

BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing
AIBC, EGBC, BOABC

File No: 18-0093

INTERPRETATION

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Interpretation Date:	January 19, 2021
Building Code Edition:	BC Building Code 2018
Subject:	Firestopping of outlet boxes
Keywords:	Firestopping, outlet boxes, combustible outlet boxes, noncombustible outlet boxes, FT rating
Building Code Reference(s):	3.1.9.1., 3.1.9.2., 3.1.9.3., 3.1.9.4.

Question:

1. Is firestopping required for combustible outlet box penetrations of a fire rated assembly?
2. Is firestopping required for noncombustible outlet box penetrations of a fire rated assembly?

Interpretation:

1. Yes.

Sentence 3.1.9.3.(5) permits combustible outlet boxes to be used in a fire rated assembly without being incorporated in the fire test referenced in Sentence 3.1.9.2.(1), provided the opening through the membrane is not more than 0.016m².

However, Sentences 3.1.9.1.(2) and (3) require FT rated firestopping for penetrations of firewalls, horizontal fire separations designed to Article 3.2.1.2, and fire separations designed to Sentence 3.6.4.2.(2).

In addition, Sentence 3.1.9.4.(1) requires that FT rated firestopping be provided, based on CAN/ULC-S115, "Fire Tests of Firestop Systems", at outlet boxes penetrating a membrane forming part of a fire rated assembly.

2. Yes, except for certain situations.

Sentence 3.1.9.1.(1) requires that penetrations of a fire separation or a membrane forming part of a fire rated assembly, be:

- a) Firestopped based on CAN/ULC-S115, "Fire Tests of Firestop Systems",
- b) Cast in place, or
- c) Tightly fitted.



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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In addition, Sentences 3.1.9.1.(2) and (3) require FT rated firestopping based on CAN/ULC-S115, "Fire Tests of Firestop Systems", for penetrations of firewalls, horizontal fire separations designed to Article 3.2.1.2, and fire separations designed to Sentence 3.6.4.2.(2).

Sentence 3.1.9.4.(1) further requires that FT rated firestopping be provided at outlet boxes penetrating a membrane forming part of a fire rated assembly, except for vertical fire separations, or a membrane forming part of a fire rated assembly, if the following limitations are met for the outlet boxes:

- Maximum area 0.016m² with an aggregate area of 0.065m² in any 9.3m² of surface area,
- Annular space between the membrane and the noncombustible outlet box must not exceed 3mm.

The following therefore summarizes the firestopping requirements for outlet boxes:

Penetrated Assembly	Outlet Box type	Firestop	Comments / exceptions	Code Reference
Ceiling membrane forming part of fire rated assembly, or horizontal fire rated assemblies (except as provided further on)	Combustible	FT rated		3.1.9.1.(1) 3.1.9.4.(1)
	Noncombustible	FT rated	Firestopping not required if: <ul style="list-style-type: none">▪ Maximum area 0.016m²▪ Aggregate area 0.065m² in any 9.3m² surface area▪ Annular space between membrane and noncombustible outlet box ≤ 3mm	3.1.9.1.(1) 3.1.9.4.(1) 3.1.9.4.(2)
Ceiling membrane forming part of fire rated assembly designed to 3.6.4.2.(2)	Combustible	FT rated		3.1.9.1.(3)
	Noncombustible	FT rated		3.1.9.1.(3)
Floors / Roofs designed to Article 3.2.1.2.	Combustible	FT rated		3.1.9.1.(2)
	Noncombustible	FT rated		3.1.9.1.(2)
Vertical Fire Separations	Combustible	FT rated		3.1.9.1.(1) 3.1.9.4.(1)

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Vertical Fire Separations (except for firewalls)	Noncombustible	FT rated	Firestopping not required if: <ul style="list-style-type: none"> ▪ Maximum area 0.016m² ▪ Aggregate area 0.065m² in any 9.3m² surface area ▪ Annular space between membrane and noncombustible outlet box ≤ 3mm 	3.1.9.1.(1)
				3.1.9.4.(1)
Firewalls	Combustible	FT rated		3.1.9.4.(2)
	Noncombustible	FT rated		3.1.9.1.(2)

Notes:

1. The Notes to Part 3, A-3.1.9.4 for Outlet Boxes indicates: For the purposes of Article 3.1.9.4, outlet boxes include, but are not limited to, electrical boxes, junction boxes, high and low voltage outlets, switches, enclosures for electrical equipment, laundry boxes, and shower diverters.
2. In addition to firestopping requirements, Sentence 3.1.9.4.(3) requires that outlet boxes at opposite sides of a vertical fire separation be separated by a minimum 600mm horizontal distance, or fireblocking conforming to Article 3.1.11.7.
3. Sound separation integrity requirements must also be considered for outlet box penetrations.
4. Refer also to previous BC Building Code Interpretation 18-0021.



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