



# PERMITS AND INSPECTIONS BULLETIN

## Building Department bulletin regarding Fire Separation

This bulletin was published to provide clarification regarding the code requirements for Fire Separations for residential suites and multi-family residential units, as addressed in the 2018 BC Building Code.

### Code Requirements:

In Part 9, Housing and Small Buildings, section 9.10 of the 2018 BC Building code addresses the requirements of fire protection in a Part 9 Building.

In Part 3, Fire Protection, Occupant Safety and Accessibility, Section 3.1.7, 3.1.8 & 3.1.9 of the 2018 BC Building code addresses the requirements of fire protection in a Part 3 Building.

### Fire Resistance Rating:

Refer to article **A-9.10.3.1** for code prescribed fire-resistance rated assemblies.

**Note:** *A ceiling assembly with a single layer of 1/2" or 5/8" Type X drywall applied directly to wood joists or wood I-joists does not have a fire resistance rating. Refer to **Table A-9.10.3.1.B** for approved fire resistance assemblies.*

### Penetrations in ceiling assemblies:

Articles **3.1.9. & 9.10.9.6.** states that pipes, ducts, electrical outlet boxes, totally enclosed raceways or other similar devices that penetrate an fire resistant assembly shall be non-combustible or as outlined in Article 9.10.9.6.

### Potlights:

Due to the quantities and concentration of potlights, the number of potlights exceed the typical amount of ceiling boxes, continuity of the fire rated assembly must be maintained around the potlights. Potlights are only permitted to penetrate the ceiling fire separation, if the fire separation is maintained around the potlights.

Acceptable solutions for maintaining the fire separation are to line the joist cavity, around the pot, with

- 2 layers of 5/8" Type X Drywall or
- at least 3" of rock wool board insulation.

With a large number of the "puck style" potlights, the best method may be to do a drop ceiling below the fire rated ceiling assembly; therefore any amounts of lights can be installed with no effect to the fire separation.



### **Ducts:**

Article **D-2.3.10.** states that ducts are permitted to penetrate a ceiling membrane not in excess of a 1 hr fire resistance rating, if the depth of the ceiling concealed space is greater than 230 mm (9") and the clearance between the bottom of the duct and the ceiling membrane is more than 100mm (4"). If the ceiling assembly meets these requirements then a duct can penetrating assembly, but if the duct opening exceeds 130 cm<sup>2</sup> (20 in<sup>2</sup>) [or 5" in diameter] then a fire damper must be installed where the duct penetrates the membrane or by thermally protecting the duct by installing the same material as the ceiling membrane around the duct extending 200 mm (8") beyond the opening.

**Note:** *This requirement is for buildings that have a fire rated ceiling assembly. For example, ceiling/floor of an apartment/condo to the unit above, single family dwelling ceiling between main house and suite, etc. This is not a complete lists of requirements for penetrations to a fire rated assembly. Please refer to the current edition of the BC Building Code.*

### **Bathtub/Shower against fire rated assemblies:**

Bathtubs are not outlined as a permitted openings under Article **9.10.5.** Fire-resistance ratings shall be continuous as per Article **9.10.9.2.**; the wall fire separation shall be continuous behind the tub and/or shower from the ceiling to the floor prior to the installation of the tub or shower. Tub and shower drains must be non-combustible and fire stopped in accordance with Article **9.10.9.6.** **Please call for an inspection of the fire separation** prior to the installation of a tub or shower where it is installed against a fire separation.

### **Load Bearing Walls that support ceiling assemblies:**

Article **9.10.8.3.** addresses fire-resistance ratings of all loadbearing walls, columns and arches. These load bearing assemblies shall have a fire-resistance rating of not less than floor or roof assembly that it is supporting.

**In conclusion, when dealing with fire separations; please discuss details with the building official after demolition and prior to commencing any work pertaining to a fire separations.**