Guidance Note

Sprinkler systems
Residential & domestic

This guidance highlights the benefits of residential and domestic sprinkler systems and the ongoing maintenance required to ensure they meet expected standards.

A domestic property is one principally in the occupation of a single family of people such as an individual dwelling house, whilst a residential property is a building with multiple occupation, for example a block of flats or home for the elderly.

Sprinkler installations provided in both are usually based on the same principle. Systems designed for residential properties are governed by BS 9251: Sprinkler Systems for Residential and Domestic Occupancies, which was first published in 2005..

Causes of fire in the home

Fires resulting in loss of life occur most frequently in the lounge, living or dining rooms followed by the bedroom. Most non-fatal injuries from fires in the home start in the kitchen.

There are many sources of ignition as well as combustible contents found within domestic and residential properties that can burn.

Cooking appliances, heaters and smoking materials can provide a source of heat, whilst objects such as furniture, bedding, curtains, books and magazines can act as fuel for a fire.

Risk Advice Line

Should you have any additional questions on this topic or other risk-related matters, as a valued Ecclesiastical customer you can contact us through our Risk Advice Line on

0345 600 7531
(Monday to Friday 9am – 5pm, excluding bank holidays)

and one of our in-house risk professionals will be able to assist.

Alternatively, you can email us at

risk.advice@ecclesiastical.com

and one of our experts will call you back within 24 hours.

For queries about your policy cover or claims, please contact your insurance broker.

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Why install sprinklers?

- The benefits of sprinklers are seen as a highly cost effective way in saving lives and reducing the United Kingdom's death toll from fire. Residential systems are usually installed for life safety, focusing on protecting escape routes and accommodation areas. They do not necessarily provide total protection to a building, for example, roof voids are not normally covered
- Regional Governments in Wales and Scotland are requiring sprinkler protection in certain residential settings.
- As a result of the Grenfell tragedy in 2017, from November 2020, the installation of a sprinkler system in all high rise residential flats, above 11 metres in height, became mandatory.
- Additionally, Local Authorities and Fire Officers may in certain circumstances insist on a sprinkler system being installed in a residential or domestic setting.

How do sprinklers work?

A sprinkler installation comprises a range of water filled pipes installed at ceiling level on each floor of the property and connected to a pump and a water supply.

At intervals on the pipework are sealed outlets referred to as sprinkler heads. These sprinkler heads incorporate a temperature sensitive glass bulb which acts like a stopper preventing the release of water from the pipes under normal conditions. When a fire occurs the bulb will break at a predetermined temperature allowing water to be discharged in the form of a spray over the floor below. The discharge pattern from any two sprinkler heads will overlap and in doing so leaves no part of the area below the ceiling unprotected. Often specially designed concealed heads are used for cosmetic appearance in private dwellings.

As water flows from the pipework through the sprinkler heads, water pressure drops, triggering the pump to replenish the pipework from the water supply, and activate an internal and external alarm system.

Dispelling popular myths & misconceptions

All Sprinklers go off at once – not true

60% of all fires are extinguished or controlled by sprinkler systems with a maximum of 4 heads operating. Only the sprinkler heads in close proximity to a fire are activated[1].

Sprinkler heads are activated by smoke – not true

Smoke alone will not cause an activation. In order to activate, all sprinkler heads require the application of heat at a predetermined temperature.

Sprinklers cause more damage than fire – not true

Ten sprinkler heads operating produce the same amount of water as a single fire hose[2].

Sprinklers can go off accidentally – not true

The risk of an accidental discharge of water, due to manufacturing defects, is 1 in 16,000,000 per year of service[3].

[1] ww.firesafe.org.uk/industrialfiresprinklers/
[2] www.cheshirefire.gov.uk/sprinklers/sprinklers-myths-and-facts/
[3] www.bafsa.org.uk/sprinkler-systems/sprinkler-facts/

Water supplies

There are a number of different water supplies available for use with residential sprinkler systems including a direct town mains connection, which may or may not have a booster pump to increase the water flow or a storage tank and pump.

By far the most popular and cost effective water supply for residential sprinklers is the direct town mains connection. However, in opting for this method of supply the adequacy of the water pressure must be established.

Design & maintenance requirements

It is strongly recommended that any domestic sprinkler system is installed in accordance with BS9251:2014.

Although under BS9251 there is no requirement to test and maintain a system, other than on an annual basis, most insurers would look for any such an installation to be tested more regularly, to ensure connections to the bells and sounders are functioning correctly.

Contractors installing and maintaining sprinkler systems should be suitably qualified and experienced, preferably accredited to a third party certification organisation.

Conclusion

Residential sprinklers should be considered as part of an overall package of safety measures within a property that includies smoke alarms and fire detection systems and not in isolation. However, a sprinkler installation will:

- Detect a fire
- Fight the fire by releasing water in the affected area
- Sound an alarm
- Call the Fire Brigade
- Mitigate the consequences of the fire.

By installing a system it will protect both your property and, more importantly, the lives of those residing in it.

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