California Home Fire Sprinkler Fact Sheet

Fires in the home pose one of the biggest threats to the people of your community. Over 350,000 home fires occur every year in this country and more than 2,500 people a year die in home fires. Home fire sprinklers are a proven way to protect lives and property against fires at home.

These life-saving systems respond quickly and effectively to the presence of a nearby fire. When sprinklers are present, they save lives. 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.

- If you have a reported fire in your home, the risk of dying decreases by about 80 percent when sprinklers are present.
- People in homes with sprinklers are protected against significant property loss—sprinklers reduce the average property loss by 71 percent per fire.

Home Fire Death and Injury Risk

The Centers for Disease Control and Prevention (CDC) offers the following national burn death and injury data. California's rates track very closely with national statistics.

- Fire related injuries represent 1% of the incidence of injuries and 2% of the total costs of injuries, or $7.5 billion each year.
- Fatal fires and burn injuries cost $3 billion, representing 2% of the total costs of all fatal injuries.
- Hospitalized fire and burn injuries total $1 billion while non-hospitalized fire and burn injuries cost $3 billion.
- Groups at increased risk of fire related injuries and death include children 4 and under, older adults ages 65 and older, African Americans and Native Americans, the poorest Americans, persons living in manufactured homes and substandard housing, and persons living in rural areas.
- In California, the counties identified as "rural" accounted for approximately 7% of the population and 22% of the fire deaths (2006-2010).

Facts about Home Structure Fires in California

From 2003-2010 California fire departments responded to an estimated 73,422 home structure fires (one-two family homes).

These fires caused:

- **563 civilian fire deaths**
- **3 firefighter deaths**
- **2,072 civilian fire injuries**
- **$3.1 billion in direct damage**

Nationally, 85 percent of all civilian fire deaths in 2009 resulted from home structure fires.

On average, eight people a day die in U.S. home fires. That is equivalent to the number of deaths that would be caused if one commercial airplane crashed every month.

Sources:

Fire Loss in the United States during 2009 by Michael J. Karter, Jr., NFPA, Quincy, MA, August 2010

Home Structure Fires by Marty Ahrens, NFPA, Quincy, MA, January 2009

Office of the California State Fire Marshal, 2003-2010 data as reported by 48% of fire departments

Facts About the Cost of Home Fire Sprinklers

Much research has been conducted and information collected on the cost of residential fire sprinkler installation; as in any business those prices vary depending on the structure configuration, size, and design (custom housing verses production housing). The Fire Protection Research Foundation recently issued the *Home Fire Sprinkler Cost Assessment* report. The report reveals that the cost of installing home fire sprinklers averages $1.61 per square foot for new construction, which equates to about 1 to 1.5% of the home cost and an approximate $5.00 extra mortgage payment a month. Within California, the Office of the State Fire Marshal has been provided installation costs from residential sprinkler installers that range from $.65 to $2.75 per square foot depending on house configuration. Also, the California Department of Insurance has provided information from one of their surveys that indicate a savings on residential insurance to be between 2–13% for the installation of residential fire sprinklers.

For additional information about residential fire sprinklers, check out the following websites:
osfm.fire.ca.gov and firesprinklerinitiative.org

Additionally, cost and fees should be differentiated. Fees are driven by individual agencies or communities based on their individual needs and business plan. Examples include stand-by water fees imposed by water purveyors for water that will not be used unless there is a fire; and the water usage will be far less than water used to extinguish the fire by the fire department. Other fees are associated to local needs to process requests, plans, and provide inspection services of the new construction. These fees are included within the local agency's adopted local ordinances.

Practical Solutions for Water Supply

Water supply for the residential fire sprinklers can be obtained from a variety of means. They include a connection to a reliable waterworks system, an elevated tank, a pressure tank, a stored water source with an automatically operated pump or a well with a pump of sufficient capacity and pressure to meet the sprinkler demand. Also, where a fire sprinkler system is supplied by a stored water source with an automatically operated means of pressurizing the system other than an electric pump, the water supply may serve the sprinkler system only. The required design water demand for the fire sprinkler system is the flow of two sprinkler heads for 10 minutes (approximately 310 gallons of water needed for life safety).

Beware of False Claims 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 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. Nationally recognized studies show new construction building techniques, larger homes, open spaces, and increased fuel loads and materials contribute to faster fire propagation, shorter time to flashover, shorter escape time for occupants, and shorter time to structural collapse.

Environmental Benefits of Fire Sprinklers

- **Reduce greenhouse gases by 98%**
- **Reduce fire damage by up to 97%**
- **Reduce water usage to fight a home fire by upwards of 90%**
- **Reduce the amount of water pollution released into the environment**
- **Reduce debris to landfills**

Source:
The Environmental Impact of Automatic Fire Sprinklers, a study by *FM Global and Home Fire Sprinkler Coalition*, 2010

Freeze Protection Issues

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. Examples of freeze protection best business practices include insulating sprinkler piping, similar to the house plumbing, and proper use of antifreeze solutions.

Fire Sprinklers are Environmentally Friendly

The findings of a groundbreaking study show that greenhouse gases released by burning buildings can be reduced by 98% when automatic fire sprinklers are installed. The study, a collaborative effort of FM Global and the Home Fire Sprinkler Coalition, also found that automatic fire sprinklers: reduce fire damage by up to 97%; reduce water usage to fight a home fire by upwards of 90%; and reduce the amount of water pollution released into the environment.