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## New codes offer more clarity and flexibility

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## **2005 National Construction Codes:**

More Clarity and Flexibility for Designers

*This article introduces Construction Canada's readers to the objective-based 2005 National Construction Codes and highlights some of the key technical changes compared with the 1995 editions.*

By Jim Gallagher and Martin Thériault

A new objective-based concept in building regulation is making its way into the construction industry with the recent publication of the 2005 versions of three national construction codes by the National Research Council.

The National Building Code, the National Fire Code and the National Plumbing Code were released in late September after a comprehensive ten-year review that began after the publication of the 1995 editions. The review by industry and provincial/territorial representatives, in collaboration with the NRC Institute for Research in Construction, has brought not only numerous technical changes but significant new information to help users understand what must be done to satisfy code provisions. This new information, at the heart of the objective-based format, will make the codes clearer, enable easier application to existing buildings and remove barriers to innovation by assisting designers in proposing "alternative solutions" to code requirements if they wish to do so.

"Objective-based" means all provisions in a particular code will be tied directly to the code's objectives. For the National Building Code, for example, these objectives are safety, health, accessibility of occupants, and fire and structural protection of buildings. The new objective-based format will help designers understand the reason why a particular provision must be met and provide information that will assist them to develop and evaluate alternative solutions should they wish to propose one.

Veteran codes users know that past editions of the national codes have always permitted alternative solutions, known previously as "equivalencies." This means designers could devise a different solution from what the code prescribed, as long as they could prove to a building official that it would work just as well. The new objective-based codes continue that long-standing tradition but make the process clearer by providing explanatory information that will, in turn, help building code officials to review and approve them the alternative solutions.

On the other hand, for the many users who wish to stick to the tried and true approach of meeting code requirements and nothing else, however, the new codes will require little change or adjustment. For their day-to-day work they will find the same code provisions as they found in the 1995 editions (now referred to as "acceptable solutions") and they won't have need for the additional explanatory information that the objective-based codes provide.

## **How the New Codes are Organized**

To accommodate the objective-based concept, the 2005 codes have a new organizational layout that differs from the 1995 editions. Each of the three new codes comprises three divisions: **A, B and C**. Divisions A and B are of greater interest for users, with Division B holding the most similarity to the 1995 editions. **Division C** contains administrative provisions, which have all been consolidated into this one place from various places in the 1995 codes. Division C also contains general provisions for the review and documentation of alternative solutions.

**Division B** is for those wishing to stick to the tried and true. It contains the acceptable solutions (standard code provisions) referred to above but updated with the many technical changes that reflect research findings and technology advances since 1995. Most builders and contractors will likely use Division B because they are familiar with the provisions that have been in effect and proven to work for many years and because their clients are not requesting innovative solutions. The code structure and vocabulary that these users are familiar with remain in place.

For designers who wish to work with their clients to develop alternative solutions, **Division A** provides explanatory information that will help assess whether an alternative will offer equivalent performance to the acceptable solution of Division B. This new information includes “Objectives” and “Functional Statements.” Objectives state what needs to be achieved, which, for the National Building Code are, as stated above, safety, health, accessibility, and fire and structural protection. Functional statements aid in understanding by further describing the functions a building must perform.

All of the provisions in Division B will be linked to at least one objective and one functional statement in Division A to help designers and regulatory authorities better understand the reason why a particular provision must be met and to help them evaluate their alternative solutions. There are limitations on the application of certain objectives and functional statements (not all objectives and functional statements apply to all buildings).

### **NRC Seminars to Review Code Changes**

The National Research Council has organized a series of seminars to review the most significant technical changes in the new codes. The seminars, to begin in December, will be given in major cities across Canada, with sessions for Vancouver and Victoria scheduled for March 2006.

For convenient purchase of the 2005 codes (only the printed versions are available now, with CD-ROM versions coming in early 2006), the NRC Institute for Research in Construction has just launched its Virtual Store. Further details on this and many other aspects of the new codes and the upcoming seminars are available at <http://www.nationalcodes.ca>. Readers can also access the September issue of the IRC newsletter, Construction Innovation, at: [http://irc.nrc-cnrc.gc.ca/pubs/ci/v10no3/v10no3\\_e.html](http://irc.nrc-cnrc.gc.ca/pubs/ci/v10no3/v10no3_e.html)

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