

CHAPTER 3 CONSTRUCTION

SECTION 301 GENERAL

301.1 General. The construction or installation of new bleachers, folding and telescopic seating, and grandstands and press boxes shall comply with the provisions of this chapter.

301.2 Location on lot. Outdoor installations shall be located at least 10 feet (3048 mm) from adjacent lot lines and from other buildings on the same lot unless the exterior walls and openings of the adjacent building are protected in accordance with the building code.

SECTION 302 PERMITTED MATERIALS

302.1 Combustibility and flame spread. Bleachers, folding and telescopic seating, and grandstands shall be permitted to be constructed of combustible or noncombustible materials. Such installations within a building shall not be considered interior finish relative to the application of the building code.

302.2 Durability. Materials used in the construction of outdoor installations shall be weather resistant. Where wood is used, it shall be naturally durable or preservative-treated wood as defined in the building code or other approved material. Where ferrous metal is used, it shall be protected from corrosion. Fasteners shall consist of aluminum or other approved corrosion-resistant materials or shall be provided with approved corrosion-resistant coatings such as copper or zinc.

302.3 Interior corrosive environment. Installations located in interior corrosive environments, such as those located in conjunction with indoor pools, shall be corrosion resistant.

SECTION 303 STRUCTURAL DESIGN

303.1 Design. The structural design shall be in accordance with the building code.

303.2 Loads. Bleachers, folding and telescopic seating, and grandstands shall be designed for a uniform live load of 100 pounds per square foot (psf) (4788 Pa). Press boxes shall be designed for a uniform live load of 50 psf (2394 Pa). The components of the installation shall be designed to support the loads listed in Table 303.2.

303.3 Other loads. Bleachers, folding and telescopic seating and grandstands, and press boxes and platforms attached to such installations, subject to wind, snow, seismic and other loads, shall be designed in accordance with the building code.

303.4 Stress increases. Where handrails and guards are designed in accordance with the provisions for allowable stress design (working stress design) exclusively for the loads specified in Section 303.2, allowable stress for the members and their attachments is permitted to be increased by one-third. Stresses permitted in the design standards of the various materials shall be permitted to be increased by one-third due to sway or wind loads or by a combination of sway or wind loads and vertical loads, provided that no such increases shall be allowed for stresses due to vertical loads alone. All other allowable stress increases relative to the design of the installation shall be in accordance with the building code.

303.5 Deflections. Live load deflection of structural members shall be limited to 1/200 of the span.

Exception: Deflection of members in folding and telescopic seating shall not be limited.

**TABLE 303.2
DESIGN LOADS**

TIERED SEATING ELEMENT	LOAD
Seats (vertical)	120 pounds per linear foot.
Horizontal sway loads	24 pounds per linear foot parallel to the seats and 10 pounds per linear foot perpendicular to the seats. These loads need not be assumed to act concurrently and need not be applied simultaneously with other lateral forces such as wind or seismic loads.
Treads	Stair treads and aisle stair treads shall be designed to resist a minimum concentrated load of 300 pounds on an area of 4 square inches.
Handrails and guards, uniform load	Handrail assemblies and guards shall be designed to resist a load of 50 pounds per linear foot (pound per foot) applied in any direction at the top. The supporting elements shall transfer this load to the structure.
Handrails and guards, concentrated load	Handrail assemblies and guards shall be able to resist a single concentrated load of 200 pounds, applied in any direction at any point along the top. Attachment devices and supporting elements shall transfer this load to the structure. This load need not be assumed to act concurrently with the uniform load.
Guards, infill components	Intermediate rails (all those except the handrail), balusters and panel fillers shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to 1 square foot, including openings and space between rails. Reactions due to this loading are not required to be superimposed with the uniform loads or concentrated loads.

For SI: 1 square inch = 645.46 mm², 1 square foot = 0.0929 m², 1 pound = 4.448 N, 1 pound per linear foot = 14.594 N/m.

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303.6 Foundations. A foundation, designed to support all loads, shall be provided as required by the building code.

Exception: Outdoor installations that are directly supported on the ground that is adequate to support the superimposed loads.

SECTION 304 INTERIOR INSTALLATIONS

304.1 Interior installations. Interior installations shall be supported on building facility floors. Folding or telescopic seating shall be supported on building facility floors specifically designed to accommodate both the live and dead loads associated with the movement of such installations.

SECTION 305 SPACES BENEATH SEATS

305.1 Spaces beneath seats. Spaces beneath or adjacent to seating structures shall comply with the building code and fire code.

SECTION 306 CLEAR HEIGHT

306.1 Clear height. The clear height of aisle accessways, aisles and portions of the means of egress system shall be a minimum of 80 inches (2032 mm).

SECTION 307 ROOF HEIGHT

307.1 Roof height. A smoke-protected assembly seating area with a roof shall have the lowest portion of the roof deck not less than 15 feet (4572 mm) above the highest aisle or aisle accessway.

Exception: A roof canopy above an outdoor installation shall be permitted to be less than 15 feet (4572 mm) above the highest aisle or aisle accessway provided that there are no objects less than 80 inches (2032 mm) above the highest aisle or aisle accessway.

SECTION 308 ELECTRICAL

308.1 Electrical. The electrical system shall comply with the electrical code.

SECTION 309 FIRE PROTECTION

309.1 Fire protection. Fire protection systems shall be provided where required by the building code.

SECTION 310 ACCESSIBILITY

310.1 Accessibility. Tiered seating shall be accessible as required by the building code.

SECTION 311 OPEN SPACES BENEATH FOOTBOARDS AND SEATBOARDS

311.1 Open spaces at footboards and seatboards. Where an opening between the seatboard and footboard is located more than 30 inches (762 mm) above the floor or ground below, the opening shall be closed with construction such that a 4-inch-diameter (102 mm) sphere cannot pass through.