

BC BUILDING CODE 2012

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GUIDE TO BUILDING CODE PARAMETERS FOR RAMP DESIGN

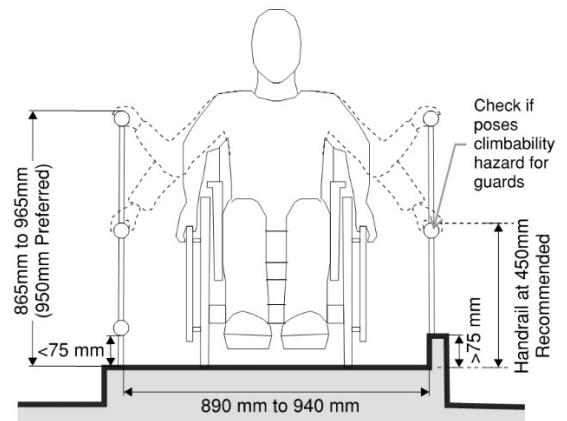
This guide provides summary guidance only – please refer to the BC Building Code for complete requirements.

RAMP OPTIONS FOR PERSONS WITH DISABILITIES - INTERIOR AND EXTERIOR

Ramp Slope (height to length ratio)	Minimum Ramp Width (mm)	Maximum Distance Between Landings (mm)	Minimum Landing Size Width x Length (mm)	Handrails Required	Comments
> 1 in 20 to 1 in 16	1500	12000	1500 x 1500	both sides	slopes less than 1 in 20 are not considered a ramp
> 1 in 16 to 1 in 12	1500	9000	1500 x 1500	both sides	
Maximum 1 in 12	1500	2000	1500 x 1500	one side	
> 1 in 12 to 1 in 10	890 to 940 between handrails	6000	ramp width x 1500	both sides	ramps repeated sequentially in series prohibited
> 1 in 10 to 1 in 8	1500	600	1500 x 1500	not required	- known as 'curb cut ramps' - curb cut ramps repeated sequentially in series prohibited

RAMP OPTIONS FOR PERSONS WITH DISABILITIES - INTERIOR WIDE PASSAGEWAYS

Passageway Width (mm)	Minimum Ramp Width (mm)	
up to and including 6000	915 between handrails	
> 6000	1 ramp option	1500
	2 separate ramps option	915 between handrails



Section: 1 in 12 to 1 in 10 Ramp

ADDITIONAL NOTES TO ABOVE TABLES

- Ramps may need to be wider to accommodate minimum means of egress widths.
- Landings must not slope more than 1 in 50 (>50%).
- Mount handrails 865mm to 965mm above the ramp surface. Guards 1070mm high may be required to address potential fall hazards.
- Where the ramp is 1500mm wide, handrails may project maximum 100mm from each side of the ramp into this width (total width reduction 200mm).
- At least one handrail must have 300mm horizontal extensions beyond both top and bottom of the ramp slope.
- If there is a vertical drop of more than 75mm at the side of the ramp, provide a 75mm high curb at the side of the ramp, or alternatively provide flanking walls, railings or other such barriers such that the gap from the ramp surface to underside of such barriers is maximum 75mm.
- Ramp surface must be slip resistant and must not have gratings with openings which permit passage of a 13mm spherical object. Gratings with elongated openings must have them oriented approximately perpendicular to the direction of travel.
- Ramp must be free of obstructions to a clear height of 1980mm (2050mm if to be also used by ambulatory persons).
- Provide colour contrast or distinctive pattern to demarcate the beginning and end of ramps.



RAMP OPTIONS FOR AMBULATORY PERSONS (not used by persons with disabilities)

Occupancy Classification/Use	Minimum Ramp Width (mm)	Maximum Ramp Slope (height to length ratio)	Comments
Exterior use	1100	1 in 10	
Group A - Assembly	1100	1 in 10	see Article 3.3.2.5 for ramps in aisles
Group B - Detention, Treatment or Care	1100	1 in 10	
Group B-2 - Patients' or Residents' Sleeping Rooms	1650		minimum ramp widths do not apply within individual suites of care occupancy
Group C - Residential	1100	1 in 10	
Group D - Office or Personal Services	1100	1 in 8	
Group E - Mercantile	1100	1 in 6	
Group F - Industrial	1100	1 in 6	design of ramps for service rooms or spaces and industrial occupancies, intended only for occasional use in servicing equipment and machinery, not prescribed by Building Code

ADDITIONAL NOTES TO ABOVE TABLE

- Ramps may need to be wider to accommodate minimum means of egress widths.
- Provide landings top and bottom of ramps as follows:
 - length and width generally equal to ramp width, except that in a straight run length of landing need not exceed 1100mm.
 - if a doorway or stairway empties onto a ramp through a side wall, provide landing extending 300mm each side of wall opening (one side only if abuts on an end wall).
 - if a doorway or stairway empties onto a ramp through an end wall, provide a landing as wide as ramp and 900mm long.
 - for exterior ramps, landing may be omitted at bottom, provided there is no gate, door or fixed obstruction within the lesser of the width of ramp or 1100mm.
 - landings must not slope more than 1 in 50.
- Provide handrails both sides of ramp. If required ramp width exceeds 2200mm, provide intermediate handrails continuous between landings, located at maximum 1650mm between handrails.
Mount handrails 865mm to 965mm above ramp surface.
Guards 1070mm high may be required to address potential fall hazards.
- At least one handrail must have 300mm horizontal extensions beyond both top and bottom of the ramp slope.
- Ramp surface must be slip resistant.
- Ramp must be free of obstructions to a clear height of 2050mm.
- Provide colour contrast or distinctive pattern to demarcate the beginning and end of ramps.



About the Author

Teddy Lai (Architect AIBC, MRAIC, CP) is an Architect and Certified Professional with experience in aspects of project design and compliance and specifically, access for the disabled, stair safety, washrooms, dimensional clearances and ergonomic aspects of Code compliance. Teddy has developed specialized expertise in the application of Building Codes and creation of alternative approaches (equivalents) to meeting the Building Code intent on a performance basis.

GHL CONSULTANTS LTD provides expertise in stair/ramp safety consulting, provisions for persons with disabilities, Building Code consulting and Fire Science Engineering. GHL advises on existing ramps in renovations and upgrading projects.

The information in this guide is for discussion purposes only. Refer to applicable Building Codes for actual requirements. The designer should always check with the AHJ for local policies and interpretations regarding the foregoing.

ABOUT GHL CONSULTANTS LTD

GHL is a team of fire science engineers and building code professionals who have extensive experience and advanced training in fire safety codes and fire engineering. With expert knowledge in fire safety and an established working relationship with many authorities having jurisdiction, we are capable of solving a wide variety of fire engineering challenges that arise from the prescriptive codes. Our fire science background provides us with a strong capability in fire modelling and evacuation/egress modelling. With a dedicated team of fire modelling engineers, GHL can advise clients when fire modelling adds value to a project and when fire modelling analysis is required. For further information, visit our website at www.ghl.ca