

Guard Rails

9.8.8. Guards

9.8.8.1. Required Guards

(See Note A-9.8.8.1.)

1) Except as provided in Sentence (2), every surface to which access is provided, including but not limited to *flights* of steps and ramps, exterior landings, porches, balconies, *mezzanines*, galleries and raised *walkways*, shall be protected by a *guard* on each side that is not protected by a wall for the length where

- a) there is a difference in elevation of more than 600 mm between the walking surface and the adjacent surface, or
- b) the adjacent surface within 1.2 m of the walking surface has a slope of more than 1 in 2.

2) *Guards* are not required

- a) at loading docks,
- b) at floor pits in *repair garages*, or
- c) where access is provided for maintenance purposes only.

9.8.8.2. Loads on Guards

(See Note A-9.8.8.2.)

1) Except as provided in Sentences (2) and (4), *guards* shall be designed to resist the specified loads prescribed in Table 9.8.8.2.

Table 9.8.8.2.
Specified Loads for Guards
Forming Part of Sentence 9.8.8.2.(1)

Location of Guard	Minimum Specified Loads		
	Horizontal Load Applied Inward or Outward at any Point at the Minimum Required Height of the Guard	Horizontal Load Applied Outward on Elements Within the Guard, Including Solid Panels and Balusters	Evenly Distributed Vertical Load Applied at the Top of the Guard
<i>Guards</i> within <i>dwelling units</i> and exterior <i>guards</i> serving not more than 2 <i>dwelling units</i>	0.5 kN/m OR concentrated load of 1.0 kN applied at any point ⁽¹⁾	0.5 kN applied over a maximum width of 300 mm and a height of 300 mm ⁽²⁾	1.5 kN/m
<i>Guards</i> serving access ways to equipment platforms and similar areas where the gathering of many people is improbable	Concentrated load of 1.0 kN applied at any point	Concentrated load of 0.5 kN applied over an area of 100 mm by 100 mm located at any point on the element or elements so as to produce the most critical effect	1.5 kN/m
All other <i>guards</i>	0.75 kN/m OR concentrated load of 1.0 kN applied at any point ⁽¹⁾	Concentrated load of 0.5 kN applied over an area of 100 mm by 100 mm located at any point on the element or elements so as to produce the most critical effect	1.5 kN/m

Notes to Table 9.8.8.2.:

(1) The load that creates the most critical condition shall apply.

(2) See Sentence (2).

2) For *guards* within *dwelling units* and for exterior *guards* serving not more than 2 *dwelling units*, where the width and spacing of balusters are such that 3 balusters can be engaged by a load imposed over a 300 mm width, the load shall be imposed so as to engage 3 balusters.

3) None of the loads specified in Table 9.8.8.2. need be considered to act simultaneously.

4) For *guards* within *dwelling units* and for exterior *guards* serving not more than 2 *dwelling units*, Table 9.8.8.2. need not apply where the *guard* construction used has been demonstrated to provide effective performance.

9.8.8.3. Height of Guards

(See Note A-9.8.8.3.)

- 1) Except as provided in Sentences (2) to (4), all *guards* shall be not less than 1 070 mm high.
- 2) All *guards* within *dwelling units* shall be not less than 900 mm high.
- 3) Exterior *guards* serving not more than one *dwelling unit* shall be not less than 900 mm high where the walking surface served by the *guard* is not more than 1 800 mm above the finished ground level.
- 4) *Guards* for *flights* of steps, except in required *exit* stairs, shall be not less than 900 mm high.
- 5) The height of *guards* for *flights* of steps shall be measured vertically from the top of the *guard* to a line drawn through the tread nosing served by the *guard*.

9.8.8.4. Guards for Floors and Ramps in Garages

1) Except for floors of garages referred to in Section 9.35., where garage floors or ramps are 600 mm or more above the adjacent ground or floor level, every opening through a garage floor and the perimeter of floors and ramps that have no exterior walls shall be provided with

- a) a continuous curb not less than 140 mm in height, and
- b) a *guard* not less than 1 070 mm above the floor level.

2) Vehicle guardrails shall be designed and constructed to withstand the loading values stipulated in Sentence 4.1.5.15.(1). (See Note A-4.1.5.14. and 4.1.5.15.(1).)

9.8.8.5. Openings in Guards

1) Except as permitted in Sentences (2) and (3), openings through *guards* shall be of a size that prevents the passage of a spherical object having a diameter of 100 mm. (See Note A-9.8.8.5.(1) and (2).)

2) Except where they serve *storage garages*, *guards* in *industrial occupancies* are permitted to consist of

- a) a top railing, and
- b) one or more horizontal intermediate rails spaced such that the size of the openings through the *guard* prevents the passage of a spherical object having a diameter of 535 mm.

(See Note A-9.8.8.5.(1) and (2).)

3) Openings through any *guard* that is not required by Article 9.8.8.1. and that serves an *occupancy* other than an *industrial occupancy* shall be of a size that

- a) prevents the passage of a spherical object having a diameter of 100 mm, or
- b) permits the passage of a spherical object having a diameter of 200 mm.

(See Note A-9.8.8.5.(3).)

9.8.8.6. Design of Guards to Not Facilitate Climbing

1) Except for *guards* in *industrial occupancies*, *guards* required by Article 9.8.8.1. that protect a level located more than 4.2 m above the adjacent level shall be designed so that no member, attachment or opening located between 140 mm and 900 mm above the level protected by the *guard* facilitates climbing. (See Note A-9.8.8.6.(1).)

9.8.8.7. Glass in Guards

1) Glass in *guards* shall be

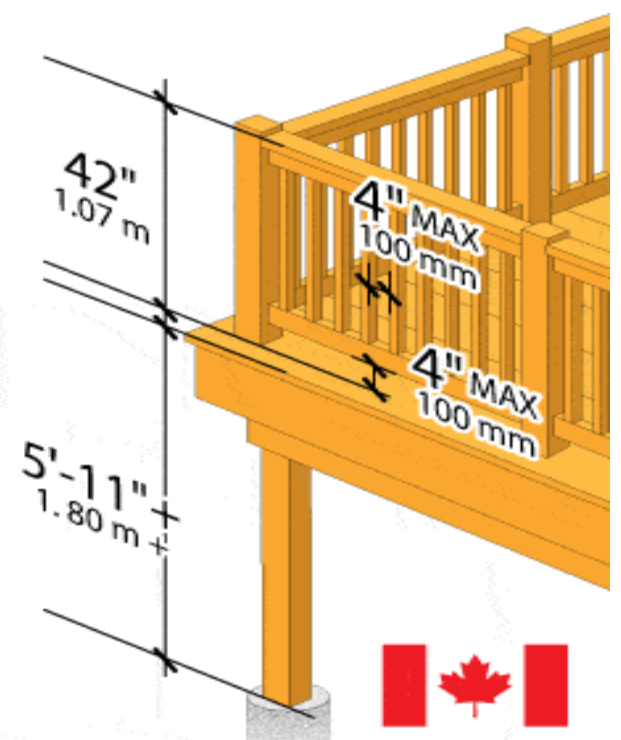
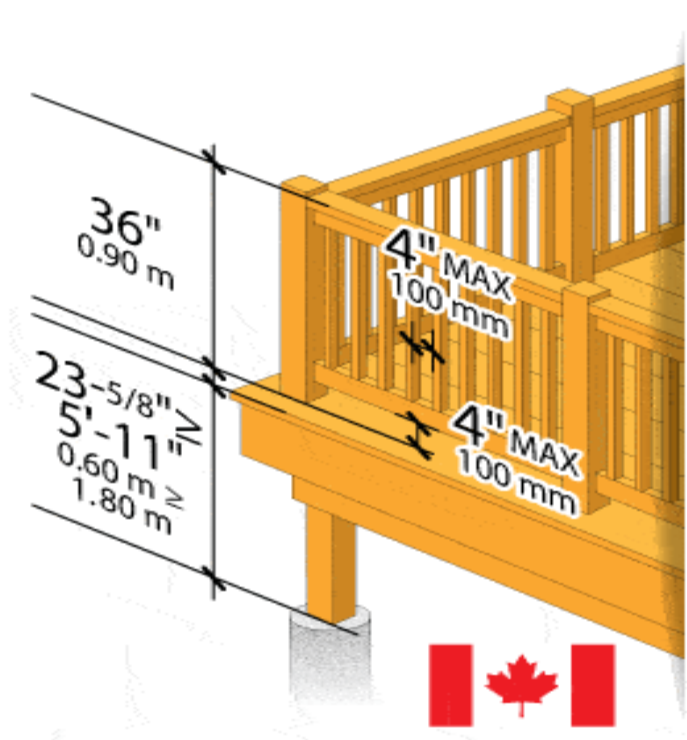
- a) safety glass of the laminated or tempered type conforming to CAN/CGSB-12.1-M, "Tempered or Laminated Safety Glass," or
- b) wired glass conforming to CAN/CGSB-12.11-M, "Wired Safety Glass."

PART 9- CODE UPDATE INFORMATION	
ABC 2014	NBC(AE) 2019
(See Appendix A.)	(See Appendix Note A-9.8.7.2.)
<p>1) Except as provided in Sentence (2), at least one required handrail shall be continuous throughout the length of the stair or ramp, including landings, except where interrupted by</p> <ol style="list-style-type: none"> doorways, or newel posts at changes in direction. <p>2) For stairs or ramps serving a single <i>dwelling unit</i> or a house with a <i>secondary suite</i> including their common spaces, at least one required handrail shall be continuous throughout the length of the stair or ramp, except where interrupted by</p> <ol style="list-style-type: none"> doorways, landings, or newel posts at changes in direction. 	<p>1) Except as provided in Sentence (3), required handrails shall be continuously graspable throughout the length of</p> <ol style="list-style-type: none"> ramps, and flights of stairs, from the bottom riser to the top riser. <p>1)2) Except as provided in Sentence (2) Except for stairs or ramps serving a single <i>dwelling unit</i> or a house with a <i>secondary suite</i> including their common spaces, at least one required handrail shall be continuous throughout the length of the stair or ramp, including at the landings, except where interrupted by doorways. (See Note A-3.4.6.5.(10).)</p> <ol style="list-style-type: none"> doorways, or newel posts at changes in direction. <p>2)3) For stairs or ramps serving a single <i>dwelling unit</i> or a house with a <i>secondary suite</i> including their common spaces, at least one required handrail shall be continuous throughout the length of the stair or ramp, except where interrupted by a handrail is permitted to start from a newel post or volute installed on the bottom tread.</p> <ol style="list-style-type: none"> doorways, landings, or newel posts at changes in direction.

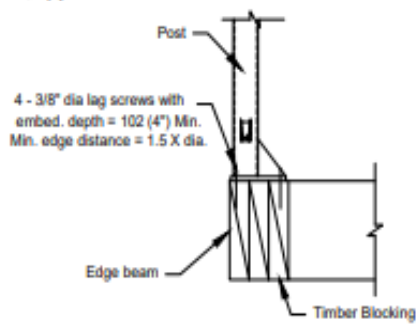
PART 9- CODE UPDATE INFORMATION	
ABC 2014	NBC(AE) 2019
	b) will permit s the passage of a spherical object having a diameter of 200 mm. (See Appendix A Note A-9.8.8.5.(3).)
<p>9.8.8.6. Design of Guards to Not Facilitate Climbing</p> <p>1) <i>Guards</i> required by Article 9.8.8.1., except those in <i>industrial occupancies</i> and where it can be shown that the location and size of openings do not present a hazard, shall be designed so that no member, attachment or opening facilitates climbing.</p> <p>2) <i>Guards</i> shall be deemed to comply with Sentence (1) where all elements protruding from the vertical and located within the area between 140 mm and 900 mm above the floor or walking surface protected by the <i>guard</i> conform to at least one of the following Clauses:</p> <ol style="list-style-type: none"> they are located more than 450 mm horizontally and vertically from each other, they provide not more than 15 mm horizontal offset, they do not provide a toe-space more than 45 mm horizontally and 20 mm vertically, or they present more than a 2-in-1 slope on the offset. <p>(See Appendix A.)</p>	<p>9.8.8.6. Design of Guards to Not Facilitate Climbing</p> <p>1) <i>Guards</i> required by Article 9.8.8.1., except those Except for guards in industrial occupancies and where it can be shown that the location and size of openings do not present a hazard, <i>guards</i> required by Article 9.8.8.1. that protect a level located more than 4.2 m above the adjacent level shall be designed so that no member, attachment or opening located between 140 mm and 900 mm above the level protected by the <i>guard</i> facilitates climbing. (See Note A-9.8.8.6.(1).)</p> <p>2) <i>Guards</i> shall be deemed to comply with Sentence (1) where all elements protruding from the vertical and located within the area between 140 mm and 900 mm above the floor or walking surface protected by the <i>guard</i> conform to at least one of the following Clauses:</p> <ol style="list-style-type: none"> they are located more than 450 mm horizontally and vertically from each other, they provide not more than 15 mm horizontal offset, they do not provide a toe-space more than 45 mm horizontally and 20 mm vertically, or they present more than a 2 in 1 slope on the offset. <p>(See Appendix A.)</p>



No Climbable Hold between 5.5" and 35.4" (140 mm and 900 mm)

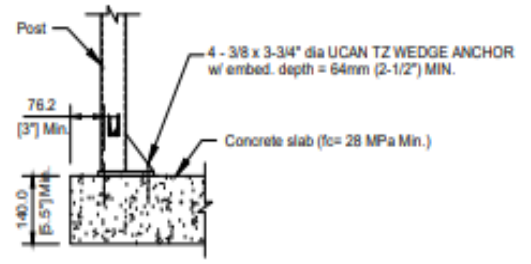


SECTION A-A



TYPICAL TOP MOUNTED DETAIL ON TIMBER FLOOR

SECTION A-A



TYPICAL TOP MOUNTED DETAIL ON CONCRETE FLOOR

