

BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing
AIBC, EGBC, BOABC

File No: 18-0192

INTERPRETATION

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Interpretation Date: September 27, 2022

Building Code Edition: BC Building Code 2018

Subject: Integrity of fire rating protection for supporting column

Keywords: Fire rating integrity, column, building services, access hatch

Building Code Reference(s): 3.1.7.1.(2), D-2.6.5, 3.1.9.

Question:

Sentence 3.1.7.1.(2) permits an assembly of materials to be assigned a fire-resistance rating on the basis of Appendix D. If a supporting column is thus protected in accordance with Appendix D-2.6.5;

1. Is it acceptable to have cast iron rainwater leader piping located inside the cavity of the fire rated assembly enclosing the column?
2. Is it acceptable to have System 15 rated rainwater leader piping located inside the cavity of the fire rated assembly enclosing the column?
3. If the answers to 1. and 2. are yes, is a fire rated access hatch required for cleanout access related to drain pipes that are located inside the cavity of the fire rated assembly enclosing the column?
4. Are horizontal joints permitted for the gypsum board membrane if a 2 layered gypsum board system is used for the fire rated membrane, with joints overlapped?

Interpretation:

1. Yes.

If the protective fire rated assembly is properly attached to the column, the cast iron rainwater leader located in the cavity is not likely to have an adverse effect on the performance of the enclosing fire rated gypsum membrane assembly. Since insulation is not required in the cavity for fire protection purposes, any piping located in the cavity would not have the effect of compromising such a requirement for insulation. However, insulation may be required for other reasons, such as the Plumbing Code.

Firestopping to Section 3.1.9 requirements must be provided if the piping penetrates the fire rated assembly.



Patrick Shek, P.Eng., CP, FEC, Committee Chair

The views expressed are the consensus of the joint committee with members representing AIBC, EGBC and BOABC, which form the BC Building Code Interpretation Committee. The Building and Safety Standards Branch, Province of BC and the City of Vancouver participate in the committee's proceedings with respect to interpretations of the BC Building Code. 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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2. Yes.

If the protective fire rated assembly is properly attached to the column, the System 15 rated rainwater leader located in the cavity is not likely to have an adverse effect on the performance of the enclosing fire rated gypsum membrane assembly. The plastic piping would likely fail at a much lower temperature than the column.

Since insulation is not required in the cavity for fire protection purposes, any piping located in the cavity would not have the effect of compromising such a requirement for insulation. However, insulation may be required for other reasons, such as the Plumbing Code.

Firestopping to Section 3.1.9 requirements must be provided if the piping penetrates the fire rated assembly.

3. Yes, subject to installation requirements.

Any required access to building services located inside the cavity of the fire rated assembly enclosing the column, such as to cleanout junctions, must be protected with a fire rated closure such as a fire rated access hatch. The performance of the continuity of fire rated enclosure is dependent on reliable fire rated access hatch details and listings. Detailing considerations should include practicality of opening and closing or removal and replacement of the fire rated access hatch, to address the risk of the access opening being left open after maintenance or repair work. Signage should be provided advising that the fire rated hatch must be kept closed for protection.

4. Yes, subject to installation requirements.

Appendix D reference D-2.6.5.(2) indicates the Type X gypsum board shall be applied vertically without horizontal joints. This is interpreted to mean unsupported horizontal joints. If the joints are properly supported to prevent premature opening of the gypsum board joints, then the protection performance would be acceptable. This applies to single layer or multiple layer situations. Even if layers of gypsum board are overlapped, proper continuous joint support must be provided for the gypsum board fasteners penetrating past the inner gypsum board layer.

Careful consideration must be given to coordinating and integrating the various Code requirements beyond fire protection, such as but limited to: thermal and condensation effects, components movement, and Part 5 provisions.



Patrick Shek, P.Eng., CP, FEC, Committee Chair

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