



# FAQs Industrial and Commercial Sprinkler Systems

**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 6A and C are intended to provide a ready reference to some of the most Frequently Asked Questions.**

## ? What standards do I need to comply with when designing or installing sprinkler systems?

There are a number of standards that relate to sprinklers for non-residential premises:

### **BS EN 12845: 2015+ A1 2019 Fixed firefighting systems - Automatic sprinkler systems - Design and maintenance.**

There are also equipment standards for system components for systems installed to BS EN 12845 in the BS EN 12259 series.

### **LPC Rules for Automatic Sprinklers**

These are insurers' requirements and consist of the current text of BS EN12845 together with a series of Technical Bulletins (TBs). The TBs interpret and, in some cases, impose additional requirements that exceed those of the BS EN. Compliance with these Rules is usually specified by if the sprinkler system is being installed at the behest of the insurer. ([thefpa.co.uk](http://thefpa.co.uk))

### **FM Standards**

FM Global is a US-based, international insurer that issues its own sprinkler standards in the form of data sheets. ([fmglobal.com](http://fmglobal.com))

### **NFPA Standards**

The US National Fire Protection Association issues a wide range of standards which are used extensively in the US and elsewhere. NFPA 13:2019 is its main sprinkler standard i.e. equivalent to BS EN 12845. ([nfpa.org](http://nfpa.org))

## ? Does the installation of sprinklers permit 'trade-offs' in respect of requirements regarding escape routes and passive fire protection measures?

'Trade-offs' or trade-ups as they should be more correctly termed, are often appropriate when a building is fitted with a full sprinkler system.

Examples of the sort of trade-ups that might be possible include:

- Doubling compartment sizes.
- Doubling travel distances to escape routes.
- Reductions in fire compartment ratings.
- Reductions in the number of smoke stops doors and lobbies.
- Accepting sprinklers as alternative compliance for requirements for access by the fire and rescue service under Approved Document B5 or the Scottish Technical Handbooks
- Allowing open plan living rooms/kitchens in dwellings.
- Accepting non-compliance in the provision of means of escape for attic and loft conversions.
- Insurance premium discounts.

For more information on this topic see BS 9999: 2017: Code of practice for fire safety in the design, management and use of buildings and BAFSA BIF 12: Sprinklers and the Building Regulations.

## ? What maintenance activity is mandatory for sprinkler systems?

The maintenance of industrial and commercial sprinkler systems is set out in BS EN 12845 and described in BIF 16B.

Systems installed in accordance with the LPC Sprinkler Rules should be subject to the maintenance regime described in TB 203.

Where trained employees undertake this activity, it would be wise to ensure that all sprinkler system components are also inspected on a regular basis by a specialist contractor. Don't overlook the need to check electric and diesel pumps and water storage tanks.

There is also a requirement to undertake regular checks ('the hazard review') to ensure the fire risks in the protected premises have not changed.



### APPLICABLE STANDARDS



**BS EN 12845: 2015+ A1 2019**



**LPC RULES**



**FM**



**NFPA**



**? I have been told that my sprinkler system must be inspected annually by an independent inspection body. Is this correct and is this requirement in addition to the servicing done by the sprinkler installer and checks undertaken by my insurer?**

The 2019 version of BS EN 12845 contains a revised Para 21 which says that: "The sprinkler system shall be periodically inspected by a qualified person at least once a year (see Annex Q)". Annex Q which is informative not normative recommends (but does not require) that such inspections are undertaken by an independent body.

**? Can I train one of my existing maintenance staff to undertake routine sprinkler system maintenance?**

Many organisations already do this subject to the need for competence referred to in the relevant standards. However, insurers' views should be sought, and it should be remembered that UK fire safety legislation now imposes strict liabilities on employers/property occupiers with regard to the need for proper maintenance of fire systems installed for the protection of life.

It is BAFSA's view that weekly and monthly checks are within the capabilities of most maintenance personnel but that other maintenance activity should be undertaken only by third party certificated installation or maintenance companies. For more information on sprinkler maintenance for industrial and commercial systems see the BAFSA Publication BIF 16B: [bafsa.org.uk](http://bafsa.org.uk)

**? I have been told that my insurers require me to have my sprinkler tank surveyed as it is more than 10 years old, what do I have to do?**

Assuming that it's an LPCB-listed tank in an LPS 1048/LPC Sprinkler Rules System. TB 203 Care and Maintenance of Automatic Sprinkler Systems requires that at ten-year intervals 'Ten Year Tanks' shall be drained, cleaned as necessary, examined internally and externally for corrosion and fitness for purpose and have any damaged fabric attended to as necessary and restored in accordance with the manufacturers' recommendations. Increasing use of borescopes and CCTV may make tank draining unnecessary.

**? I have recently taken over a warehouse building that is fitted with a sprinkler system. I don't need this for insurance purposes do I have to maintain it?**

You should verify whether the original fire strategy for the building relies on the presence of a working sprinkler system. If the sprinkler

system was originally installed for life safety purposes, failure to maintain this in good working order would be a criminal offence under Article 17 of the Regulatory Reform (Fire Safety) Order 2005 in England & Wales or Article 16 of the Fire Safety (Scotland) Regulations 2006 - note that if maintenance is undertaken by a second party, that party becomes a 'Competent Person' within the meaning of the regulations.

Even if the system is not 'mandatory' you should consider carefully its value in preventing fire damage to your organisation. Reliable data shows that fires in sprinklered buildings suffer up to 85% less damage than fires in un-sprinklered buildings and in many cases, fires are extinguished by the operation of only one or two sprinkler heads. Sprinkler protection should be seen as a valuable adjunct to a Business Continuity Plan.

**? Is there any guidance for protecting a Nitrogen cylinder warehouse?**

BAFSA believes the protection requirement should be based on 'cooling' of pressurised cylinders to prevent explosions in the event of a fire. This can be achieved by sprinkler protection to extinguish any fires near the cylinders. If you read Factory Mutual Data Sheet 0750 paragraphs 2.4.1 and 3.3.14 you will find some guidance on fire protection of Nitrogen Cylinder Storage.

**? An old hotel site is being converted to open plan offices. We are of the opinion that there are now too many sprinkler heads and some probably need to be capped off. How should we proceed?**

We recommend that that you contact the sprinkler company that installed the system to survey the site. They can then make recommendations about how to rearrange the sprinkler heads to adequately cover the new layout of the area. You can find information on the original installer on the BLOCK PLAN that is usually located in the foyer or next to the sprinkler installation control valve. You will find a list of third party accredited sprinkler installers on the BAFSA home page : [bafsa.org.uk](http://bafsa.org.uk). Any of the listed companies will be capable of providing advice and of doing the necessary modification works. They will also check that the existing water supplies are adequate for the new building arrangement.

**? On an old sprinkler diesel pump I have been advised that my lead acid batteries must be changed to NiCad type in compliance with TB209: 10.9.8. Does this requirement apply if the pump was installed before the TB was published.**

LPC Technical Bulletins are effective from the date they are issued, or a date specified in TB and are not retrospective. They do give improved guidance based on current experience and would no doubt enhance existing sprinkler systems. As for the current requirements for enhanced batteries you mentioned in TB210.9.8. If old batteries have reached the end of their useful life then the sprinkler installer/maintenance company are correct in recommending that you replace them with a more reliable alternative. The final decision is down to yourself, but the sprinkler maintenance company has a duty of care to at least let you know what the latest requirements are. Your insurer may also have an opinion/ advice on the matter.

*If you have a question or seek advice regarding automatic water-based fire suppression systems, please email the team : [ian.gough@bafsa.org.uk](mailto:ian.gough@bafsa.org.uk) or [joe.mcafferty@bafsa.org.uk](mailto:joe.mcafferty@bafsa.org.uk). 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/](http://bafsa.org.uk/sprinkler-systems/faqs/)*