

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

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INTERPRETATION

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Interpretation Date:

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Subject:

Combustible components in exterior walls

Keywords:

Combustible; exterior walls; cladding; foamed plastic

Building Code Reference(s):

3.1.5.5., 3.1.5.12., 3.2.3.7., 3.2.3.8. See also 98-0012

Question:

A sprinklered, Part 3 building is required by Subsection 3.2.2 to be of noncombustible construction. One or more exposing building faces are within close proximity to the property line such that less than 10% unprotected openings are permitted. Therefore, Sentence 3.2.3.7.(1) or 3.2.3.7.(4) require these exterior wall assemblies to be of noncombustible construction.

1. For the exposing building faces that are permitted not more than 10% unprotected openings, is foamed plastic insulation permitted in these exterior wall assemblies?
2. For the exposing building faces that are permitted more than 10% unprotected openings, what options are available to protect the foam plastic insulation?

Interpretation:

1. No.

Article 3.1.5.1. states that a building or part thereof required to be constructed of noncombustible construction shall be constructed of noncombustible materials [except for exemptions noted in Sentence 3.1.5.1.(1)].

The building code requires combustible, foamed plastic, insulation to be protected from a fire exposure on the

- Interior side of an exterior wall assembly by a thermal barrier (12.7 mm gypsum wallboard, for example) [refer to Sentence 3.1.5.12.(3)]; and
- Exterior side of an exterior wall assembly by:
 - An assembly demonstrated not to contribute to vertical fire spread [refer to Sentence 3.1.5.5.(1).] or
 - Noncombustible protective material [refer to Article 3.2.3.8.];

The protection of foamed plastic insulation on the interior side of exterior walls is intended to minimize the potential for the combustible insulation from contributing to the spread and growth of an interior fire. The thermal barrier is required to be one of the generic materials identified in Sentence 3.1.5.12.(3) or any thermal barrier that will meet the stated pass/fail criteria in Sentence 3.1.5.12.(3) when tested in conformance with CAN/ULC-S101-M "Fire Endurance Tests of Building Construction and Materials". This test standard is intended to represent the fire severity of an interior fire exposure.



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.

2. Options for the protection of foamed plastic insulation used in the exterior wall assembly of a sprinklered building or a building not more than 3 storeys in building height include the following:

The protection of foamed plastic insulation on the exterior side of exterior walls is intended to minimize the potential of the combustible foamed plastic insulation to contribute to the spread and growth of a fire over the exterior wall that could breach floor fire separations and expose neighbouring buildings to fire. Where more than 10% unprotected openings are permitted, the building code provides 2 options to protect the combustible foamed plastic insulation in the exterior wall assembly from contributing to the exterior fire spread:

Option A: Comply with Article 3.1.5.5., which requires fire testing in accordance with CAN/ULC-S134 "Fire Tests of Exterior Wall Assemblies." The fire exposure in this case is based on a venting exterior flame (refer to CAN/ULC-S134 "Fire Tests of Exterior Wall Assemblies"). Sentence 3.1.5.1.(1) specifically states that "except for an exposing building face required to conform to Sentence 3.2.3.7.(1) or Sentence 3.2.3.7.(4), an exterior non-load bearing wall assembly that includes combustible components is permitted to be used in a building required to be of noncombustible construction..." This option is available only where more than 10% unprotected openings are permitted. Restricting the use of this option to configurations that are permitted more than 10% unprotected openings acknowledges that the combustible components may compromise the ability of the exterior wall to prevent fire spread to a neighbouring building for short limiting distances. This restriction is consistent with the increasing construction requirements that apply as limiting distance decreases.

Or

Option B: Comply with Article 3.2.3.8., which requires fire testing in accordance with CAN/ULC-S101 "Fire Endurance Tests of Building Construction and Materials." The objective is to confirm that the noncombustible protective material will stay in place, reducing the potential for the foamed plastic layer to contribute to the growth or spread of fire on the exterior wall assembly, which could also expose neighbouring buildings. This option is available regardless of the unprotected openings permitted. That is, there is no restriction on the percent unprotected openings (or the limiting distance) permitted. The combustible components are effectively protected with noncombustible materials such that the potential for vertical fire spread or horizontal fire spread to a neighbouring building is acceptable.


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