

Should Sprinklers Be Mandatory in All New Canadian Homes?

by Jim Adair

The issue of making sprinkler systems mandatory for all new home construction has been kicked around Canadian municipalities for years. In Ontario, the only province where sprinklers are not mandatory in high-rise buildings, a private-members bill in the Legislature would require them in all new homes. The City of Toronto is also actively promoting ways to make sprinklers mandatory.

Home builders have always opposed the move, saying the costs of residential sprinklers outweigh the advantages. They've urged more studies to prove that sprinklers really would make a significant difference. Now, a new analysis from Canada Mortgage and Housing Corp. (CMHC) is giving the builders ammunition in their battle.

The report, which summarizes and updates two previous studies from 1989 and 1990, says that the rates for residential fires and resulting deaths, injuries and property damage have dropped in the last 25 years. The death rate per 100,000 one- and two-family houses was 75 per cent lower in 1999 than in 1980, it says.

The report says smoke alarms are the main reason why fire incidents are dropping, because they alert people to smoldering or small fires before they become serious. In Ontario, the top four causes for house fires are smoking, cooking materials, matches/lighters and candles. The smaller number of smokers, combined with safer building materials, heating appliances and furniture fabrics, are also credited for lowering fire rates.

The 1990 study said that the cost of "saving one life by mandating sprinklers would be more than \$38 million." The updated report estimates that the cost of a sprinkler system in a small house with 1,500 square feet finished area (2,000 square feet sprinklered area including basement) ranges between \$3,000 and \$4,000.

CMHC's report also shows that in Canada in 2001, fewer people died in fires in houses built since 1980 than in motor vehicle accidents, falls, drownings, poisonings, gun assaults, all other assaults and choking.

But the Toronto Fire Services says the argument that sprinklers are too expensive is "generally a statement of priority. We rarely hesitate when buying a more comfortable couch, plusher carpet, the latest stereo equipment or an upgraded computer. A sprinkler system can be installed in a new home for as little as \$1.50 per square foot which, in many cases, would represent less than two per cent of the total construction cost. System installation in existing homes is simple but more expensive. Since your family, irreplaceable possessions and home are a precious part of your life, you can't afford not to have a sprinkler system."

A City of Toronto staff report says that 223 deaths and 2,652 injuries due to residential fires took

place from 1994 to 2004. The report says, "Fatal residential fires most often occur between the hours of midnight and 6 am, when victims are asleep. Victims are also disproportionately children and the elderly, who are vulnerable because they are physically less capable of escaping. When a fire occurs, occupants of a house may not be able to respond to smoke alarms and escape in the few minutes before flashover occurs. When provided, fire sprinklers add a layer of protection to prevent the growth of fire to deadly proportions."

The City of Vancouver has had a sprinkler bylaw since 1990. The average fire property loss in a home with sprinklers there is \$1,065 compared to \$13,937 in a home without sprinklers. Since the regulations in Vancouver took effect, there have been no fire deaths in homes with sprinklers.

Toronto Fire Services tackles some other "myths" about sprinklers on its website. One, that sprinklers cause significant water damage, isn't true, says the fire department, because sprinklers discharge less than 20 gallons per minute in a fine spray. That's only 1/10th to 1/100th the amount of water used by a firefighter's hose.

It says the odds of sprinklers going off accidentally are one in 16 million, and that sprinklers don't leak because they remain closed until needed and do not receive the wear and tear of daily use.

National Research Council Canada, which is responsible for writing Canada's building codes, continues to collect research about residential fires. It has a fire research house in its testing laboratories and is encouraging stakeholders in the fire protection industry to submit ideas for research projects.

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