



General Sprinkler FAQ's

BAFSA provides a free inquiry service for both its members and the general public and each year deals with hundreds of enquiries. Many of the same questions crop up regularly and this publication and BIF 6B and C are intended to provide a ready reference to some of the most Frequently Asked Questions.

Sprinkler Myths: The most commonly asked questions relate to the myths which appear to have grown up around sprinklers.

? Don't all the heads go off at once? I'm sure I've seen this happening on tv!

No, each sprinkler head is effectively a self-contained heat detector and will only operate when the predetermined temperature at which it is set to operate is reached. This is normally 68°C, so only the heads in the immediate vicinity of a fire will operate. This is also why sprinklers will not 'false alarm' - unlike smoke detectors, they will not operate if you burn the toast or let steam from your shower escape from the bathroom! Sprinkler heads will only operate at their preset temperature. Operating a key-switch or lever cannot turn on sprinklers. The depictions of sprinklers on tv and in films are invariably wrong!

? Surely sprinklers create more water damage than the fire and rescue service?

Absolutely not: a sprinkler head discharges between 35 - 100 litres per minute (depending on the design of the system). The discharge will begin around 10 - 30 seconds after the fire produces enough heat to operate the sprinkler head. No fire brigade, however efficient and effective, is likely to reach the premises involved in less than four minutes and unlikely to get to the seat of the fire for five - ten minutes after they have arrived. When fire crews get to work, they are likely to pump 1000 - 3000 litres per minute on what will inevitably have become a much larger fire. You should remember that even if you have an automatic fire detection system linked to the fire service via a central alarm station it could take up to three minutes for the call to reach your nearest fire station.

? What happens if sprinklers false alarm?

Sprinklers cannot false alarm. They only operate

when the air around the sprinkler heads reaches their predetermined temperature. They will not respond to smoke, dust or fumes from aerosol sprays. It is true however, that a few heads each year are damaged by for example, the masts of fork-lift trucks. Where this can happen, special protective cages should be fitted around the sprinkler head.

? Aren't sprinkler heads vandalised?

Sprinklers can be damaged deliberately but this is an extremely rare event and, in most cases, where this happens, the vandal will get very wet and be easily identified! All sprinkler systems should be fitted with waterflow alarms so that those present will be alerted to a sprinkler actuation. In many cases the waterflow alarm is connected to a commercial alarm receiving centre which will arrange for the fire and rescue service to respond. Note that deliberate damage to any part of a sprinkler system probably constitutes a criminal offence.

? Is there not a risk of sprinklers causing Legionnaire's Disease?

There has been extensive, international research which shows there is no realistic chance of a member of the public contracting Legionella pestis from a sprinkler system when it operates. Current thinking is that the water droplet sizes generated by sprinkler head deflectors are too large to pass through the membranes of the lung and this, together with the fact that the oxygenation, pH and temperature of the water in sprinkler pipes do not provide a suitable environment for the Legionella bacteria to flourish suggests that there is no substantive issue.

There are no recorded cases of anyone contracting Legionella from a sprinkler system anywhere in the world. Such risk as might exist for maintenance personnel can be eliminated by adherence to proper working practices.



EACH SPRINKLER IS A SELF CONTAINED HEAT DETECTOR



SPRINKLERS DO NOT GO OFF ALL AT ONCE



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? **How do sprinkler heads work?**

A sprinkler head is a temperature-controlled valve that opens, to release a spray of water, when the heat-sensitive element reaches a specific temperature. Most sprinkler heads installed today are of the 'glass bulb type'. The bulb is filled with a liquid and a small bubble of vapour. As the bulb heats to its operating temperature, the liquid expands compressing the vapour, at the preset temperature, the vapour disappears and the expanding liquid fractures the bulb. This allows the release of the water in the pipework behind the head.

Under normal conditions in temperate climates, a rating of 68°C or 74°C will be suitable.

However, sprinkler heads with an operating temperature range from 57°C to 230°C are available as needed.

? **How long should a sprinkler system last without major upgrading?**

Most authorities agree that correctly specified and installed sprinkler systems will not need any major modification for at least 40 years and there is real-life evidence to show that systems installed more than 60 years ago remain in working order. It is suggested that if a building is being upgraded or modified or subject to a change of use it would be wise to test a sample of sprinkler heads in systems more than 25-30 years old. Should any of these fail to operate as designed then all of the heads should be replaced.

There is no need to replace sprinkler heads as a matter of routine unless they are damaged or covered in paint.

Good practice endorsed by the insurers (in the LPC Rules) is to undertake a 25-year inspection and test of sprinkler systems by submitting a percentage of heads for laboratory testing and removing sections of pipe for examination.

? **I want to install sprinklers in a new building but the installer I have spoken to tells me that the water supply from the local mains is inadequate. Can I still install sprinklers?**

The simplest solution in this case is to install a water storage tank and the necessary pump/s. It may be however, more cost-effective to pay for a reinforced water supply.

? **Aren't sprinklers expensive to maintain?**

Far from it! Unlike other fire protection systems, which usually depend on electronics that may need frequent updating or replacement, sprinkler systems need only very basic maintenance. Usually two visits each year by the installation company will suffice to keep the system in good working order. Simple weekly and monthly checks of pumps (where fitted), pressure gauges and valve settings can be carried out by suitably trained employees.

? **I provide a range of facilities management services for a number of clients who have sprinkler-protected premises. Can I undertake the maintenance of the sprinkler systems?**

There is no reason (subject to insurers' approval) why staff working for an FM company cannot be trained to undertake most routine checks on a sprinkler system. Competence is the primary requirement, and this can be achieved by a combination of training and experience.

However, one of the tasks which must be undertaken every six months as part of a maintenance package is a 'hazard review' of the system. This is intended to ensure that the sprinkler system as installed is still fit for purpose and that the fire risks in the premises (e.g. the materials stored) have not changed.

It is BAFSA's view that significant specialist training would be necessary to enable an employee to undertake hazard reviews. Significant liabilities could be incurred if these were not done properly including the possibility that an insurer would decline to pay out after a fire.

? **I have a fully sprinklered building and have been told that I no longer need to provide portable fire extinguishers, is this correct?**

While sprinklers are an extremely effective way of protecting people and property, BAFSA recommends that an appropriate number and type of portable fire extinguishers should still be provided so that those who have been trained in their use can swiftly extinguish small fires before they trigger the nearest sprinkler head. Extinguishers may also be demanded by insurers and are usually required by fire safety regulations such as the Fire Safety (Regulatory Reform) Order 2005.

? **Can I install or maintain sprinklers without registering with anyone or being approved by the government or any other agency?**

It is a legal requirement that anyone installing or maintaining any type of fire systems required for the safety of life must be able to prove their competence. The simplest way to do this is to obtain third party certification from an United Kingdom Accreditation Services approved body.

? **We want to put together a specification for maintenance of a sprinkler system to comply with LPC Rules TB 203. Are there any advice/documents you can provide to assist with this?**

You only have to tell your chosen sprinkler maintenance company that their specification must comply with TB 203, they will do a survey and provide a unique and comprehensive listing of what needs servicing and when on the premises.

? **Do you have details of capable sprinkler maintenance companies in our locality?**

You can find a list of BAFSA member companies who undertake sprinkler system maintenance on our website bafsa.org.uk. Most BAFSA member companies operate nationwide and will have sub-offices throughout the UK so you should be able to find one near you.

If you have a question or seek advice regarding automatic water-based fire suppression systems, please email the team : lan.gough@bafsa.org or joe.mcafferty@bafsa.org. If they do not have an answer for you, they will know someone who has! FAQs can be found at bafsa.org.uk/sprinkler-systems/faqs/

British Automatic Fire Sprinkler Association

bafsa

BRITISH AUTOMATIC FIRE SPRINKLER ASSOCIATION

Unit 12, Kildean Business & Enterprise Hub,
146 Drip Road, Stirling FK8 1RW
info@bafsa.org.uk

www.bafsa.org.uk

facebook.com/SprinklersSaveLives

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