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Proposed Change 1878

Code Reference(s):	NBC20 Div.B 3.3.1.14.(1) (first printing)
Subject:	Windows, Doors and Skylights
Title:	Nearness of Non-Exit Stairways to Doors
Description:	This proposed change expands Sentence 3.3.1.14.(1) to include a reference to the requirement in Sentence 9.9.6.6.(1) regarding the nearness of non-exit stairways to doors.
Related Code Change Request(s):	CCR 1249, CCR 1251

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input checked="" type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The National Building Code of Canada (NBC) 2020 does not require interior stairs in large buildings to be provided with any clearance between the riser edge and the swing of the door, which is inconsistent with the clearance requirements for exit doors in both large and small buildings (i.e., minimum 300 mm) in Sentences 3.4.6.11.(1) and 9.9.6.6.(1) of Division B of the NBC. The lack of a clearance requirement for interior stairs in Part 3 buildings creates a safety issue by

- impeding access to exit doors from interior stairs,
- increasing the risk that a person may be hit by the door when it is opened and subsequently lose balance and fall, and
- increasing the risk that a person may lose balance by accidentally stepping through a doorway and down onto the step of a stairway when expecting a level surface.

This problem is also inconsistent with analogous requirements in Sentence 9.9.6.6.(1), where the minimum requirements for clearance between the swing of the door and the edge of non-exit stairs in small buildings are consistent with those for exit stairs.

Justification

This proposed change would expand Sentence 3.3.1.14.(1), which specifies the requirements for ramps and stairways that do not serve as exits in large buildings, to include a reference to Sentence 9.9.6.6.(1). This would introduce a requirement for a minimum clearance of 300 mm between a stair riser and the leading edge of a door during its swing and would harmonize the minimum requirements for the clearance between non-exit stairs and doors with those in place for exit stairs. Part 3 prescribes a minimum clearance of 300 mm for exit stairs in Sentence 3.4.6.11.(1). However, this proposed change would add a cross-reference to Sentence 9.9.6.6.(1), which includes the same dimensions for minimum clearance but also includes an exemption for dwelling units.

By introducing a minimum requirement for door swing clearance for non-exit stairs in Part 3 buildings, this proposed change would help limit the probability that a person on the stairs near a door would be hit by the door if it were opened, which could lead to harm to the person.

This proposed change would also limit the probability that a person would step through a doorway and unexpectedly arrive at the step of a stairway, which could lead to the person falling and experiencing subsequent harm.

PROPOSED CHANGE

NBC20 Div.B 3.3.1.14.(1) (first printing)

[3.3.1.14.] 3.3.1.14. Ramps and Stairways

- [1] 1)** Except as permitted by Sentence (2), Article 3.3.4.7. and Subsection 3.3.2., *ramps* and stairways that do not serve as *exits* shall conform to the requirements for *exit ramps* and stairways stated in Sentences 3.4.3.2.(8) and 9.9.6.6.(1), and Articles 3.4.3.4.~~7~~ and 3.4.6.1. to 3.4.6.9.

Impact analysis

Impact on safety: This proposed change is expected to improve the safety of building occupants by ensuring that there is enough clearance between the riser edge of interior stairs and the leading edge of a door during its swing. This would limit the probability that a person on the stairs near the door would be hit by the door if it were opened, which could lead to harm to the person. This proposed change would also limit the

probability that a person would step through the doorway and down onto a step, which could lead to the person falling and experiencing subsequent harm. As a similar change has already been implemented in Part 9 buildings, this proposed change would help to harmonize the level of occupant safety in Part 3 buildings.

Impact on usable floor space in large buildings: This proposed change would introduce an explicit requirement for a minimum clearance of 300 mm between the riser edge of interior stairs and the door during its swing. For a door with a width of 850 mm, this would correspond to a footprint of approximately 2.5 m² per interior stairway leading to a door. In relation to the overall floor area of large buildings that would be affected by this proposed change, the impact on spatial demands would be negligible. A similar change can already be found in the NBC for Part 9 buildings (i.e., small buildings), which suggests that the consequences for the use of space in Part 3 buildings (i.e., large buildings) would be limited.

Impact on financial cost: The financial cost associated with this proposed change is expected to be negligible in relation to the overall construction cost of a Part 3 building, recognizing that the proposed change is already in place for Part 9 buildings. Architects may need to re-evaluate certain designs for Part 3 buildings to ensure that enough clearance is provided between the riser edge of interior stairs and the door, similar to required practice for Part 9 buildings. Harmonizing the requirements for Part 3 buildings with Part 9 buildings may simplify the design process for new buildings in the future.

Impact on the provinces and territories: Since this proposed change has not yet been implemented in any provincial or territorial building codes, the regulatory impact would be similar across Canada.

Enforcement implications

Since a similar requirement is already in place for Part 9 buildings and for exit stairs, harmonizing the requirements for interior stairs in Part 3 buildings may simplify future enforcement by authorities having jurisdiction.

This proposed change could be enforced using the existing enforcement infrastructure for Part 9 buildings.

Who is affected

The proposed change would affect

- building occupants, who would be less likely to be hit by a door while descending interior stairs in large buildings
- professional designers, building owners and building developers, who would need to implement the requirement in the design of new large buildings
- authorities having jurisdiction, who would need to enforce the new requirement

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

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[3.3.1.14.] 3.3.1.14. (**[1]** 1) no attributions