

BC BUILDING CODE INTERPRETATION COMMITTEE
AIBC, APEGBC, BOABC, POABC

File No: 98-0153

INTERPRETATION

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Interpretation Date: September 19, 2006

Building Code Edition: BC Building Code 1998

Subject: Exterior walls meeting at an angle

Keywords: Exterior walls, spatial separation, exposure protection, 135° angle, D_o, unprotected openings, unsprinklered

Building Code Reference(s): 3.2.3.13.(1) and (2)

Question:

Sentence 3.2.3.13.(1) requires a minimum distance D_o but not less than 1m, between unprotected openings in the exterior walls of 2 different fire compartments, if the exterior horizontal angle between the 2 respective fire compartment exterior walls containing the unprotected openings, is parallel or less than 135° (except as in Sentence 3.2.3.13.(3) for sprinklered buildings).

Sentence 3.2.3.13.(2) requires the exterior walls within the distance required by Sentence 3.2.3.13.(1), to have a fire resistance rating not less than that of the interior vertical fire separation between each fire compartment and the remainder of the building (except as in Sentence 3.2.3.13.(3) for sprinklered buildings).

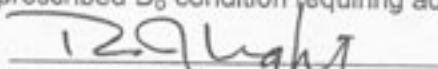
1. Do the requirements of Sentences 3.2.3.13.(1) and (2) apply if there are unprotected openings (but no window openings) in the exterior walls of the 2 fire compartments, within the D_o distance?
2. Do the requirements of Sentences 3.2.3.13.(1) and (2) apply if there is an unprotected opening or window opening in the exterior wall of only one of the 2 fire compartments?

Interpretation:

1. Yes.

Sentences 3.2.3.13.(1) and (2) are intended to reduce the possibility of fire being transmitted from one unprotected opening through another adjacent unprotected opening, thereby possibly spreading fire from one fire compartment into another. Unprotected openings are deemed to be incapable of containing an interior fire for a sufficient duration, as compared to a typical exterior fire rated wall containing no unprotected openings.

Note that the phrase 'unprotected opening' is used rather than just 'opening'. This differs from the Part 9 version of these requirements. Unprotected opening is defined as any opening not protected by a required fire rated closure, or any portion of an exterior wall having a fire resistance rating less than that required for the exposing building face. 2 specific fire protection measures are prescribed by the Building Code where adjacent windows or unprotected openings are placed within the prescribed D_o condition requiring additional protection, as follows:


R. J. Light, Committee Chair

The views expressed are the consensus of the joint committee of AIBC, APEGBC, BOABC, and POABC, which form the BC Building Code Interpretation Committee. The purpose of the committee is to encourage uniform province wide interpretation of the BC Building Code. These views should not be considered as the official interpretation of legislated requirements based on the BC Building Code, as final responsibility for an interpretation rests with the local Authority Having Jurisdiction. The views of the joint committee should not be construed as legal advice.

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- The respective unprotected openings must be spaced apart by the minimum calculated D_o distance, but not less than 1m. This creates an acceptable spatial separation distance between the exposing unprotected openings.
- The minimum specified distance between the unprotected openings must have a fire resistance rating equal to the interior vertical fire separation between the fire compartment and remainder of the building. This acts as a protective vertical spandrel between the adjacent unprotected openings. It should be noted that in the case of an exterior wall having no window openings but containing portions within the D_o distance that have a fire resistance rating less than that required for the exposing building face, those portions having a lesser rating are considered similar to window openings, in which case Sentences 3.2.3.13.(1) and (2) have to be applied.

2. Yes.

Sentences 3.2.3.13.(1) and (2) are intended to reduce the possibility of fire being transmitted from one unprotected opening through another adjacent unprotected opening, thereby possibly spreading fire from one fire compartment into another. Unprotected openings are deemed to be incapable of containing an internal fire for a sufficient duration, as compared to a typical exterior fire rated wall containing no unprotected openings. Therefore, 2 specific fire protection measures are prescribed by the Building Code where adjacent windows or unprotected openings are placed within the prescribed D_o condition requiring additional protection, as follows:

- The respective unprotected openings must be spaced apart by the minimum calculated D_o distance, but not less than 1m. This creates a mitigating spatial separation distance between the exposing unprotected openings.
- The minimum specified distance between the unprotected openings must have a fire resistance rating equal to the interior vertical fire separation between the fire compartment and the remainder of the building. This acts as a protective vertical spandrel between the adjacent unprotected openings.

If one fire compartment has an exterior wall unprotected opening, but not the other, Sentence 3.2.3.13.(1) is met as there is adequate distance separation provided. Sentence 3.2.3.13.(2) is met as there is no other unprotected opening of another fire compartment, exposed to the single exterior wall unprotected opening.

However, it should be noted that if the exterior wall having no window openings does contain portions within the D_o distance that have a fire resistance rating less than that required for the exposing building face, that portion having a lesser rating is considered similar to a window opening, in which case Sentences 3.2.3.13.(1) and (2) will still have to be applied.


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