



Home Fire Sprinkler<sup>®</sup>  
COALITION CANADA  
Protect What You Value Most<sup>™</sup>



HOME FIRE  
SPRINKLER SYSTEMS

the future of **fire safety**  
here today





## UNDERSTANDING FIRE SPRINKLER PROTECTION FOR HOMES

Fire continues to negatively impact Canadians on a daily basis, and is responsible for approximately 300 fire fatalities each year. Ironically, most fire deaths occur in the very place where we feel safest — our own homes. Those at highest risk are very young children and older adults, who may have difficulty making a quick escape.

Fire sprinklers provide powerful protection from fire. They work automatically and immediately; before a fire spreads. Sprinklers put water right where it is needed, slowing or stopping the flames and poisonous smoke, so people can get out safely.

“In the last 15 years Vancouver has not recorded a single fire related death where a sprinkler has been activated.”

DARRELL REID, FIRE CHIEF, VANCOUVER, BRITISH COLUMBIA

The ideal time to install fire sprinklers is during new construction. Many homeowners opt to install, or retrofit, sprinklers when they remodel their homes.

### You are at Greatest Danger from Fire at Home

According to the National Fire Protection Association (NFPA), eight out of 10 structure fire deaths happen in homes. Many people don't realize how fast a home fire grows and spreads from room to room. Too often, people think they'll have plenty of time to get out.

Home fire sprinklers can save your life if fire strikes. In fact, when fire strikes at home, it can become deadly in as few as three minutes. Most fatal fires take place at night when people are sleeping. Having fire sprinklers installed is like having a firefighter on duty 24 hours a day.

Watch a video that demonstrates how fast a home fire can become deadly at [HomeFireSprinklerCanada.ca](https://www.homefiresprinklercanada.ca).

### A Total System of Safety

Sprinklers are the ultimate home fire safety technology available today. Experts agree the most comprehensive protection from a home fire is a total system of safety:

- Prevention
- Early warning (working smoke alarms on every level)
- Quick Evacuation (well-planned and practiced home fire drills)
- Suppression (fire sprinklers)





Pendent Sprinkler  
 Concealed Sprinkler  
 Sidewall Sprinkler  
 Concealed Sidewall Sprinkler

## HOW FIRE SPRINKLERS WORK

Fire sprinklers protect your home around the clock, automatically. The design and layout of fire sprinklers are unique to each home where they are installed. In most cases, fire sprinklers are connected to the household water main. If the water supply is from a well or if the water pressure is too low, a pump and storage tank may be needed.

Fire sprinklers are linked throughout the home by a network of piping, typically comprised of strong, noncombustible plastic pipe known as CPVC or PEX. Just like plumbing, sprinkler piping is typically hidden behind walls and ceilings. In unfinished basements, you may be able to see the piping in the ceiling; and it may be copper rather than plastic.

There are several types of fire sprinklers made just for homes. They can be installed on walls or in ceilings. Some sprinklers are concealed by a plate. Home fire sprinklers are much smaller than the types of sprinklers used in commercial properties and use much less water.

### Heat Activates a Sprinkler, Not Smoke

Each sprinkler has a temperature-sensitive element and is individually activated by heat. Water flows from the sprinkler when the temperature reaches between 57C - 74C (135° - 165°F). In the vast majority of fires in sprinklered homes, only a single sprinkler will operate.

Smoke, cooking vapors or steam cannot cause home fire sprinklers to activate. Only the high temperature of a fire will operate the sprinkler.

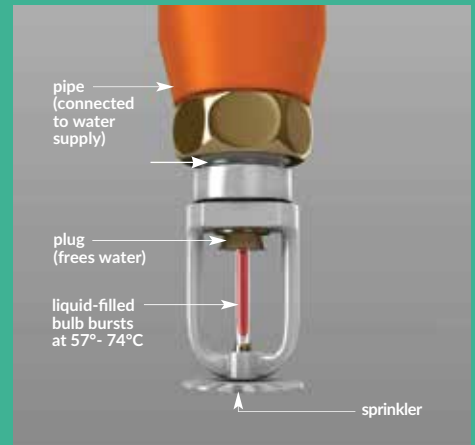
### Maintenance is a Snap

Home fire sprinklers require very little maintenance. It's essential to keep the water valve turned on, so a simple visual inspection should be done routinely to ensure the valve is open. (Keeping the valve padlocked in the "on" position is a good idea.)

Inspect the pipes and sprinklers occasionally to make sure nothing is obstructing them.

A water flow test should be conducted on a regular basis. It's a simple test that can be done by the homeowner or a fire sprinkler contractor.

EXTENDED COVERAGE SPRINKLERS CAN COVER A MAXIMUM AREA OF 6.1M X 6.1M (20 X 20 FEET).



SPRINKLERS ARE LINKED BY A NETWORK OF PIPING, TYPICALLY HIDDEN BEHIND WALLS AND CEILINGS AND USUALLY DRAWING UPON HOUSEHOLD WATER SOURCES.



Each sprinkler protects an area below, and when heated by fire, activates.



Only the sprinkler closest to the fire will activate, spraying water directly on the fire.



“We have been installing residential sprinklers in new homes for 4 years with the support of builders and home owners. This helps meet our goal of a safe and caring community” DENIS PILON, FIRE CHIEF, SWIFT CURRENT, SASKATCHEWAN



## THE ADVANTAGES OF HOME FIRE SPRINKLERS

### With Fire Sprinklers

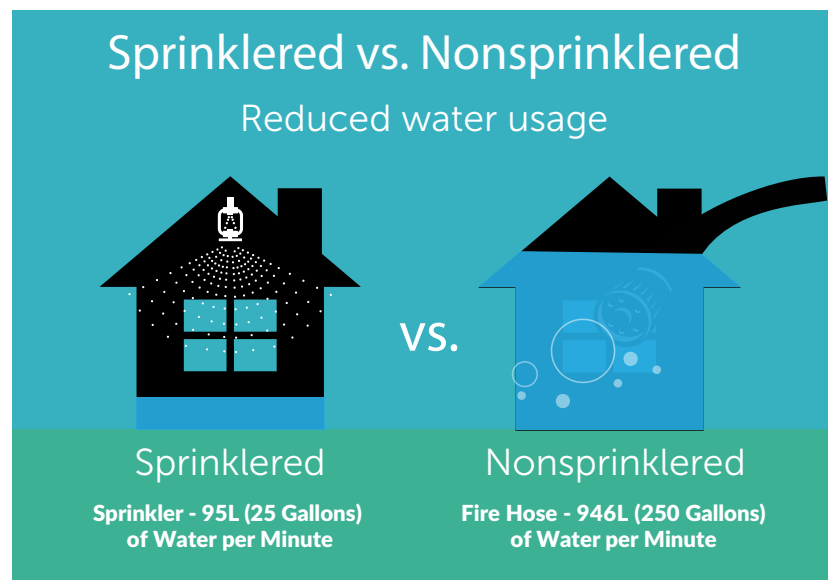
- The sprinkler closest to the fire activates
- Water contains or extinguishes fire
- Residents have time to safely escape
- Surrounding rooms are protected from damage

Fire sprinklers work so fast they often put out a home fire before the fire department arrives. Instead of launching a major fire suppression effort, arriving firefighters will simply turn off the fire sprinklers and mop up the water.

### Without Fire Sprinklers

- Flames grow and move room to room
- Heat and toxic gases spread
- In as few as three minutes, the fire becomes deadly
- Flashover occurs and the gases and combustible materials burst into flames

It typically takes 9-12 minutes from the time a fire starts to the time the fire department arrives. In that time, the fire will be so advanced that firefighters will have to use high-pressure and high volume hoses, applying water at 946L (250 gallons) per minute. Even if the family is lucky enough to get out unharmed, the home will likely be lost and the family displaced.





## HOME FIRE SPRINKLERS ARE A SMART CHOICE

Homebuilders know that homeowners are safety conscious. They want to protect their families and they want to secure their investment. That's why more and more homebuilders are offering their customers the option of installing fire sprinklers in new homes. Installing fire sprinklers is a smart choice. Unlike the many upgrades that are available in new construction – such as gourmet kitchen amenities, whirlpool tubs and high-end flooring – only home fire sprinklers can save your life if there is a fire. And, fire sprinklers also protect your home and your valuables. No other upgrade can do that.

Nearly 70% of homeowners believe having fire sprinklers increases the value of a home, according to a survey conducted by Harris Interactive. Seventy percent say a sprinklered home is more desirable than an unsprinklered home.

### Affordable Fire Protection

The cost to install fire sprinklers can be rolled into a new home mortgage, as are the plumbing and electrical systems.

Sprinklered homes qualify for valuable discounts on homeowner insurance premiums. Discounts vary by company and by Province, so shop around to find the best discount in your area.

The cost to install home fire sprinklers also varies by region. Nationally on average, the cost to install sprinklers is 1% to 2% the total value of the home. Retrofitting a home with sprinklers is typically higher. In many municipalities, increased installations have brought the cost down significantly.

### Unmatched Peace of Mind

Home fire sprinklers significantly reduce fire-related casualties, reduce the significance of fire spread, and reduce the demand placed on fire department resources.

RESIDENTIAL STRUCTURE FIRES THAT OCCURRED IN BC REPORTED TO THE OFFICE OF THE FIRE COMMISSIONER BETWEEN OCTOBER 2006 AND OCTOBER 2011.

### SINGLE-FAMILY HOMES WITH FIRE SPRINKLERS

- 59 FIRES
- 0 DEATHS
- \$52,431 AVERAGE COST OF PROPERTY DAMAGE

### SINGLE-FAMILY HOMES WITHOUT FIRE SPRINKLERS

- 6,293 FIRES
- 78 DEATHS
- \$75,489 AVERAGE COST OF PROPERTY DAMAGE

Garis, L. & Clare, J. 2013. University of Fraser Valley. Sprinkler Systems and Residential Structure Fires. Exploring the Impact of Sprinklers for Life Safety and Fire Spread.

“Sprinklers have allowed building design to be more flexible and provide cost savings in construction materials and methods”

DARRELL REID, FIRE CHIEF, VANCOUVER, BRITISH COLUMBIA



## Protect the Earth One Home at a Time

### FIRE SPRINKLERS ARE GREEN

AN FM GLOBAL STUDY PROVED THAT FIRE SPRINKLERS ARE GOOD FOR THE ENVIRONMENT. IN A FIRE, FIRE SPRINKLERS:

- REDUCE GREENHOUSE GAS EMISSIONS BY 98%
- REDUCE FIRE DAMAGE BY UP TO 97%, WHICH MEANS LESS WASTE IS SENT TO LANDFILLS
- REDUCE WATER USAGE TO FIGHT A HOME FIRE BY AS MUCH AS 91% VERSUS FIRE HOSES
- REDUCE RUNOFF WATER POLLUTION

### HOME FIRE SPRINKLER FAQs

#### If one sprinkler activates, will they all activate?

No. Sprinklers activate independently; only the sprinkler(s) closest to the fire will activate. In most home fires, only one sprinkler is needed to control the fire.

#### If I burn toast, will the sprinkler activate?

No. Fire sprinklers do not respond to smoke; they respond to the high temperature of a fire at about 57C - 74C (135° - 165°F). Smoke caused by cooking or cigars cannot and will not cause a sprinkler to activate.

#### Will my sprinklers leak?

Sprinkler mishaps are generally less likely and less severe than conventional home plumbing system problems. Choose an experienced residential sprinkler contractor to install your fire sprinklers. Contractors follow national installation standards, which help ensure proper operation.

#### Is post-fire water damage from sprinklers worse than fire damage would be without sprinklers?

Fire damage and water from high-pressure, high-volume fire hoses are far greater. A residential sprinkler flows 38L - 98L (10 - 26 gallons) of water per minute, for approximately 10 minutes (or less if the fire department turns the water off sooner). An uncontrolled fire will cause far greater fire destruction and smoke damage, requiring a tremendous amount of water from fire department hoses – more than 10 times the water per minute. The property loss in a sprinklered home fire is typically only a fraction of the loss in an unsprinklered home fire.

#### Won't the fire department be able to put out the fire and save my things?

From the time the fire department is notified of a fire, it typically takes about nine to 12 minutes for the fire department to arrive. In that time, an uncontrolled fire will have grown and spread throughout the home, causing tremendous smoke and fire damage before the fire department can get there.

#### Will my sprinklers freeze in the winter?

Freezing is not a problem with proper installation. The national sprinkler installation standard provides guidance for proper installation in cold regions, including appropriate additional insulation and moving fire sprinklers to interior walls.

### Since I have smoke alarms, why do I need fire sprinklers?

Smoke alarms are essential in every home, but they can only detect a fire. To be effective, residents must be willing and able to respond quickly to the alarm. Only fire sprinklers can detect the fire and automatically control or extinguish it, paving the way for residents to make a safe escape – and also protecting property and valuables. The best protection from fire is having both smoke alarms and fire sprinklers.

### Are fire sprinklers difficult to maintain?

No. Home maintenance is simple. Regular flow tests should be conducted and homeowners can do these simple tests themselves or have the sprinkler contractor do it every year or so.

### FREE RESOURCES FOR HOMEOWNERS

The Home Fire Sprinkler Coalition (HFSC) is a national, nonprofit organization dedicated to educating the public about the value and availability of fire sprinkler protection for homes. HFSC works with fire departments, local officials, sprinkler contractors and others to help increase awareness of home fire safety.



YOU CAN LEARN MORE ABOUT HOME FIRE SPRINKLERS ON THE NONPROFIT HOME FIRE SPRINKLER COALITION WEBSITE, [HomeFireSprinklerCanada.ca](http://HomeFireSprinklerCanada.ca), INCLUDING:

- ANIMATED FIRE SPRINKLER FEATURES
- COMPARISONS OF HOME FIRES WITH AND WITHOUT FIRE SPRINKLERS
- CHECKLIST FOR INSTALLING SPRINKLERS IN YOUR HOME
- HOW TO TALK TO YOUR BUILDER ABOUT INSTALLING FIRE SPRINKLERS
- HOW TO CHOOSE A QUALIFIED SPRINKLER CONTRACTOR

THERE IS NO COST TO DOWNLOAD THE MATERIALS FROM HFSC'S WEBSITE.

FOR ADDITIONAL INFORMATION, CONTACT YOUR LOCAL FIRE DEPARTMENT'S PUBLIC EDUCATOR.

# HFSC MEMBERS

