BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing

AIBC, EGBC, BOABC

Interpretation Date:	July 19, 2023
Building Code Edition:	BC Building Code 2018, Book I: General
Subject:	Firestopping for Rated Assemblies that are not Fire Separations
Keywords:	Firestopping; Fire Separations; Rated Assemblies
Building Code Reference(s):	Division B, 9.10.5.1.; 9.10.8.1.; 9.10.15.5.

Question(s):

1. Does a loadbearing wall, required to have a fire-resistance rating as per Sentence 9.10.8.3.(1), require firestopping tested to CAN/ULC-S115 where combustible DWV piping penetrates the membrane of the wall assembly?

2. Does a non-loadbearing wall, required to have a fire-resistance rating as per Article 9.10.15.5,, require firestopping tested to CAN/ULC-S115 where combustible DWV pipe penetrates the wall assembly?

3. If electrical service panels and media panels are installed in either wall described in question 1 or 2, would they be required to conform to have a listed firestop system?

4. Do similar penetrations into the membrane forming part of a wall assembly required only to provide a fire-resistance in Part 3 construction also require a firestop system?

1. Yes.

   In Part 9 construction, the requirements of Articles 9.10.8.1. and 9.10.8.3. describe the need for certain loadbearing walls to have a fire-resistance rating but does not include a requirement for these to be fire separations. Sentence 9.10.9.7.(2) which includes the provisions for firestopping penetrations of a membrane that forms part of an assembly required to have a fire-resistance rating by combustible DWV piping.

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

This concern arises where the combustible DWV piping could be damaged or consumed in a fire, which could lead to the creation of an opening in the membrane of an assembly that would compromise the ability of that assembly to achieve the required fire-resistance rating. Consequently, firestopping tested to CAN/ULC-S115 to achieve the 'F' rating corresponding to the loadbearing wall in which this is installed is required by Sentence 9.10.9.7.(2).

2. Yes.

   The requirements of Sentences 9.10.9.7.(2) and (3) make no distinction between load-bearing and non-load conditions in wall assemblies that required a fire-resistance rating. If the assembly is required to have a fire-resistance rating because of spatial separation as per Article 9.10.15.5., then firestopping tested to CAN/ULC-S115 is required. Any applicable loadbearing conditions are simply factored into the testing that determines the capacity of the assembly to achieve a given fire-resistance.

3. Yes.

   The root provisions of Sentence 9.10.5.1.(1) are generally intended to require penetrations through a wall or ceiling membrane forming part of an assembly (i.e. not a membrane fire-resistance per Appendix D 2.3.12.) to have been specifically tested for such use unless they fully comply with the identified exceptions of Sentences 9.10.5.1.(2) to (4). This typically includes the use of assemblies listed by recognized testing agencies are one means by which compliance with such testing can be readily demonstrated to the local authority having jurisdiction.

   Electrical outlet boxes referenced by 9.10.5.1.(2) are permitted to penetrate the membrane of an assembly required to have a fire-resistance rating if tightly fitted. However, these are listed and tested equipment under the provision of the Canadian Electrical Code and limited in size.

   Electrical service panels and media panels typically do not conform to testing that is consistent with those of outlet boxes, and these are also considerably larger than typical

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

outlet boxes. This could place assemblies required to achieve a fire-resistance rating at a greatly increased risk of failure due to direct exposure to fire if the box fails, or as a consequence of greater heat transfer due to the sizable discontinuity of the protective membrane.

4. Yes – in most cases.

   The provisions of Part 3 are conceptually similar, although there are specific differences in language, generally as it pertains to exceptions. Broadly speaking, Article 3.1.9.1. addresses the continuity of fire separations or the membrane of assemblies providing a fire-resistance rating, and generally requires firestopping tested to CAN/ULC-S115 to maintain continuity.

   3.1.9.1. Fire Stops
   (1) Except as provided in Sentences (2) to (5) and Article 3.1.9.4., penetrations of a fire separation or a membrane forming part of an assembly required to have a fire-resistance rating shall be […]

   Similarly, Article 3.1.9.3. and 3.1.9.4 provides a set of requirements for electrical outlet boxes, but differing in that there is an exception for firestopping only for noncombustible outlet boxes meeting certain dimensional requirements. Combustible outlet boxes must be firestopped.

   Article 3.1.9.5. addresses combustible DWV piping penetrations, in both fire separations and the membrane of assemblies with a fire-resistance rating, but here the language is slightly different leading to slightly different outcomes, but generally requiring firestopping to be testing to CAN/ULC-S115, but also the more stringent requirement of testing with a 50 Pa pressure differential.

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