

2018 British Columbia Building Code Public Review of Proposed Changes



PROPOSED CHANGE: Radon

CHANGE NUMBER: 2018-BCBC-11-Radon

CODE REFERENCE(S): 2015 National Building Code - Division A - Subsection 1.1.3.,
Division B - Subsection 9.13.4.

RELATED CODE REFERENCE(S): Division B / Table C-3 in Appendix C

DESCRIPTION OF THE PROPOSED AMENDMENT:

It is proposed to change the application of radon protection requirements to defer to the data established by the authority having jurisdiction and, in the absence of such data, to a revised table in the British Columbia Building Code (BCBC).

PROBLEM/GENERAL BACKGROUND:

The BCBC is based substantially on the model National Building Code of Canada (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. However, the table of locations requiring radon rough-ins is unique to British Columbia. As such, the Province must update this table periodically.

Health Canada guidelines for indoor radon concentration establish an annual average concentration of 200 Bq/m³. In locations where there is evidence of radon concentration in buildings exceeding the Health Canada guidelines, a means to address high radon concentrations in the future is required by the BCBC, should unacceptable indoor radon concentrations be found once the building is completed.

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

1.1.3. CLIMATIC AND SEISMIC DESIGN DATA

1.1.3.1. Climatic and Seismic Values

- 1) <Except as required by Sentence 9.7.4.3.(2), the climatic and seismic values required for the design of *buildings* under this Code shall be in conformance with the values established by the *authority having jurisdiction* or, in the absence of such data, with Sentence (2) and the climatic and seismic values in Appendix C. (See Appendix A.)>
- 2) The outside winter design temperatures determined from Appendix C shall be those listed for the January 2.5% values. (See Appendix A.)

1.1.3.2. Depth of Frost Penetration

1) Depth of frost penetration shall be established on the basis of local experience.

1.1.3.3. Soil Gas

1) Locations where the requirement for a means to address high radon concentrations in the future applies shall be determined in accordance with the data established by the *authority having jurisdiction* or, in the absence of such data, in accordance with Article 9.13.4.2. and Table C-3 in Appendix C.

9.13.4.2. Protection from Soil Gas Ingress

1) All wall, roof and floor assemblies separating *conditioned space* from the ground shall be protected by an *air barrier system* conforming to Subsection 9.25.3.

2) Except as permitted by Sentence (4), unless the space between the air barrier system and the ground is designed to be accessible for the future installation of a subfloor depressurization system, *dwelling units* and *buildings* containing *residential occupancies* shall be provided with the rough-in for a subfloor depressurization system conforming to Article 9.13.4.3.

3) Except as permitted by Sentence (4) or (5), where *buildings* are used for *occupancies* other than those described in Sentence (2), and are intended to be occupied on average for greater than 4 hours within a 24 hour period, protection from radon ingress and the means to address high radon concentrations in the future shall conform to

- a) Article 9.13.4.3., or
- b) Part 5 and 6 (see Article 5.4.1.1. and 6.2.1.1.).

(See Appendix A.)

4) Locations where the requirement for a means to address high radon concentrations in the future applies shall be determined in accordance with Article 1.1.3.3. of Division A.

5) *Buildings* described in Clause 9.16.2.1.(2)(b) need not conform to Sentence 9.13.4.2.(3).

Table C-3 Locations in British Columbia Requiring Radon Rough-Ins (see Article 9.13.4.2.) ⁽¹⁾ Forming part of Appendix C	
Location	Radon Area 1 or 2 Radon Rough-In Required/Not Required
100 Mile House	1 Required
Abbotsford	2 Required

Agassiz	2 Not Required
Alberni	2 Not Required
Ashcroft	1 Required
Atlin	1 Required
Bamfield	2 Not Required
Barriere	1 Required
Beaton River	2 Not Required
Bella Bella	2 Not Required
Bella Coola	2 Not Required
Brackendale	2 Not Required
Burns Lake	1 Required
Cache Creek	1 Required
Campbell River	2 Not Required
Carmi	1 Required
Castlegar	1 Required
Chetwynd	1 Required
Chilliwack	2 Not Required
Clearwater	1 Required
Colwood	Not Required
Comox	2 Not Required

Coquitlam	2 –Not Required
Courtenay	2 –Not Required
Cranbrook	1 –Required
Crescent Valley	1 –Required
Crofton	2 –Not Required
Dawson Creek	1 –Required
Dease Lake	1 –Required
Delta	2 –Not Required
Dog Creek	1 –Required
Duncan	2 –Required
Elko	1 –Required
Fernie	1 –Required
Fort Nelson	1 –Required
Fort St. John	1 –Required
Garibaldi	2 –Not Required
Genelle	1 –Required
Glacier	1 –Required
Gold River	2 –Not Required
Golden	1 –Required
Grand Forks	1 –Required

Greenwood	1 Required
Hope	2 Required
Invermere	1 Required
Jordan River	1 Required
Kamloops	1 Required
Kaslo	1 Required
Kelowna	1 Required
Kimberley	1 Required
Kitimat Plant	2 Not Required
Kitimat Townsite	2 Not Required
Ladysmith	2 Not Required
Langford	2 Not Required
Lillooet	2 Required
Little Fort	1 Required
Lytton	1 Required
Mackenzie	1 Required
Masset	2 Not Required
McBride	1 Required
McLeod Lake	1 Required
Merritt	1 Required

Mission City	2 –Not Required
Montrose	1 –Required
Nakusp	1 –Required
Nanaimo	2 –Not Required
Nelson	1 –Required
Ocean Falls	2 –Not Required
Osoyoos	1 –Required
Parksville	2 –Not Required
Pemberton	2 –Not Required
Penticton	1 –Required
Port Alberni	2 –Not Required
Port Alice	2 –Not Required
Port Clements	2 –Not Required
Port Hardy	2 –Not Required
Port McNeill	2 –Not Required
Port Moody	2 –Not Required
Port Renfrew	2 –Not Required
Powell River	2 –Not Required
Prince George	1 –Required
Prince Rupert	2 –Not Required

Princeton	1 Required
Qualicum Beach	1 Required
Queen Charlotte City	2 Not Required
Quesnel	1 Required
Revelstoke	1 Required
Rosland	1 Required
Salmon Arm	1 Required
Sandspit	2 Not Required
Sechelt	2 Required
Sidney	2 Not Required
Smith River	1 Required
Smithers	1 Required
Sooke	2 Not Required
Squamish	2 Not Required
Stewart	1 Required
Tahsis	2 Not Required
Taylor	1 Required
Terrace	1 Required
Tofino	2 Not Required
Trail	1 Required

Ucluelet	2 –Not Required
Valemont	1 –Required
Vavenby	1 –Required
Vancouver Region	-
Burnaby (Simon Fraser Univ.)	2 –Not Required
Cloverdale	2 –Not Required
Haney	2 –Not Required
Ladner	2 –Not Required
Langley	2 –Not Required
New Westminister	2 –Not Required
North Vancouver	2 –Not Required
Richmond	2 –Not Required
Surrey (88 Ave & 156 St.)	2 –Not Required
Vancouver (City Hall)	2
Vancouver (Granville & 41 Ave)	2
West Vancouver	2 –Not Required
Vernon	1 –Required
Victoria Region	-
Victoria (Gonzales Hts)	2 –Not Required
Victoria (Mt. Tolmie)	2 –Not Required

Victoria	2 –Not Required
Whistler	2 –Required
White Rock	2 –Not Required
Williams Lake	1 –Required
Youbou	2 –Not Required

Notes to Table C-3:

⁽¹⁾ Testing has demonstrated that specific areas of the province are at an elevated risk of the presence of indoor radon levels exceeding Health Canada guidelines. For locations identified in this table as not requiring a radon rough-in, there is not sufficient evidence to determine an elevated risk of the presence of indoor radon levels exceeding Health Canada guidelines at the time of publication.

RATIONALE FOR CHANGE:

Evidence of indoor radon levels exceeding Health Canada guidelines has been found in many areas that are currently exempted from providing a means to address high radon concentrations in the future (e.g., a rough-in for a subfloor depressurization system). Building codes and revisions to building codes are challenged to keep pace with the increasingly available radon data known to local authorities.

JUSTIFICATION/EXPLANATION:

Since the 2012 BCBC was published, new evidence¹ has been submitted that identifies radon concentrations in buildings exceeding the Health Canada guidelines in some areas that were exempt from the BCBC’s requirement for a means to address high radon concentrations in the future. Table C-3 is proposed to be updated to reflect that evidence.

Further, it is proposed to defer the classification of radon areas to the data established by the authority having jurisdiction, who may have more current data of radon concentrations in their jurisdiction. It is also anticipated that the authority having jurisdiction will be able to respond more quickly than the BCBC when new evidence of radon concentration is found.

In the absence of data from the authority having jurisdiction, Table C-3 in the 2018 BCBC will apply.

Table C-3 has also been updated to delete the concept of radon areas 1 and 2. For clarity and ease of understanding, the new table defines whether the radon rough-in is required, or not required.

References within the City of Vancouver have been removed as the BCBC does not apply in those areas.

¹ Cross Canada Residential Surveys of Radon Concentrations in Homes (2009-2011)
National Radon Laboratory, Radiation Protection Bureau