

2018 British Columbia Building Code Public Review of Proposed Changes

PROPOSED CHANGE: Additional Compliance Path for Combustible Mid-Rise Residential Buildings

CHANGE NUMBER: 2018-BCBC-09-Mid-Rise

CODE REFERENCE: 2015 National Building Code - Division B - Articles 3.2.2.10. and 3.2.2.50.

DESCRIPTION OF THE PROPOSED AMENDMENT:

Adopt the 2015 National Building Code of Canada (NBC) provisions for mid-rise combustible buildings with an exemption for certain buildings from the requirement that 25% of the building perimeter be located within 15 meters of a street or streets.

PROBLEM/GENERAL BACKGROUND:

The British Columbia Building Code (BCBC) is based substantially on the model NBC. The NBC is updated about every five years and British Columbia adopts most of the NBC requirements into the next edition of the BCBC. The 2018 BCBC will be based on the 2015 NBC with some changes specific to British Columbia.

British Columbia intends to adopt the 2015 NBC provisions for mid-rise combustible construction as a replacement for British Columbia's unique provisions. This presents a challenge of how to transition industry toward the new NBC approach from the existing approach. A change from British Columbia's existing provisions to the 2015 NBC provisions will present economic challenges due to the NBC requirement that not less than 25% of the building perimeter be located within 15 meters of a street or streets. Building lots with the potential today for development of mid-rise residential combustible construction could no longer be economically viable should British Columbia switch to requiring 25% street frontage from not. Industry has brought to the attention of the Province perceived impacts associated with this 25% rule.

The code language shown below is the proposed final code language that will appear in the 2018 BCBC. Comments submitted should focus on the changes noted. Changes from the 2012 BCBC to the 2015 NBC are not identified.

2018 PROPOSED BRITISH COLUMBIA CODE LANGUAGE (~~Deleted text~~ / Added text):

3.2. Building Fire Safety

3.2.1. GENERAL

3.2.2.10. Streets

- 1) Every *building* shall face a *street* located in conformance with the requirements of Articles 3.2.5.4. and 3.2.5.5. for access routes.
- 2) For the purposes of Subsections 3.2.2. and 3.2.5. an access route conforming to Subsection 3.2.5. is permitted to be considered as a *street*.

3) A-Except as required by Sentence (7), a building conforming to Article 3.2.2.50. or 3.2.2.58. is considered to face 1 *street* where not less than 25% of the *building* perimeter is located within 15 m of a *street* or *streets*.

4) A *building* is considered to face 2 *streets* provided not less than 50% of the *building* perimeter is located within 15 m of the *street* or *streets*.

5) A *building* is considered to face 3 *streets* provided not less than 75% of the *building* perimeter is located within 15 m of the *street* or *streets*.

6) Enclosed spaces, tunnels, bridges and similar structures, even though used for vehicular or pedestrian traffic, are not considered as *streets* for the purpose of this Part.

7) Sentence (3) does not apply to a building conforming to Article 3.2.2.50. provided

a) it has a maximum height of less than 18 m measured between *grade* and the uppermost floor level of the top storey, and

b) it has a *building area* not more than

i) 7 200 m² if 1 storey in *building height*,

ii) 3 600 m² if 2 storeys in *building height*,

iii) 2 400 m² if 3 storeys in *building height*,

iv) 1 800 m² if 4 storeys in *building height*,

v) 1 440 m² if 5 storeys in *building height*, or

vi) 1 200 m² if 6 storeys in *building height*.

(See also Sentence 3.2.2.50.(6) and Note A-3.2.2.10.(7).)

A-3.2.2.10.(7) Access Routes. Except for buildings to which the exemption in Sentence 3.2.2.10.(7) of Division B applies, this edition of the British Columbia Building Code requires that 5 and 6 storey residential buildings of combustible construction have not less than 25% of the building perimeter within 15 m of a street. In contrast, the 2012 British Columbia Building Code did not contain the 25% perimeter requirement for these buildings. To receive the exemption a building must:

- conform to the building height and building area limits set out in the 2012 British Columbia Building Code,
- conform to the construction requirements for mixed major occupancies as set out in the 2012 British Columbia Building Code, and
- conform to all other provisions for 5 and 6 storey residential buildings of combustible construction as set out in this edition of the British Columbia Building Code and the British Columbia Fire Code.

3.2.2.50. Group C, up to 6 Storeys, Sprinklered

1) A *building* classified as Group C is permitted to conform to Sentence (2), provided

a) it is *sprinklered* throughout,

- b) it is not more than 6 storeys in *building height*,
- c) it has a height not more than 18 m measured between the floor of the *first storey* and the uppermost floor level that does not serve a rooftop enclosure for elevator machinery, a stairway or a *service room* used only for service to the *building*, and
- d) it has a *building area* not more than
 - i) 9 000 m² if 1 storey in *building height*,
 - ii) 4 500 m² if 2 storeys in *building height*,
 - iii) 3 000 m² if 3 storeys in *building height*,
 - iv) 2 250 m² if 4 storeys in *building height*,
 - v) 1 800 m² if 5 storeys in *building height*, or
 - vi) 1 500 m² if 6 storeys in *building height*.

2) Buildings referred to in Sentence (1) are permitted to be of *combustible construction* or *noncombustible construction*, used singly or in combination, and

- a) except as provided in Sentence (3), floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 1 h,
- b) roof assemblies shall have a *fire-resistance rating* not less than 1 h,
- c) except as provided in Sentence (4), where the roof assembly has a height greater than 25 m measured from the floor of the *first storey* to the highest point of the roof assembly, the roof assembly shall be constructed of *noncombustible construction* or *fire-retardant-treated wood* conforming to Article 3.1.4.5.,
- d) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
- e) *loadbearing walls*, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3) In a building that contains *dwelling units* that have more than one storey, subject to the requirements of Sentence 3.3.4.2.(3), the floor assemblies, including those over *basements*, that are entirely contained within these *dwelling units* shall have a *fire-resistance rating* not less than 1 h but need not be constructed as *fire separations*.

4) Where buildings conforming to Sentence (2) include non-contiguous roof assemblies at different elevations, the roof assemblies are permitted to be evaluated separately to determine which ones are required to be constructed in accordance with Clause (2)(c).

5) Except as provided in Sentence (6), Group A, Division 2 *major occupancies*, Group E *major occupancies* and *storage garages* located in a *building* or part of a *building* within the scope of this Article are permitted to be constructed in accordance with this Article provided

- a) the Group A, Division 2 *major occupancy*, and Group E *major occupancy* is located below the third storey, and
- b) the *storage garage* is located below the fourth storey (See also Sentence 4.4.2.1.(1)).

(See Note A-3.2.2.50.(5) and 3.2.2.58.(4).)

- 6) Multiple *major occupancies* in a *building* that is permitted by Sentence 3.2.2.10.(7) shall not
- a) receive the permissions of Sentence (5), or
 - b) include *major occupancies* regulated by Article 3.2.2.58.
- (See Note A-3.2.2.10.(7).)

RATIONALE FOR CHANGE:

Adopting the provisions of the 2015 NBC (and the 2015 National Fire Code of Canada) for mid-rise combustibles residential buildings and discontinuing British Columbia's existing provisions will remove a compliance path for certain lot configurations. The proposed code change provides a compliance path to allow industry in British Columbia to use either the NBC provisions for 5 and 6 storey combustibles residential buildings in whole, or to utilize the exemption from the 25% street facing requirement on the conditions that building height, building area, and the construction of multiple and superimposed major occupancies are limited to those permitted by the 2012 BCBC.

JUSTIFICATION/EXPLANATION:

Since 2009, British Columbia's provisions for mid-rise residential combustibles construction have achieved an acceptable level of performance. The 2015 NBC introduces other provisions for similar buildings, with greater design permissions, balanced with greater compensatory measures. The NBC approach does not lessen the level of performance required by the BCBC so continuing the British Columbia approach will maintain a level of performance already accepted. As a benefit, other new provisions in the NBC will be applied to the continued British Columbia approach which will raise the level of performance of these buildings. This continued approach is proposed as a solution for this edition of the BCBC while British Columbia continues participation to further national code development of mid-rise buildings and moves towards alignment with the National Codes.