



Advisory

October 9, 2019

(Revised May 28th, 2021)

Subject - Protection of Openings Near Unenclosed Exterior Stairs and Ramps.

Background:

The building industry and private home owners in Calgary have expressed an interest in developing Secondary Suites in single family homes as well as in Multi-family developments. An Issue with the safe egress (exiting) from the secondary suite has arisen due to the proximity of *unprotected openings* in the exposing building face of main dwelling unit. The location of the *unprotected openings* which may be adjacent to unenclosed exterior stairs and ramps which are the only means of egress from a secondary suite creates an unacceptable risk to the occupants.

Advisory:

Article 9.9.4.4., of Division B of the National Building Code – Alberta Edition 2019, addresses *unprotected openings* in the exposing building face of one dwelling unit where they are adjacent to unenclosed exterior stairs and ramps of another dwelling unit, fire compartment or a secondary suite.

The Article specifies where *unprotected openings* in the exterior walls need to be protected to reduce the risk of fire breaking out through them and interfering with the evacuation from an exterior exit stairway or ramp due to excessive heat radiation.

Exterior unenclosed stairs and ramps are also vulnerable to exposure to fire from openings such as windows. Openings located close enough to be an exposure hazard must be protected with wired glass or glass block (Figure 9.9.- 3), when the exterior stairs or ramp are the only means of egress (escape) from a suite and could be exposed to fire from unprotected openings in the exterior walls of another dwelling unit or other fire compartment.

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.

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For the purposes of this advisory, 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.

The following illustration indicates the required clearances from *unprotected openings* (windows) of another dwelling unit or fire compartment to the unenclosed exit stairs from a secondary suite.

Taken from 9.9.3 of the Illustrated Users Guide – NBC 2010 Part 9, Housing and Small Buildings.

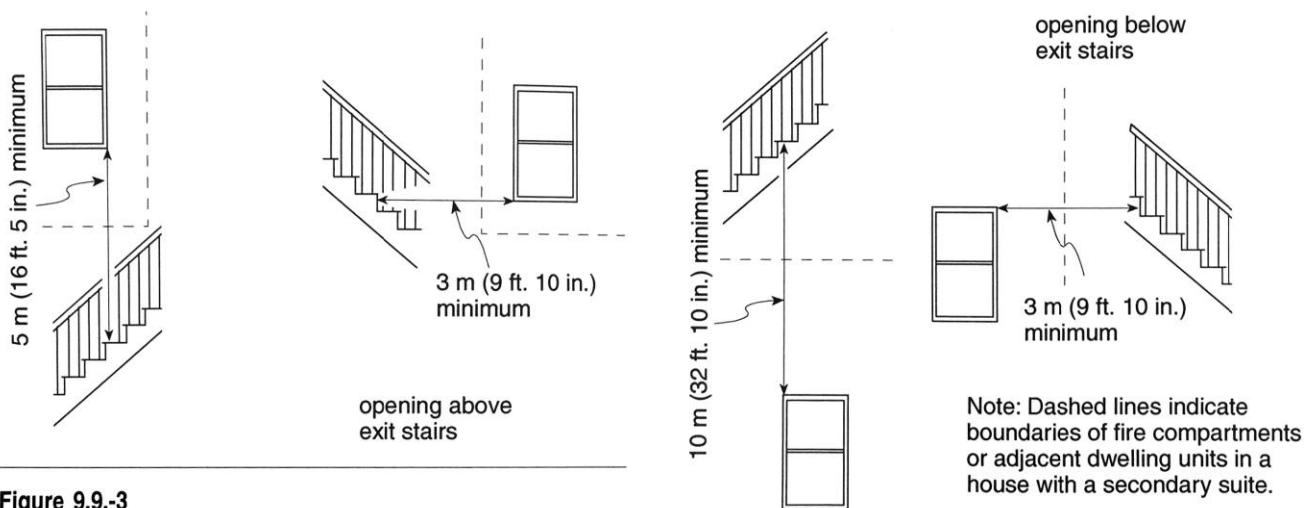


Figure 9.9-3
Allowable proximity to openings in unenclosed exit stairs and ramps not protected with wired glass or glass block

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Applicable Regulatory Requirements:

The National Building Code – Alberta Edition 2019, is an objective-based code, which means that there are two methods of achieving compliance with the code.

1. The acceptable solution method, where the applicant complies with the prescribed requirements of the code articles as mentioned above.
2. The applicant may also demonstrate that the proposed solution will meet the objective and functional statements of the individual code articles and an Alternative Solution will achieve the minimum performance level required by the ABC. The attributing functional and objective statements for the article mentioned above are as follows:

F05 - To retard the effects of fire on emergency egress facilities and

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



In addition to the prescriptive requirements of, Article 9.9.4.4., of Division B of the National Building Code – Alberta Edition, 2019, *unprotected openings* in the exposing building face, where they are adjacent to unenclosed exterior stairs and ramps, are considered protected when one of the following methods is applied:

1. Construction of a projection/roof above the entirety of the exit stair. The roof must be constructed of solid construction material such as wood, metal or concrete.
2. The installation of a fire shutter activated by a fusible link provided that the window is not designated as an egress window.
3. An application for an [Alternative Solution](#) which provides evidence as to how the proposed variance will achieve an equivalent or greater safety performance than the acceptable solution of Division B. Options which may be considered, but would not be limited to: a complete NFPA 13D sprinkler system, or a sprinkler protected glazing system. 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.

Chief Building Official
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Planning & Development