

## The Case for Home Fire Sprinklers

*The mission of the international nonprofit NFPA, established in 1896, is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education. This document is to support the adoption of fire sprinkler requirements in new homes, to provide important information about home fires sprinklers, and to clarify key NFPA statistics that may have been used out of context by home fire sprinkler opponents.*

### Home fire is a major problem in the U.S.

Fire in the home poses one of the biggest threats to the people of your community. More than 2,500 people per year die in U.S. home fires. Congressional hearings have been scheduled and pandemics have been declared on the basis of much smaller death tolls than the home fire death toll. Most people do not believe that we are safe enough or that current death tolls from home fires are acceptable.

### Smoke alarms and sprinklers both save lives from fire

Home fire sprinklers are a proven way to protect lives and property against fires at home. These live-saving systems respond quickly and effectively to the presence of a nearby fire. When sprinklers are present, they save lives. Sprinkler systems provide additional benefits, on top of the benefits already provided by smoke alarms.

- Working smoke alarms cut the risk of dying in a reported home fire by about 50 percent.
- If you have a reported fire in your home, the risk of dying decreases by about 80 percent when sprinklers are present.

### Beware misleading percentages on survival and death

Fire sprinkler opponents have been using a statistic of 99.45 percent to illustrate the effectiveness of smoke alarms in reducing home fire deaths. This NFPA statistic estimates the likelihood of surviving as home fire when a working smoke alarm is present. Taken completely out of context, a number like 99.45 percent sounds very high. But consider this:

- The total home fire death toll of more than 2,500 deaths a year occurs in more than 350,000 reported home fires a year. Therefore, the likelihood of surviving a home fire is over 99 percent without regard to the presence of smoke alarms or any other fire safety provisions. Does that mean 2,500 deaths are acceptable? Most people would say no.
- Each year, there are an estimated 41,000 deaths due to motor vehicle accidents and an estimated 6 million reported motor vehicle accidents crashes. The likelihood of surviving a motor vehicle accident crash is 99.4 percent. Does that mean 41,000 deaths are acceptable? Most people would say no.
- Each year, 2.4 million people die of any cause in the country compared to a total U.S. resident population of 300 million. The likelihood of surviving every hazard, threat and illness for a year is 99.2 percent. Does that mean 2.4 million deaths are acceptable – that nothing at all should be done to protect Americans from anything, especially when technology exists that could save lives? Most people would say no.

### Sprinklers do more than save lives

Sprinklers do more than save lives; they also protect property from destruction by fire. In many situations, that means a family that survived a fire will also have a place to live and enough resources to continue living their lives as they did before. “Saving lives” means more than just preventing deaths. Just as there is no other fire safety technology or program that

produces as great a reduction in risk of death as sprinklers, there also is no other fire safety technology or program that produces as great a reduction in property loss per fire as sprinklers.

- People in homes with sprinklers are protected against significant property loss – sprinklers reduce the average property loss by 71 percent per home fire.

### **The national consensus is in favor of sprinklers**

All model safety codes now require the use of home fire sprinklers in new one- and two-family homes. These requirements offer the highest level of safety to protect the people of your community.

- Home sprinkler systems respond quickly to reduce the heat, flames, and smoke from a fire, giving families valuable time to get to safety.
- Roughly 85 percent of the time, just one sprinkler operates.
- Each individual sprinkler is designed and calibrated to go off when it senses a significant heat change.
- Only the sprinkler closest to the fire will activate, spraying water directly on the fire.

### **Beware misleading percentages on effectiveness and reliability**

It is important to recognize that home fire sprinkler systems are designed to activate to the heat of a fire that grows large enough for the temperature to rise to 135°-160°F. They are not activated by smoke, nor should they be.

Opponents have cited some low percentages for what they call fire sprinkler efficiency. Such statistics improperly include as failures fires that do not produce enough heat to activate the sprinkler system, possibly because they were extinguished before heat rises to the point of activating the sprinkler system. In home fires deemed large enough to activate an operational sprinkler, sprinklers operated *and* were effective in 92 percent of reported fires.

### **Beware false claims made for newer homes**

Opponents of residential fire sprinkler systems like to boast that newer homes are safer homes and that the fire and death problem is limited to older homes. This statistical claim evaporates if you adjust for the higher risk characteristics (e.g., lower income, less education) found on average in the occupants of older homes. But in fact, newer homes are also more likely to include a threat to firefighters in the form of lightweight construction. Lightweight construction has been variously estimated to be used in a half to two-thirds of all new wood one- and two-family homes. Sprinklers can offset the increased dangers posed by lightweight construction and create a safer fire environment for firefighters to operate.

### **Home fire sprinklers are cost effective**

A national perspective on the cost of installing residential fire sprinklers is examined in the report, *Home Fire Sprinkler Cost Assessment*, released by the Fire Protection Research Foundation, an affiliate of NFPA. According to the report, the cost of installing sprinkler systems averaged **\$1.61 per sprinklered square foot**. This cost includes all costs to the builder associated with the system including design, installation, and other costs such as permits, additional equipment, increased tap and water meter fees – to the extent that they apply.

Additionally, in a recent study, *Comparative Analysis of Housing Cost and Supply Impacts of Sprinkler Ordinances at the Community Level*, conducted by Newport Partners for NFPA and just released, it is reported that: “the following analysis did not reveal that the enactment of sprinkler ordinances caused any detrimental effects on housing supply and costs.” This report clearly indicates there is no merit to the claim that a residential sprinkler requirement creates an unfair market advantage for an area that does not have a requirement, as claimed by sprinkler opponents.