

BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing
AIBC, EGBC, BOABC

File No: 18-0243

INTERPRETATION

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Interpretation Date:	June 27, 2023
Building Code Edition:	BC Building Code 2018
Subject:	Stair Handrail Extension
Keywords:	Handrail
Building Code Reference(s):	Div. A, 1.4.1.1., Notes A-1.4.1.2.(1); Div. B, 3.4.6.5.(9), (10), (11) & (12); Note A-3.4.6.5.(10)

Question:

1. Is a sloping handrail on an exit stairway required to extend past the bottom riser before transitioning to a 300 mm horizontal extension?
2. Is this horizontal extension required to be parallel to the direction of the stair?

Interpretation:

1. Yes.

Clause 3.4.6.5.(9)(b) requires that the handrail be continuously graspable throughout the length of the flight of stairs from the bottom of the bottom riser to the top of the top riser (see illustration below from the Notes to Part 3).

Flight

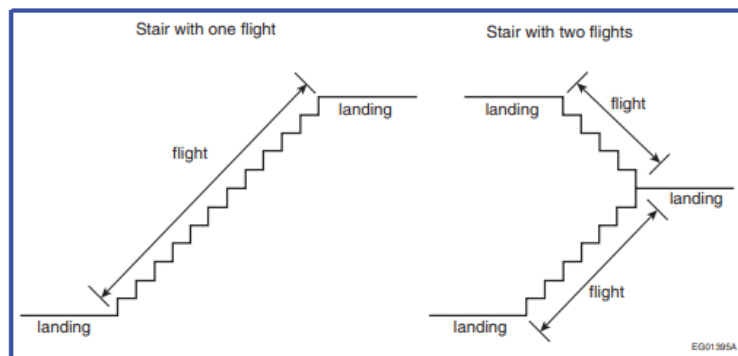


Figure A-1.4.1.2.(1)-A
Flight

Pat Shek

Patrick Shek, P.Eng., CP, FEC, Committee Chair

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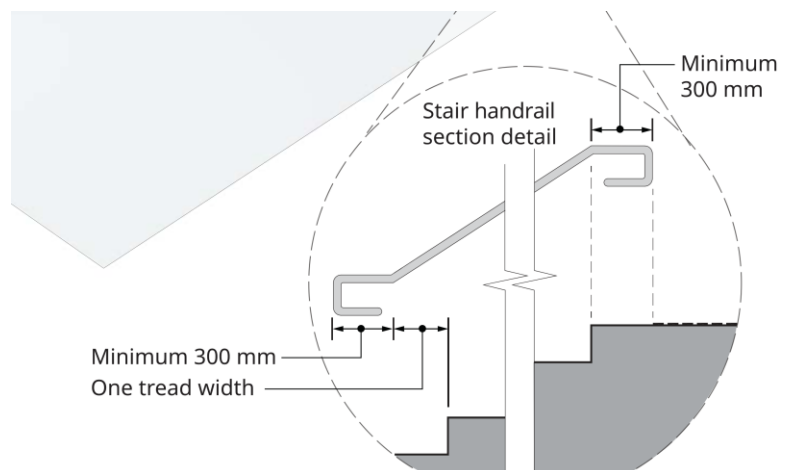
Sentence 3.4.6.5.(12) requires that at least one handrail at the side of a stairway shall extend horizontally not less than 300 mm beyond the top and bottom of the stairway.

The handrail is required for secure and steady support of a person using the stairs. It should be graspable throughout the length of a flight of stairs from the bottom of the bottom riser to the top of the top riser.

As illustrated above in Figure A-1.4.1.2.(1)-A, the stair flight extends from the bottom stair landing to the top stair landing. The bottom step of the stair is on the bottom stair landing (i.e. at the bottom of the bottom riser). A person descending the stair has not reached the bottom of the stair until they step on the bottom stair landing. The fact that the 2018 BCBC has increased the range of the handrail heights between 865mm to 1070mm does not mean that the sloping handrail can terminate before it reaches the end of the bottom step, which is located on the bottom stair landing.

The location of the transition from a sloping handrail to a horizontal extension is particularly important for persons with visual impairments because the transition provides a warning to the occupant of the stair termination at the bottom stair landing. If the transition occurs before reaching the bottom stair landing, it gives a false impression that the descent of the stair flight is complete.

The sloping handrail extended one run past the last riser will result in the horizontal extension to be at the same height as the sloping handrail which is the preferred design. Refer to Figure 3.8.3.5.(1)-C below from the 2020 Building Accessibility Handbook:



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Although the 2018 BCBC does not mandate a uniform height of a handrail throughout the entire stair flight, it is good design practice to maintain such uniformity, including at the 300 mm handrail extension.

A sudden change in the height of the handrail could interrupt the continuous graspability as required by Sentence 3.4.6.5.(9) which would not meet the intent of the code.

It may be necessary to vary the handrail height when a stair turns 90° or 180° with a sloping transition which is preferable to a vertical “gooseneck” because the sloping transition is continuously graspable.

2. No, with conditions.

Note A-3.4.6.5.(10) explains that blind or visually-impaired persons rely on handrails to guide them on stairways. The horizontal extension of the handrail is helpful to persons with physical disabilities to steady themselves before using the stairs. The extension also provides an indication of the end of the stair flight. It is the intent of the code to have the 300 mm horizontal extension of the handrails to follow the direction of the exit pathway at the top and bottom of the stair.

Sentence 3.4.6.5.(11) requires that handrails be terminated in a manner that will not obstruct pedestrian travel or create a hazard. Note A-3.4.6.5.(10) states that handrails should return to the wall, floor, or post, so as not to constitute a hazard to blind or visually-impaired persons.

If the exit pathway at the top or bottom of a stair is parallel to the stair flight, then the preferred direction of the handrail extension is parallel to the stair flight provided it does not obstruct pedestrian travel or create a hazard.

However, if the 300 mm handrail extension obstructs pedestrian travel or creates a hazard, it is acceptable to turn the handrail extension 90 degrees.

If the direction of the exit pathway at the top or bottom of a stair flight turns at an angle from the direction of the stair flight, then the 300 mm handrail extension can also turn to match the direction of the exit pathway.



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