

Public Review

BC Building Code 2023

Proposed change to early adopt National Building Code 2025
proposed changes

Topic: Earthquake Design for Housing and Small Buildings

Code change number: BCBC2023-PR-03-ED

Code reference: BC Building Code 2018 – Part 9 of Division B, Subsection 9.23.13.

Related code reference(s): Appendix C of Division B, Table C-3, and online [NRC Seismic Hazard Tool](#)

Description of the proposed change

The proposed change is to early adopt provisions developed for the 2025 National Building Code of Canada that allow improved design methodologies within Part 9 to address earthquake resistance of housing and small buildings in locations with high seismic hazard values. The National Building Code (NBC) 2020 seismic hazard values have increased in many populated locations in the Province, which leads to a requirement for registered professional engineers to oversee the structural design and construction of housing and small buildings in accordance with Part 4 of the BCBC. Early adopting these proposed NBC 2025 changes into the BC Building Code 2023 (BCBC) will address the higher seismic safety requirements of the NBC 2020 while providing earthquake design solutions for small buildings that are available without requiring a professional engineer.

Justification

British Columbia will be adopting the updated seismic hazard in the NBC 2020 so that seismic risks and loads on buildings can be appropriately designed for. However, a consequence of doing so is that many buildings in many locations throughout British Columbia will exceed the parameters of structural design within Part 9 of the NBC 2020. The result limits design to being done only by registered professionals and only to Part 4.

A proposal has been developed for additional design methodologies within Part 9 to address buildings in locations with high seismic values. British Columbia can offer design flexibility and help manage costs by adopting proposed changes in advance of their inclusion in the NBC 2025.

Early adoption of these proposed changes will allow housing and small buildings to choose structural design options within Part 9 that respond to a single set of seismic hazard values, such as for Part 4, that was developed based on current knowledge of seismic hazards across the country.

Impact analysis

The NBC 2020 increases seismic hazard values over those in the NBC 2015 and BCBC 2018 for many locations in British Columbia. These increased values can result in the Part 9 design parameters being exceeded, thus requiring registered professionals to design to Part 4. The proposal to early adopt proposed changes for the NBC 2025 into the BCBC 2023 intends to lessen the impact of design by registered professionals to Part 4 and instead, offer prescriptive design solutions within Part 9. The proposed Part 9 prescriptive design solutions offer additional methodologies whereby some building designs may see a softening of costs due to increased accuracy of site condition factors and the resulting impacts on design, materials, and labour. However, some building designs and locations will see a cost increase resulting from the increased seismic hazard values and the proposed Part 9 design methodologies. These increases may include additional design costs, material costs, and/or labour costs. The methodologies proposed may be new to designers, builders, and enforcement officials.

Proposed National Code content for adoption

An NBC national public review took place between February 27 to April 27, 2023. The proposed change from that review # PCF-1475 contains the new provisions for Part earthquake design. For more information review the PCF 1475 Structural Design (Part 9) lateral loads on the B.C. public review [webpage](#).

Note: This national proposal is provided for informational purposes only and may differ from the final national provisions. This PCF has not yet been approved for publication by the Canadian Board for Harmonized Construction Codes.