



# The Need to Recognize Fire Fighter Safety in the National Building Code of Canada

## Background

Every fire creates the potential for danger, but perhaps no fire is as potentially devastating as one that occurs inside a family home. As a result, society has built modern urban fire departments capable of being on scene quickly and entering the burning home to conduct search and rescue of anyone who may be trapped. This is an inherently dangerous situation for fire fighters, but they do it because it is their duty, and with the trust that measures are taken by society to make even the most dangerous of professions as safe as possible.

But imagine fire fighters streaming into a home laced with hidden dangers such as lightweight floor assemblies that are on the verge of collapse, not even 10 minutes into the fire. The questions must be asked: what are the rules and regulations when it comes to minimum construction requirements, and who decides them? Is the fact that fire fighters may be entering a home building while others are fleeing properly recognized in the rules that govern residential construction? And, importantly, can stakeholders such as fire fighters gain effective participation in the development of the rules governing residential construction and properly raise concerns about their safety? Alarming, the answers to some of these questions are unclear.

The National Building Code of Canada is administered by the Canadian Commission on Building and Fire Codes (CCBFC), which oversees the work of nine committees and numerous working groups. The CCBFC is connected to the National Research Council, an agency of the federal government that is overseen by Industry Canada, a federal government department.

The NBC is a model code that specifies minimum requirements; some provinces adopt the code while others use it as a basis for the development of their own code. The Provincial -Territorial Policy Advisory Committee on Codes (PTPACC) relays provincial and territorial code issues and priorities to the CCBFC. Together, the CCBFC and PTPACC solely set National Building Code priorities and issues to be addressed.

While fire safety has always been an important component of the National Building Code, advances in construction and in the development of lightweight materials have occurred quickly, and in 2005, a switch was made to objective-based codes. First responder safety was not made a functional requirement under the 2005 and 2010 editions of the National Building Code, which means that designers and builders don't have to specifically consider it. It also means that fire fighter safety cannot be the basis of a proposed amendment to the National Building Code, because it does not match any of the stated objectives.

The expanded use of lightweight building materials and construction techniques has been a major concern for fire fighters across North America. Scientific testing, including research performed by the National Research Council, has shown that lightweight materials such as engineered floor assemblies used in new homes typically fail much faster than traditional flooring construction. This places fire fighters in direct danger when conducting interior search and rescue in residential dwellings. Existing language in the building code that addresses building occupant safety does not adequately consider the unique role that fire fighters play during a structural fire, and the IAFF fears it may only be a matter of time before a tragedy occurs as a result.

Because it does not specifically reference fire fighters, Part 9 of the National Building Code – which applies to residential structures – assumes that fire fighters will not have to enter the room of fire origin to perform rescue of anyone who may be trapped, or hiding, as children sometimes do when fire erupts. The reality is that modern urban fire departments routinely provide aggressive interior attack beyond the immediately dangerous to life and health (IDLH) levels, therefore making them more susceptible to any issues relating to post-flashover and structural compromise. The public expects and deserves this level of protection.

In the past, the IAFF has tried to raise fire fighter safety issues through the channels provided by the CCBFC, such as the codes amendment process, only to have those concerns ignored or dismissed outright. For example, at an August, 2009 meeting, building code officials pledged to investigate what happened with previous and unacknowledged IAFF submissions on the switch to objective based codes and window egress, but never followed through.

At the same meeting, the IAFF was invited to use the existing code change request process to pursue the goal of having fire fighter safety added as a core objective. As a result, the IAFF provided a formal code change request submission on this issue. Like other IAFF submissions, it was not acknowledged by the CCBFC. In early 2011, after repeated inquiries about the status of the submission, the IAFF was advised that the request had been rejected at a closed meeting of the CCBFC in December, 2010 with the rationale that existing code language referring to “building occupants” was meant to refer to first responders as well. This is despite the fact that fire fighters may be entering a burning structure to perform search and rescue after others may have been able to escape.

The CCBFC also argues that adopting provisions specifically referencing the need for fire fighter safety in Part 9 of the National Building Code could fundamentally change how houses are designed and have “major technical, policy and cost implications.” The IAFF argues that cost and policy implication cannot be overriding factors when it comes to fire fighter and public safety issues.

The IAFF welcomes news that in response to recent large-scale fires, improvements in the area of spatial separation and the fire performance of exterior cladding were expedited and included in the 2010 edition of the National Building Code. At the same time however, safety problems caused by lightweight floor assemblies still exist, while new threats to fire fighter safety are emerging, such as the potential allowance in the Building Code of six-storey all-wood construction.

Virtually every other nation recognizes fire fighter safety in its building codes. The International Residential Code (IRC), which applies to the U.S., was recently amended to require improved floor assembly fire performance, specifically to allow time for fire fighters to conduct rescue and firefighting activities.

### **IAFF Position**

The IAFF calls on the Minister of Industry to review existing shortfalls with the National Building Code that impact fire fighter safety, specify that first responder safety can be used as the basis of a code change request and ensure that fire fighter safety is written into the code as a core requirement in the 2015 code review cycle. These measures are necessary in order to enable outside stakeholders to effectively pursue future code amendments that may be necessary improve fire fighter safety.

### **IAFF Arguments**

- ✓ New lightweight building materials and construction techniques with decreased fire performance capabilities have come on scene quickly
- ✓ Fire performance in housing materials and construction directly impacts fire fighter safety
- ✓ Because fire fighter safety is not a core requirement in the National Building Code, homebuilders are not required to consider it when designing and building homes and it is also exceedingly difficult for stakeholder groups like the IAFF to achieve building code amendments
- ✓ Existing Building Code language addressing building occupant safety does not adequately consider the unique role that fire fighters play during a structural fire

### **Current Status**

Currently, the National Building Code of Canada does not include fire fighter safety as a core requirement. As a result, designers and homebuilders are not required to consider it when designing and building homes and stakeholder groups like the IAFF cannot use fire fighter safety as the basis for proposed building code amendments. Existing language addressing building occupant safety does not adequately consider the unique role that fire fighters play during a structural fire.

**For more information about this issue or any other issue affecting Canada’s professional fire fighters, visit [www.iaff.org/canada](http://www.iaff.org/canada) or contact the IAFF Canadian Office at (613) 567-8988. The International Association of Fire Fighters represents 298,000 professional fire fighters in North America, including over 21,000 in Canada. The IAFF is affiliated with the AFL-CIO and the Canadian Labour Congress.**