Secondary Suites within a Single-Family Dwelling
2018 BC Building Code Requirements

Fire Separations

***It is important to note that for existing or unfinished building's, the requirements stated in Division B of BCBC and this document can be met through alternative compliance methods adherent to table 1.1.1.1.(6) in Division A of the 2018 BCBC. [See Building Advisory #2)**

Fire Separation of Residential Suites 9.10.9.14.(3) - Dwelling units that contain 2 or more storeys including basements as well as houses with a secondary suite including their common spaces shall be separated from the remainder of the building by a fire separation having a fire-resistance rating of not less than 1 h. (See Note A-3.3.4.4.(1).)

Fire Separation of Residential Suites 9.10.9.14.(4) - 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.

In addition to meeting 9.10.9.14.(3) if applicable, the Fire Separations noted in 9.10.9.14.(4), must comply with one of the fire-resistance ratings, applicable smoke alarm installation and sound transmission ratings of A, B, C or D below:

A) having a fire-resistance rating not less than **15 minutes** where all smoke alarms within the house are of photo-electric type and interconnected as described below:

In a house with a secondary suite, including their common spaces, all smoke alarms shall be of photo-electric type and interconnected so that the actuation of any one smoke alarm causes all smoke alarms within the house and within the secondary suite, including their common spaces, to sound (9.10.19.5.(2)(a)). (see also Sentence 9.10.3.1.(2)),

In a house with a secondary suite including their common spaces, where a minimum fire-resistance rating of **15 minutes** is permitted, the construction described in Clause 9.11.1.1.(2)(a) is permitted to be used.

I) Where a house contains a secondary suite, each dwelling unit shall be separated from every other space in the house in which noise may be transmitted by:
   a. construction having joist spaces filled with sound-absorbing material of not less than 150 mm, stud spaces filled with sound-absorbing material,
   b. resilient channel on one side of the separation spaced 400 or 600 mm o.c., and not less than 12. 7 mm thick gypsum board on ceilings and on both sides of walls,
   c. construction providing an STC rating of not less than 43, or

III. a separating assembly and adjoining constructions, which together provide an **ASTC rating of not less than 40**. (See also Sentence 9.10.3.1.(2) and Note A-9.11.1.1.(2).) – [note excerpt shown on next page]

BCBC Note A-9.11.1.1.(2) Sound Transmission in Houses with a Secondary Suite. Controlling sound transmission between dwelling units is important to the occupants' health and well-being. Although this may be difficult to achieve in an existing building, it is nevertheless necessary that a minimum level of sound transmission protection be provided between the dwelling units in a house with a secondary suite. A somewhat reduced level of performance is acceptable in the case of secondary suites because the occupants of the house containing a secondary suite are only affected by the sound of one other unit and, in many cases, it is the owner of the house who will decide on the desired level of protection. Sound resistance can be improved by selecting furnishings and finishings that absorb sound, such as carpet.

B) having a fire-resistance rating not less than **30 minutes** where additional smoke alarms of photo-electric type are installed and interconnected as described below:

In a house with a secondary suite, including their common spaces, an additional smoke alarm of photo-electric type shall be installed in each dwelling unit and common space and be interconnected so that the actuation of one smoke alarm will cause the additional smoke alarms in the other dwelling unit, or common spaces to sound (9.10.19.5.(2)(b)). (see also Sentence 9.10.3.1.(3)),

In a house with a secondary suite including their common spaces, where a minimum fire-resistance rating of **30 minutes** is permitted, it is permitted to use construction having:

I. walls and floor/ceiling assemblies framed with wood studs,

II. joist spaces filled with:
   a. preformed insulation of rock or slag fibres conforming to CAN/ULC-S702, "Mineral Fibre Thermal Insulation for Buildings," having a mass per unit area of not less than 1.22 kg/m2 of floor surface, OR
   b. wet-blown cellulose fibres conforming to CAN/ULC-S703, "Cellulose Fibre Insulation for Buildings", having a density of not less than 50 kg/m3 to a minimum depth of 90 mm on the underside of the subfloor and the sides of the structural members,

III. stud spaces of;
   a. non-loadbearing-assemblies filled with preformed insulation of glass fibres conforming to CAN/ULC-S702, "Mineral Fibre Thermal Insulation for Buildings," having a mass per unit area of not less than 0.6 kg/m2 of wall surface, AND

b. loadbearing assemblies filled with preformed insulation of rock or slag fibres conforming to CAN/ULC-S702, "Mineral Fibre Thermal Insulation for Buildings," having a mass per unit area of not less than 1.22 kg/m2 of wall surface, or filled with insulation of cellulose fibres conforming to CAN/ULC-S703, "Cellulose Fibre Insulation for Buildings," having a density of not less than 50 kg/m3,

IV. resilient channel on one side of the fire separation spaced 400 or 600 mm o.c., AND

V. not less than 12.7 mm thick gypsum board on ceilings and on both sides of walls.

(See also Clause 9.11.1.1.(2)(a).)

Where a house contains a secondary suite, each dwelling unit shall be separated from every other space in the house in which noise may be transmitted by:

I. construction having,
   a. joist spaces filled with sound-absorbing material of not less than 150 mm nominal thickness,
   b. stud spaces filled with sound-absorbing material,
   c. resilient channel on one side of the separation spaced 400 or 600 mm o.c., AND
   d. not less than 12. 7 mm thick gypsum board on ceilings and on both sides of walls,

II. construction providing an **STC rating of not less than 43**, or

III. a separating assembly and adjoining constructions, which together provide an **ASTC rating of not less than 40.** (See also Sentence 9.10.3.1.(2) and Note A-9.11.1.1.(2).)

Note: *This option is similar to the 2018 BCBC requirements prior to the December 2019 revision. The December revision to the 2018 BCBC now includes smoke alarms in common areas. The typical smoke alarms conforming to CANIULC-S531, required within each of the dwelling units, are not required to be a specific type (they can be ionized). However, they must be interconnected within each unit so that the actuation of any one smoke alarm causes all the smoke alarms within both of the units to sound.*

C) having a fire-resistance rating not less than **45 minutes** when smoke alarms are not installed and interconnected as described in (A) or (B) above:
Additional photo-electric smoke alarms and interconnection of smoke alarms between dwelling units and common spaces in a house with a secondary suite are not required as per 9.10.19.5.(3)(a).

Note: *Smoke Alarms are still required to be installed as described under 9. 10. 19.*

9.10.19.1. Required Smoke Alarms

1) Except as permitted by Article 9.10.19.8., smoke alarms conforming to CAN/ULC-S531, "Standard for Smoke Alarms," shall be installed in
   a) each dwelling unit,
   b) each sleeping room not within a dwelling unit, AND
   c) ancillary spaces and common spaces not in dwelling units in a house with a secondary suite. (see 9. 10. 19. 8. for Residential Fire Warning Systems)

D) that the fire separation is not required to have a fire-resistance rating if the building is sprinklered: Additional photo-electric smoke alarms and interconnection of smoke alarms between dwelling units and common spaces in a house with a secondary suite are not required as per 9.10.19.5.(3)(b).

Note: *Smoke Alarms are still required to be installed as described under 9. 10. 19.*

9. 10. 19. 1.Required Smoke Alarms

1) Except as permitted by Article 9.10.19.8., smoke alarms conforming to CAN/ULC-S531, "Standard for Smoke Alarms," shall be installed in
   a) each dwelling unit,
   b) each sleeping room not within a dwelling unit, AND
   c) ancillary spaces and common spaces not in dwelling units in a house with a secondary suite.(see 9. 10. 19. 8. for Residential Fire Warning Systems)

Fire Separation of Public Corridor 9.10.9.15. -A public corridor located in a house with a secondary suite shall be separated from the remainder of the spaces in the house with a fire separation.

Smoke Alarms 9.10.19. & 9.32.4.2.

The 2018 BCBC requires smoke alarms (ionization or photo-electric) in each dwelling unit as specified in 9. 10. 19. 3. (below) and also requires additional smoke alarms in common areas and between suites in dwellings with secondary suites. Installation of photo-electric smoke alarms and the type of interconnection affects the fire-resistance rating required between a dwelling and a secondary suite (as detailed under Fire Separation above.

Carbon monoxide alarms will be required if there is a fuel-burning appliance or a solid fuel-burning appliance or the dwelling contains a storage garage. (see Carbon Monoxide (CO) Alarm below)

Note: Wireless technology is acceptable for interconnecting smoke alarms in houses with secondary suites; however, each smoke alarm must be installed with a permanent electrical connection.

Location of Smoke Alarms - 9.10.19.3. Within each dwelling unit, sufficient smoke alarms shall be installed:

1) so that at least one smoke alarm is installed on each storey, including the basement,
2) on any storey with a sleeping room, a smoke alarm is to be installed in each sleeping room,
3) in a location between the sleeping rooms and the remainder of the storey, and
4) if the sleeping rooms are served by a hallway, the smoke alarm shall also be located in the hallway. Smoke alarms shall be installed on or near the ceiling.

Required Smoke Alarms - 9.10.19.1.(1)(c) Smoke alarms shall also be installed in ancillary spaces and common spaces not within dwelling units in a house with a secondary suite.

Interconnection of Smoke Alarms - 9.10.19.5.(1) Where more than one smoke alarm is required in a dwelling unit, the smoke alarms shall be interconnected so the actuation of one alarm will cause all alarms within the dwelling unit to sound.

Power Supply - 9.10.19.4. Smoke alarms are to be installed with permanent electrical connections, and with a battery alternative power source.

Carbon Monoxide (CO) Alarm - 9.32.4.2

Are required where a residential occupancy is served by a fuel-burning appliance or a solid fuel-burning appliance or contains a storage garage.

Are required for each suite sharing a wall, floor or ceiling assembly with a storage garage or is adjacent to an attic or crawl space.

1) The Carbon Monoxide (CO) alarms required above are to be located in each bedroom or within 5 m of each bedroom door,
2) Where a fuel-burning appliance serves a residential occupancy and is installed in a service room that is not in a suite (i.e., in a common area), the CO alarms are to be located in the service room and each bedroom or within 5 m of each bedroom door.
3) CO alarms are required in rooms with a solid fuel-burning appliance.
4) In a dwelling unit with a secondary suite and common areas, the CO alarms are to be interconnected so that actuation of any one CO alarm causes all CO alarms to sound.
5) The interconnection of CO alarms can be accomplished using wireless technology

Note: Some Smoke Alarms are combination alarms which include the carbon monoxide alarm.

Fire-Resistance and Fire-Protection Ratings 9.10.3.1.

Required fire-resistance rating shall be determined in conformance with:

1) the test methods described in Part 3 of the BCBC,
2) the calculation method presented in Appendix D (BCBC), or
3) the construction speCifications presented in Tables 9.10.3.1.-A and 9.10.3.1.-B. (BCBC).

The construction specifications described below are permitted for a 15- and 30-minute fire-resistance rating.

In a house with a secondary suite, including their common spaces, where a minimum fire-resistance rating of **15 minutes** is permitted, the construction described in 9.11.1.1 (2)(a) is permitted.

Note: *Sound Transmission Assembly meets the 15-minute fire-resistance rating.*

In a house with a secondary suite, including their common spaces, where a minimum fire-resistance rating of **30 minutes** is permitted, it is permitted to use construction having:

1. Walls and floor/ceiling assemblies framed with wood studs and joists, joist spaces filled with:

    a. preformed insulation of rock or slag fibres conforming to CAN/ULC-S702, "Mineral Fibre Thermal Insulation for Buildings", having a mass per unit area of not less than 1.22 kg/m2 of floor surface, or
    b. wet-blown cellulose fibres conforming to CAN/ULC-S703, "Cellulose Fibre Insulation for Buildings", having a density of not less than 50 kg/m3 to a minimum depth of 90mm on the underside of the subfloor and the sides of the structural members.

2. Non-load bearing Stud spaces filled with:
    a. preformed insulation of glass fibres conforming to CAN/ULC-S702, "Mineral Fibre Thermal Insulation for Buildings", having a mass per unit area of not less than 0.6 kg/m2 of wall surface, and

3. Load bearing Stud spaces filled with:
    a. preformed insulation of rock or slag fibres conforming to
        i. CAN/ULC-S702, "Mineral Fibre Thermal Insulation for Buildings", having a mass per unit area of not less than 1.22 kg/m2 of wall surface,

ii. or filled with insulation of cellulose fibres conforming to CAN/ULC-S703, "Cellulose Fibre Insulation for Buildings," having a density of not less than 50kg/m3,

4. Resilient channel on one side of the fire separation spaced 400mm or 600mm (16" or 24") o.c., and not less than 12.7mm (1/2") thick gypsum board on ceilings and on both sides of walls.

Sound Transmission Assembly and 15-minute Fire Resistance Rating 9.11.1.1

For occupants' health and well-being, a required Sound Transmission Class (STC rating) of 43 has been added to the secondary suite requirements. This can be accomplished with the assembly listed below, or other construction assemblies found in Tables 9.10.3.1.-A and 9.10.3.1.-B. or Apparent Sound Transmission Class (ASTC rating) not less than 40. Details of how to achieve an ASTC rating can be found in the Notes to Part 9 of the 2018 BCBC . .

9.11.1. Protection from Airborne Noise

9.11.1.1. Required Protection

1) Except as provided in Sentences (2) and (3), a dwelling unit shall be separated from every other space in a building in which noise may be generated by:
   a) a separating assembly and adjoining constructions, which together provide an apparent sound transmission class (ASTC) rating of not less than 47, or
   b) a separating assembly providing a sound transmission class (STC) rating of not less than 50 and adjoining constructions that conform to Article 9.11.1.4. (See Note A-9.11.1.4.)

2) Where a house contains a secondary suite, each dwelling unit shall be separated from every other space in the house in which noise may be transmitted by:
   a) construction having:
      i) joist spaces filled with sound-absorbing material of not less than 150 mm nominal thickness,
      ii) stud spaces filled with sound-absorbing material,
      iii) resilient channel on one side of the separation spaced 400 or 600 mm o.c., and
      iv) not less than 12. 7 mm thick gypsum board on ceilings and on both sides of walls,
   b) construction providing an STC rating of not less than 43, or
   c) a separating assembly and adjoining constructions, which together provide an ASTC rating of not less than 40.

(See also Sentence 9.10.3.1.(2) and Note A-9.11.1.1.(2))

3) Construction separating a dwelling unit from an elevator shaft or refuse chute shall have an STC rating of not less than 55.

Note: *Common spaces must also have a sound separation from the dwelling units.*

Door Openings to be Protected with Closures 9.10.9.3. & 9.10.13.3.

Doors in a fire separation with a required fire-resistance rating of **45 minutes** or less need not have a fire-protection rating (FPR; i.e., no CAN/ULC rating required) provided that they are:

1) at least 45 mm (1-3/4") thick solid core wood doors
2) have a self-closing device, and
3) hung in a wood door frame 38 mm (1-1/2") thick

Note: *A 45 mm door is deemed to provide a 20-minute fire-protection rating (FPR) and is not required to be marked with a CANIULC rating.*

Exit Protection

Openings Near Unenclosed Exterior Exit Stairs and Ramps 9.9.4.4.

Unprotected openings in exterior walls of the building shall be protected with wired glass in fixed steel frames or glass block conforming to Articles 9.10.13.5. and 9.10.13.7., where an unenclosed exterior exit stair or ramp provides the only means of egress from a suite and is exposed to fire from unprotected openings in the exterior walls of:

1) another fire compartment, or
2) another dwelling unit, ancillary, or common space in a house with a secondary suite;

and unprotected openings in the exterior walls of the building are within 3 m (9' 10-1/8") horizontally and less than 10 m (32' 9-11/16") below or less than 5 m (16' 4-7/8") above the exit stair or ramp.

Openings Near Exit Doors 9.9.4.6.

Where an exterior exit door in one fire compartment is within 3 m (9' 10-1/8") horizontally of an unprotected opening in another fire compartment and the exterior walls of these fire compartments intersect at an exterior angle of less than 135°, the opening shall be protected with:

1) wired glass in fixed steel frames conforming to Article 9.10.13.5., or

2) glass block conforming to Article 9.10.13. 7.

Ancillary Rooms 9.9.5.9.

Ancillary rooms such as storage rooms, washrooms, toilet room, laundry rooms, and service rooms shall not open directly into an exit.

Note: *In a dwelling unit with a secondary suite, this may be an issue where both the secondary suite and the dwelling unit exit through one common space within the building.*

Safety

Two Separate Exits 9.9.9.2.

For dwelling units in a house with a secondary suite, it may not be required to go in more than one direction to an exit from the location where the egress door opens onto a public corridor or exterior passageway when the building is sprinklered or if each dwelling unit has its own separate and direct access from each storey to
a balcony, or
an openable window that is not less than 1 m (3' 3-3/8") in height and 0.55 m (21-5/8") in width, and located so the sill is not more than 1 m (3' 3-3/8") above the floor and 7 m (23') above adjacent ground level.

Shared Egress Facilities 9.9.9.3.

1) Where a dwelling unit is located above another dwelling unit or common space in a house with a secondary suite, the upper dwelling unit shall be provided with a second and separate means of egress where an egress door from that dwelling unit opens onto:
   a) an exit stairway
   b) a public corridor
   c) an exterior passageway
   d) a balcony

Plumbing

Combustible Drain, Waste, and Vent Piping 9.10.9.7.

Note: *The December 2019 revision to the 2018 BCBC removed the Article permitting a penetration of combustible piping in a vertical assembly protected with 12. 7 mm (1/2") gypsum board for a dwelling unit with a secondary suite. The Article 9. 10. 9. 7. now applies,*

which includes the use of combustible pipe, fire stopped with the appropriate F-rating at the fire separations.

Combustible drain, waste, and vent piping not located in a vertical shaft is permitted to penetrate a fire separation required to have a fire-resistance rating, provided the piping is sealed at the penetration by a fire-stop that has an F rating not less than the fire-resistance rating required for the fire separation.

Note: *Many types of fire-stop systems are permitted if tested to the CANIULC-115-M standard. Fire-stop systems are designed for specific wall or ceiling construction, types of penetration, and specific fire-resistance rating. Only the appropriate type of listed fire-stop systems should be used. Typical systems used with combustible pipe are intumescent Sealants and Fire-Stop Collars or Sleeves.*

Ventilation and Heating

Required Ventilation 9.32.1.2.

Ventilation for Smoke Control - The control of smoke transfer between dwelling units in a house with a secondary suite, or between the dwelling units and other spaces in the house, is a critical safety issue. Providing a second ventilation system to serve the two dwelling units is an ideal solution for achieving a minimum acceptable level of fire safety. Other solutions to providing separate ventilation systems for the dwelling units must address smoke control.

Ventilation for Air Exchange - The provision of a ventilation system for the purpose of maintaining acceptable indoor air quality is a critical health issue. However, Sentence 9.32.1.2.(3)&(4) allows exits, public corridors, and common areas in houses with a secondary suite to be unventilated. Lack of active ventilation of these spaces is considered acceptable because occupants do not spend long periods of time there and because exits are somewhat naturally ventilated when doors are opened.

A self-contained heating-season ventilation system serving a single dwelling unit or a house with a secondary suite, including their common spaces, shall comply with Subsection 9.32.3. In houses that contain a secondary suite including their common spaces, heating-season ventilation need not be provided for:

1) Exits,
2) public corridors, and
3) ancillary spaces that are not within a dwelling unit

Design and Installation 9.32.3.2.

Heating and ventilation systems between suites must be separate or be designed and inspected by a Mechanical Engineer.

In a house with a secondary suite, including their common spaces, where a heating or ventilation system serves more than a single dwelling unit, the system shall be designed and installed to prevent the circulation of smoke upon a signal from a duct-type smoke detector.

Except as provided in Sentence 9.10.9.6.(14), ducts penetrating fire separations shall be equipped with fire dampers in conformance with Article 3.1.8.10.

Duct Penetration of Fire Separations 9.10.9.6.(14)

In a house with a secondary suite, including their common spaces, ducts penetrating fire separations need not be equipped with fire dampers in conformance with Article 3.1.8.10. provided they are non-combustible with all openings in the duct system serving only one fire compartment.

Note: Common areas require fire separations from the dwelling unit and the secondary suite. Consideration is required in the design of the heating system of the common areas to ensure the fire separation remains intact.

Heating System Controls 9.33.4.3.(1)

Where a single heating system serves two dwelling units and common spaces in a house with a secondary suite, it must be possible for the occupants to control the temperature in their own suites.

Note: *This Sentence, which applies only to electric, fuel-fired, or unitary heaters and hydronic heating systems, specifies that separate temperature controls must be provided in each dwelling unit in a house with a secondary suite; however, the controls for shared spaces may be located in those spaces or in one of the suites.*

Room I Egress Dimensions 9.5.3.1., 9.9.3.3. & 9.9.3.4.
Height of Rooms and Spaces Table 9.5.3.1.

The minimum height of rooms or spaces in a secondary suite shall be not less than 2.1 m (6' 10-11 /16") in height over the lesser of area of the space, or as identified below for each type of room.

Table 9.5.3.1.
Room Ceiling Heights
Forming Part of Sentences 9.5.3.1.(1) and (4)

Room or Space	Minimum Ceiling Height, m	Minimum Clear Height, m	Minimum Area Over Which Minimum Ceiling Height Shall Be Provided(1)
Living room or space	2.1		Lesser of area of the space or 10.0 m^2
Dining room or space	2.1		Lesser of area of the space or 5.2 m^2
Kitchen or kitchen space	2.1		Lesser of area of the space or 3.2 m^2
Master bedroom or bedroom space	2.1		Lesser of area of the space or 4.9 m^2
Other bedroom or sleeping space	2.1		Lesser of area of the space or 3.5 m^2
Unfinished *basement* including laundry area therein		2.0	Clear height under beams and in any location that would normally be used for passage
Bathroom, water-closet room or laundry area above *grade*	2.1		Lesser of area of the space or 2.2 m^2
Passage, hall or main entrance vestibule	2.1		Area of the space
Habitable rooms and spaces not specifically mentioned above	2.1		Lesser of area of the space or 2.2 m^2

Notes to Table 9.5.3.1.:
(1) Area of the space shall be measured at floor level.

Width and Height of Corridors 9.9.3.3. & 9.9.3.4.

The clear width and height of a public corridor and exit corridor that serve only a house with a secondary suite, including common spaces, shall be not less than 860mm (2' 9-7/8") and 2m (6 '6-3/4") respectively.

Door Sizes 9.5.5.1.

Swing-type doors in an entrance, vestibule and utility doors, in a dwelling unit or house with a secondary suite, including common spaces, must be 810mm (2' 7-7/8") wide by 1.98m (6' 6") high.

Where doors in an exit or access to exit serve more than a single dwelling, they shall comply with the following Articles in 9.9.6.:

1) The exit width shall not be decreased by more than 100mm (4") in exit corridors and 50mm (2") for other exit facilities,

2) The swing of doors shall not reduce the width of the path of travel to less than the required width in exit corridors and passageways, and 750 mm (2' 5-1/2") on exit stairs or landings,
3) The clear opening height of doors providing exit or access to exit shall be not less than 1.98 m (6'6") high.
4) The clear opening width of doorways in an exit or access to exit from a suite shall be not less than 800 mm (2' 7-1 /2") wide,

Note: *Minimum door size will be 864mm (2' 1 O") to meet this requirement.*

5) The distance between a stair riser and leading edge of a door during its swing shall be not less than 360 mm (14-3/16"),
6) An exit door may open onto not more than one step provided the riser of the step does not exceed 150 mm (6"),

Note: *The exit doors serving a house with a secondary suite are permitted to swing inward all other exit doors are required to swing outward in direction of exit travel.*