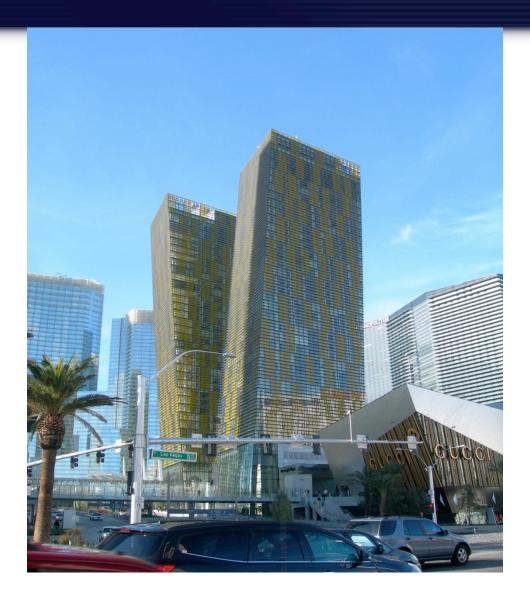


2012 Code Change

Highlights of Code Change Part 9





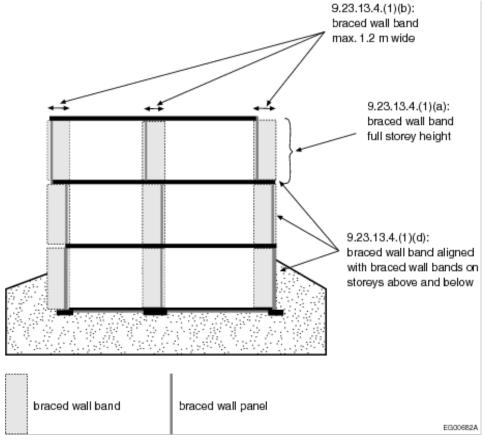


• Definitions 1.4.1.2.

 Braced wall band means an imaginary continuous straight band extending vertically and horizontally through the building or part of the building, within which braced wall panels are constructed.



Appendix - A 9.23.13.4.



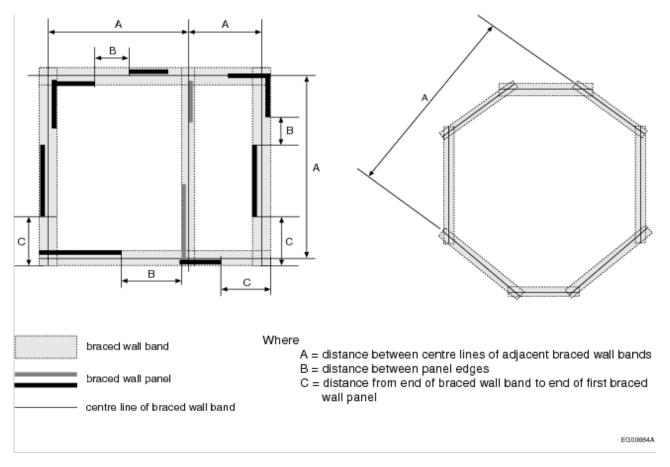


Definitions 1.4.1.2.

 Braced wall panel means a portion of a woodframe wall where bracing, sheathing, cladding or interior finish is designed and installed to provide the required resistance to lateral loads due to wind or earthquake.



• Appendix – Table 9.23.13.5





- Definitions 1.4.1.2
- Care means the provision of services other than treatment by or through care facility management to residents who require these services because of cognitive, physical or behavioural limitations.
- Care occupancy means the occupancy or use of a building or part thereof where care is provided to residents. (See Appendix A.)



A- 1.4.1.2.(1) Defined Terms Care Occupancy

Support services rendered by or through care facility management refer to services provided by the organization that is responsible for the care for a period exceeding 24 consecutive hours. They do not refer to services provided by residents of dwelling units or suites, or to services arranged directly by residents of dwelling units or suites with outside agencies.

In the context of care occupancies, these services may include a daily assessment of the resident's functioning, awareness of their whereabouts, the making of appointments for residents and reminding them of those appointments, the ability and readiness to intervene if a crisis arises for a resident, supervision in areas of nutrition or medication, and provision of transient medical services. Services may also include activities of daily living such as bathing, dressing, feeding, and assistance in the use of washroom facilities, etc. **No actual treatment is provided by or through care facility management.**



- Definitions 1.4.1.2.
- Combustible dusts means dusts and particles that are ignitable and liable to produce an explosion.
- Combustible fibres means finely divided, combustible vegetable or animal fibres and thin sheets or flakes of such materials which, in a loose, unbaled condition, present a flash fire hazard, including cotton, wool, hemp, sisal, jute, kapok, paper and cloth.



• Definitions 1.4.1.2.

Cooktop means a cooking surface having one or more burners or

heating elements.

Dangerous goods means those products or substances that are regulated by the "Transportation of Dangerous Goods Regulations." (See Table 3.2.7.1. of Division B of the NFC.)



- Definitions 1.4.1.2.
- **Detention occupancy** means the *occupancy* by persons who are restrained from or are incapable of evacuating to a safe location without the assistance of another person because of security measures not under their control.
- **Distillery** means a process plant where distilled beverage alcohols are produced, concentrated or otherwise processed, and includes facilities on the same site where the concentrated products may be blended, mixed, stored or packaged.
- Distilled beverage alcohol means a beverage that is produced by fermentation and contains more than 20% by volume of watermiscible alcohol.

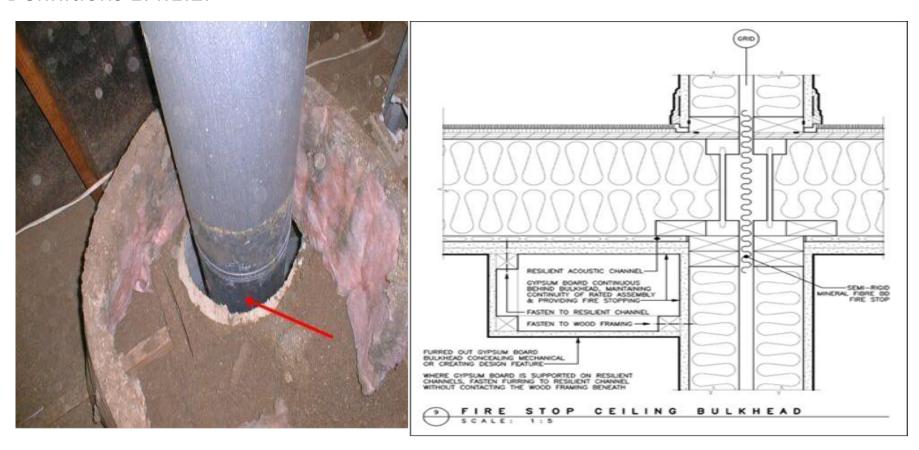


- Definitions 1.4.1.2.
- Fire block means a material, component or system that restricts the spread of fire within a concealed space or from a concealed space to an adjacent space.





Definitions 1.4.1.2.





- Definitions 1.4.1.2.
- Residential occupancy means the occupancy or use of a building or part
 thereof by persons for whom sleeping accommodation is provided but
 who are not harboured for the purpose of receiving care or treatment and
 are not involuntarily detained.
- Rim joist means the outermost member in floor framing, other than blocking, be it parallel, perpendicular or on an angle to the floor joists. (See Appendix A.)



- Definitions 1.4.1.2
- Treatment means the provision of medical or other health-related intervention to persons, where the administration or lack of administration of these interventions <u>may render them incapable of evacuating to a safe location without the assistance of another person</u>. (See Appendix A.)

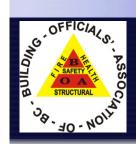


- Definitions 1.4.1.2.
- Treatment occupancy means the occupancy or use of a building or part thereof for the provision of treatment, and where overnight accommodation is available to facilitate the treatment.



Definitions 1.4.1.2.

 Unstable liquid means a liquid, including flammable liquids and combustible liquids, that is chemically reactive to the extent that it will vigorously react or decompose at or near normal temperature and pressure conditions or that is chemically unstable when subjected to impact.



- 9.3.2.9. Termite and Decay Protect
- 9.3.2.9.(5) Where wood is required by this Article to be treated to resist termites or decay, such treatment shall be in accordance with <u>Table 2</u>, <u>Use</u> <u>Categories for Specific Products</u>, <u>Uses</u>, and <u>Exposures</u>, of <u>CAN/CSA-O80.1</u>, "Specification of Treated Wood," as follows:

- (a) Use Category 1 (UC1), where the wood member is used in
- i) <u>interior construction</u>,
- ii) <u>above-ground applications, and</u>
- iii) applications where the wood member remains dry,



- 9.3.2.9. Termite and Decay Protect
- 9.3.2.9.(5)
- (d) Use Category 4.1 (UC4.1), where
- i) the wood member is in contact with the ground,
- ii) the wood member is in contact with fresh water, or
- element and the finished ground level is less than 150 mm and the wood

<u>elements are not separated from</u> <u>permeable supporting materials by a moisture</u> <u>barrier, or</u>



- 9.5.3 Ceiling Heights
- 9.5.3.1. Ceiling Heights of Rooms or Spaces
- (1) The ceiling heights and clear heights in rooms or spaces in *residential occupancies* shall conform to Table 9.5.3.1.



- 9.5.5.3. Doorways to Rooms with a Bathtub, Shower or Water Closet
- (1) This Article applies where a hallway of not less than 860 mm wide serves one or more rooms containing a bathtub, shower or water closet.
- (2) At least one doorway in a hallway described in Sentence (1) shall be constructed
 - (a) so that access is provided to not less than 1 of each type of fixture described in Sentence (1), and
- (b) to accommodate a door not less than 760 mm wide.



• 9.6 Glass & 9.7 Windows

Reorganized, New Standards



Overview Ramps, Handrails & Guards

- Technical changes for stairs,
- ramps, handrails and guards address:
- Harmonization between Part 3
 and Part 9
- Clarification of terminology
- – Introduction of design criteria





• 9.8.1.2. Stairs, Ramps, Landings, Handrails and Guards in Garages

(1) Where stairs, ramps, landings, handrails or *guards* are installed in garages that serve a single *dwelling unit*, the garage shall be considered to be part of the *dwelling unit* and the requirements for stairs, ramps, landings, handrails and *guards* within *dwelling units* shall apply.

•



• 9.8.2.1 Stair Width

| • | 9.8.2.1. | Stair Width |
|---|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • | (1) | Except as provided in Sentence (2), required exit stairs and public stairs serving buildings of residential occupancy shall have a width of not less than 900 mm. |
| • | (2) | Exit stairs serving a single dwelling unit shall have a width of not less than 860 mm. |
| • | (3) | Required exit stairs and public stairs serving buildings of other than residential occupancy shall have a width of not less than the greater of |
| • | | (a) 900 mm, or |
| • | | (b) 8 mm per person based on the <i>occupant load</i> limits specified in Table 3.1.17.1. |
| • | (4) | At least one stair between each floor level within a dwelling unit, and exterior stairs serving a single dwelling unit except required exit stairs, shall have a width of not less than 860 mm. |

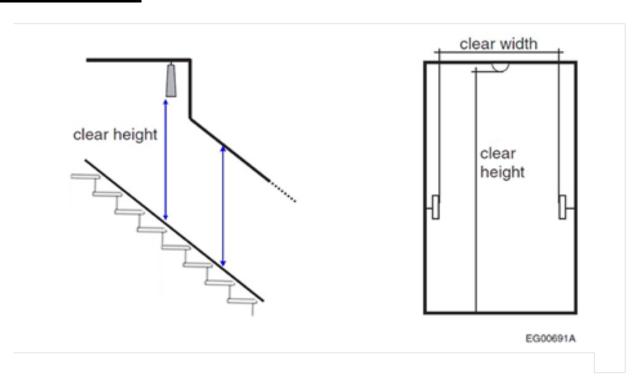


- 9.8.2.2. Height over Stairs
- 9.8.2.2. Height over Stairs
- (1) The clear height over stairs shall be measured vertically, over the clear width of the stair, from a straight line tangent to the tread and landing nosings to the lowest point above. (See A-3.4.3.4. in Appendix A.)
- (2) Except as permitted by Sentences (3) and (4), the clear height over stairs shall not be less than 2050 mm.
- (3) The clear height over stairs serving a single dwelling unit shall not be less than 1950 mm.

•

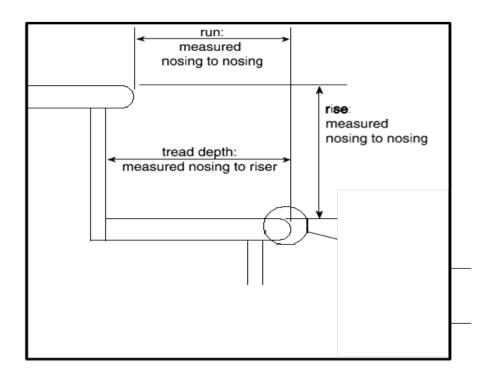


- 9.8.2.2.Height over Stairs
- The <u>clear height</u> over stairs measured vertically, over the clear width of the stair, from a straight <u>line tangent to the tread and landing nosings</u> to the <u>lowest point above</u>



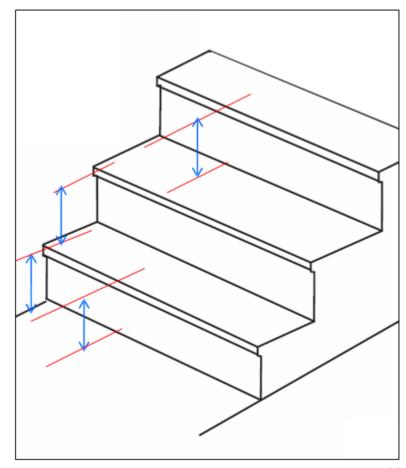


- Appendix A9.8.4.A.
- Riser measured as a <u>vertical nosing-to-nosing</u> distance
- Run measured as a <u>horizontal nosing-to-nosing</u> distance





- 9.8.4.4. (1) Uniformity and Tolerances for Risers and Treads
- Stairs shall have:
- Uniform height in any one flight
- Tolerances of <u>5 mm</u> between <u>adjacent treads</u> or landings
- <u>10 mm</u> between the <u>tallest</u> and <u>shortest</u> risers in a flight
- Fire escapes exempt from requirements



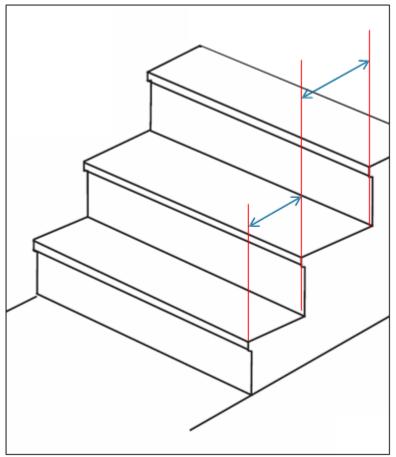


• 9.8.4.4. (3) Uniformity and Tolerances for Risers and Treads

Stairs shall have:

Uniform run in any one flight

- Tolerances of <u>5 mm</u> between <u>adjacent treads</u> or landings
- <u>10 mm</u> between the <u>deepest</u> and <u>shallowest</u> treads in a flight





- 9.8.5.2. Ramp Width
- (1) Except as provided in Sentence (2), *exit* ramps and public ramps serving *buildings* of *residential occupancy* shall have a clear width of not less than 870 mm.
- (2) All ramps serving a single *dwelling unit* shall have a width of not less than 860 mm.
- (3) Exit ramps and public ramps serving buildings of other than residential occupancy shall have a clear width of not less than the greater of
 - (a) 870 mm, or
 - (b) 8 mm per person based on the *occupant load* limits specified in Table 3.1.17.1.





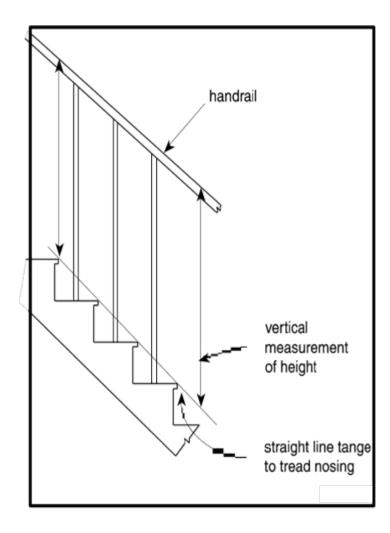


- 9.8.7.1. Required Handrails
- Number of Sides of Stair or Ramp Required to Have a Handrail
- **Table 9.8.7.1.** Forming Part of Sentence 9.8.7.1.(1)

| | Handrails Serving Stairs | | | Handrails Serving Ramps | |
|------------------------------------|---------------------------------------------|--------|--------------------------|--------------------------|-------------------------|
| Location of Stair or Ramp | Stairs < 1 100 mm Wide | | Stairs≥ 1 100 mm Wide | Ramps < 1 100 mm Wide | Ramps≥ 1 100 mm Wide |
| | Straight | Curved | All | Straight or Curved | All |
| | Number of Sides Required to Have a Handrail | | | | |
| Within a dwelling unit | 1 | 1 | 1 | 1 | 2 |
| All other locations ⁽¹⁾ | 1 | 2 | 2 | 2 | 2 |

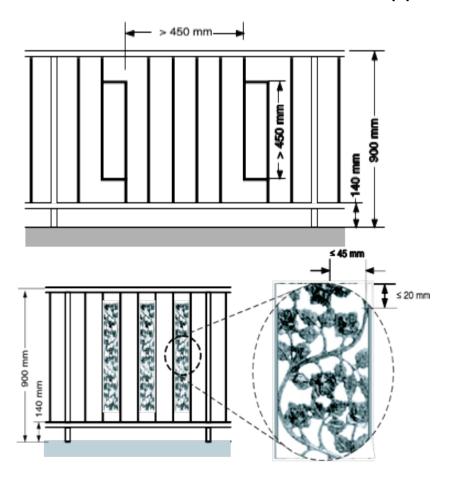


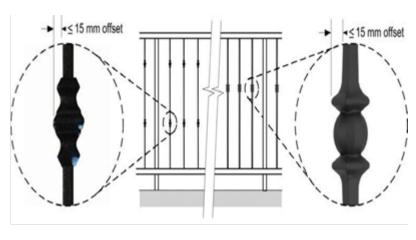
- 9.8.7.4.(2) Height of Handrail
- Minimum Height of Handrails
- Min. 865 mm
- Max. 965 mm

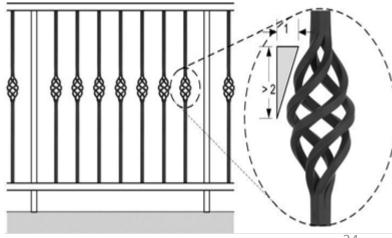




• 9.8.Climbable Guards New Appendix Note with illustrations









- 9.8.8.4.(2) Guards for Floors and Ramps in Garages
 - (2) Vehicle guardrails shall be designed for a concentrated horizontal load of 22 kN applied outward at any point 500 mm above the floor surface. (See A-4.1.5.14. and 4.1.5.15.(1) in Appendix A.)



• 9.8.8.4.(2) Guards for Floors and Ramps in Garages





- 9.9.4.4. Openings Near Unenclosed Exterior Exit Stairs and Ramps
- (1) 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
 - (a) 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
 - i) another fire compartment, or
 - ii) another *dwelling unit*, and
- (b) *unprotected openings* in the exterior walls of the building are within 3 m horizontally and less than 10 m below or less than 5 m above the exit stair or ramp.

•



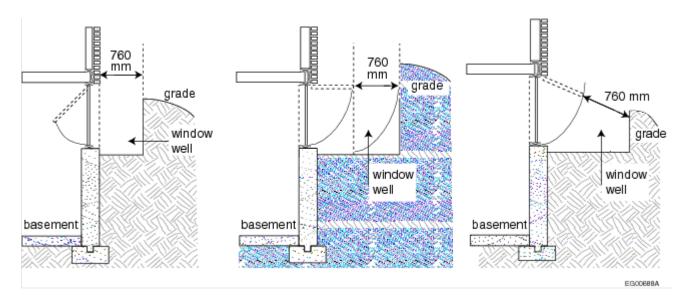
9.9.4.6. Openings Near Exit Doors

•

- (1) Unprotected openings 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
- (a) an exterior *exit* door
 - i) in one *fire compartment* is within 3 m horizontally of an *unprotected Opening* serving another *fire compartment*, or
 - ii) in one *dwelling unit* is within 3 m horizontally of the *unprotected openings* serving another *dwelling unit*, and
- (b) the exterior walls of the fire compartments and dwelling units, referred to in Clause (a) intersect at an exterior angle of less than 135°.



- 9.9.10 Egress from Bedrooms
 - (3)Where a window required in Sentence (1) opens into a window well, a clearance of not less than 760 mm shall be provided in front of the window. (See Appendix A.)





| • | 9.9.11.3. | Exit Signs |
|---|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • | (1) | Every exit door shall have an exit sign placed over it or adjacent to it if the exit serves |
| • | | (a) a building that is 3 storeys in building height, |
| • | | (b) a building having an occupant load of more than 150, or |
| • | | (c) a room or <i>floor area</i> that has a fire escape as part of a required <i>means of egress</i> . |
| • | (2) | Every exit sign shall |
| • | | (a) be visible on approach to the exit, |
| • | | (b) except as permitted in Sentence (3), consist of a green pictogram and a white or lightly tinted graphical symbol meeting the colour specifications referred to in ISC 3864-1, "Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs in workplaces and public areas," and |
| • | | (c) conform to the dimensions indicated in ISO 7010, "Graphical symbols – Safety colours and safety signs – Safety signs used in workplaces and public areas," for the following symbols (see A-3.4.5.1.(2)(c) in Appendix A): |
| • | | i) E001 emergency exit left, |
| • | | ii) E002 emergency exit right, |
| • | | iii) E005 90-degree directional arrow, and |
| • | | iv) E006 45-degree directional arrow. |



9.9.11.3. Exit Signs (continued)

- (3) Internally illuminated exit signs shall be continuously illuminated and
- (a) where illumination of the sign is powered by an electrical circuit, be constructed in conformance with CSA C22.2 No. 141, "Emergency Lighting Equipment," or
 - (b) where illumination of the sign is not powered by an electrical circuit, be constructed in conformance with CAN/ULC-S572, "Photoluminescent and Self-Luminous Signs and Path Marking Systems."
 - (4) Externally illuminated *exit* signs shall be continuously illuminated and be constructed in conformance with CAN/ULC-S572, "Photoluminescent and Self-Luminous Signs and Path Marking Systems." (See A-3.4.5.1.(4) in Appendix A.)
- (5) The circuitry serving lighting for externally and internally illuminated exit signs shall
 - (a) serve no equipment other than emergency equipment, and
- (b) be connected to an emergency power supply as described in Sentences 9.9.12.3.(2),(3) and (7).
 - (6) Where no exit is visible from a public corridor, from a corridor used by the public, or from principal routes serving an open floor area having an occupant load of more than 150, an exit sign conforming to Clauses (2)(b) and (c) with an arrow or pointer indicating the direction of egress shall be provided.



- A 3.4.5.1.(2)(c)
- Green pictograms conforming to ISO standards
- Conform to universal sign
- Language independent
- Internationally recognized
- Harmonize internationally





- Recognizing that photoluminescent technology
- Continues to function when building emergency power fails
- provides options to designers and easier installation
- all exit signs need to be listed according to CAN/ULC- S572-10,
 "Photoluminescent and Self-luminous Exit Signs and Path Marking

Systems





• 9.9.12.2. Required Lighting in Egress Facilities

- (1) Every exit, public corridor or corridor providing access to exit for the public shall be equipped to provide illumination to an average level of not less than 50 lx at floor or tread level and at all points such as angles and intersections at changes of level where there are stairs or ramps.
- (2) The minimum value of the illumination required by Sentence (1) shall be not less than 10 lx.



- 9.9.12.3. Emergency Lighting
- (4) Illumination from lighting required in Sentence (1) shall be provided to average levels of not less than 10 lx at floor or tread level.
- (5) The minimum value of the illumination required by Sentence (4) shall be not less than 1 lx.



- 9.10.1.2. Commissioning of Life Safety and Fire Protection Systems
- (1) Where life safety and fire protection systems are installed to comply with the provisions of this Code or the NFC, the commissioning of these integrated systems must be performed as a whole to ensure the proper operation and interrelationship of the systems. (See A-3.2.4.6.(1) in Appendix A.)

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A-3.2.4.6.(1) Commissioning of Life Safety and Fire Protection Systems

When commissioning a building, the owner must ensure that the life safety systems and their components (i.e. fire alarm systems, sprinklers, standpipes, smoke control, ventilation, pressurization, door hold-open devices, elevator recalls, smoke and fire shutters and dampers, emergency power, emergency lighting, etc.) are functioning according to the intent of their design. The commissioning provides the documented confirmation that building systems satisfy the intent of the Code.



- A-3.2.4.6.(1) continued
- Ultimately, someone will have to ensure that the interconnected operation of all life safety systems within the building has been confirmed: this responsibility may fall on the designer, owner, contractor or a commissioning body. The British Columbia Building Code does not specify who must fulfill this role as this is an administrative issue.

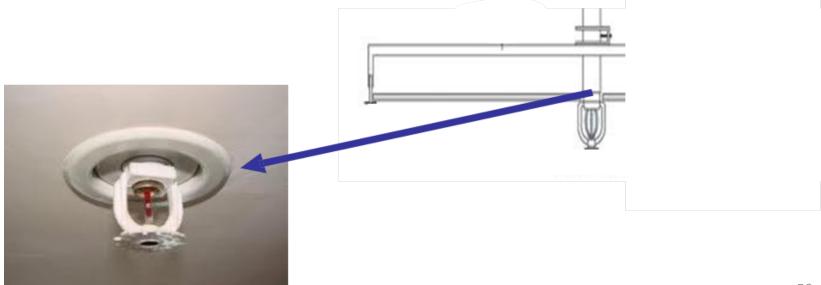


• 9.10.9.6 Penetration of Fire Separations refers to Appendix A-3.1.9.

• The term "membrane penetration" usually designates an opening made through one side (wall, floor or ceiling membrane) of an assembly, whereas the term "through-penetration" designates an opening that passes through an entire assembly.



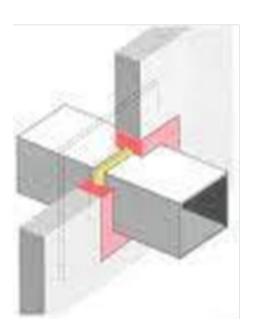
- 9.10.9.6. Penetration of Fire Separations
- (11) Sprinklers are permitted to penetrate a fire separation or a membrane forming part of an assembly required to have a fire-resistance rating without having to meet the fire stop requirements of Sentence (1), provided the annular space created by the penetration of a fire sprinkler is covered by a metal escutcheon plate in accordance with NFPA 13, "Installation of Sprinkler Systems."





- 9.10.9.6.(13) Fire dampers are permitted to penetrate a fire separation or a membrane forming part of an assembly required to have a fire-resistance rating without having to meet the fire stop requirements of Sentence (1), provided the fire damper is
- (a) installed in conformance with NFPA 80, "Fire Doors and Other Opening Protectives," or
 - (b) specifically designed with a *fire stop*.







• 9.10.9.6.(9) Any size combustible water distribution pipe is permitted to penetrate a fire separation





- 9.10.11.1. Required Firewalls
- (1) Except as provided in Article 9.10.11.2., a party wall on a property line shall be constructed as a *firewall*. (See A-3.2.3.4.(1) in Appendix A.)



- Appendix 3.2.3.4.(1)
- When a building spans a property line, constructing <u>a party wall on the property line is not mandated by the Code</u>, but subdividing the building at the property line is an option the owner can consider. The Code permits a building constructed on more than one property to be designed as a single undivided building, whether the properties have a common owner or not. However, if a subdividing wall is constructed on the property line within the building for the purpose of separating the two real estate entities and is shared by two different owners, the wall would, by definition, be deemed a party wall. As such, this party wall would need to meet the construction requirements described above, depending on the building's occupancy classification and size.
- A building that spans two or more properties, but that does not have a party wall at the property line, may need to address the Code requirements for party walls in the future.



- 9.10.12.3 Exterior Walls Meeting at an Angle
- (1) Except as provided in Article 9.9.4.5., where exterior walls of a building meet at an external angle of 135° or less, the horizontal distance from unprotected openings in one exterior wall to an unprotected openings in the other exterior wall shall be not less than 1.2 m, where these openings are
 - (a) in different fire compartments, or
 - (b) in different dwelling units.
- (2) The exterior wall of each *fire compartment* referred to in Sentence (1) within the 1.2 m distance shall have a *fire-resistance rating* not less than that required for the interior vertical *fire separation* between the compartment and the remainder of the *building*.



- 9.10.14.3. Limiting Distance and Fire Department Response
- 1) Except for the purpose of applying Sentences
 9.10.14.4.(2), (3), (8) and (9), and Sentences
 9.10.14.5.(3), (8) and (12), a limiting distance equal
 to half the actual limiting distance shall be used as
 input to the requirements of this Subsection, where
- (a) the time from receipt of notification of a fire by the fire department until the first fire department vehicle arrives at the *building* exceeds 10 min in 10% or more of all calls to the *building*, and
- (b) any storey in the building is not sprinklered



- A-3.2.3.1.(8) Intervention Time and Limiting Distance The total time from the start of a fire until fire suppression by the fire department depends on the time taken for a series of actions. Sentence 3.2.3.1.(8) is only concerned with the time from receipt of notification of a fire by the fire department until the arrival of the first fire department vehicle at the building. It specifies a 10-min time limit which must be met in more than 90% of the calls to the building served by the fire department. This reliability level and provision for flexibility is essentially consistent with NFPA 1710, "Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments."
- Clause 4.1.2.1 of NFPA 1710 establishes "time objectives" for fire incidents as follows:
- 1 min (60 s) for turn-out of responders after receipt of notification of a fire, and
- 4 min (240 s) or less for arrival of the first arriving engine company at a fire suppression incident and/or 8 min (480 s) or less for the deployment of a full first alarm assignment at a fire suppression incident.



- A-3.2.3.1.(8) Intervention Time and Limiting Distance (continued)
- The standard requires that the fire department establish a "performance objective" of not less than 90% for each response time objective. This reliability level is referred to in NFPA 1710 as a "performance objective."
- Where the 10-min limit cannot be met by the fire department at least 90% of the time, Sentence 3.2.3.1.(8) specifies that a value corresponding to half the actual limiting distance be used in requirements that depend on limiting distance to define other criteria.
- For new subdivisions, legal agreements may be made for the construction of fire stations to serve those areas. The fire department response time in those subdivisions may temporarily exceed 10 min until the fire station is constructed.



- A-3.2.3. Fire Protection Related to Limiting Distance versus Separation Between Buildings Code provisions that address protection against fire spread from building to building use the limiting distance (see the definition in Article 1.4.1.2. of Division A) for a building rather than using the distance between adjacent buildings on separate properties, since this would result in situations where the design and construction of a building on one property affects the design and construction of a building on an adjacent property.
- The Code requirements that deal with reducing the probability of building-to-building fire spread were originally developed based on the assumption that the exposing building faces of adjacent buildings are of similar size and configuration, and are equidistant from the shared property line. Where buildings are of different sizes, the smaller building may be subject to a higher heat flux in the event of a fire compared to the larger building. Where buildings are closely spaced and not equidistant from the property line, the construction of the building with the greater limiting distance does not recognize the proximity of the building with the lesser limiting distance.



- A-3.2.3. Fire Protection Related to Limiting Distance versus Separation Between Buildings (continued)
- The Code has more stringent requirements for buildings with lesser limiting distance as regards the maximum area and spacing of unprotected openings, and the construction, cladding and fire resistance of walls. This increased stringency recognizes that the fire hazard is greater where buildings are closer together and that adjacent buildings may have exposing building faces of different sizes, configurations or limiting distances, which could further increase the hazard.
- The authority having jurisdiction may also address limiting distances through legal agreements with the parties involved that stipulate that the limiting distance be measured to a line that is not the property line. Such agreements would normally be registered with the titles of both properties.



- Notes to Table 9.10.14.4.A
- (3) Except for *buildings* that are *sprinklered* and for openable windows having an unobstructed opening equal to 0.35 m² installed in accordance with Sentences 9.9.10.1.(1) and (2), where the *limiting distance* is 2 m or less, individual *unprotected openings* shall be no greater than
 - (a) the area stated in Table 9.10.14.4.B., or
- (b) where the limiting distance is equal to or greater than 1.2 m, the area calculated by
- $Area = 0.24(2 \times LD 1.2)2$
- where
- Area = area of the unprotected opening, and
- LD = limiting distance.
 - Table 9.10.14.4.B
 - Maximum Concentrated Area of Unprotected Openings



• Table 9.10.14.5.A

| Occupancy Classification of Building or Fire Compartment | Maximum Area of Unprotected Openings Permitted, % of Exposing Building Face Area | Minimum Required Fire- Resistance Rating | Type of Construction Required | Type of Cladding Required |
|----------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------|---------------------------------|
| | 0 to 10 | 1 h | Noncombustibl e | Noncombustibl e |
| Residential, business and personal services, | > 10 to 25 | 1 h | Combustible or noncombustible | Noncombustibl e |
| and low-hazard industrial | > 25 to 50 | 45 min | Combustible or noncombustible | Noncombustibl e |
| | > 50 to < 100 | 45 min | Combustible or noncombustible | Combustible or noncombustible |
| | 0 to 10 | 2 h | Noncombustibl e | Noncombustibl e |
| Mercantile and | > 10 to 25 | 2 h | Combustible or noncombustible | Noncombustibl e |
| medium-hazard industrial | > 25 to 50 | 1 h | Combustible or noncombustible | Noncombustibl |
| | > 50 to < 100 | 1 h | Combustible or noncombustible | Combustible or noncombustible |



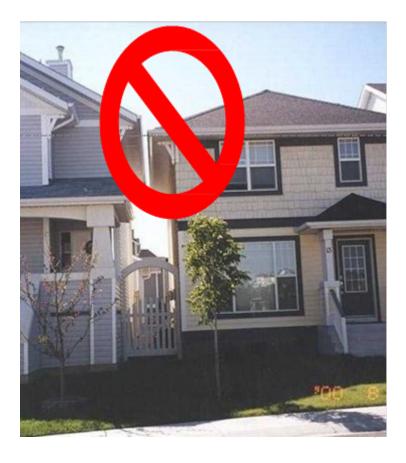
Appendix 3.2.3.6.(2) (9.10.14.5. (7))

A-3.2.3.6.(2) Protection of Roof Soffits Near Property Lines Sentences 3.2.3.6.(2) to (4) and parallel Sentences 9.10.14.5.(5) to (7) and 9.10.15.5.(5) to (7) provide requirements for the protection of soffits where the soffit of the subject building is located close to the property line or to an imaginary line between two buildings on the same property. Fire from inside the roof space of the subject building can exit unprotected soffits and expose the adjacent building to flames.



• 9.10.14.5.(9) Construction of Exposing Building Face and Walls above Exposing Building Face

Roof soffits cannot be built above EBF, where LD < 0.45 m Roof soffits not to project to < 0.45 m from property line where LD > 0.45 m



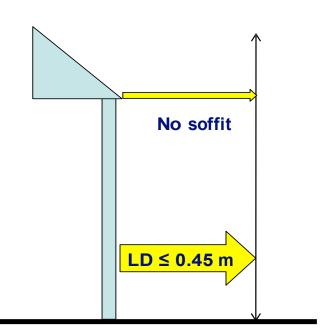
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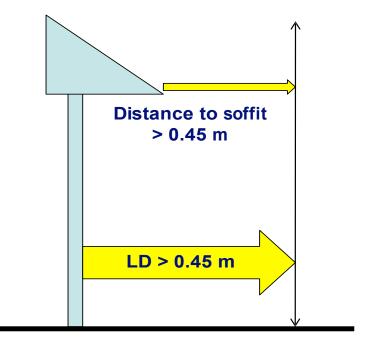
• 9.10.14.5.(9) Construction of Exposing Building Face and Walls above Exposing Building Face

$$LD \leq 0.45 \text{ m}$$

 Roof soffits cannot be constructed LD ≤ 0.45 m



- LD $> 0.45 \, \text{m}$
 - Roof soffits cannot project
 to ≤ 0.45 m from property line

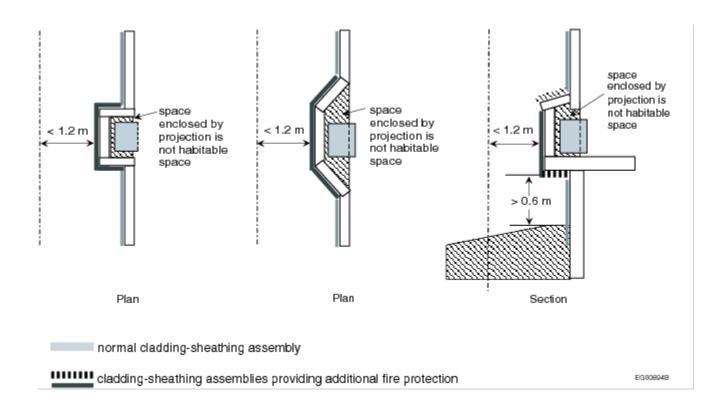




A-9.10.14.5.(7) Permitted Projections The definition of exposing building face provided in Sentence 1.4.1.2.(1) of Division A refers to "that part of the exterior wall of a building ... or, where a building is divided into fire compartments, the exterior wall of a fire compartment ..." Because the exposing building face is defined with respect to the exterior wall, projections from exposing building faces are elements that do not incorporate exterior walls. Depending on their specific configurations, examples of constructions that would normally be permitted by Sentence 9.10.14.5.(7) are balconies, platforms, canopies, eave projections and stairs. However, if a balcony, platform or stair is enclosed, its exterior wall would become part of an exposing building face and the construction could not be considered to be a projection from the exposing building face.



• Appendix A-9.10.14.5.8



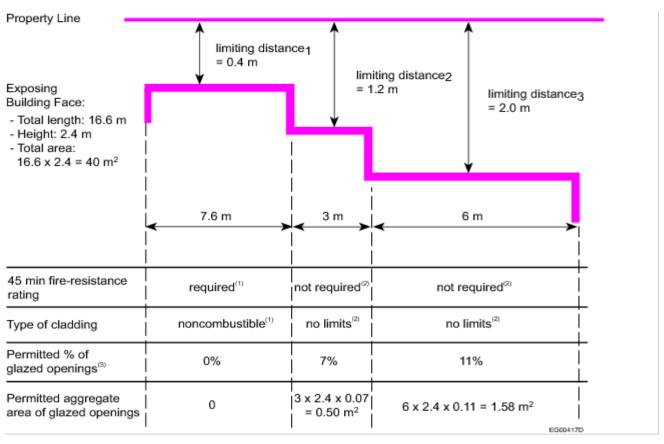


• 9.10.15.2. Area and Location of Exposing Building Face

• (2) Where the *exposing building face* of any section of an exterior wall enclosing a single room or space, or combination room and space, has a *limiting distance* of 2 m or less, that section of the *exposing building face* serving the room or space shall not be divided into portions for the purpose of calculating area of *exposing building face*. (See Sentence 9.10.15.4.(5) and A-9.10.15.4.(2) in Appendix A.)



Appendix 9.10.15.4.(2)





* 9.10.15.3. Limiting Distance and Fire Department Response

* (1)

(1) Except for the purpose of applying Sentences 9.10.15.2.(2), 9.10.15.4.(3) and 9.10.15.5.(12), a limiting distance equal to half the actual limiting distance shall be used as input to the requirements of this Subsection, where

*

(a) the time from receipt of notification of a fire by the fire department until the first fire department vehicle arrives at the building exceeds 10 min in 10% or more of all calls to the building, and

*

(b) any storey in the building is not sprinklered. (See A-3.2.3. and A-3.2.3.1.(8) in Appendix A.)



9.10.15.3. Limiting Distance and Fire Department Response

- 2) Despite Sentence9.10.15.3.(1), except for the purposes of applying Sentences 9.10.15.2.(2), Sentence9.10.15.4.
 (3) and 9.10.15.5.(12), a limiting distance equal to half the actual limiting distance shall be used as input to the requirements of this Subsection, where
- a) a building for which a building permit was applied for before December 20, 2014 is or is proposed to be located in a subdivision for which a subdivision plan was registered in a land title office before December 20, 2013,
- b) there is no fire department or the fire department is not organized, trained and equipped to meet the needs of the community, and
- c) the building is not sprinklered.



- Appendix 3.2.3.1.(8)
- A-3.2.3.1.(8) Intervention Time and Limiting Distance The total time from the start of a fire until fire suppression by the fire department depends on the time taken for a series of actions. Sentence 3.2.3.1.(8) is only concerned with the time from receipt of notification of a fire by the fire department until the arrival of the first fire department vehicle at the building. It specifies a 10-min time limit which must be met in more than 90% of the calls to the building served by the fire department. This reliability level and provision for flexibility is essentially consistent with NFPA 1710, "Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments."



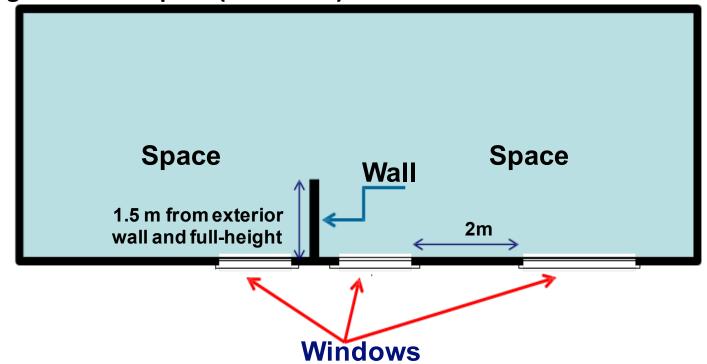
9.10.15.4. Glazed Openings in Exposing Building Face

- (3) Except for *buildings* that are *sprinklered* and for openable windows having an unobstructed opening equal to 0.35 m² installed in accordance with Sentences 9.9.10.1.(1) and (2), where the *limiting distance* is 2 m or less, individual glazed openings or a group of glazed openings in an *exposing building face* shall not exceed 50% of the maximum allowable aggregate area of glazed openings determined in Sentence (1).
- (4) The spacing between individual glazed openings described in Sentence (3) serving a single room or space described in Sentence (5) shall be not less than
 - (a) 2 m horizontally of another glazed opening that is on the same *exposing building face* and serves the single room or space, or
 - (b) 2 m vertically of another glazed opening that serves the single room or space, or another room or space on the same *storey*.
- (5) For the purpose of Sentence (4), "single room or space" shall mean
 - (a) two or more adjacent spaces having a full-height separating wall extending less than 1.5 m from the interior face of the exterior wall, or
 - (b) two or more stacked spaces that are on the same storey.



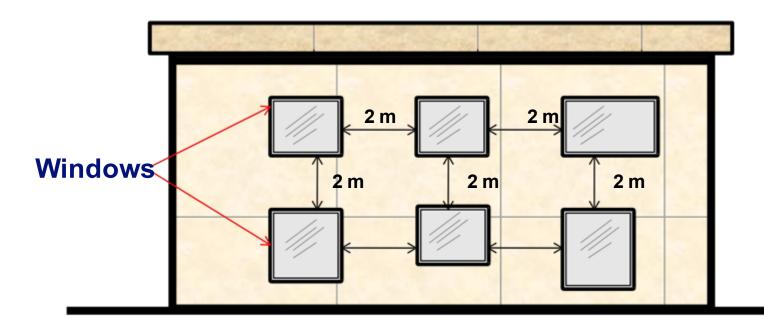
• 9.10.15.4.(3) Glazed Openings in Exposing Building Face

Single Room or Space (Plan View)





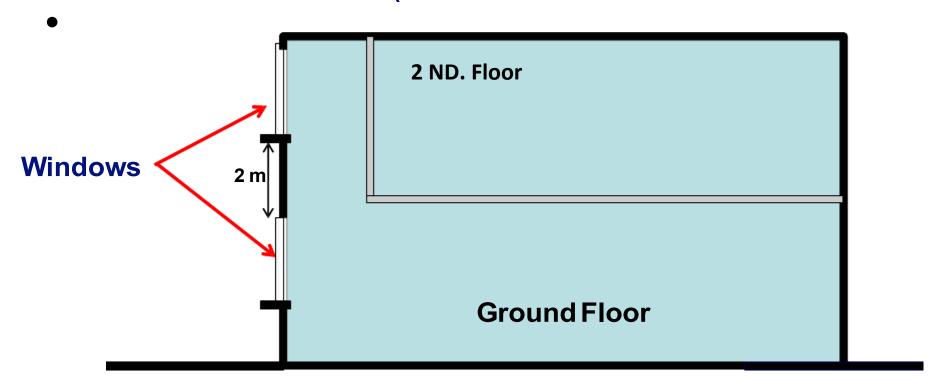
- 9.10.15.4.(5) Glazed Openings in Exposing Building Face
 Spacing where LD ≤ 2 m
 - 2 m horizontally of another unprotected opening
 - 2 m vertically of another unprotected opening





9.10.15.4.(5) Glazed Openings in Exposing Building Face
 Spacing where LD ≤ 2 m

(Sectional View





- Definitions 1.4.1.2.
- Fire block means a material, component or system that restricts the spread of fire within a concealed space or from a concealed space to an adjacent space.



- Fire Blocks
- 9.10.16.1. Required Fire Blocks in Concealed Spaces
- 9.10.16.2. Required Fire Blocks in Wall Assemblies
- 9.10.16.3. Fire Block Materials
- (1) Except as permitted by Sentences (2) and (3), fire blocks shall be constructed of materials that will remain in place and prevent the passage of flames for not less than 15 min when subjected to the standard fire exposure in CAN/ULC-S101, "Fire Endurance Tests of Building Construction and Materials."
- 9.10.16.4. Penetration of Fire Blocks



• 9.10.18.2. Fire Alarm System Required

- (1) Except as permitted in Sentences (3) and (4), a fire alarm system shall be installed in *buildings* in which a sprinkler system is required by this Part. (see Appendix)
- (2) Except as provided in Sentence (5), a fire alarm system shall be installed
 - (a) in every *building* that contains more than 3 *storeys*, including *storeys* below the *first storey*,
 - (b) where the total occupant load exceeds 300, or
 - (c) when the *occupant load* for any *major occupancy* in Table 9.10.18
- (3) In *buildings* in which a sprinkler system has been installed in accordance with NFPA 13D, "Installation of Sprinkler Systems in Oneand Two-Family Dwellings and Manufactured Homes," a fire alarm system need not be installed.
- (4) In *buildings* that contain fewer than 9 sprinklers conforming to Sentence 3.2.5.12.(4), a fire alarm system need not be installed.



• 9.10.18.3. Design and Installation Requirements

(2) The following Articles in Subsection 3.2.4. regarding fire alarm systems <u>do not apply</u> to Part 9 buildings: Articles 3.2.4.1., 3.2.4.11., 3.2.4.12., 3.2.4.13., 3.2.4.14., 3.2.4.21., and 3.2.4.22.



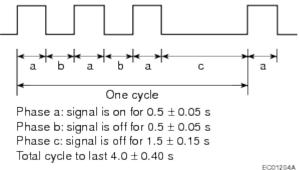
9.10.18.4. Rooms and Spaces Requiring Heat Detectors or Smoke Detectors

- (1) Where a fire alarm system is required, every public corridor in buildings of residential occupancy and every exit stair shaft shall be provided with smoke detectors.
- (2) Except as provided in Sentence (3), if a fire alarm system is required in a building that is not sprinklered, fire detectors shall be installed in the following spaces:
 - (a) storage rooms not within dwelling units,
 - (b) service rooms not within dwelling units,
 - (c) janitors' rooms
 - (d) rooms in which hazardous substances are to be used or stored (see A-3.3.1.2.(1) in Appendix A),
 - (e) elevator hoistways, chutes and dumbwaiter shafts, and
 - (f) laundry rooms in buildings of residential occupancy, but not those within dwelling units.



9.10.19.2. Sound Patterns of Smoke Alarms

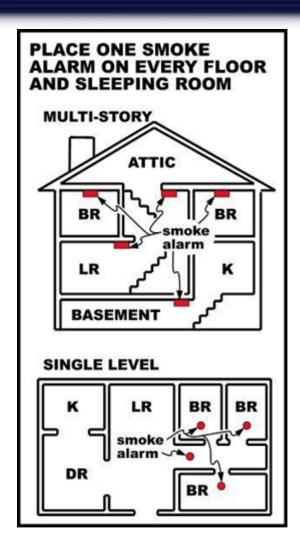
- (1) The sound patterns of smoke alarms shall
 - (a) meet the temporal patterns of alarm signals (see A-3.2.4.19.(2) in Appendix A), or
 - (b) be a combination of temporal pattern and voice relay. •• — —





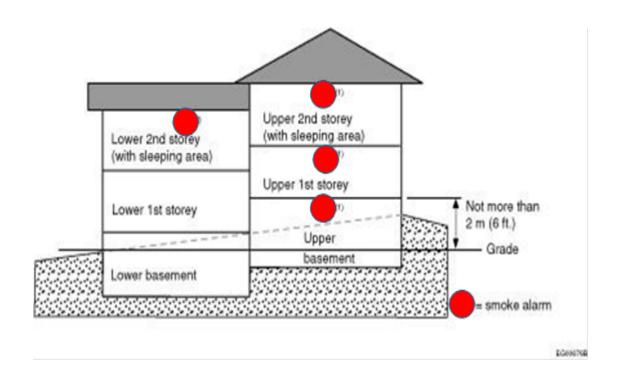
9.10.19.3 Location of Smoke Alarms

Smoke alarm shall be installed in bedrooms





- Appendix A- 9.10.19.3(1) Location of Smoke Alarms
- Split level home now only required on upper level of each floor





• 9.10.19.4.(c) Power Supply

In addition to permanent connection with power supply, battery backup for 7 days normal followed by 4 minutes of alarm





9.10.19.6. Silencing of Smoke Alarms

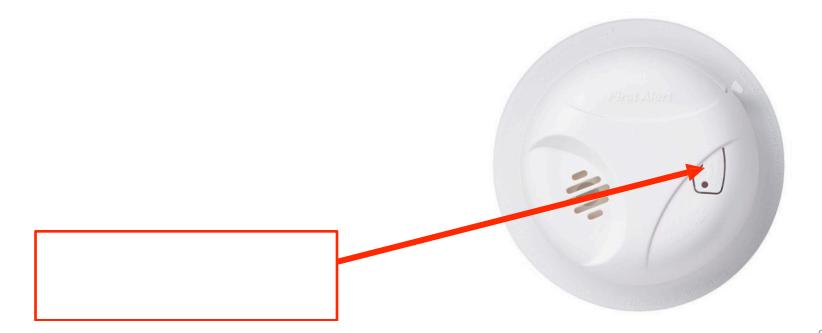
(1) Except as permitted in Sentence (2), a manually operated device shall be incorporated within the circuitry of a smoke alarm installed in a dwelling unit so that the signal emitted by the smoke alarm can be silenced for a period of not more than 10 min, after which the smoke alarm will reset and sound again if the level of smoke in the vicinity is sufficient to re-actuate it.



• 9.10.19.6.(2) Silencing of Smoke Alarms

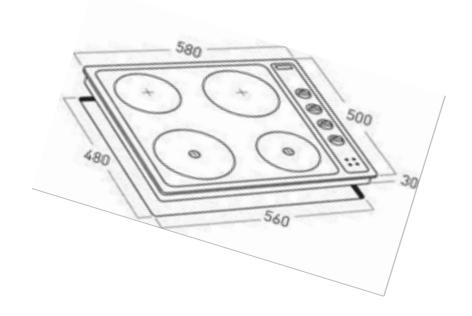
Smoke alarm shall

minimize potential tampering with smoke alarm (silencing)





- 9.10.22.1.Installation of Cooktops and Ovens
- 9.10.22.2. Vertical Clearances above Cooktops
- 9.10.22.3. Protection around Cooktops





• 9.13.2.6. Moisture Protection for Interior Finishes

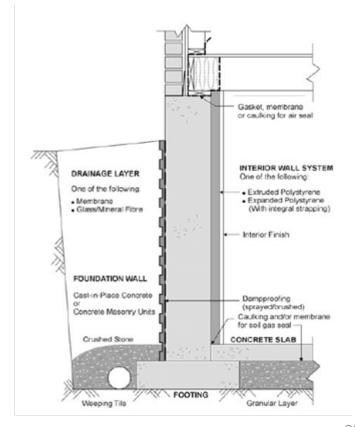
- (1) The interior surface of *foundation* walls below ground level shall be protected by means that minimize the ingress of moisture from the *foundation* wall into interior spaces, where
 - (a) a separate interior finish is applied to a concrete or unit masonry wall that is in contact with the *soil*, or
 - (b) wood members are placed in contact with such walls for the installation of insulation or finish.
 - (2) Except as provided in Sentence (3), where the protection of interior finishes required in Sentence (1) consists of membranes or coatings,
 - (a) the membrane or coating shall extend from the *basement* floor surface up to the highest extent of the interior insulation or finish, but not higher than the exterior finished ground level, and
 - (b) no membrane or coating with a permeance less than 170 ng/(Pa•s•m²) shall be applied to the interior surface of the *foundation* wall above ground level between the insulation and the *foundation* wall.
 - (3) Where insulation functions as both moisture protection for interior finishes and as a vapour barrier in accordance with Subsection 9.25.4., it shall be applied over the entire interior surface of the foundation wall.



• 9.13.2.6. Moisture Protection for Interior Finishes

Additional acceptable solution for moisture protection of interior finishes

Deleted incorrect exemption Moved gravel requirements directly into this section





What is Radon?

Odorless Tasteless Colourless

Radioactive gas, naturally occurring.

Produced by the decay of uranium.

During decay alpha particles are given off

Inhalation of particles damages lungs





- 9.13.4.2. Protection from Soil Gas Ingress
- 9.13.4.2.<mark>(4)</mark>
- The rough-in for a radon extraction system is not required for buildings constructed in areas not known to have an elevated risk for the presence of indoor radon levels exceeding the Health Canada guideline as identified in Table C-3 in Appendix C as area 2.



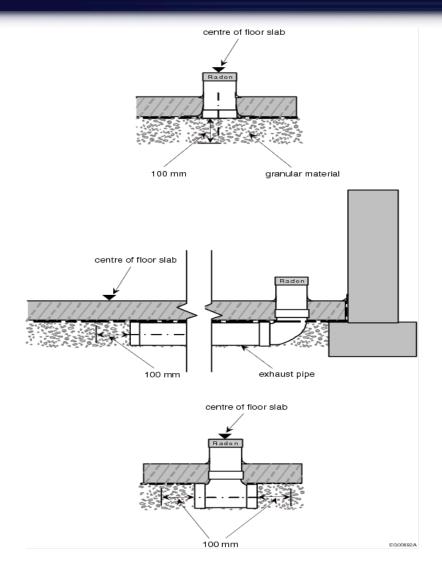
• Table C-3 (Article 9.13.4.2.)

Table C-3
Locations in British Columbia Requiring Radon Rough-Ins (see <u>Article 9.13.4.2.</u>)(1)
Forming part of <u>Appendix C</u>

| Location | Radon Area 1 or 2 |
|----------------|-------------------|
| 100 Mile House | 1 |
| Abbotsford | 2 |
| Agassiz | 2 |
| Alberni | 2 |
| Ashcroft | 1 |
| Atlin | 1 |
| Bamfield | 2 |
| Barriere | 1 |
| Beatton River | 2 |
| Bella Bella | 2 |
| Bella Coola | 2 |
| Brackendale | 2 |
| Burns Lake | 1 |
| Cache Creek | 1 |
| Campbell River | 2 |
| Carmi | 1 |
| Castlegar | 1 |
| Chetwynd | 1 |
| Chilliwack | 2 |
| Clearwater | 1 |
| Comox | 2 |
| Coquitlam | 2 |
| Courtenay | |



Appendix 9.13.4.3.(2)





Foundation Wall Thickness and Required Lateral Support

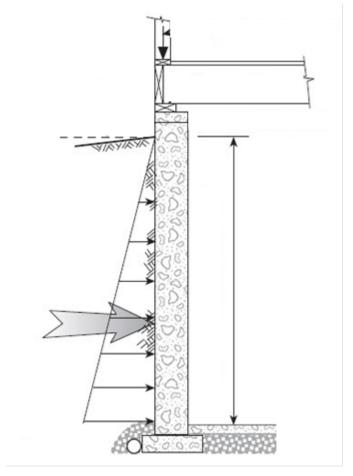
Table 9.15.4.2.A.
Thickness of Solid Concrete and Unreinforced Concrete Block Foundation Walls
Forming Part of Sentence 9.15.4.2.(1)

| | | Maximum Height of Finished Ground Above <i>Basement</i> Floor or Crawl Space | | | |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------|------|
| | Minimum Wall Thickness, mm Height of Foundation Wall Laterally Unsupported at the Top(1)(2) ? 3.0 m | Ground Cover, m | | | |
| J I | | Foundation Wall Laterally Unsupported at | Height of Foundation Wall Laterally Supported at the $Top^{(1)(2)}$ | | |
| | | ? 2.5 m | > 2.5 m and ? 2.75 m | > 2.75 m and ? 3.0 m | |
| Solid concrete, 15 MPa min. strength | 150 | 0.8 | 1.5 | 1.5 | 1.4 |
| | 200 | 1.2 | 2.15 | 2.15 | 2.1 |
| | 250 | 1.4 | 2.3 | 2.6 | 2.5 |
| | 300 | 1.5 | 2.3 | 2.6 | 2.85 |
| Solid concrete, 20 MPa min. strength | 150 | 0.8 | 1.8 | 1.6 | 1.6 |
| | 200 | 1.2 | 2.3 | 2.3 | 2.2 |
| | 250 | 1.4 | 2.3 | 2.6 | 2.85 |
| | 300 | 1.5 | 2.3 | 2.6 | 2.85 |
| Unreinforced concrete block | 140 | 0.6 | 0.8 | _ | _ |
| | 190 | 0.9 | 1.2 | (3) | (3) |
| | 240 | 1.2 | 1.8 | (3) | (3) |
| | 290 | 1.4 | 2.2 | _ | _ |



• 9.15.4.2. Foundation Wall Thickness and Required Lateral Support

Increased height of foundation walls
Maximum wall height of 3 m
For solid concrete walls
For reinforced concrete block walls
Updated sizes and spacing
of required re-bar



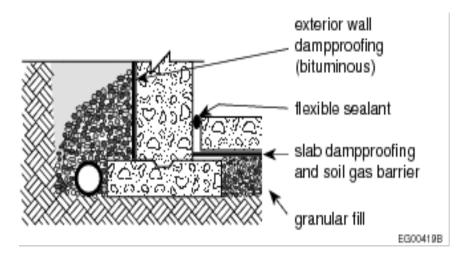


9.18.6.2. Ground Cover in Heated Crawl Spaces

- (1) Where a crawl space is heated, a ground cover consisting of not less than 0.15 mm polyethylene sheet conforming to CAN/CGSB-51.34-M, "Vapour Barrier, Polyethylene Sheet for Use in Building Construction," shall be installed as part of an air barrier system in accordance with Subsection 9.25.3.
- (2) The ground cover required in Sentence (1) shall have its joints lapped not less than 300 mm, and
 - (a) be sealed and evenly weighted down, or
 - (b) be covered with concrete not less than 50 mm thick.
- (3) The perimeter of the ground cover required in Sentence (1) shall be sealed to the *foundation* wall. (See A-9.13.4., A-9.25.3.4. and 9.25.3.6., and A-9.25.3.6.(2) and (3) in Appendix A.)
- (4) All penetrations of the ground cover required in Sentence (1) shall be sealed against air leakage. (See Subsection 9.25.3.)



• Appendix 9.25.3.6. (9.18.6.3.)





- 9.23.3.4. Nailing of Framing
- Table 9.23.3.4. , Table 9.23.3.5.A. &Table 9.23.3.5.B
 Altered
- Terms
- Hourly wind pressure (HWP)
- Seismic spectral response acceleration



9.23.6.1. Anchorage of Building Frames

- 3) For buildings with 2 or more floors supported by frame walls that are in areas where the seismic spectral response acceleration, $S_a(0.2)$, is equal to or greater than 0.70 but not greater than 1.2 and the 1-in-50 hourly wind pressure is equal to or greater than 0.80 kPa but not greater than 1.20 kPa, anchorage shall be provided by fastening the sill plate tothe foundation with not less than two anchor bolts per braced wall panel, where all anchor bolts used are
 - (a) not less than 15.9 mm in diameter, located within 0.5 m of the end of the *foundation*, and spaced not more than 2.4 m o.c, or
 - (b) not less than 12.7 mm in diameter, located within 0.5 m of the end of the *foundation*, and spaced not more than 1.7 m o.c.
- 5) Where the seismic spectral response acceleration, S_a(0.2), is greater than 1.2 or the 1-in- 50 hourly wind pressure is equal to or greater than 1.2 kPa, anchorage shall be designed according to Part 4.



• 9.24.2.1. Size and Spacing of Studs in Interior Walls Steel Studs for Non-loadbearing Interior Walls

| Minimum Stud Size, mm | Maximum Stud Spacing, mm | Maximum Wall Height, m |
|-----------------------|--------------------------|------------------------|
| 32 × 41 | 400 | 3.0 |
| | 600 | 2.7 |
| 32×64 | 300 | 4.4 |
| | 400 | 4.0 |
| | 600 | 3.5 |
| 32 × 89 | 300 | 5.2 |
| | 400 | 4.6 |
| | 600 | 3.9 |
| 32 × 152 | 300 | 6.6 |
| | 400 | 5.8 |
| | 600 | 4.9 |



9.25.1.1. Scope and Application

- (1) This Section is concerned with heat, air and water vapour transfer and measures to control condensation.
- (2) All walls, ceilings and floors separating conditioned space from unconditioned space, the exterior air or the ground shall be
 - (a) provided with
 - i) thermal insulation conforming to Subsection 9.25.2.,
 - ii) an air barrier conforming to Subsection 9.25.3.,
 - iii) a vapour barrier conforming to Subsection 9.25.4., and
 - (b) constructed in such a way that the properties and relative position of all materials conform to Subsection 9.25.5.



9.25.4.2. Vapour Barrier Materials

- (1) Vapour barriers shall have a permeance not greater than 60 ng/(Pa•s•m²) measured in accordance with ASTM E 96/E 96M,
 - "Water Vapor Transmission of Materials," using the desiccant method (dry cup).
- (2) Where the intended use of the interior space will result in high moisture generation, the assembly shall be designed according to Part 5. (See Appendix A.)



- A-9.25.4.2.(2) Normal Conditions The requirement for a 60 ng/Pa•s•m² vapour barrier stated in Sentence 9.25.4.2.(1) is based on the assumption that the building assembly is subjected to conditions that are considered normal for typical residential occupancies, and business and personal services occupancies.
- However, where the intended use of an occupancy includes facilities or activities that will generate a substantial amount of moisture indoors during the heating season, such as swimming pools, greenhouses, laundromats, and any continuous operation of hot tubs and saunas, the building envelope assemblies would have to demonstrate acceptable performance levels in accordance with the requirements in Part 5.



- 9.32.3.8. Required Make-up Air for Principal Exhaust Fan
- The provision of makeup air as described in Sentence (1) is not required for mechanical exhausting devices operating a subfloor depressurization system installed for the purpose of reducing the risk of radon ingress.



- 9.32.4.2. Carbon Monoxide Alarms
- (7) Where CO alarms are installed in a house with a *secondary suite* including their common spaces, the CO alarms shall be wired so that the activation of any one CO alarm causes all CO alarms within the house with a *secondary suite* including their common spaces to sound.



- 9.33.3.1. Indoor Design Temperatures
- (1) At the outside winter design temperature, required heating facilities shall be capable of maintaining an indoor air temperature of not less than
- (a) 22°C in all living spaces,
- (b) 18°C in unfinished *basements*,
- (c) 18°C in common service rooms, ancillary spaces and exits in houses with a secondary suite, and
- (d) 15°C in heated crawl spaces.



- 9.33.4.2. Installation of Hydronic Heating Systems
- (1) The installation of a hydronic heating system shall conform to applicable provincial or territorial regulations or municipal bylaws or, in the absence of such regulations or bylaws, to CAN/CSA-B214, "Installation Code for Hydronic Heating Systems."



- 9.33.4.3. Heating System Control
- (1) Where a single heating system serves a house with a secondary suite, individual temperature controls shall be provided in each dwelling unit served by the system. (See Appendix A.)



9.35.2.2. Garage Floor

• (1)
in the
the

Where an attached or built-in garage is provided and where adjacent spaces building are less than 50 mm above garage floor,

•

(a) the garage floor shall be sloped to the outdoors, or

•

(b) where the garage can accommodate not more than 3 vehicles, an airtight curb or *partition* not less than 50 mm high shall be installed at the edges of the garage floor adjacent to interior space.



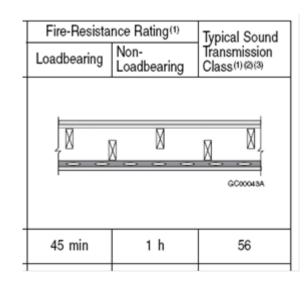
Other changes to Part 9
 Additional ratings and assemblies for Tables A-9.10.3.1.A. and B.

Added footnotes to Table A-9.10.3.1.A. and B.

Limit application of ratings to wood I-joists made with phenolic adhesives

(Table A-9.10.3.1.B.)

Allow finger-jointed studs (HRA stamped) (Table A-9.10.3.1.A.)





Other changes to Part 9

Reference Standards

Concrete <u>CSA A23.1</u> (A438)

Termite and Decay Protection new CSA O80

Steel Framing Standard AISI/COFS (CGSB)

Steel Screws Standard <u>ASTM C 954</u>

Sealant Standards <u>ASTM</u> (CGSB)

Asbestos Siding Standards Various



- Other changes to Part 9
- Expanded assumptions in Appendix Note
- Spans reflect
- balance of engineering and
- acceptable proven performance
- List factors and assumptions
- Span calculation applies a revised live load reduction factor
- to account for lower probability of a full live load in Part 9 buildings



- Other changes to Part 9
- Width of doorways in bathrooms
- Improve clarity of requirement and where it applies
- Lintels or arches
- Now reflects metric equivalents of standard imperial sizes (i.e. 89 mm and not 90 mm)
- Openings in insulating concrete form walls
- Consistency of requirements



- Starter strips
- Allow pre-fabricated starter strips
- Exhaust only ventilation systems
- Deleted ineffective method (drawing all air from bedrooms)
- Location of CO alarms
- General requirement follow manufacturers instructions
- For wood stoves only manufacturers' instructions or at ceiling
- Ducts for cooking
- More generic terminology change from "range-top fan" to "cooking exhaust fan" to cover common appliance types



