

Guards

Non-Residential Guards

Where are Guards Required?

IBC Section 1013

Guards shall be located along open-sided walking surfaces, mezzanines, industrial equipment platforms, stairways, ramps and landings which are located more than 30 inches above the floor or grade below. Guards shall be adequate in strength and attachment. Guards shall also be located along glazed sides of stairways, ramps and landings that are located more than 30 inches above the floor or grade below where the glazing provided does not meet the strength and attachment requirements.

See IBC Sec 1013 for exceptions.

See also IBC 1607.7.

Required Height

IBC Sec 1013.2

The top of guards shall not be less than 42 inches in height.

Exception:

- In assembly seating areas, the height shall be per IBC Sec 1028.14.

Opening Limitations

IBC Sec 1013.3

Open guards shall have balusters or ornamental patterns such that a 4-inch-diameter sphere cannot pass through any opening up to a height of 34 inches. From a height of 34 inches to 42 inches above the adjacent walking surfaces, a sphere 8 inches in diameter shall not pass.

Exceptions:

- The triangular openings formed by the riser, tread and bottom rail at the open side of a stairway shall be such that a sphere of 6 inches in diameter cannot pass through the opening.

- At elevated walking surfaces for access to and use of electrical, mechanical or plumbing systems or equipment, guards shall have balusters or be of solid materials such that a sphere with a diameter of 21 inches cannot pass through any opening.
- In areas which are not open to the public within occupancies in Group I-3, F, H, or S, balusters, horizontal intermediate rails or other construction shall not permit a sphere with a diameter of 21 inches to pass through any opening.
- In assembly seating areas, guards at the end of aisle where they terminate at a fascia of boxes, balconies and galleries shall have balusters or ornamental patterns such that a 4-inch-diameter sphere cannot pass through any opening up to a height of 26 inches. From a height of 26 inches to 42 inches above the adjacent walking surfaces, a sphere 8 inches in diameter shall not pass.

Screen Porches

IBC 1013.4

Porches and decks which are enclosed with insect screening shall be provided with guards where the walking surface is located more than 30 inches above the floor or grade below.

Mechanical Equipment

IBC Sec 1013.5 & IMC Sec 304.11.

Guards must be provided where appliances, equipment, fans, roof hatch openings or other components that require service are located within 10 feet of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches above the floor, roof or grade below. The guard shall extend not less than 30 inches beyond each end of such appliance, equipment, fan or component and the top of the guard shall be located not less than 42 inches above the elevated surface adjacent to the guard.

The guard shall be constructed so as to prevent the passage of a 21-inch diameter sphere and shall comply with the loading requirements for guards specified in the IBC.

Residential Guards

Where are Guards Required?

IRC Sec R312; IBC Sec. 1013.2,
Exceptions 1 and 2

Guards are required to be installed along walking surfaces, including stairs, ramps and landings, that are located more than 30 inches measured vertically above any floor or grade below any point within 36 inches measured horizontally to the edge of the open side. Open sides of stairs with a total rise of more than 30 inches above the floor or grade below shall have guards not less than 34 inches in height measured vertically from the nosing of the treads. In R-3 Occupancies, and within individual R-2 dwelling units, a guard whose top rail also serves as a handrail shall have a height not less than 34 inches and not more than 38 inches. Insect screening cannot be considered as a guard.

Guard Opening Limitations

IRC Sec R312.3

Required guards on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures which do not allow passage of a sphere 4 inches or more in diameter.

Exceptions:

- The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway are permitted to be of such a size that a sphere of 6 inches cannot pass through.
- Openings for required guards on the sides of stair treads shall not allow a sphere 4-3/8 inches to pass through.