

Home Fire Sprinklers

You never know when or where a fire will start in your home. What if you could have a firefighter stationed in every room 24 hours a day, ready to stop a fire the minute it broke out? That is what fire sprinklers are - instant firefighters. Residential fire sprinklers are small. In fact, they fit in so well that you have to point them out for people to notice them.

A sprinkler is similar to a hose nozzle because it breaks the stream of water into a fine spray. The sprinkler does not release the water until it is heated by a fire. A tight metal seal over the waterway holds the water back. The cap is held in place by either a glass bulb or metal link. Both are very rugged but are designed to melt in the high heat of a fire.

Sprinklers are required in homes without an approved fire apparatus access road or without adequate fire flow (water from a hydrant). We encourage all homeowners to consider installing sprinklers in their residence.

Sprinkler Facts

- **Sprinklers save lives**

Sprinklers are the most effective fire safety device ever invented. Look at this comparison with smoke alarms and with no fire protection at all. The National Fire Protection Association reports that people with smoke alarms in their home have a 50 percent better chance of surviving a fire. Adding sprinklers and smoke alarms increases your chances of surviving a fire by over 97 percent.

- **Sprinklers save property**

Residential fire sprinklers are designed to save lives, but because they control fires so quickly, they also reduce property damage. Fire reports show that property damage is nine times lower in sprinklered homes.

- **Sprinklers are affordable**

Fire sprinklers add about one percent or less to the cost of a new home. This is about the same cost as upgrading carpeting. But carpets need to be replaced every ten years, while fire sprinklers last for the life of the home. Compared with the cost of carpeting, fire sprinklers give

you peace of mind for a bargain price. Multipurpose Systems that serve the sprinklers and plumbing with the same pipe may lower the cost even more.

- **Lifetime safety is lifetime quality**

The features of your home reflect your values and priorities. You select high-quality items for things that you want to last. Fire safety is a quality issue, too. Fire sprinklers will protect your family for the life of the home. You can ignore the issue and accept the minimum level of safety for your family and possessions, or you can build in quality fire protection for them.

Sprinkler Questions

- **Will sprinklers leak?**

Sprinklers and their piping are pressure-tested at two to three times higher than your plumbing system, even though they use the same pressure as your plumbing. Therefore, the chance of a leaking sprinkler is practically zero. In fact statistics show that you are more likely to be struck by lightning than have a failure in your sprinkler system. Like your plumbing pipes, sprinkler pipes are not exposed to cold areas so they are protected from freezing. They do not leak because, unlike faucets and other fixtures that are operated often throughout their lives, fire sprinklers remain closed until needed and thus do not receive the wear and tear of daily use.

- **Won't all the sprinklers in the room go off at the same time?**

The heat from a fire will open only the nearest sprinkler. Its water cools the hot fire gases, making it impossible to open other sprinklers. Thus, in nearly all cases there is not enough heat to open the next nearest sprinkler. In the rare case that the heat is too much for the nearest sprinkler, the next nearest sprinkler will open to overcome the fire. The operation of more than one sprinkler occurs in a small percentage of commercial buildings, but is very unlikely in homes. Thus, only the sprinklers necessary to stop the fire will operate, and fire records show that it usually takes just one.

Why, then, do people think that all of the sprinklers in the room go off at the same time? There are two reasons. First, Hollywood gag writers show all of them going off for comic effect. They have shown this happening from someone merely lighting a cigar or pulling a fire alarm switch. Those actions cannot even make one sprinkler open, let alone all of them.

The second reason is that a lot of people mistakenly think that smoke will open a sprinkler. They have seen smoke spread throughout a room, so they conclude that smoke affects all of the sprinklers in the room. But once people understand that:

- Only heat can open a sprinkler (smoke can't melt metal or burst glass)
- Only a threatening fire can generate enough heat to open a sprinkler

Then they understand that all of the sprinklers won't open at the same time, even in a smoky room.

- **Aren't they unsightly?**

Residential fire sprinklers are much smaller than ones that you see in stores and offices. All residential models come in colors to match popular ceiling and wall colors, and manufacturers will even custom-paint them for you. Many models are partially recessed into the ceiling, and only 1/4"-3/4" is below the ceiling. If you want them completely recessed, these models are also available. The fully recessed models are hidden by a cover plate that is painted to match the ceiling. The cover is held in place by a metallic link that melts in a fire and exposes the sprinkler.

It is common to find that visitors do not notice the sprinklers at all unless you point them out, even the ones that are not recessed into the ceiling.

- **Won't the water create more damage than the fire?**

One of the myths about sprinklers is that they will cause water damage. While this may seem logical (after all, they spray water), fire records show that the reverse is actually true. Here is why. A residential fire sprinkler sprays about 10-18 gallons of water per minute and operates early in a fire to stop the burning. A hose used by firefighters flows ten times that amount, 175-200 gallons a minute. If sprinklers are not present, fires typically burn for an additional 10-15 minutes until firefighters arrive and begin spraying it with their hoses. Two things happen to cause more damage than sprinklers. First, more of your possessions have burned up before the firefighters intervened, and then you have 10 times more water being sprayed on what is left at a very high pressure.

The combination of the sprinkler's quick response, the smaller water flow and lower pressure significantly reduce water and property damage. Think about it. What would sustain more

damage, a sofa that can be dried off (sprinklered fire) or one that has turned to ashes (manual suppression)? How about an oil painting that was protected by a fine spray (sprinklered fire) or one where all that was left was part of a frame (manual suppression)? Without sprinklers, the heat and smoke from a fire travel very quickly, damaging the furniture and possessions throughout the house. With sprinklers, the sprinkler nearest the fire will stop it before it can develop the damaging heat and smoke.

You can install an alarm to alert you when a sprinkler opens and water starts flowing. The alarm will also alert neighbors, and you can have it monitored by an alarm company so they can call the fire department if no one is around.

- **Can I install them myself?**

Only qualified contractors should install fire sprinklers. They will know how to install the system in compliance with national standards, which ensures that the spacing is correct and an adequate water supply is available. Also, fire sprinklers have different operating temperatures and flow patterns. You need someone knowledgeable who can select the correct sprinkler for each area of the home.

The Office of the State Fire Marshal has provided a list of qualified contractors authorized to design and install fire sprinklers: <http://www.wsp.wa.gov/fire/licreports.htm>.