



Home Fire Sprinkler Systems: Separating Fact from Fiction

This fact sheet was prepared by the nonprofit Home Fire Sprinkler Coalition, Inc. (HFSC), a 501(c)(3) charitable organization.

HFSC is the only national, non-commercial organization working exclusively to educate the public about the life-saving value of installed residential fire sprinkler systems. HFSC develops a wide range of fire safety educational materials for consumers, members of the homebuilding industry, insurance and real estate professionals, and for the fire service to use in local educational outreach. All materials are provided at no charge and are available via HFSC's Web site: HomeFireSprinkler.org.

Home Fires: No Strategy Has as Much Documented Life Safety Effectiveness as Fire Sprinklers

The fire problem in the U.S. is overwhelmingly a home fire problem. According to the National Fire Protection Association (NFPA), homes account for about 80% of all fire deaths in a typical year and more than 95% of all deaths in structure fires in a typical year. Quite clearly, any improvements in overall fire safety must be improvements in home fire safety, and no strategy has as much documented life safety effectiveness as fire sprinklers. For the most current national home fire data, please visit NFPA.org.

Homes Burn, Whether New or Old

Few fatal home fires involve installed features of homes. Instead, they usually involve the actions and errors of the occupants in combination with the flaws and vulnerabilities of products brought into the home.

Fires Today “Burn Faster and Kill Quicker”

New homes benefit from fire sprinkler protection as much as older homes. Research conducted by the National Institute of Standards and Technology (NIST) has shown that home fires become deadly in as few as three minutes. “Fires today seem to burn faster and kill quicker, because the contents of modern homes (such as furnishings) can burn faster and more intensely,” says NIST Research Richard Bukowski.

New and old homes alike are filled with these newer contents and furnishings, which provide less margin for success for smoke alarms and add to the need for fire sprinklers.

To see how a home fire sprinkler system works, visit the United States Fire Administration (USFA) Web site and view NIST/USFA video clips of a typical home Christmas tree fire with and without fire sprinkler protection: http://www.usfa.dhs.gov/fireservice/research/dsn/dry_tree.shtm

Important Information about Smoke Alarms

Smoke alarms provide valuable early warning in dwellings. HFSC recommends that every home have working smoke alarms installed on each level. For smoke alarms to be effective, occupants must react quickly and escape immediately. Every household should hold regular fire drills to practice how to properly respond to a fire alarm. Many high-risk populations – infants, children, people with disabilities, older adults – can have difficulty hearing and waking to smoke alarms, and difficulty reacting quickly and effectively enough for safe escape. Their lives depend on stopping the fire early in its development. Their lives depend on fire sprinklers.

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Fire Sprinklers Make Up for Human Error

Fire sprinklers provide a level of protection that no other fire protection technology can offer. Like smoke alarms, sprinklers detect a fire; but they do even more. Fire sprinklers immediately respond to a fire while it is still small, controlling the spread of deadly heat, flames and toxic smoke. Fire sprinklers are effective whether or not the occupants have appropriately responded to the smoke alarm. Fire sprinklers make up for human error, and they provide a life-saving cushion for a time-consuming escape.

How Fire Sprinklers Work

In most settings where there is a municipal water supply, sprinklers operate off the household water main. When the water supply is a well, or there is not enough water pressure, a holding tank is used. Sprinklers are linked by a network of piping, typically hidden behind walls and ceilings. The high temperature of an early-stage fire (135°-165°F) will cause the sprinkler to activate. Only heat initiates the sprinkler. Only the sprinkler closest to the fire will operate, spraying water directly on the flames. This quick action controls or extinguishes the flames (often before the fire department arrives). Fire sprinklers slow the spread of deadly heat and toxic smoke and provide occupants with more time to safely escape.

Smoke Cannot and Will Not Cause a Fire Sprinkler to Operate

Fire sprinklers respond only to the high temperature of flames. Unlike interconnected smoke alarms (if one signals, they all signal), fire sprinklers activate independently. In a survey of home fires*, 90% of the time a single sprinkler was sufficient to control the fire. Despite the fictional special effects commonly seen in action movies, fire sprinklers do not spray water all at once. They do not operate in response to smoke, burned toast, cooking vapors, steam, an activating smoke alarm, or anything other than high heat.

Home Fire Sprinklers Are Simple to Maintain

Home fire sprinkler systems require very little maintenance. In fact, the sprinklers themselves require nothing more than an occasional look to ensure that nothing is hanging from them, or blocking them. Valves should be similarly checked to ensure they are turned on. The sprinkler system flow switch and water flow alarms should be tested about once a year – a simple test that can be done by the homeowner or a contractor.

Fire Sprinklers Are a Smart Investment for Developers

A national 2008 report from the Fire Protection Research Foundation found that the average cost to builders to install sprinklers in new homes was \$1.61 per square foot. Reduced labor costs and trade-up incentives have made fire sprinklers a valuable way for homebuilders to protect their bottom line. Options vary, but typical trade ups for a sprinklered residential development or sub-division include street width reduction, additional units, and increased hydrant spacing.

Fire Sprinklers Are a Smart Investment for Homeowners

Installing fire sprinklers in a new home is equivalent to installing solid-surface counter tops or other similar upgrades. The sprinkler system is paid for over the life of a mortgage, just as is the electrical or plumbing system. A national poll conducted by Harris Interactive® showed that two-thirds (69%) of U.S. homeowners say having a fire sprinkler system increases a home's value.

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Read “Home Fire Sprinklers Score ‘A’ in NIST Cost-Benefit Study”:
http://www.nist.gov/public_affairs/techbeat/tb2007_1011.htm#sprinklers

The Home Insurance Industry Encourages Sprinkler Installations

The insurance industry banks on the fact that having installed fire sprinklers not only protects against fire injuries and deaths; they also protect against fire damage. As an incentive for customers, insurance companies offer discounts ranging from 5% to 30% off the fire portion of homeowner premiums. HFSC urges consumers to shop around for the best insurance discount.

* Scottsdale, AZ 15-year Report

Home Fire Safety Resources

Home Fire Sprinkler Coalition: www.homefiresprinkler.org
Home Safety Council: www.homesafetycouncil.org
National Fire Protection Association: www.nfpa.org
Underwriters Laboratories Inc.: www.ul.com/consumers/
U.S. Fire Administration: www.usfa.dhs.gov

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