

## Proposed Changes to the British Columbia Building Code 2024

Title: Structural Elasticity

Subject/description: Proposal to reference clauses of recent industry standards for guidance for designers on what it means for structures to 'behave elastically'.

Applicable Code references: Table 1.3.1.2. and Article 4.1.8.23. of Division B

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### Problem

The British Columbia Building Code 2024 does not provide much guidance on what it means for structures to “behave elastically” which leads to confusion and inconsistency. British Columbia can offer design flexibility by adopting proposed changes in advance of their inclusion in the National Building Code of Canada 2025 edition. This can be applied to Post-disaster, High, and a subset of Normal Importance building Categories. The 2020 National Building Code of Canada Structural Commentary J has guidance related to Article 4.1.8.23 and “behave elastically” but the clauses in the 2024 editions of the Canadian Standards Association (CSA) standards are more current and more specific. The changes to the 2024 editions of the CSA standards are also in response to the engineering community’s request for further guidance on “behave elastically” after NBC 2020 was released in 2022. The specified clauses within the 2024 editions of the Canadian Standards Association (CSA) standards described in this proposed code change provide more clarity on defining “behave elastically”, which should also help to provide consistency in interpretation and application for industry.

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### Justification

The proposed change is with respect to Article 4.1.8.23. of Division B and providing designers current sources of guidance on what it means for structures to “behave elastically”. In 2024, new Canada-wide seismic data was released and referenced by the recent British Columbia Building Code changes that came into force for some projects on March 10, 2025. This proposed code change permits designers to apply specific clauses of new 2024 editions of CSA standards by reference in a new sentence under Article 4.1.8.23. At this time, it is only specific clauses of the CSA 2024 editions of standards to be explicitly referenced as they relate to structures behaving elastically. The remainder of the 2024 editions are being reviewed for impacts on other aspects of design, and in the interim, the currently referenced editions (2019 and 2014 respectively) will continue to apply to those other design aspects.

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## Proposed Change

In this document:

Black text represents 2020 National Model Code content adopted in the British Columbia Building Code 2024

Green text represents proposed unique-to-British Columbia content

Only excerpts of the British Columbia Building Code 2024 are reproduced

Issuing Agency	Document Number <sup>(3)</sup>	Title of Document	Code Reference
CSA	A23.3:19	Design of concrete structures	Table 4.1.8.9. 4.1.8.18.(7) 4.3.3.1.(1) A-4.1.3.2.(4) A-4.1.8.16.(1) A-4.1.8.16.(4) A-4.3.3.1.(1)
<u>CSA</u>	<u>A23.3:24</u>	<u>Design of concrete structures</u>	<u>4.1.8.23.(8)</u>
CSA	S16:19	Design of steel structures	Table 4.1.8.9. 4.3.4.1.(1) A-4.1.5.11. A-Table 4.1.8.9. A-4.3.4.1.(1)
<u>CSA</u>	<u>S16:24</u>	<u>Design of steel structures</u>	<u>4.1.8.23.(8)</u>
CSA	S304-14	Design of masonry structures	Table 4.1.8.9. 4.3.2.1.(1) A-5.1.4.1.(6)(b) and (c)
<u>CSA</u>	<u>S304-24</u>	<u>Design of masonry structures</u>	<u>4.1.8.23.(8)</u>

### **4.1.8.23. Additional Performance Requirements for Post-disaster Buildings, High Importance Category Buildings, and a Subset of Normal Importance Category Buildings**

8) Notwithstanding Sentence 1.3.1.1.(1), for the purpose of defining “behave elastically” with respect to Article 4.1.8.23., the design is permitted to be in accordance with the 2024 editions of:

- a) [CSA A23.3 Design of Concrete Structures, clauses 21.12.2 and 21.12.3,](#)
  - b) [CSA S16 Design and Construction of Steel Structures, clause 27.1.10, and](#)
  - c) [CSA S304 Design of Masonry Structures, clause 17.3.5.](#)
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## **Impact analysis and cost implications**

Clear and consistent understanding of the Building Code helps avoid design and construction delays and unnecessary costs. It is anticipated that projects could see construction cost savings by accounting for the elastic behaviour of the structure in the design.

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## **Enforcement implications**

Can be enforced through the existing enforcement regimes. Enforcement authorities may wish to review the editions of the standards proposed to be referenced which can be purchased as a PDF (Portable Document Format) and accessed via [CSA OnDemand™](#).

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## **Who is affected**

Designers and regulators

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## **Objective-based analysis of new or changed provisions**

No attributions proposed to be assigned.