

LOADS ON GUARDS IN NON HOUSING

ONTARIO BUILDING CODE

3.3.1.17. Guards

- (1) Except as provided in Sentences (6) and Articles 3.3.2.8. and 3.3.4.7., a guard not less than 1070 mm high shall be provided,
 - (a) around each roof to which access is provided for other than maintenance,
 - (b) at openings into smoke shafts referred to in Subsection 3.2.6. that are less than 1070 mm above the floor, and
 - (c) at each raised floor, mezzanine, balcony, gallery, interior or exterior vehicular ramp, and at other locations where the difference in level is more than 600 mm.
- (b) a concentrated load of 1.0 KN applied at any point for access ways to equipment platforms, contiguous stairs and similar areas where the gathering of many people is improbable, and
- (c) 0.75 KN/m or a concentrated load of 1.0 KN applied at any point, whichever governs for locations other than those described in Clauses (a) and (b).
- (2) Individual elements within the guard, including solid panels and pickets, shall be designed for a load of 0.5 KN applied over an area of 100 mm by 100 mm located at any point in the element or elements so as to produce the most critical effect.

3.3.1.18. Transparent Door and Panels

- (6) A window in a public area that extends to less than 1070 mm above the floor and is located above the second storey in a building of residential occupancy, shall be protected by a barrier or railing from the floor to not less than 1070 mm above the floor, or the window shall be non openable and designed to withstand the lateral design loads for balcony guards required by Article 4.1.5.14.
- (3) The loads required in Sentence (2) need not be considered to act simultaneously with the loads provided for in Sentences (1) and (4).
- (4) The minimum specified load applied vertically at the top of every required guard shall be 1.5 KN/m and need not be considered to act simultaneously with the horizontal load provided for in Sentence (1).
- (5) For loads on handrails, refer to Sentence 3.4.6.5.(12).

3.1.20.1. Glass

- (1) Except as provided in Sentence 3.3.4.7.(1), glass in guards shall conform to MMAH Supplementary Standard SB-13, "Glass in Guards".

4.1.5.14. Loads on Guards

- (1) The minimum specified horizontal load applied inward or outward at the minimum required height of every required guard shall be,
 - (a) 3.0 KN/m for open viewing stands without fixed seats and for means of egress in grandstands, stadia, bleachers and arenas,

4.1.5.16. Loads on Walls Acting As Guards

- (1) Where the floor elevation on one side of a wall, including a wall around a shaft, is more than 600 mm higher than the elevation of the floor or ground on the other side, the wall shall be designed to resist the appropriate lateral design loads prescribed elsewhere in the Section or 0.5 KPa, whichever produces the more critical effect.

LOADS ON GUARDS IN NON HOUSING

OBJECTIVE

This Builder Tip specifically deals with guards for Part 3 buildings of residential occupancy.

The main intent for providing guards in residential occupancies is to prevent accidental falls from one level to another. Guards, whether they are walls or windows acting as guards, must withstand the maximum expected horizontal forces or loads exerted by persons based on the use and occupancy of the guarded area.

When an actual guard is installed, the design of the guard and its supporting elements must take in account the maximum expected horizontal forces to be exerted on the guard. The guard must also be designed to prevent climbing, the passage of small children through the elements and meet the minimum height requirements above the finished floor. The diagrams below depict the loading requirements for guards, walls acting as guards and balcony guards.

