

Smoke Alarms – Why, Where, and Which



A smoke alarm is critical for the early detection of a fire in your home and could mean the difference between life and death. Fires can occur in a variety of ways and in any room of your home. But no matter where or how, having a smoke alarm is the first key step towards your family's safety.

This information is not intended to be all inclusive, but it is intended to inform the reader about some of the safety aspects and importance of having and maintaining working smoke alarms.

Why are Smoke Alarms Important?

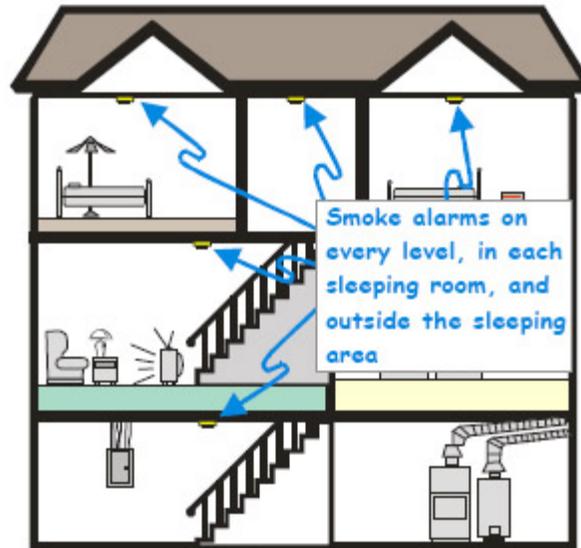
Every year in the United States, about 3,000 people lose their lives in residential fires. In a fire, smoke and deadly gases tend to spread farther and faster than heat. That's one reason why most fire victims die from inhalation of smoke and toxic gases, not as a result of burns. A majority of fatal fires happen when families are asleep because occupants are unaware of the fire until there is not adequate time to escape. A smoke alarm stands guard around the clock and, when it first senses smoke, it sounds a shrill alarm. This often allows a family the precious but limited time it takes to escape.

About two-thirds of home fire deaths occur in homes with no smoke alarms or no working smoke alarms. Properly installed and maintained smoke alarms are considered to be one of the best and least expensive means of providing an early warning of a potentially deadly fire and could reduce the risk of dying from a fire in your home by almost half.

Where Should Smoke Alarms be Installed?

Smoke alarms should be installed on every level of the home, outside sleeping areas, and inside bedrooms.

A smoke alarm should be installed and maintained according to the manufacturer's instructions. When installing a smoke alarm, many factors influence where you will place it, including how many are to be installed. Consider placing alarms along your escape path to assist in egress in limited visibility conditions. In general you should place alarms in the center of a ceiling or, if you place them on a wall, they should be 6 to 12 inches below the ceiling.



Replace batteries every year
Replace smoke alarms every 10 years

- Install a working smoke alarm on every level of the home, outside sleeping areas, and inside bedrooms.
- Replace smoke alarm batteries at least annually, such as when resetting clocks in the fall or spring.
- Test all smoke alarms in your house once a month.
- Do not place a smoke alarm too close to a kitchen appliance or fireplace, as this may result in nuisance alarms.
- Avoid locating alarms near bathrooms, heating appliances, windows, or ceiling fans.
- Replace smoke alarms that are more than 10 years old. Smoke alarms don't last forever.
- Develop and practice a fire escape plan, because working smoke alarms and a fire escape plan will increase your protection in case of a fire.

Which Smoke Alarm Type is Better?

Although there are several choices to make in selecting the right smoke alarms to buy, the most important thing to remember is that smoke alarms save lives. For that reason, you should install a smoke alarm if your home does not have one.

Smoke alarms may contain different or multiple sensors

There are two main types of smoke alarms, which are categorized by the type of smoke detection sensor, ionization and photoelectric, used in the alarm. A smoke alarm uses one or both methods, sometimes with a heat detector, to warn of a fire.

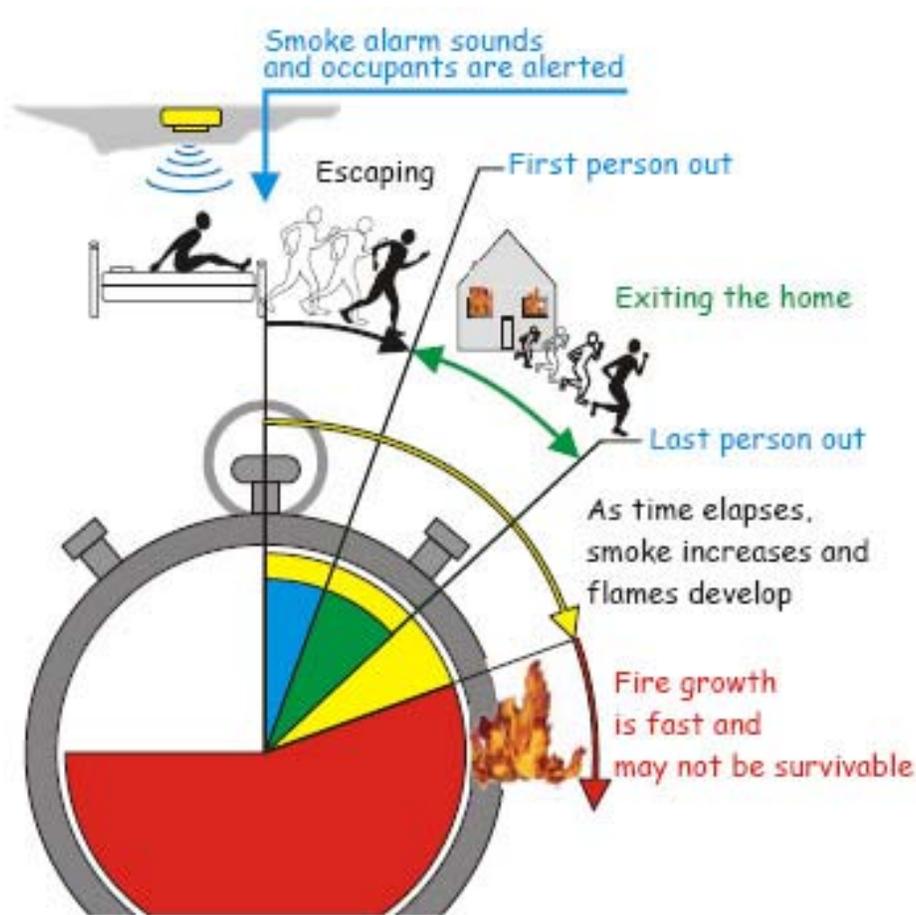
Ionization detectors contain a chamber with two plates that generate a small, continuous electric current. When smoke enters the ionization chamber, the smoke particles disrupt the current flow, which triggers the alarm.

Photoelectric detectors use a light beam and light receptor (photocell). When smoke is present between the light and receptor, depending on the type of smoke chamber configuration, the reduction or increase of light on the photocell sensor triggers the alarm.

Smoke alarms may perform differently

Both ionization and photoelectric detectors are effective smoke sensors. Even though both types of smoke detectors must pass the same tests to be certified to the voluntary standard for smoke alarms, they can perform differently in different types of fires. Ionization detectors respond quickly to flaming fires with smaller combustion particles; photoelectric detectors respond more quickly to smoldering fires. There are combination smoke alarms also that combine ionization and photoelectric detectors into one unit, called dual sensor smoke alarms.

The amount of time a person may have to escape depends on many factors, such as the type of fire, location of the fire, and the closest smoke alarm.



Smoke Alarm Sounds

Do not waste any time saving property. The fire has already developed and the closest smoke alarm has detected the smoke.