

Myths vs Facts*

When considering home fire sprinkler requirements for your community, it is important to address key myths often raised by sprinkler opponents. The fact is, because automatic sprinkler systems have been commonly used in structures for many years, the evidence is clear that such systems are a proven way to protect lives and property against fires.

MYTH

“A smoke alarm provides enough protection.”

FACT

Smoke alarms alert occupants to the presence of danger, but do nothing to extinguish the fire. Home fire sprinkler systems respond quickly to reduce heat, flames, and smoke from a fire, giving residents valuable time to get out safely. Smoke alarms reduce the risk of dying in a home fire by 50%. If you have a reported fire in your home, the risk of dying decreases by about 80% when sprinklers are present.

Beware misleading percentages on survival and death: Fire sprinkler opponents have been using a statistic of 99.45% to illustrate the effectiveness of smoke alarms in reducing home fire deaths. This NFPA statistic estimates the likelihood of surviving a home fire when a working smoke alarm is present.

A 100% chance of dying would mean that every fire is fatal, or, roughly, 100 deaths per 100 fires. Fortunately, that is not the case. The chances of surviving a reported home fire when working smoke alarms are present is 99.45% (100 minus 0.55) vs. 98.87% (100 minus 1.13) in home fires with no working smoke alarms. The first number is barely higher than the second.

The 99.45% vs. 98.87% statistic is based on “chances of survival” which is not the same thing as “risk of fire death” based on total number of reported fires. Chances of survival don’t have much bearing in the discussion; preventing home fire death and reducing home fire death risk is the goal.

Consider this: Each year, there are an estimated 3,000 home fire deaths out of approximately 400,000 reported structure fires. Therefore, the likelihood of surviving a home fire is approximately 99% without regard to the presence of smoke alarms or any other fire safety provisions. Does that mean 3,000 deaths are acceptable? Most people would say no.

Important comparison: Each year, there are an estimated 42,000 deaths due to motor vehicle crashes and an estimated 6 million reported motor vehicle crashes. The likelihood of surviving a motor vehicle crash is 99%. Does that mean 42,000 deaths are acceptable? Most people would say no

MYTH

“Newer homes are safer homes; the fire and death problem is limited to older homes.”

FACT

Age of housing is a poor predictor of fire death rates. When older housing is associated with higher rates, it usually is because older housing tends to have a disproportionate share of poorer, less educated households. Statistically, the only fire safety issue that is relevant to the age of the home is outdated electrical wiring. Beyond that, age of the home has little to nothing to do with fire safety. A fire at 2:00 a.m. is just as deadly in a new home as it is in an older home.

In fact, new methods of construction negatively impact occupant and firefighter life safety under fire conditions. The National Research Council of Canada (NRC) tested the performance of unprotected floor assemblies exposed to fire. The findings of the study, [The Performance of Unprotected Floor Assemblies in Basement Fire Scenarios](#) assert that these structures are prone to catastrophic collapse as early as six minutes from the onset of fire.

In 2008, Underwriters Laboratories® (UL) conducted a study to identify the danger to firefighters created by the use of lightweight wood trusses and engineered lumber in residential roof and floor designs. The findings of the report, [Structural Stability of Engineered Lumber in Fire Conditions](#), point to the failure of lightweight engineered wood systems when

exposed to fire. Firefighters expecting thirty minutes of structural integrity with dimensional wood structures face higher peril in lightweight structures.

The same UL study found that the synthetic construction of today's home furnishings add to the increased risk by providing a greater fuel load. Larger homes, open spaces, increased fuel loads, void spaces, and changing building materials contribute to:

- Faster fire propagation
- Shorter time to flashover
- Rapid changes in fire dynamics
- Shorter escape time
- Shorter time to collapse

Lightweight construction has been variously estimated to be used in one-half to two-thirds of all new wood one- and two-family homes. Fire sprinklers can offset the increased dangers posed by lightweight construction and create a safer fire environment for firefighters to operate in.

MYTH

"Home fire sprinklers are expensive and will make housing unaffordable, especially for first-time buyers moving to our area."

FACT

The fact is, home fire sprinklers are affordable. The Fire Protection Research Foundation recently issued the Home Fire Sprinkler Cost Assessment report (PDF, 634 KB), which revealed that the cost of installing home fire sprinklers **averages \$1.61 per square foot for new construction**. To put the cost of a sprinkler system into perspective, many people pay similar amounts for carpet upgrades, a paving stone driveway, or a whirlpool bath.

Sales in many U.S. communities where sprinkler systems are available show that, not only are consumers requesting this feature, but also that houses with sprinkler systems are selling faster than those without. Installing home fire sprinklers can help residents: significantly reduce property loss in the event of fire; cut homeowner insurance premiums; help qualify home for a tax rebate; and help support local fire service efforts.

MYTH

We don't need sprinkler mandates; home fire sprinklers should be a matter of consumer choice

FACT

Every major model safety code now requires home fire sprinklers in new construction. In 2006 three major NFPA codes were revised to include the requirement for home fire sprinklers in new construction of one- and two-family dwellings. In 2008, the International Code Council voted to add a similar provision to the 2009 edition of *International Residential Code*. This occurred through a process properly vetted by both private and public concerns and not influenced by any single special interest group. The standard of home fire safety has been set.

National model codes represent minimum standards of safety to protect people in their homes. U.S. consumers expect that the products they buy, including their homes, come equipped with the minimum standards of safety. Minimum standards of safety are always included in the fixed cost of a product.

MYTH

"Home fire sprinklers often leak or activate accidentally."

FACT

Home fire sprinkler systems are much like home plumbing systems – when installed and maintained properly, there is a very low risk of leaks. Each individual sprinkler is designed and calibrated to activate only when it senses a significant heat change, directing water to the area of the fire. Over the last 50 years, records indicate the likelihood of leaks from automatic sprinkler systems is very remote.

MYTH

“If you want your home fire sprinklers to be reliable, they will need frequent, expensive maintenance.”

FACT

The standard design for home fire sprinklers is much simpler than the design for more traditional sprinklers like the ones used in commercial buildings. If you install a home fire sprinkler system, the only “inspection and maintenance” you will need is to (a) walk around your home and make sure the sprinklers are not obstructed by something that would block the water coming out, and (b) avoid turning off the main control valve, which you don’t normally operate anyway.

MYTH

“When a fire occurs, every sprinkler will activate and everything in the house will be ruined.”

FACT

In the event of a fire, only the sprinkler closest to the fire will activate, spraying water directly on the fire, leaving the rest of the house dry and secure. Ninety percent of the time, just one sprinkler operates.

MYTH

“The water damage caused by the sprinkler system will be more extensive than fire damage.”

FACT

Home fire sprinklers can significantly reduce property loss and damage due to a fire. The sprinkler will quickly control the heat and smoke from the fire, limiting damage to other areas of the house, giving residents valuable time to get out safely. Any resulting water damage from the sprinkler will be much less severe than the damage caused by water from fire-fighting hose lines. On average, home fire sprinkler systems use about eight times less water than fire hoses.

MYTH

“Home fire sprinkler systems are not practical in colder climates, as the pipes will freeze and cause water damage.”

FACT

With proper installation, home sprinkler systems will not freeze in cold settings. NFPA13D sets forth guidelines on proper insulation to avoid pipes freezing. The Chicago area is a great example of a cold weather region where many jurisdictions have passed sprinkler mandates for new homes with limited to no problems with systems freezing.

MYTH

“Home fire sprinkler systems are unattractive and will ruin the aesthetics of our residents’ homes.”

FACT

Actually, new home fire sprinkler models are very unobtrusive, can be mounted flush with walls or ceilings, and can be concealed behind decorative covers.

MYTH

“Any time a smoke alarm goes off it will activate the home fire sprinklers.”

FACT

This is incorrect. Each individual sprinkler is designed and calibrated to activate when it senses a significant heat change. They do not operate in response to smoke, burned toast, cooking vapors, steam, or an activating smoke alarm.



The Fire Sprinkler Initiative®, a project of the National Fire Protection Association, is a nationwide effort to encourage the use of home fire sprinklers and the adoption of fire sprinkler requirements for new construction.

**Data referenced from NFPA, the Home Fire Sprinkler Coalition, and other sources.*

www.firesprinklerinitiative.org