



## Specialized Expertise from the Department of Loss Prevention

### What Every Homeowner Should Know About Fire

There exists an unsubstantiated attitude that “a fire won’t happen to me” and that fire “is someone else’s problem”. We also place an unrealistic burden on our fire departments to save us from any fire that may occur. The reality is very different, and the National Fire Protection Association statistics bear this out.

- There are about 271,500 home fires per year.
- On average the normal American house will have 5 fire related events over the course of its life.
- In 2013 there was 5.6 Billion dollars of property damage caused by fire.
- Between 2003 and 2013 an average of 2,756 people died each year in home fires.

#### Life Safety:

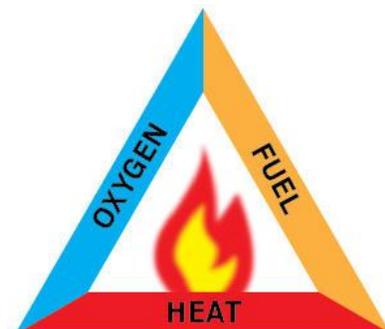
The most important factor in fire safety is safeguarding the lives of family and friends. It should always be the first priority of the homeowner to ensure that everyone knows what to do in the event of a fire.

Family members (especially young children) should know what the alarm sounds like and how to “call in” an alarm (tell mom & dad, call 911, tell a neighbor). It is imperative that everyone in the home be made aware that there is a fire.

- Ensure the alarm can be heard in all parts of the home. If necessary extend the reach of the alarm system to cover even the most remote areas of the home. Parents please keep in mind that small children and teenagers can ignore even the loudest alarm when watching cartoons or listening to the latest hit song and most can sleep through just about anything.
- Have fire drills each year. Make sure that everyone knows the primary and secondary escape routes from every part of the home. Escape route doors or windows should remain accessible at all times and should never be blocked.
- Establish a meeting point outside the home. It is important that everyone inside the home be accounted for as quickly as possible. If someone is missing, notify the fire department as soon as possible so that rescue efforts can begin. It is also important to notify the fire department when everyone is out of the house, because they usually will not start to fight the fire until everyone is accounted for.

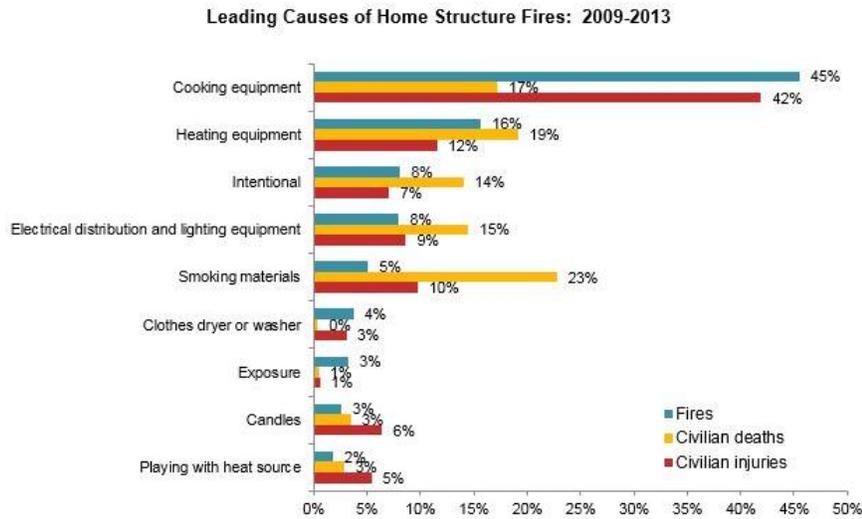
#### Ignition sources and Fuel:

The Fire Triangle. In order to have fire there must be Oxygen, a combustible material (Fuel) and Heat (Source of Ignition). We can’t do much about Oxygen because there is air all around us, but we can control some Fuel and Ignition Sources that are present in our homes.





First let's look at what causes fires in a home. The NFPA (National Fire Protection Assoc.) has done extensive studies on the cause of home fires. The graph below is the result of one of these studies.



NFPA Paper – Home Structure Fires

**Ignition Sources:**

Cooking and Open Flames – anywhere there are open flames (cooking, candles, and fireplaces) the fire should never be left unattended. Cooking operations of any kind should always be monitored. Use a timer to ensure that cooking foods are not forgotten. Don't allow window coverings or towels near an open flame and don't wear loose fitting clothing around open flames. Don't allow children to play with candles, matches or lighters.

Small Electrical Appliances – Small appliances (toasters, coffee makers, mixers, etc.) should be inspected and approved by a testing laboratory (UL or similar). They should be use on a flat non-combustible surface that is at least 18 inches from combustible materials (curtains, towels) and should have a light that indicates when the appliance is on. Appliances should have an automatic shutoff that is triggered by inactivity after a predetermined length of time.

Mechanical Equipment and Major Appliances - Heating, Air-conditioning equipment and Major Appliances (refrigerator, dishwasher, washer & Dryer) should be installed by professionals. They should also be maintained by professionals on a regular schedule.

Electrical System – wiring should be installed by qualified electricians and in strict accordance with local building codes. Extension cords and multiple plug adapters should be avoided for permanent power delivery. If breakers or fuses trip repeatedly this usually indicates a problem on the circuit (not a faulty breaker or fuse). The problem should be cleared before resetting the breaker or replacing the fuse. If overload is causing the breaker to trip or the fuse to blow; the system should be expanded to accommodate the extra load.

Arc Fault Circuit Interrupters – this is a relatively new type of breaker. It senses arcing within the circuit and opens the breaker to stop the flow of electricity. Arcing provides an ignition source for fire and is common prior to the start of a fire caused by the electrical system. The installation of arc fault circuit interrupters should be considered.



Lightning Protection - If your home is located in an area that is prone to lightning strikes it should be equipped with a lightning protection system. If your home has a lightning protection system, the system must be properly maintained. The system should be inspected after a known lightning strike, when visible damage is noted and at least every five years. The inspection should be done by a certified lightning protection professional.

**Fuel Sources:**

- Hallways, stairs and doorways should never be used for storage.
- If large amounts of paper items are stored; they should be stored in cabinets that are labeled as fire resistant.
- Don't store combustible items adjacent to electrical cabinets, outlets or heat producing objects.
- Nothing should be stored within three feet of electrical panels.
- When possible use natural materials for interior decorating. Natural materials are much more resistant to fire than synthetic materials. Synthetic materials, if used, should be treated with a fire retardant.
- Natural gas, propane gas and fuel oil lines should be installed by professionals. If a leak occurs the fuel supply should be shutoff and the leak fixed as soon as is possible.

**Fire Suppression Systems:**

A properly installed and maintained sprinkler system is the most effective defense against fire. While residential systems were developed and designed to save lives, the sprinkler system has proven to be a very effective property conservation tool as well.

Where homes are equipped with fire sprinklers,  
the risk of dying in a fire is decreased by 80%.

For home fires where sprinklers are present,  
the average property loss due to fire is decreased by 71%

NFPA – FACTS ABOUT US HOME STRUCTURE FIRES

There are three basic types of sprinkler systems used in residential properties; Wet Pipe, Dry Pipe and Preaction.

Each system has a piping distribution that will supply water to all parts of the home that are protected and each has a "riser" that is made up of an isolation valve, pressure gages and a water flow alarm. It is important to note, that in the event of a fire, not all sprinkler heads in the home spray water, only the sprinkler heads in the immediate vicinity of the fire are activated.

Because many homeowners are worried about water damage the preaction system was developed. The preaction system provides additional security against inadvertent discharge of the sprinkler system. It is used where valuable or sensitive products are located in the protected area. The preaction piping system is filled with compressed air or inert gas and requires at least two indications of a fire from the fire detection system before water is allowed to enter the piping distribution system. Water pressure is allowed to enter the piping system only when there is an alarm signal from the fire alarm system. Then a sprinkler head must be subjected to the heat from a fire before water is discharged. Only the sprinkler heads in the direct vicinity of the fire spray water.

This system design provides greater protection against water damage due to an inadvertent leak.

Modern fire sprinkler systems can be installed in unobtrusive ways. Manufacturers now produce sprinkler heads in a wide assortment of styles, shapes, sizes and colors to accommodate almost any application. Some have concealed heads that are covered by a small plate. The plate is almost flush to the ceiling and can be supplied in a wide variety of colors or even faux painted. Sprinkler heads can be concealed in walls, ceiling designs or even crown molding.

Examples of Concealed Sprinkler Head Cover Plate Colors



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