



## **BULLETIN RB06-010**

(Updated 2015 Dec 10)

### **FIRE DAMPERS IN DUCTS PASSING THROUGH VERTICAL FIRE SEPARATIONS BETWEEN SUITES**

**Reference: Sentence 3.1.8.8.(5) and Sentence 3.3.1.1.(1)**

**Sentence 3.1.8.8.(5)** “A continuous noncombustible duct having a melting point above 760oC that penetrates a vertical fire separation as required by **Sentence 3.3.1.1.(1)** between suites of other than residential or care or detention occupancy need not be equipped with a fire damper at the fire separation, provided the duct is tightly sealed at the penetration on all sides and extends for at least 1 m on both sides of the fire separation without any openings.”

**Sentence 3.3.1.1.(1)** “Except as permitted by Sentences (2) and (3), each suite in other than business and personal services occupancies shall be separated from adjoining suites by a fire separation having a fire-resistance rating of not less than 1 h. (See also **Subsection 3.3.3.** for care or detention occupancies, **Article 3.3.4.2.** for residential occupancies and **Article 3.1.8.7.** for fire dampers.)”

#### **Question:**

Does this relaxation of fire dampers also apply to fire separations between suites of different occupancy classifications?

#### **Commentary / Relevant Facts:**

**Sentence 3.1.8.8.(5)** relaxes the requirement for fire dampers in ducts passing through fire separations between suites required under **Sentence 3.3.1.1.(1)**, except in the case of residential and care or detention occupancies.

**Article 3.3.1.1.** refers to separations between suites, not between occupancies. Two areas of different occupancy require occupancy separations under **Sentence 3.1.3.1.(1)** and **Table 3.1.3.1.** Two areas of the same occupancy require suite separations in accordance with **Article 3.3.1.1.**

Therefore some confusion exists as to the intent of the relaxation in **Sentence 3.1.8.8.(5)** and to what extent it should be applied when the fire separations have the same 1 hour rating whether a suite separation or an occupancy separation.

The consideration governing this situation is not under which **Sentence (i.e. Sentence 3.3.1.1.(1) or Sentence 3.1.3.1.(1))** the fire separation is required, but the rating of the fire separation through which the duct passes. There is no justification to apply this relaxation to a duct passing through a 1 hr. fire separation between, for example, two Group A Division 2 occupancies (required under **Sentence 3.3.1.1.(1)**) and not apply it to a 1 hr. fire separation between a Group D occupancy and a Group A Division 2 occupancy (required under **Sentence 3.1.3.1.(1)**). Obviously, the first situation poses the greater hazard, due to the higher aggregate occupant load and combustible content involved.

Therefore the Alberta Municipal Affairs - Safety Services interprets that the relaxation in **Sentence 3.1.8.8.(5)** of the requirement for fire dampers for ducts passing through fire separations between suites to be based solely on the fire rating required of the fire separation, and not on the occupancies on the opposite sides of the fire separation. This is subject to other limitations stated in the Code (see below).

### **Conclusion:**

Fire dampers are not required in ducts passing through fire separations separating suites of similar or different occupancy classifications provided such fire separations are not required to have a fire resistance rating of more than 1 hour. This is subject to the following conditions:

1. This relaxation does not apply to ducts passing through fire separations with a Group B or Group C occupancy on one or both sides.
2. The duct must be continuous and be of sheet metal and have a melting point above 7600 C.
3. There should be no flexible duct or combustible components in the duct run.
4. A "continuous" duct for this purpose may have registers on either or both sides of the fire separation, these being at least 1.0 m away from the vertical fire separation.**(Sentence 3.1.8.8.(5))**
5. Transfer grilles require a fire damper.
6. This ruling does not apply to fire separations separating any other area in the building, e.g. exits, public corridors, service rooms, service shafts, storage rooms, janitor's rooms, etc. even though such fire separations may only be required to have a fire resistance rating of 1 hour or less. Such ducts must be provided with fire dampers in the appropriate points of intersection with the vertical fire separations as required by the Code.

Chief Building Inspector

**This bulletin is issued by The City of Calgary Inspections & Permit Services.**

Unless stated otherwise, the Code references in this bulletin are to Division B of the Alberta Building Code 2014 (ABC 2014). Bulletins do not overrule the ABC 2014 nor constitute a relaxation of the Code. They serve to clarify the Code in areas where the latter is ambiguous or does not cover a specific topic. Bulletins are City of Calgary clarifications for staff use to enable consistency in the application of the Code. These bulletins should always be read in the context of the appropriate requirements of the Code.