaluation Reports*. The wall capacity shall be established in the same manner.

2.3 As an alternate to Section 2.2 above for grab bars spanning 36" or less between supports, a connection using a back-up plate on the other side of the partition, with two through-bolts spaced vertically 2.25 inches min. apart, is acceptable without calculations. The back-up plate shall be minimum 2 in. wide x 3.25 in., stainless steel, 16 gauge or thicker, and the nuts on the other side shall be smooth rounded carriage type, covering the bolt end and not protruding more than ¼". Similar configurations for connection may be approved on a case by case basis. The prefabricated partition wall that the grab bar is attached to will not be reviewed by DSA and can be treated as a black box. A reasonable review of the fasteners of the prefabricated wall panel to the adjacent structural wall or other prefabricated partitions shall be made. The prefabricated connectors (angles, light metal shapes, etc.) connecting the wall panels to each other and to the adjacent structural wall need not be evaluated, but rather only the fasteners (screws, anchors, etc.).

2.4 Where panels are interconnected with a continuous bar connected across the top of the partition wall to which the grab bar is attached and perpendicular to it, running over the stall door, that bar shall be installed so as to extend and be connected to a structural

wall, made of materials as specified in Section 2.1 above. The bar is intended to stabilize the wall by attaching its top to a solid wall. The fasteners from the bar to the structural wall or adjacent prefabricated wall panels shall be calculated to resist its share of the grab bar reaction. DSA will not review the design of the bar itself.

2.5 Grab bars shall not be installed on partitions without supports extending to the floor (i.e., partitions hung from the upper floor or roof).

3. SUBMITTAL REQUIREMENTS: Provide clearly detailed connection and bracing (e.g., include fastener type, size, location, etc. and plate size, thickness, material, etc. and top of partition bracing requirements and connection details to the structure, etc.) on the DSA-approved construction documents.

REFERENCES:

2019 California Code of Regulations (CCR) Title 24
Part 1: California Administrative Code (CAC), Section 4-304
Part 2: California Building Code (CBC), Section 1607A.8.2

This IR is intended for use by the DSA staff and by design professionals to promote statewide consistency for review and approval of plans and specifications as well as construction oversight of projects within the jurisdiction of DSA, which includes State of California public schools (K–12), community colleges and state-owned or state-leased essential services buildings. This IR indicates an acceptable method for achieving compliance with applicable codes and regulations, although other methods proposed by design professionals may be considered by DSA.

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