

## Fire Statistics

- Each year, fire departments respond to nearly 400,000 home fires, which claim the lives of over 2,700 people and injure more than 13,000, not including firefighters. Over 90% of structure fire deaths occur in homes.
- Over 93 percent of homes in the U.S. now have at least one smoke alarm
- As the number of smoke alarms in homes increased over the years, the residential fire death rate has dropped nearly 50 percent
- **Smoke alarms are missing in 2/3 of fatal residential fires**
- Most fire deaths are caused by smoke inhalation and happen between midnight and 8:00 AM
- The number of missing or inoperable smoke alarms is increasing
- Experts estimate as many as one in three homes have an inoperable smoke alarm



## What Happens in a Residential Fire?

A fire can begin small in a room and approach a condition called **flashover** in as little as three minutes (1200+ degrees Fahrenheit where all the combustibles are ignited down to floor level in a room). Even before flashover, toxic products of combustion are produced, which can kill you in just a few breaths. Modern furnishings, made out of polyurethane foams (produced from hydrocarbons similar to those found in gasoline) provide more than enough fuel to allow this to happen very quickly. In a matter of just a few minutes, your home could easily become unsurvivable.

## How Long do I Have to Safely Evacuate?

This depends on the fire, however, studies have shown that the average safe window of escape time has been reduced from 17 minutes in the 1970's to as little as three minutes currently. This is attributed to the widespread use of hydrocarbons in modern furniture, such as polyurethane foams. Smoke and products of combustion from these fires are deadly.



## Smoke Alarm Facts

### Why are Smoke Alarms Essential?

Smoke alarms provide an early warning of a fire developing in your home. They are intended to wake you in the early stages of a fire so that you can safely evacuate your home. The National Fire Protection Association (NFPA) has shown that people have nearly a 50 percent better chance of surviving a fire if their home has the recommended number of smoke alarms.



### What is the Difference between Ionization and Photoelectric Smoke Alarms?

Both ionization and photoelectric smoke alarms pass the test required by Underwriter's Laboratories for residential smoke alarms.

#### **Ionization smoke alarms:**

- Detects by sensing electrical charge imbalances caused by smoke through an electrical current
- Are quicker at sensing fast developing flaming fires

#### **Photoelectric smoke alarms:**

- Detect by using a light source to measure the smoke density
- Are quicker at sensing smoldering fires

### How Many Smoke Alarms Should I Have?

Before 1997, Oregon building codes required only one smoke alarm outside of the bedroom areas and one on each floor level of the home. Beginning in 1997, smoke alarms were also required to be installed in each bedroom. All but the smallest home or apartment needs more than one. The exact number depends on two things, the number of levels in the home and the number of bedrooms. It is recommended that smoke alarms be installed in the following locations:

- **A smoke alarm in each bedroom**
- **A smoke alarm outside the bedroom area that is close enough to be heard through closed doors**
- **A minimum of one smoke alarm on each level of the home.**

Smoke alarms should not be placed in kitchens or bathrooms, as these areas produce false alarms.

### What If I Experience a False Alarm?

Do not disable smoke alarms activated from cooking or other non-fire events. Instead use the smoke alarm's hush feature if available. Open the windows and doors to clear smoke from the home.

### How Often Should I Test Smoke Alarms?

Smoke alarms should be tested at least monthly. If the smoke alarm does not sound when tested, replace the battery (if solely battery powered), and test it again. If it still does not sound or the unit is hard-wired and does not sound when tested, replace the smoke alarm with a new one. Newer battery operated smoke alarms will "chirp" intermittently if a battery is getting weak. Replace the battery if you hear this and then test the alarm.



### Are there Smoke Alarms for the Hearing Impaired?

Smoke alarms can be purchased with a visible notification appliance (strobe) to help warn the hearing impaired.



### Are there Smoke Alarms that Work Better to Wake Children?

Smoke alarms can be purchased with a personalized voice recording feature. These have been proven more successful at waking children.

### How Long are Smoke Alarms Good For?

Smoke alarms that are 10 years old are near the end of their service life and should be replaced. Some people think that their smoke alarm sits idle until smoke is present, but that is not the case. It is working every minute, constantly monitoring the air 24 hours a day. For example, an ionization smoke alarm goes through 3.5 million monitoring cycles in 10 years. Likewise, a light in a photoelectric smoke alarm operates 24 hours a day to check for smoke particles in the air. Just like any electrical appliance, the components can wear out over time. When a smoke alarm reaches 10 years of use, the potential of failing to detect a fire increases substantially. Replacing them after 10 years reduces the likelihood of failure. Both hard-wired and battery operated smoke alarms are equally affected by age.

## Oregon Smoke Alarm Laws

### What are the Required Smoke Alarm Design Features?

- Ionization smoke alarms that are solely battery-operated shall be packaged with a 10-year battery
- All ionization smoke alarms shall include a “hush” mechanism that allows a person to temporarily disengage the alarm for a period of not more than 15 minutes. This also applies to hard-wired smoke alarms.
- Photoelectric smoke alarms are exempt from the above requirements. Solely battery operated photoelectric smoke alarms should have their battery replaced once a year.

### What are the Landlord/Tenant Laws for Smoke Alarms?

Rental Dwelling Units, Including Single Family Residences, Apartment Buildings, and Motels/Hotels:

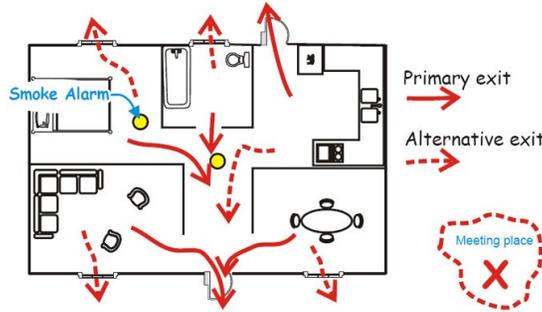
- The landlord must provide at least one working smoke alarm that meets the above design features.
- The tenant is responsible to maintain the provided smoke alarm(s)
- Motels/Hotels must have a percentage of rooms with smoke alarms for hearing impaired.

### What are the Laws Regarding Updating Smoke Alarms when You Sell a Home?

- Smoke alarms in homes that are sold must be updated to meet the above design requirements

### If I Need to Replace a Smoke Alarm, What are the Requirements?

- Smoke alarms must be replaced like-for-like. A 110v hard-wired smoke alarm must be replaced with a hard-wired smoke alarm. A solely battery operated smoke alarm cannot be used to permanently replace a hard-wired smoke alarm.



### Remember to Plan Ahead

In addition to having working smoke alarms, plan ahead and practice home escape drills. Talk with your family about evacuation of your home and establish a safe meeting place. Teach your children to crawl on the floor to avoid smoke and heat. Show them how to feel the door with the back of their hand and to not open the door if it is hot to the touch. Make sure you have two ways out of every sleeping room, and that the windows can be opened easily. If the primary route is blocked by smoke or fire, you may have to escape through a window. Conduct a fire drill at night to determine your child's response, and practice until it becomes routine. Sleep with bedroom doors closed to provide a barrier of protection from smoke and heat spreading into your bedrooms. Practice home escape drills with your family monthly.

### Consider Fire Sprinklers

Consider having a residential fire sprinkler system installed in your home. They are designed to maintain a survivable environment. Your chances of surviving a fire approach 100% when fire sprinklers and smoke alarms are installed in your home.

#### Sources:

*Residential Fire Safety Institute; NFPA; OSFM*

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 Prevention Bureau or go to our website at: [www.ci.medford.or.us/Page.asp?NavID=603](http://www.ci.medford.or.us/Page.asp?NavID=603)

# Smoke Alarm Information



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