



## CODES AND STANDARDS DE-MYSTIFIED

Codes and standards have a huge impact on what gets made, sold and installed in our industry, but how well do we understand the process that made and continues to make it possible for us to benefit from Canada's regulatory system? Some may scoff at viewing this

country's system as beneficial, but consider the situation in the United States where as an engineer or contractor you must design and install in a country where the model code and relevant standards vary from region to region and State to State.

At one time there were four major code bodies in the U.S., now however the Uniform Plumbing Code (UPC) and the International Plumbing Code (IPC) are the most prevalent. There is talk of trying to amalgamate to have only one model code and one current version.

### SOME HISTORY

What is the hierarchy of regulation in Canada? Jack Robertson, the former head of the BC Building Standards Branch, now in Regulatory Services

with Underwriters' Laboratories, offers some insight. According to Robertson, "In descending order governance is controlled by: legislation; acts; regulations (which include codes and standards); and policies (and guidelines for policy use) where the Constitution Act makes the provinces and territories responsible for building regulation."

At one time, like the U.S. today, Canada did not have one model code, which left us with individual authority having jurisdiction creating its own regulations. It was a lengthy evolution to the high degree of uniformity we currently have (see sidebar).

Today the Canadian Commission on Building and Fire Codes (CCBFC) develops and updates six model national codes, including: the National Building Code of Canada 2005; the

National Fire Code of Canada 2005; and the National Plumbing Code of Canada 2005. The members of the committees and task groups that CCBFC oversees establish the content of those model codes. Typically relevant sectors and geographical areas of the country are represented. NRC publishes the model codes on behalf of the CCBFC. Provinces and territories have the opportunity to give guidance on the scope, content, format, and development process of the model codes through the Provincial/Territorial Policy Advisory Committee on Codes (PTPACC).

### SIGNIFICANT CHANGES

The last update to the National Building Code, NBC 2005, was the first in 10 years and has resulted in some significant changes. Up to and including the 1995 National Building Code, the requirements of the code were prescriptive; meaning that the methods of installation were limited to those methods and materials recognized within the intent and substance of the code.

NBC 2005 is an objective-based code which allows for greater flexibility through provisions to consider alternate methods and materials for use on a given project. As it is explained at the NRC website, previous editions of the National Building, Plumbing and Fire Codes did make some provision for flexibility, however when something new was proposed: "*it must be demonstrated that it provides the level of performance required by the codes. The objective-based codes (published in September 2005) provide additional information that will help proponents and regulators determine what minimum performance must be achieved, thereby facilitating the evaluation of new products and construction techniques.*"

### THE ROAD TO UNIFORMITY

The following is a dateline of major events that resulted in what we know as the NBC 2005.

- 1937 The National Research Council starts development of a model building regulation that could be adopted by all municipalities in Canada.
- 1941 The first edition of the National Building Code is published. The model national building, plumbing and fire Codes are later adopted by the provinces and territories.
- 1948 Demand for a revised code heats up. NRC creates the Associate Committee on the National Building Code to update and maintain the document and to provide for a broader input.
- 1953 NBC is revised. New versions have been published about every five years since. NBC 2005 is the 12th edition.
- 1956 The Associate Committee on the National Fire Code is created and produces the first edition of the National Fire Code in 1963.
- 1991 Associate Committees disbanded and replaced by the Canadian Commission on Building and Fire Codes (CCBFC).

A detailed history is available at the National Research Council of Canada website ([http://irc.nrc-cnrc.gc.ca/codes/about\\_E.shtml](http://irc.nrc-cnrc.gc.ca/codes/about_E.shtml)).

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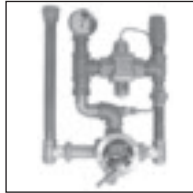
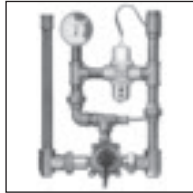
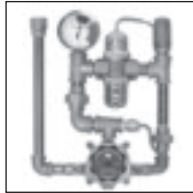
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The Uniform Plumbing Code from the International Association of Plumbing and Mechanical Officials is one of the most prevalent codes referenced in the United States.

*Also, proponents and regulators who assess code conformance will have a better common understanding of the compliance issues thanks to the additional information provided."*

According to Robertson, "All of the prescriptive requirements are still there, however the door is opening to the way codes can be used in the future. We will soon see the affect of this as most of the provinces will adopt the 2005 version model codes in the second or third quarters of 2006 following review and inclusion of some minor variations."

While this is welcomed by many who felt the old system was adversarial and limiting, it does raise questions that have yet to be answered.

### INNOVATE WITH CARE

As each of these "new" methods or material applications has to be evaluated, at some level the process becomes more subjective. How is this possible? Under the old system, as it was for all intents and purposes practicably prescriptive, there was far less opportunity for interpretation and fewer gray areas requiring an opinion on the suitability

of any proposed alternative solution. Under the new regime, each alternative will have to be considered and the potential for subjectivity increases unless the consideration process limits interpretation; in which case it might as well be prescriptive and can be as the prescriptive elements remain in the document.

You would expect that in this objective-based approach, designers and installers will potentially have more options. However, by proposing alternatives that fall outside of what was possible under the old prescriptive code requirements, are they not exposing themselves to additional liability? The

**NBC 2005 incorporates an objective-based format.**



in a code adopted by a provincial, territorial or municipal authority. A code on the other hand, as defined by NRC, is broad in scope. It covers a wide range of issues and is intended to be given the

explains, “The charter gives council authority to adopt its own by-laws.”

As we move forward with the new 2005 National Building Code, many more questions will be asked and answered. This is possible because according to Pope, “In this last round of development, since the work was done by committee, consensus and input from a variety of groups made this a very inclusive process.”

We are fortunate to have commonality and as much uniformity as we do. Canadians benefit, as does our industry since we do not have to make products specific to small regions, or deal with installation methods limited by the interpretation of isolated regulators. **HPAC**

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**Author's note:** This is my last by-lined feature for some time as I am taking a break from writing. Over the last four years I have learned many things from my involvement with HPAC. Thank you to everyone who has written me or stopped me at a trade show to offer an opinion on one of my articles. This has been a rewarding and enjoyable experience and I look forward to returning to it in the future.

“The range of alternatives will in some way be impacted by standards concerning construction methods, material assemblies and product evaluation”

freedom to innovate will no doubt be influenced by the principles of accrued liability and the considered reality of pushing the envelope of accepted or common practice.

**STANDARDS EXPLAINED**

The range of alternatives will in some way be impacted by standards concerning construction methods, material assemblies and product evaluation.

What is the difference between a standard and a code? In the construction context, a standard is generally narrow in scope. It is intended to be given force of law by being referenced

force of law through adoption by a provincial, territorial or municipal authority.

Over 200 standards are referenced in Canada's NBC. These standards are developed by organizations accredited by the Standards Council of Canada as standards development organizations (see *Figure 1*). The role of these firms is not only to author new standards but also to provide compliance testing services. Beyond them, there are many other firms that are Standards Council accredited to provide testing services, but that do not play a role as standards authors.

**THE WILD CARD**

In some cases, the regulatory powers of individual cities pre-dated or superseded the provincial mandate. Cities governed by their own charter, such as the City of Vancouver, may adopt by reference any code or standard including those not currently referenced in the model National Code, giving them greater flexibility in carrying out their mandate.

David Pope is the manager of the Plumbing Branch – Permits and Inspections in the City of Vancouver and he

**FIGURE 1**

**STANDARDS DEVELOPMENT ORGANIZATIONS**

- Canadian Standards Association
- Underwriters' Laboratories Canada
- Canadian General Standards Board
- Bureau de Normalisation du Quebec

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