

**BUILD FOR QUALITY
BUILD FOR VALUE
BUILD FOR LIFE**



HomeFireSprinkler.org

AUTOMATIC FIRE SPRINKLER PROTECTION

Residential fire sprinkler system installations are increasing every day thanks to growing buyer demand, lower costs, and simpler installation. Offering sprinkler systems in the homes you build puts your company on the cutting edge and gives your homes a distinct security advantage that homebuyers want and need.

Every home fire starts small. If it goes unchecked, a home fire grows and spreads quickly, reaching extreme heat and spreading highly toxic smoke. No one can survive a fire that reaches this level. According to the National Institute of Standards and Technology (NIST), a home fire can reach deadly proportions in only three minutes or less.

A home fire sprinkler system works automatically at the earliest stage of fire growth, controlling the flames before they can build deadly heat and smoke. This gives families the time they need to safely escape – even very young children and older adults who may not be able to get out on their own – and limits the extent of damage to a single area of the home.

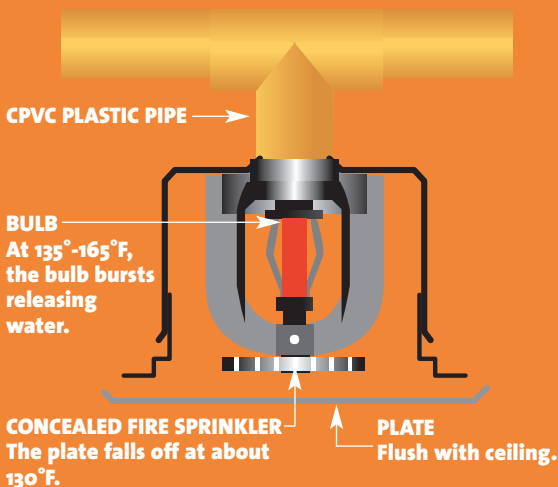
“Fire sprinklers give me peace of mind, especially at night when my children are sleeping.” – SANDRA KUHNS, HOMEOWNER

In a typical fire, 7-10 minutes or longer will have passed from the time the fire starts, is discovered and reported to the time the fire trucks roll up to the scene. In homes without fire sprinklers, that means the fire will have continued to burn – growing and spreading. Even if the residents were fortunate enough to escape unharmed, their home would likely be a total loss.

When you build a home with an automatic fire sprinkler system, it's built for life.

HOW HOME FIRE SPRINKLERS WORK

Sprinklers cover a minimum 12 X 12 foot area. Extended coverage sprinklers can cover a maximum area of 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.



Sprinklers and smoke alarms together cut the risk of dying in a home fire by 82%, relative to having neither. - NFPA

SHELTER AND THEN SOME

YOU SELL QUALITY HOMES. YOU MAKE CUSTOMER CONFIDENCE A TOP PRIORITY. THAT'S GOOD BUSINESS AND IT PAYS OFF.

TODAY, CUSTOMER CONFIDENCE IS AFFECTED BY MORE THAN JUST COMFORT, CONVENIENCE AND QUALITY. SAVVY BUYERS ALSO WANT TO KNOW THEIR LOVED ONES, PETS AND BELONGINGS ARE SAFE WITHIN THEIR NEW HOMES. WISE BUILDERS MAKE SURE THEY OFFER THOSE BUYERS WHAT IT TAKES TO GAIN THEIR TRUST AND EARN THEIR BUSINESS.

THAT'S ONE OF THE REASONS WHY MORE BUILDERS THAN EVER ARE OFFERING AUTOMATIC FIRE SPRINKLER SYSTEMS IN THE NEW HOMES THEY BUILD.



Graphic Source: Tyco Fire Products

TAKE A LOOK AT A HOME SYSTEM

A typical residential fire sprinkler system operates off the household water main and uses piping that is installed behind walls and ceilings in finished areas.



Attached to the piping at intervals are the individual sprinklers. Concealed sprinklers are often used in finished areas. An unfinished basement may have exposed piping and pendent sprinklers instead of concealed sprinklers.

Typically, each sprinkler can protect an area up to 12 x 12 feet. Extended coverage sprinklers are available that protect even larger areas.

Sprinklers activate independently – unlike hard-wired and interconnected smoke alarms. If there is a fire, only the sprinkler closest to the flames will operate. A recent study showed that in about 90% of home fires, only one sprinkler was necessary to control the fire.

Custom builder? No problem! A wide variety of sprinkler designs makes it possible to install sprinklers in any type of new home – even homes with specialty layouts, high or sloped ceilings and other distinctive configurations.

Sprinkler systems are designed specifically for the homes where they'll be installed, by experts who have experience creating systems that are highly effective and also efficient.

Home fire sprinklers can be seamlessly incorporated into any interior design, without sacrificing comfort or style. That adds to your credibility as a builder, and that's important to your bottom line.

NFPA 13D – THE NATIONAL STANDARD

The national installation standard for home fire sprinkler systems is *NFPA 13D, Standard for Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*.

Compliance with NFPA 13D is intended to prevent injury, life loss and property damage. The standard requires at least 10 minutes of sprinkler water on the fire in its initial stage of development. That controls the fire early, giving residents the time to escape safely and the fire department time to respond. A typical home fire will be controlled and may even be extinguished by the time the fire department arrives.

In a survey of more than 1,000 adults, 47% said they would definitely consider installing a home fire sprinkler system if they were building a new home.

— NFPA 2004 FIRE SAFETY SURVEY.

NFPA 13D requires sprinklers to be installed only in living areas. The standard does not require sprinklers in smaller bathrooms or closets, pantries, garages or carports, attached open structures, attics, and other concealed non-living spaces.

The local building authority where you build may have requirements that exceed NFPA 13D, so you'll want to determine local requirements ahead of time.

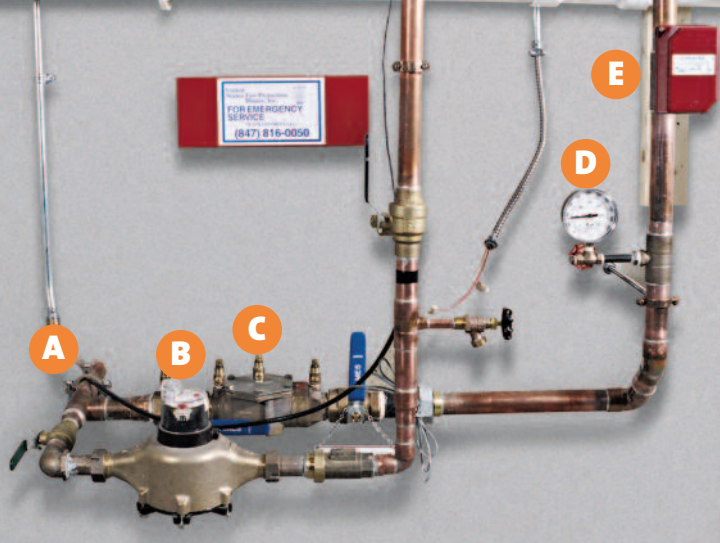
Two common types of fire sprinkler systems are acceptable under NFPA 13D – stand-alone (or independent) systems, and multi-purpose combined (or network) systems.



FIRE DOESN'T DISCRIMINATE

THE HOMES YOU BUILD ARE SAFE FROM A VARIETY OF DANGERS. BUT ARE THEY SAFE FROM FIRE? ACCORDING TO THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), FIRE IS MORE COMMON AND OFTEN MORE DEADLY THAN HURRICANES, TORNADOS AND OTHER DISASTERS.





TYPICAL SPRINKLER WATER SUPPLY

Here's what you'll have with a typical stand-alone system. The water supply for the sprinklers comes from the household water main. There will be a "T" connection between the main and the water meter, feeding the sprinklers. This is called the "riser."

The riser is really the brains of the system. It includes the pressure gauge, a flow switch and a backflow valve (where required) and the test and drain assembly. NFPA 13D doesn't require a flow alarm, but your local codes might.

The flow switch monitors any water flow through the system and is wired to an inside bell. The flow switch can also be wired to an outside

IN HOMES THAT AREN'T ON A MUNICIPAL WATER SUPPLY – FOR EXAMPLE, A HOME WITH A WELL – OR WHERE THE WATER PRESSURE IS VERY LOW, A TANK AND PUMP ARE USED TO ENSURE WATER PRESSURE. A PUMP AND A 300 GALLON TANK PROVIDE THE 10 MINUTES OF WATER SUPPLY REQUIRED BY NFPA 13D.

- A** “T” CONNECTION TO WATER MAIN
- B** WATER METER
- C** BACKFLOW VALVE
- D** PRESSURE GAUGE
- E** FLOW SWITCH

NFPA 13D permits the use of certain anti-freeze solutions and provides guidelines in its appendix for proper insulation around piping in unfinished attics.

horn or strobe to alert neighbors to sprinkler activation in case fire strikes when no one is at



home. The switch can also be connected to a monitored security system.

Backflow prevention devices are required in some areas. They are installed to isolate the water used for sprinklers from the water used for

domestic purposes, to prevent any cross-contamination of potable water. Backflow prevention devices and water meters reduce the available pressure for the sprinkler system, however, so when they are used it is necessary to use larger water taps and meters of at least one inch or more. Your sprinkler contractor will ensure you have the information you need to know about taps and meters before you install the system.

LOWER COST, EASIER INSTALLATIONS

One of the reasons that sprinkler systems have become so cost-effective for homes is that now plastic pipe can be used. CPVC (chloro-polyvinyl chloride) is the light-weight material used for plastic piping. Special glue secures the CPVC pipe connections, reducing the problems of sweating copper joints or threading steel pipe.

Either plastic or copper pipe is typically used in unfinished basements. CPVC pipes are fed off a riser passing through the interior wall space to the upper floors.

NFPA 13D does not require sprinklers in unfinished attics. In regions where freezing is a concern, pipes are installed in the walls instead. In finished attics and in warm regions, pipe can be run up into the attic and ceiling sprinklers can be used.

SPRINKLERS

Based on the unique floor plan of the home you're building, the sprinkler designer determines the piping design and the appropriate number, type and layout of sprinklers along the piping.

In many rooms you'll have a single sprinkler protecting the room. That is because sprinklers typically cover an area up to 12 x 12 feet, with extended sprinklers covering up to a 20 x 20 foot area. Larger areas will be protected by additional sprinklers or special extended coverage sprinklers. For example, in a typical unfinished basement, three pendent sprinklers would be used to protect the far sides of the area and near the center stairway.

The NFPA 13D standard permits positioning sprinklers in basements to anticipate future ceiling



Sidewall Sprinkler



Concealed Sprinkler



Pendent Sprinkler

finishing – a flexibility selling point for your buyers who are thinking ahead. If you finish the basement, concealed sprinklers can be used immediately.

When you get up into the finished areas of the home, concealed sprinklers can be used in the ceilings. Wall-mounted, semi-recessed sprinklers are used when you want to avoid placing pipes in an unfinished attic.

SPRINKLERS PROVIDE THE ULTIMATE FIRE PROTECTION

IF YOU DON'T BUILD WITH SPRINKLER SYSTEMS, YOUR HOMES ARE ONLY PARTLY PROTECTED FROM FIRE. LOCAL BUILDING AND FIRE CODES MOST LIKELY REQUIRE YOU TO INSTALL HARD-WIRED SMOKE ALARMS, AND THESE PROVIDE A CRUCIAL COMPONENT OF A HOME FIRE SAFETY SYSTEM – EARLY WARNING.

BUT THE PROTECTION AFFORDED BY SMOKE ALARMS REQUIRES QUICK AND PROPER ACTION BY RESIDENTS TO SAVE LIVES – THE ALARMS SIGNAL A FIRE WHILE IT IS STILL SMALL, GIVING THE RESIDENTS EXTRA TIME TO FOLLOW THEIR ESCAPE PLAN AND GET OUT.

SPRINKLER SYSTEMS PROVIDE AUTOMATIC PROTECTION – THEY PUT WATER ON THE FLAMES IMMEDIATELY, CONTROLLING OR EXTINGUISHING THE FIRE IN TIME TO SAVE LIVES.

THE SAFEST HOME IS A HOME WITH SMOKE ALARMS AND A FIRE SPRINKLER SYSTEM.

NATIONALLY, EIGHT OUT OF 10 FIRE DEATHS TAKE PLACE IN HOMES VERY MUCH LIKE THE ONES YOU BUILD – COLONIAL AND RANCH, LARGE AND SMALL, FANCY AND PLAIN. FIRE CAN STRIKE ANYONE, AT ANY TIME. IF GIVEN THE OPPORTUNITY, YOUR CUSTOMERS WOULD CHOOSE TO LIVE IN A HOME PROTECTED BY FIRE SPRINKLERS.

**FIND A CONTRACTOR: VISIT
HomeFireSprinkler.org**

“We work very closely to coordinate with the other contractors – the plumbing and HVAC contractors and the electrician. It’s important to maintain good communication with the builder, because we have to rough our system in the walls before the dry wall.”

- COLLEEN McNALLY, U.S. FIRE PROTECTION



WORKING AS A TEAM

The most important decision you'll make is choosing your sprinkler contractor. You want someone who is qualified as a specialist in sprinkler installation. The NFPA 13D standard says only people "knowledgeable and trained" should install sprinkler systems.



Choose a contractor who strictly adheres to NFPA 13D and complies with any additional requirements of local codes. You want someone with experience and someone who knows his or her way around town hall.

Once you have your sprinkler partner, you'll meet with the fire officials and go from there. A good sprinkler contractor will help navigate any code concerns, water usage issues, permits, etc., helping you stay on schedule and on budget.

The sprinkler contractor's first step will be to prepare shop drawings and hydraulic calculations, to make sure the system performance will comply with minimum code requirements. This is usually submitted for approval during the permit process.

Fire sprinkler systems can be roughed in anytime after the plumbing and HVAC installation, and trimmed at the same time other contractors are working.

“...fires today seem to burn faster and kill quicker, because the contents of modern homes (such as furnishings) can burn faster and more intensely.” –

RICHARD BUKOWSKI, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY RESEARCHER

PROTECTING YOUR BOTTOM LINE

On top of increased safety for your customers and value added to the homes you build, you may be able to benefit from cost-saving incentives as well. Many municipalities offer what's known as "trade ups" for builders and designers who sell sprinklered homes.

The options vary widely, which is one of the reasons you will want to meet with fire and code officials early on. Examples of typical trade ups for a sprinklered development or sub-division include street width reduction, additional units, and increased hydrant spacing. Bundled together, trade ups can net a builder significant savings.

Another option to explore is building code alternatives, which might include a reduction in fire-rated partitioning requirements between the living spaces of the home and other spaces, such as an attached garage. Sprinkler trade ups and code alternatives can substantially offset the cost of sprinkler installation.



EASY HOME MAINTENANCE

Sprinkler systems require very little maintenance. In fact, the sprinklers themselves require none at all.

The flow switch and water flow alarms need to be tested at least once a year to be sure they are operating. And occasionally, the system should be visually inspected to check for any obstructions and to ensure all valves are open. These simple maintenance steps can be handled by either the homeowner or sprinkler contractor. That's it.

LIKE HAVING A FIREFIGHTER ON DUTY 24 HOURS A DAY.

Every year, thousands of lives are lost to home fires because the residents couldn't or didn't

FIRE SPRINKLER TECHNOLOGY HAS BEEN AROUND FOR WELL OVER A CENTURY, WITH A STRONG AND SUCCESSFUL TRACK RECORD OF BOTH LIFE SAFETY AND PROPERTY PROTECTION. WIDELY USED IN HOTELS, HOSPITALS, HIGH-RISE BUILDINGS AND COMMERCIAL CONSTRUCTION FOR DECADES, AUTOMATIC FIRE SPRINKLERS ARE RAPIDLY GAINING POPULARITY IN HOMES AS WELL.

BECAUSE THEY PROVIDE SUCH A HIGH LEVEL OF PROPERTY PROTECTION, SOME MUNICIPALITIES REQUIRE SPRINKLER SYSTEMS TO BE INSTALLED IN NEW CONSTRUCTION OF ONE- AND TWO-FAMILY HOMES.

“If you can put fire sprinklers in homes to protect homeowners and work with the local jurisdiction to reduce costs through trade ups, it’s clearly a win-win situation for everybody involved.”-

ROB CAMPBELL, ARBOR CUSTOM HOMES



respond quickly enough when fire broke out. When you build with sprinklers, your customers will be protected from that kind of needless tragedy because they’ll be living in a home with automatic fire protection.

Home fire sprinklers are the future of fire safety. Sprinklers save lives and protect property. That’s value added for your customers.

HOME FIRE SPRINKLERS – GOOD BUSINESS

Knowing what your customers want and delivering it is good business. That's why smart builders are putting sprinklers in the homes they build more often than ever before.

Your customers value safety and security. Offering peace of mind is priceless. So whether you cater to families or retiring couples or communities of all ages, put sprinklers in the homes you build and save lives, one family at a time.

MAKING SPRINKLERS WORK FOR YOU

- **Choose your partner**

Select the right sprinkler contractor for your needs.

- **Plan ahead**

Do some advance planning. Meet with fire, code and water officials early to cross-check codes, answer any questions, and stay on track.

- **Lower construction costs**

Find out about trade ups and code alternatives to save time and money.

HFSC MEMBERS



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