



# Installing smoke alarms

## Is your home protected?

The warning provided by smoke alarms has been responsible for saving thousands of lives and homes throughout the world. FESA strongly supports the statement that only a working smoke alarm saves lives.

FESA urges householders to make sure there are enough smoke alarms installed in the right places throughout the house to afford maximum protection to you and your family.

## How do they work?

There are two types of smoke alarms, these being ionisation and photo-electric, and each detects smoke differently. FESA recommends that households use the photo-electric type of smoke alarm.

Ionisation alarms use a small amount of radioactive material to ionise air in the sensing chamber. As a result, the air chamber becomes conductive, permitting current to flow between two charged electrodes. When smoke particles enter the chamber, the conductivity of the chamber air decreases. When conductivity is reduced to a predetermined level, the alarm is set off.

Photo-electric smoke alarms consist of a light emitting diode and a light sensitive sensor in the sensing chamber. The presence of suspended smoke particles in the chamber scatters the light beam. This scattered light is detected and sets off the alarm.

## Which smoke alarm should I use?

Recent research indicates the photo-electric smoke alarms consistently provide sufficient time for occupants to escape from smouldering and flaming fires, provided the alarms are installed and maintained properly and the occupants hear them.

FESA recommends every home should have mains powered photo-electric smoke alarms. A mains powered smoke alarm is one which is wired direct to a 240 volt AC power supply or to a 12/24 volt DC system powered by a 240 volt supply.

It is important to note that all mains powered smoke alarms must be installed by a qualified electrician, and must comply with Australian Standard 3786 and carry the Australian Standards or the ActivFire labels shown below.



## What are interconnectable alarms?

Interconnectable smoke alarms can be set up in a network where if one smoke alarm is activated, all other smoke alarms on the same network will also activate.

This can be very useful in larger homes where it may be difficult to hear smoke alarms that are at the other end of the house, or on another level.

Some more advanced networks can have isolator buttons included. Once you are made aware of the alarm, pressing the isolator button will switch off all the alarms except for the one that initially activated the alert.

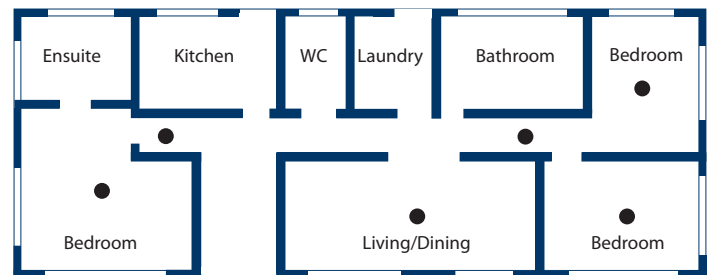
## Where should I install smoke alarms?

The positioning of smoke alarms is just as important as the smoke alarm itself.

It is recommended that smoke alarms be located in all sleeping areas and in all paths of travel between sleeping areas and exits to the open air.

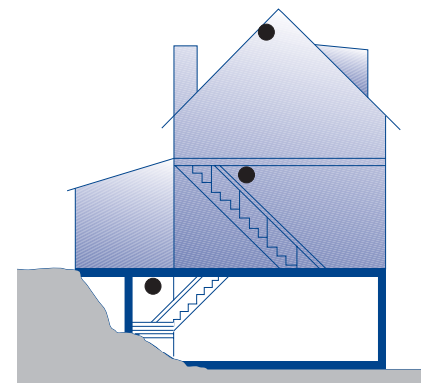
Whenever possible, smoke alarms should not be installed in close proximity to kitchens, laundries and bathrooms.

The image below gives an example of where smoke alarms should be located to provide maximum protection.



In a multi-level house it is recommended that in addition to the above provisions, smoke alarms be located in the path of travel between each level.

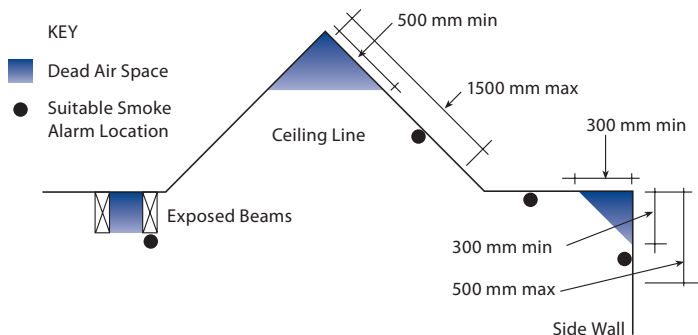
Once you have decided on the appropriate location of smoke alarms in your house, there are a few considerations that must be made:



- Smoke alarms should be located in the centre of the ceiling.
- Smoke alarms can be installed on the wall provided they are fitted between 300mm and 500mm below the ceiling.

- The distance from the apex of a cathedral ceiling to the smoke alarm should be between 500mm and 1500mm.
- Take care to avoid dead air space. These occur where the ceiling meets the wall, in the apex of cathedral ceilings, and between exposed beams.

The diagram below gives a summary of the recommended smoke alarm positioning.



## How do I prevent false alarms?

Smoke alarms are very sensitive and may detect smoke and moisture created by common household activities (such as burning toast or steam from a bathroom etc).

To reduce the likelihood of false alarms, a smoke alarm should **not** be located near:

- cooking appliances;
- doorways to bathrooms, laundries or other damp and humid areas;
- water heaters, space heaters or fireplaces;
- Heating and cooling duct outlets, ceiling fans, doors and windows (excessive air movement may prevent smoke from reaching the smoke alarm);
- Fluorescent light fittings (to avoid the effect of electrical 'noise' or 'flicker'); or
- doorways and windows where barbecues and incinerators are located.

## Smoke alarm maintenance

Smoke alarms require regular testing and cleaning. FESA recommends smoke alarms should be maintained as detailed in Australian Standard 1851.

Key smoke alarm maintenance routines are:

- Testing once per month to ensure the battery and the alarm sounder are operating. Refer to manufacturer's guide for testing procedure.
- Replacing batteries annually where appropriate. Refer to manufacturer's guide for battery type.
- Cleaning with a vacuum cleaner annually to remove particles that will affect smoke alarm performance.

When maintaining your smoke alarm it also important to note the following:

- Generally, smoke alarms will sound a warning 'beep' every 60 seconds for a minimum of seven days when the battery needs replacing. Refer to manufacturer's guide for exact warning details.
- Smoke alarms should never be painted.
- Contact the manufacturer or supplier with any queries regarding your smoke alarm.

## Disposal of smoke alarms

Ionisation smoke alarms contain a small amount of radioactive material, therefore it is important to use the following disposal guide:

- 1–3 smoke alarms—dispose of in general household rubbish
- 4+ smoke alarms—dispose of separately in lots of 2 or 3, or for larger quantities contact the Radiation Health Branch on 9346 2260 to organise the disposal.

Any number of photo-electric smoke alarms can be disposed of in general household rubbish.

## Hearing impaired

For the hearing-impaired there are smoke alarms that sound an ultra-loud warning and others that have visual and vibrating indicators. Further information on these can be obtained from:

### Independent Living Centre (WA)

Phone: (08) 9381 0600, (08) 9381 0608, or  
1300 885 886 (cost of a local call from anywhere in WA).  
Email: [general@ilc.com.au](mailto:general@ilc.com.au)  
Website: [www.ilc.com.au](http://www.ilc.com.au)

### Better Hearing Australia (WA)

Phone: (08) 9328 7938  
TTY: (08) 9328 7938  
Email: [bhawa@iinet.net.au](mailto:bhawa@iinet.net.au)  
Website: [betterhearingwa.iinet.net.au](http://betterhearingwa.iinet.net.au)

### The Deaf Society of WA

**Perth**  
Phone: (08) 9441 2677  
TTY: (08) 9441 2655  
Email: [wadeaf@wadeaf.org.au](mailto:wadeaf@wadeaf.org.au)

### Bunbury

Phone: (08) 9791 8032  
TTY: (08) 9791 8034  
Email: [wadeafbunbury@wadeaf.org.au](mailto:wadeafbunbury@wadeaf.org.au)  
Website: [www.wadeaf.org.au](http://www.wadeaf.org.au)

**Remember, FESA recommends every home should have mains powered photo-electric smoke alarms.**

For more information on fire safety in the home, call FESA Community Safety Division on (08) 9323 9300 or visit [www.fesa.wa.gov.au](http://www.fesa.wa.gov.au)