Variance SPV-006
June 19, 2025

Subject: Firewall in a Rowhouse with Secondary Suites

Background:

A variance is written permission to build, install, process or otherwise act in a manner not consistent with the provisions of an applicable code but which provides, in the opinion of the Authority Having Jurisdiction (AHJ) or safety codes officer, an equivalent or greater level of safety to persons or property.

As stated in Sentence 1.2.1.1.(1). of Division A of the National Building Code – Alberta Edition (NBC-AE), compliance with this Code shall be achieved by either of the following methods:

a) Complying with the applicable acceptable solutions in Division B or
b) Using alternative solutions that will achieve at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the applicable acceptable solutions.

Note: *Standing Posted Variances (SPV) cannot be altered or deviated from. Any modification to the scope or application will require the prescriptive requirements of Division B to be followed or a site-specific variance to be applied for. If a site-specific variance is applied for to vary Division B, Sentence 9.10.11.2.(2) professional involvement is required as part of the application.*

Applicable regulatory requirements:

National Building Code - Alberta Edition
Division B, Sentence 9.10.11.2.(2) Firewalls Not Required
Division B, Sentence 9.10.13.13.(1) Fire Dampers

Reason for Variance:

Sentence 9.10.11.2.(2) of Division B of the National Building Code - Alberta Edition requires that in a building which contains more than 2 houses, a party wall that separates any two adjacent houses with a secondary suite, shall be constructed as a firewall. This is intended to create separate buildings, each containing no more than two adjacent houses with a secondary suite, see Figure 1.

Due to the complexity and the structural requirements of a firewall, professional involvement is required for its design. The complexity of a firewall increases the time it takes to review building permit applications with them. The inclusion of a firewall in a building also increases the time and cost of construction for the project. It is seen as an impediment to housing affordability, and it can slow the ability of getting new housing to market quickly.

When an applicant wants to add a secondary suite to an existing rowhouse building, that does not already have a firewall, it is often not feasible for them to achieve this prescriptively. Applying for an alternative solution is often beyond their means and capabilities.

A review of building codes in other Canadian jurisdictions for alternatives to firewalls in rowhouses with secondary suites was conducted. It was found that other jurisdictions use passive fire protection methods. They require fire separations between dwelling unit(s) and exits, and enhanced egress for the dwelling units when only shared egress facilities are provided. An example of a shared egress facility is a stair which is accessible to both the principal dwelling unit and secondary suite.

Passive fire protection through compartmentation is a key element in allowing an alternative to a firewall by containing and controlling fire spread within a building. This aligns with the Objectives and Functional Statements attributed to Sentence 9.10.11.2.(2).

The review of building codes in other Canadian jurisdictions helped inform the basis of SPV-006. This variance intends to limit fire to the fire compartment of origin with the addition of fire separations with a fire-resistance rating to the secondary suites. It also intends to limit damage due to structural failure with the requirement that all loadbearing walls and columns in the storey immediately below a floor assembly, shall have a fire-resistance rating of not less than that required for the supported floor.

Additionally, SPV-006 provides for an enhanced and safer path of egress for occupants in an emergency, when only shared egress facilities are provided. It also encourages the sprinklering of buildings by providing an alternative to a second means of egress and the fire-resistance rating of the fire separations, see Figure 2.

Acceptable method of Variance:

Where a design incorporates the fire safety features as identified below, a firewall required by Division B 9.10.11.2.(2) need not be provided.

1. **Fire Separations for Exits**
    a) Where an exit is located in a house with a secondary suite including their common spaces, the exit shall be separated from adjacent floor areas with a fire separation,
    b) have a fire-resistance rating not less than 45 min., or
    c) that is not required to have a fire-resistance rating if the building is sprinklered.

2. **Separation of Residential Suites**
    a) In a house with a secondary suite, dwelling units shall be separated from each other and from ancillary spaces and common spaces with a fire separation,
    b) have a fire-resistance rating not less than 45 min., or
    c) that is not required to have a fire-resistance rating if the building is sprinklered.

3. **Construction of Fire Separations with a Fire-Resistance Rating**
    Where a fire-resistance rating is required, such rating shall be determined in conformance with
    a) Article 9.10.3.1., or
    b) construction that is deemed to satisfy the requirements of 9.10.3.1. having
        i) walls and floor/ceiling assemblies framed with wood studs, wood joists or wood I joists,
        ii) joist/stud spaces filled with preformed rock or slag fibre insulation(1),
        iii) resilient channel on one side of the fire separation spaced 400 or 600 mm on centre, and
        iv) not less than 15.9 mm thick Type X gypsum board on ceilings and both sides of walls(2), and
    c) all loadbearing walls, columns and arches in the storey immediately below a floor assembly shall have a fire-resistance rating of not less than that required for the supported floor or roof assembly.

(1) National Building Code - Alberta Edition Division B, D-2.3.4.(4) Method of Calculation *– Spaces between wall studs and structural members of floor assembly filled with preformed insulation of rock or slag fibres conforming to CAN/ULC-S702.1, "Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification," and having a mass per unit area of not less than 1.22 kg/m2 of wall/floor surface.*

(2) National Building Code - Alberta Edition Division B, D-2.3.8. Edge Support for Gypsum Board in Wall Assembly *– Gypsum board installed over framing or furring in a wall assembly shall be installed so that all edges are supported, except that 15.9 mm Type X gypsum board may be installed horizontally with the horizontal joints unsupported when framing members are at 400 mm on centre maximum.*

4. **Two Separate Exits**
    a) For dwelling units in a house with a secondary suite where an egress door from either dwelling unit opens onto a shared egress facility and the dwelling unit is served by only a single exit, a second and separate means of egress need not be provided if the building is sprinklered or if the dwelling units have separate and direct access to
        i) a balcony, or
        ii) an openable window conforming to Clauses 9.9.9.1.(2)(a) and (b).

5. **Ventilation, Air Ducts and Fire Dampers**
    a) Ducts penetrating fire separations need not be equipped with fire dampers in conformance with Article 9.10.13.13. provided they are noncombustible having a melting point not below 760°C with all openings in the duct system serving only one fire compartment.
    (See also Clause 9.33.1.1.[3])
    b) Drawings are submitted with the building permit application for heating, ventilating and air-conditioning systems showing the size and continuity of all pipes, ducts, shafts, flues and fire dampers; the location, size, capacity and type of all principal units of equipment, and the size and location of all combustion air and ventilation openings.

6. **Doors and Penetrations**
    a) Door openings in fire separations shall be protected by closures with a minimum 20 min fire-protection rating, or a 45 mm thick solid core wood door in accordance with 9.10.13.2. and shall be installed with a self-closing device.
    b) Penetrations of fire separations are to be sealed in accordance with 9.10.9.6.

7. **National Building Code - Alberta Edition**
    a) Excepting the points noted above, all other acceptable solutions and technical requirements for secondary suites as outlined in the National Building Code - Alberta Edition must be satisfied for an application proposing to use this SPV.

Attributing Objective and Functional Statements:

OS1 Fire Safety

An objective of this Code is to limit the probability that, as a result of the design or construction of the building, a person in or adjacent to the building will be exposed to an unacceptable risk of injury due to fire. The risks of injury due to fire addressed in this Code are those caused by:

- **OS1.2** – fire or explosion impacting areas beyond its point of origin.

OP1 Fire Protection of the Building

An objective of this Code is to limit the probability that, as a result of the design, construction or demolition of the building, the building or adjacent buildings will be exposed to an unacceptable risk of damage due to fire or structural insufficiency, or the building or part thereof will be exposed to an unacceptable risk of loss of use also due to structural insufficiency.

- **OP1.2** - fire or explosion impacting areas beyond the building of origin.

OP3 Protection of Adjacent Buildings from Fire

An objective of this Code is to limit the probability that, as a result of the design or construction of the building, adjacent buildings will be exposed to an unacceptable risk of damage due to fire. The risks of damage to adjacent buildings due to fire addressed in this Code are those caused by:

- **OP3.1** - fire or explosion impacting areas beyond the building of origin.

The objectives of this Code are achieved by measures, such as those described in the acceptable solutions in Division B, that are intended to allow the building or its elements to perform the following functions:

- **F03** – to retard the effects of fire on areas beyond its point of origin.

This variance is based on:

- British Columbia Building Code 2024
- Vancouver Building By-law 2019 (VBBL)
- Reference to Variance SPV-006 and compliance with the construction requirements is included in the permit documents submitted by the applicant to obtain a building permit.
- Reference to Variance SPV-006 is included within the permit conditions of the building permit.

Address:

Where referenced as (SPV-006) within the building permit conditions, this Variance shall be applicable to the address of the building permit.

Authority and conditions:

Under the authority of Section 38 of the Safety Codes Act, Chapter S-1 of the Statues of Alberta 2000, this variance is granted based on:

- The owner/contractor acknowledging the authority under which the variance is issued by virtue of referencing this variance number (SPV-006) in the Building Permit documentation.
- The owner and contractor ensuring that the project is carried out as outlined in this variance.

If this variance is relied upon to obtain a permit, non-compliance with the requirements of this variance are an offence under the Safety Codes Act.

This Standing Posted Variance (SPV) was accepted by the Codes and Standards Technical Interpretation Committee (CSTIC) meeting on June 19, 2025.

Chief Building Official
The City of Calgary

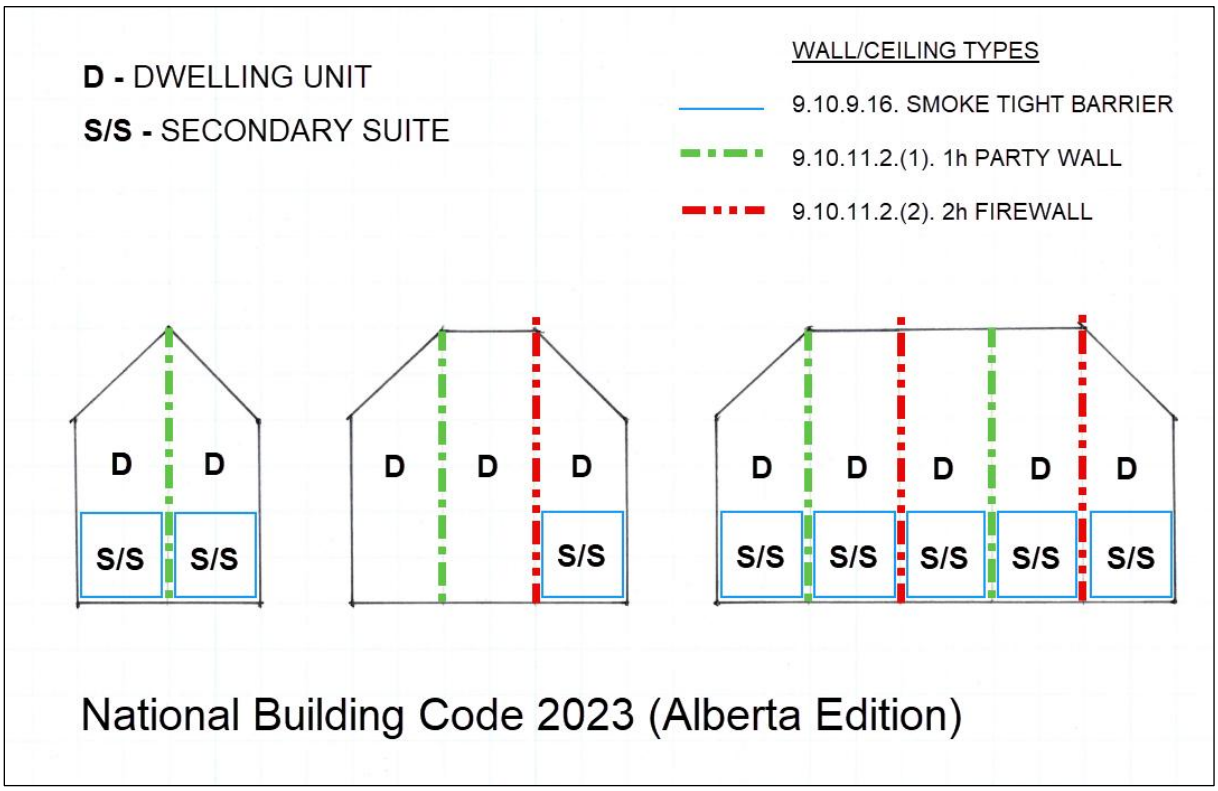

Figure 1.

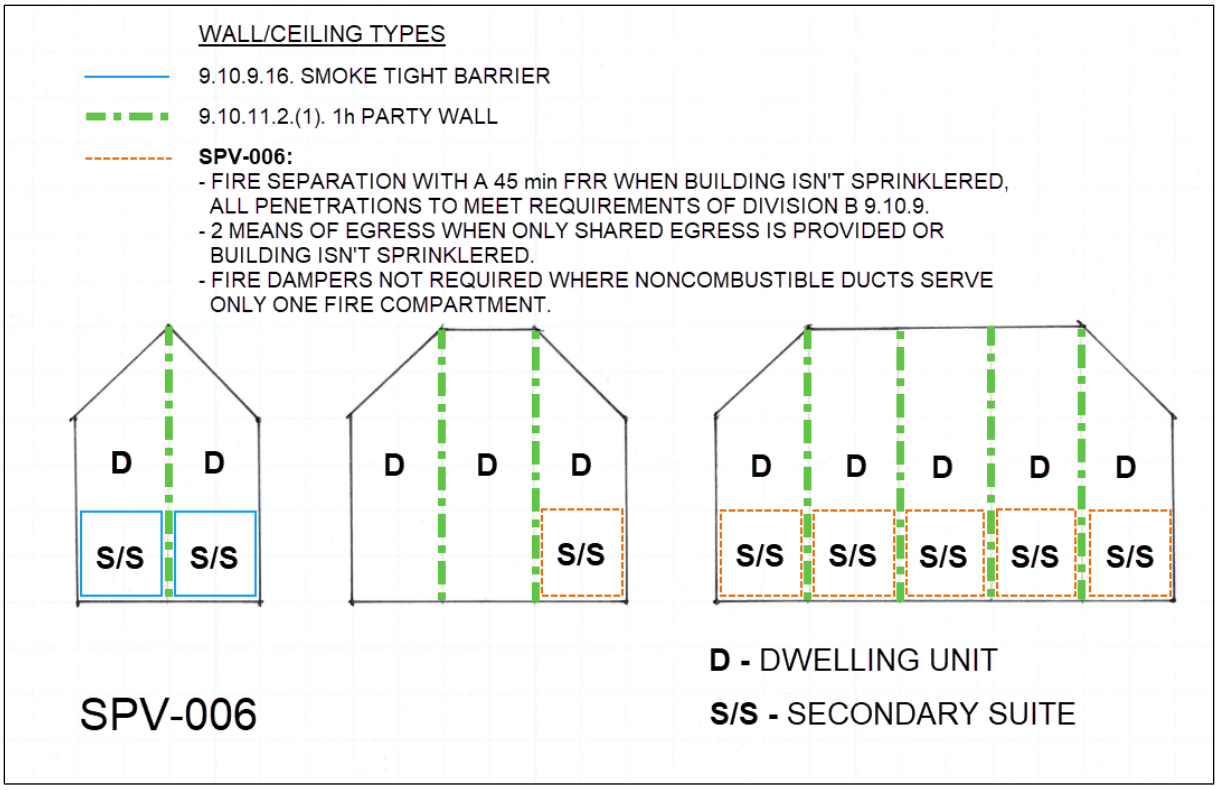

Figure 2.