

Subject: Protection of Openings Near Unenclosed Exterior Stairs and Ramps

Background:

Article 9.9.4.4. of Division B of the National Building Code - Alberta Edition (NBC - AE), addresses the requirements for the protection of openings in the exterior wall of a building when the opening is adjacent to an unenclosed exterior exit stair or ramp and the stair or ramp provides the only means of egress for another suite. The Article specifies the proximity of when openings are deemed to be an exposure hazard to the stair or ramp and when the openings must be protected with wired glass or glass block (Figure 9.9.- 3).

The intent of this article is to limit the probability that fire will spread from a fire compartment, dwelling unit, ancillary space or common space in a house containing a secondary suite through an unprotected opening in an exterior wall and expose an exterior exit stair or ramp to fire, which could lead to a person's harm or delays in their evacuation to a safe place.

An unprotected opening in the context of this Article means a doorway, window or other opening, except one equipped with a closure having the required fire-protection rating.

The following illustration indicates the required proximity of unprotected openings in a fire compartment, dwelling or secondary suite to an unenclosed exit stair or ramp providing the only means of egress from another suite. Please note, the 3 m horizontal distance also applies to exit stairs parallel to the building face.

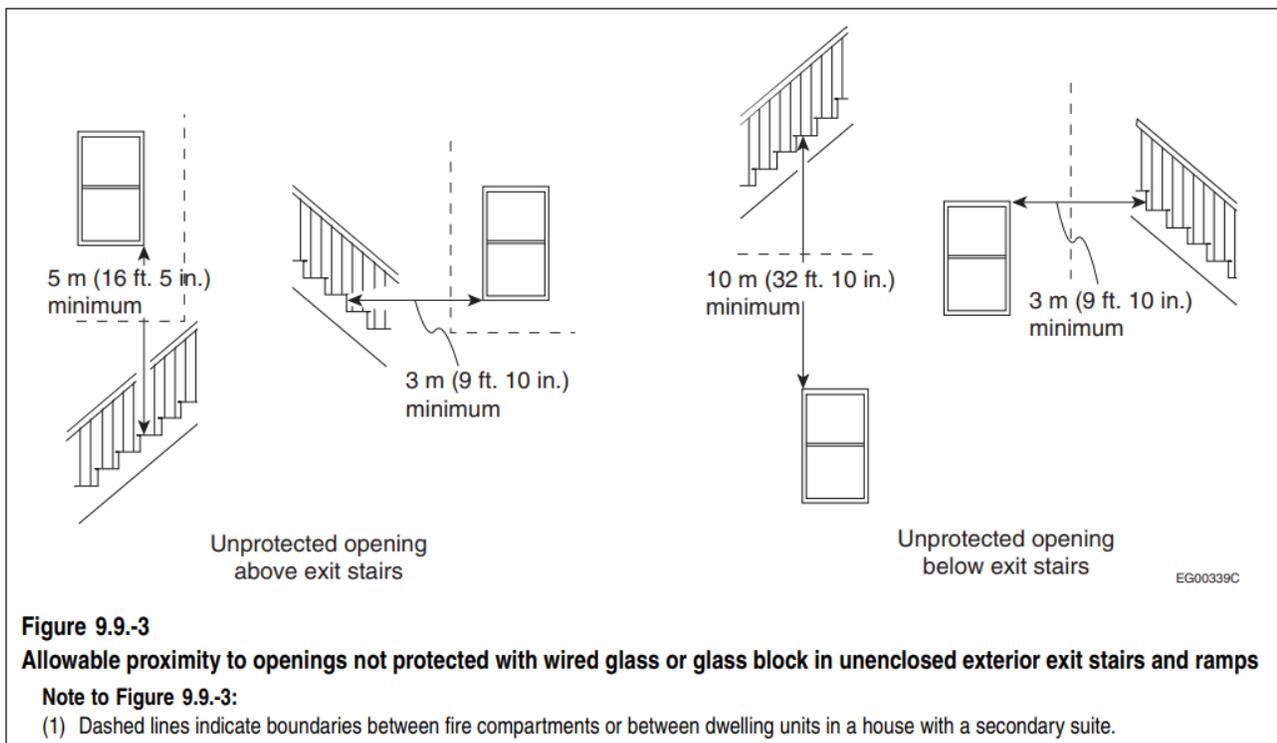


Figure 9.9.-3 has been taken from the Illustrated Users Guide – NBC 2015: Part 9 of Division B, Housing and Small Buildings

Applicable Regulatory Requirements:

As stated in Sentence 1.2.1.1.(1). of Division A of the NBC - AE, compliance with this Code shall be achieved by either of the following methods:

- a) Complying with the applicable acceptable solutions in Division B or
- b) Using alternative solutions that will achieve at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the applicable acceptable solutions.

Division B

Section 9.9. Means of Egress

9.9.4.4. Openings Near Unenclosed Exterior Exit Stairs and Ramps

- 1) Unprotected openings in exterior walls of the building shall be protected with wired glass in fixed steel frames or glass block conforming to Articles 9.10.13.5. and 9.10.13.7., where
 - a) an unenclosed exterior exit stair or ramp provides the only means of egress from a suite and is exposed to fire from unprotected openings in the exterior walls of
 - i) another fire compartment, or
 - ii) another dwelling unit, ancillary space or common space in a house with a secondary suite, and
 - b) unprotected openings in the exterior walls of the building are within 3 m horizontally and less than 10 m below or less than 5 m above the exit stair or ramp.

Attributing Objective and Functional Statements:

OS1 Fire Safety – An objective of this Code is to limit the probability that, as a result of the design or construction of the building, a person in or adjacent to the building will be exposed to an unacceptable risk of injury due to fire. The risks of injury due to fire addressed in this Code are those caused by:

OS1.5 – Persons being delayed in or impeded from moving to a safe place during a fire emergency.

The objectives of this Code are achieved by measures, such as those described in the acceptable solutions in Division B, that are intended to allow the building or its elements to perform the following functions:

F05 – To retard the effects of fire on emergency egress facilities.

Advisory:

1. Ramps and stairs that have a difference in elevation of equal to or less than 600 mm between the walking surface and the adjacent surface are not considered unenclosed exterior exit stairs or ramps.

2. In addition to the prescriptive requirements of Article 9.9.4.4., of the NBC - AE, unprotected openings in the exterior walls of a building adjacent to an unenclosed exterior exit stair or ramp can be considered protected when one of the following methods is applied:
 - a) A fire shutter activated by a fusible link located within the interior of the building is installed to the opening as a closure, provided that the window or door being protected is not designated as an egress window or door.
 - b) For a house with a secondary suite, constructed in accordance with Subsection 9.10.15. of Division B of the NBC - AE, a sprinkler system is installed throughout the building in conformance to NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes and the NBC – AE.
 - c) For a dwelling unit, constructed in accordance with Subsection 9.10.14. of Division B of the NBC - AE, a sprinkler system is installed throughout the building in conformance to NFPA 13R, Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies and the NBC – AE.
 - d) For all buildings, a water curtain which includes closely spaced sprinklers is installed in conformance to NFPA 13, Standard for the Installation of Sprinkler Systems.

For points 2. b), c), and d), an application for [Alternative Solution](#) must be submitted as part of the building permit application which provides evidence as to how the proposed variance will achieve an equivalent or greater safety performance than the acceptable solution of Division B. In all instances the applicant will have to provide a rationale as to how all points listed under the Reason for Variance within [Guide to Applying for an Alternative Solution](#) are being addressed and how the alternative proposals will achieve the objectives of the code. Professional involvement must be included as part of the Alternative Solution submission.

This interpretation was accepted by the Codes and Standards Technical Interpretation Committee (CSTIC – March 5, 2025).

Chief Building Official
The City of Calgary

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