



CRI

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Performance-Based Codes

In Canada, provincial and territorial governments have the authority to enact legislation that regulates building design and construction within their jurisdictions. This legislation may include the adoption of the National Building Code of Canada (NBC) without change or with modifications to suit local needs. The NBC is a model code. Where adopted, it helps to promote consistency among provincial and territorial building codes.

The objective-based code format of the NBC uses objectives and functional statements to describe the conditions necessary to achieve code compliance. It provides two compliance paths: (1) complying with acceptable solutions, and (2) using alternative solutions. Acceptable solutions provide provision-based technical design requirements that may include prescriptive and performance-based compliance options. The alternative solution compliance path allows for design flexibility and innovation on a provision-by-provision basis. In this case, the designer must demonstrate that the proposed solution meets at least the minimum level of performance of the applicable acceptable solution requirements.

Improving the clarity of intended levels of performance for the current NBC can provide more design flexibility and innovation via the alternative solutions compliance path, where performance-based approaches can be leveraged. It also supports the overall movement towards PBCs. Before increasing the number of performance-based provisions in the NBC, knowledge gaps need to be addressed and research on the feasibility of the development of a PBC for Canadian model codes must be undertaken.

To this end, focusing on fire safety and seismic design for the pilot, the National Research Council of Canada (NRC) first identified lessons learned from other countries that have developed, implemented and revised performance-based building codes. Following this research, a workshop on performance-based codes was conducted in March 2022. The workshop was focused on engaging Canadian stakeholders and international speakers, who provided insights and suggestions on the potential structure of a future performance-based NBC

The workshop had a total of 95 participants and provided opportunities to gauge interest, share concerns and learn from the outcomes of PBC-focused research and initiatives undertaken internationally. Moving forward, the learnings of the workshop will contribute to the development of research towards a more performance-based NBC. This research will build regulatory capacity and work towards the development of regulations that can better respond to additional or changing priorities (for example, increased climate resilience) while allowing greater flexibility for designers.