

Statistics

Each Year in the United States:

- Fire departments respond to nearly 400,000 home fires, which claim the lives of over 2,500 people and injure more than 13,000, not including firefighters. Over 90% of structure fire deaths occur in homes.¹
- Fire kills more people than all natural disasters combined.

Consider the following:

- Children under the age of 5 are 1 1/2 times more likely to die in a home fire as the general public.²
- Adults 75 years or older are nearly 3 times more likely to die in a home fire as the general public.²
- Most victims of fires die from smoke or toxic gases and not from burns.¹
- More than one of every three (36%) fatal fire victims never wakes up before being injured.²
- More than two of every five (43%) people injured (but not killed) in home fires were trying to fight the fire or rescue someone when they were injured.²
- Smoking is the leading cause of fire-related deaths.³ Cooking is the primary cause of residential fires and the leading cause of civilian fire injuries.³
- Fire is the most costly insurance claim locally.¹⁷



Reasons for Residential Sprinklers

A Home Fire Sprinkler System:

- Save lives. It is designed to ensure a tenable atmosphere for escape.⁹
- Combined with the recommended number of smoke alarms increases the chance of surviving a fire by over 97%.¹⁰
- Is like having a firefighter 24/7 with an immediate response time.¹⁰
- Controls a fire in a home over 90% of the time with just one sprinkler head activated.⁶
- Controls a fire with approximately 1/10 of the water usage compared to firefighting efforts.⁶
- May give you a 5-15% insurance savings.⁷
- Reduces the average property loss by 74%.^{8,9}

Answers to Common Questions

Do residential sprinklers really save lives?

Yes. The evidence on this point is overwhelming. For instance, Napa California and Cobb County Georgia mandated residential sprinkler systems. There has not been a single residential fire fatality in a residence with a sprinkler system since the inception of their fire sprinkler programs. There has not been a single fire fatality in Prince George's County, Maryland in a building with a sprinkler system¹². Scottsdale, Arizona credits sprinkler systems with saving up to 13 lives since the ordinance passed in 1985.¹³ See the case studies on the back of this brochure.

Aren't smoke alarms enough?

No. While functioning smoke alarms do save lives, they may not be enough to prevent tragedy. Consider the following statistics:

- 40% of fire deaths were in homes with working smoke alarms⁴
- Smoke alarms are missing in 2/3 of deadly residential fires³
- In a study completed in 2006, only 58 percent of a test group of children ages 6-12 awakened when a standard smoke alarm sounded; only 38 percent of the test group successfully evacuated⁵

If a fire occurs while you are sleeping and you have no warning, the smoke and toxic gasses put you into a deeper sleep until you die. If you awake by a working smoke alarm during a fast growing fire, you might be fortunate to have a matter of seconds between when the detector alarms and the Atmosphere becomes unsurvivable. During the escape, the smoke is often so heavy that you cannot see your hand in front of you. You must crawl in darkness to safety. Residential sprinklers are designed to control the fire before the atmosphere becomes unsurvivable. You are virtually guaranteed to survive a fire with residential fire sprinklers.¹⁰



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SURVIVAL

Aren't there inherent built-in features that make newer houses safer?

Whether or not a house is new ignores the fact that the fuel load inside the house drives the fire. Modern furniture presents a huge fuel load, loaded with synthetic materials such as polyurethane foam and plastics which burn like gasoline. Room flashover times of 3-5 minutes after ignition are not unusual and are unsurvivable conditions¹⁶. While some features make newer structures safer, other features do not. Smoke alarms can be disabled and, when exposed to fire, modern composite lightweight construction can suffer structural failure faster than conventional lumber.



See MFR's side-by-side bedroom burn video demonstrations at: <http://www.ci.medford.or.us/Page.asp?NavID=663>

Aren't residential fire sprinkler systems expensive?

Medford average = \$1.68 per sq. ft. of living area

National average = \$1.35 per sq. ft. of living area⁸

The cost equates to:

- About the cost of upgrading carpet, cabinets, countertops, driveways, etc., except fire sprinklers last for the life of the home^{14,15}
- Amortized over 30 years, approx. \$5-10/month after interest deductions and insurance savings
- About or 1-1 1/2% of total building cost⁵

The Medford Water Commission offers 3/4" water meters for residential fire sprinkler systems at the same SDC rate as standard 5/8" water meters.

Aren't systems expensive to maintain?

No. There is virtually no maintenance.

Aren't sprinkler heads ugly?

There are now a variety of residential sprinkler heads including concealed heads, which are hidden until they drop down upon activation. Also, all residential sprinklers can be factory painted to match ceiling and wall colors.



What about flooding my house?

The scenes in Hollywood showing all the sprinkler heads activating at the same time throughout, flooding an entire building, are misleading. It takes heat to activate a sprinkler head (155-200 degrees F). 93% of all fires that occur in homes are quickly controlled by a single sprinkler head¹¹ flowing 13-25 gallons per minute. Without fire sprinklers, the fire continues to grow exponentially. The fire department arrives 5-10 minutes later and puts hundreds to thousands of gallons on the out-of-control fire. A fire which escapes early detection and suppression takes far more water to extinguish, and the uncontrolled fire destroys much of the contents in the house. Tests conducted by the Los Angeles Fire Department and the U.S. Fire Administration showed that damage caused by water in a sprinklered fire is substantially less than damage caused by a fire department hose streams in an identical unsprinklered fire.

Loss records of Factory Mutual Research show that the probability of a sprinkler discharging accidentally due to a manufacturing defect is only 1 in 16 million sprinklers per year in service.



Ben-

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owner

- Assurance of life safety & property protection

Benefits to Communities

- Safer community (less injuries and deaths)
- Less property damage
- Less risk to firefighters
- Saved \$\$\$-Less overtime for suppression and investigation efforts
- Less apparatus required for extended durations

Benefits to Homebuilders

- Possible construction tradeoffs
- Ability to advertise fire-safe sustainable house



Case Studies

1. Scottsdale, AZ (15-year study)¹²
 - Over 50% of houses fire sprinklered
 - 13 lives saved
 - Over \$20 million in property loss prevented
 - Average fire loss was:
 - \$2,166 in fire sprinklered residences
 - \$45,019 in non-fire sprinklered residences
 2. Prince George's County, MD (15-year study)¹³
 - Lives Lost: 0
 - Injuries Reported: 6
 - Average Fire Loss per Incident: \$ 4,883
 - Over \$42 million in property loss prevented
- Homes Protected by Fire Sprinklers
- Lives Lost: 0
 - Injuries Reported: 6
 - Average Fire Loss per Incident: \$ 4,883
 - Over \$42 million in property loss prevented
- Homes Not Protected by Fire Sprinklers
- Lives Lost: 101
 - Injuries Reported: 328
 - Average Fire Loss per Incident: \$ 9,983
 - Avg. Fatal Fire Loss per Incident: \$ 49,503

This brochure is being provided as a resource. If you need a copy of the references cited in this brochure or want more information, contact our Fire & Life Safety Division or go to our website at: www.ci.medford.or.us/Page.asp?NavID=663

The Case for Residential Fire Sprinklers



MFR Side-by-side Bedroom Burn Demonstration 9-2011



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