sprinkler focus

British Automatic Fire Sprinkler Association
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WINTER 2024

INSIDE

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Sprinkler FOCUS is the biannual magazine of the British Automatic Fire Sprinkler Association. It is the only UK publication which has automatic fire sprinklers at its core with current news, features and opinions along with case studies and product updates.

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British Automatic Fire Sprinkler Association
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From the chief executive

"BAFSA is developing a range of new qualifications which will meet the requirements of the upcoming revision of LPS 1048, and the associated competency assessments will replace the equivalent LPCB exams and likewise be accepted by FIRAS. We are confident that IFC will follow suit."

On the 7th of November BAFSA's AGM was held followed by a gala dinner at the Victoria & Albert Hotel in Manchester to celebrate our fantastic association's 50th anniversary.

At the AGM I reflected on the progress we have made against our 5-year plan and highlighted some notable successes. The past year has seen BAFSA's membership grow from 207 to 230.

Joe McCafferty helped by other members of BAFSA's team has responded to 190 technical queries compared to 120 last year and in doing so sent 280 replies by email compared to 140 in 2023.

Stewart Kidd has contributed to over 14 regulatory standards and certification groups, as well as writing more than 10 articles for key UK Fire and Construction magazines. In total BAFSA has provided more than 25 articles this year and now regularly receives requests for content from the key industry publications. The promotion of sprinklers through such articles has contributed to the number of LinkedIn followers we have, increasing from 950 in early 2023 to 2400 followers in 2024.

BAFSA has designed and delivered a new L2 installers course. Led by Ruth Oliver the course has been developed by BAFSA members through the Skills and Development Committee for the industry, and the course is now provided through BAFSA's own training centre.

BAFSA is developing a range of new qualifications which will meet the requirements of the upcoming revision of LPS 1048, and the associated competency assessments will replace the equivalent LPCB exams and likewise be accepted by FIRAS. We are confident that IFC will follow suit. A heads of terms agreement has been signed by BAFSA and the BRE to formalise this arrangement. The first of these revised courses was launched in 2024 with both and experienced workers and a new entrants route. The System Classification & Pre-Calculated Fire Sprinkler System Design is in the process of being confirmed as a level 5 award by ABBE and we hope this will allow successful candidates to apply for a black skill card.

Despite making good progress there is still work to be done. The long-awaited Grenfell Phase 2 report failed to deliver on the promise of the Phase 1 report to consider sprinklers in the Phase 2 report (see Stewart Kidd's article on page 32 for a more in-depth appraisal), in particular the Government response to previous recommendations the Grenfell Phase 1 Report volume 4, chapter 33 section 33.26. Thanks to Ronnie King I was able to raise this omission at the All Party Parliamentary Fire Safety & Rescue Group and BAFSA will continue to promote this fabulous life saving industry at every opportunity.

Here's to the next 50.

Ali Perry
Chief Executive Officer
BAFSA

Changes to BS EN 12845:2015

BSI are reviewing the existing BS EN 12845:2015 and plan to release a new version as three separate standards. BS EN 12845-3:2024 was released by BSI in May 2024, but will not be incorporated into the LPC Sprinkler Rules as this has no impact on the UK.

It is anticipated that BSI will release BS EN 12845-2 in early 2025, followed by a second addendum to the existing BS EN 12845:2015+A1:2019. This second addendum will see the withdrawal of ESFR and CMSA, which will be updated and incorporated into BS EN 12845-2. BS EN 12845-1 is in the process of being updated following a significant number of comments received in the first consultation. It is understood that this is due to be released in a couple of years' time, following a second consultation, although no release date has been confirmed.

Bafsa Technical Committee statement on Fire Industry Standards

As the UK's leading professional trade association for the fire sprinkler industry, BAFSA continues to engage with the review of established standards, and the development of new EN standards, by the European Committee for Standardization (CEN) and implemented by the British Standards Institution (BSI) in the UK.

The maintenance and development of industry standards is essential to capture technical advancements and ensure fire protection systems provide the highest levels of quality, safety, reliability and performance which underpins the confidence held by authorities and insurers in their effectiveness.

Substantial changes to standards, and the introduction of new standards to replace existing standards can have a major impact on quality and outcomes, and on those involved in the design, delivery and certification of compliant systems.

This is especially true when longstanding and well-known requirements and practices are changed, and new requirements introduced. BAFSA remains committed to development of high-quality standards, facilitating the transitions and providing the necessary resources and guidance to our members during the pivotal implementation phase.

Reporting sprinkler activations to MP's

To raise awareness of the good work that sprinklers do, BAFSA has launched a new initiative to provide authoritative information to local MP's on the benefits of sprinkler systems and how sprinklers can play a significant role in saving life and property from the devastating effects of fire by reporting sprinkler saves from their constituency

This will help us in our continued campaign to lobby Government to introduce tougher sprinkler rules making the installation and retrofitting of sprinklers mandatory in all buildings, we are particularly concerned about

- Buildings housing vulnerable residents
- Residential buildings
- Schools
- Carparks
- Storage and warehouses
- Hospitals

We welcome the Government's proposal to install sprinklers in all new purpose-built care homes but urge further action on other buildings housing vulnerable members of the community such as specialised housing regardless of height. Full details on all the incidents referenced can be found at www.sprinklersaves.co.uk

BAFSA Student of the Year Award winners

Congratulations to Barry Sykes and Shane Tandy (pictured left to right) winners of our BAFSA Student of the Year awards for 2024 who were both presented with their awards at the BAFSA 50th anniversary conference in Manchester in November.

BAFSA offers new pathways to learning and development for sprinkler professionals

BAFSA new 'Learning Portal'- The BAFSA Training Centre is now live. This easy to navigate digital platform is designed to consolidate training content and resources on automatic fire sprinkler systems.

Ruth Oliver BAFSA's skills and qualifications advisor and head of The Training Centre says: "The introduction of this portal aims to strengthen adherence with legal and competency requirements and supplement the training provided by companies to their staff. It has been created to support our members and non-members with low cost, high quality learning and development which they can access from anywhere."

The learning portal is free to use and offers a wealth of content to assist BAFSA members and non members in keeping up to date with the fire sprinkler installation, design, inspection and commissioning requirements.

Over the next 12 months BAFSA will increase the number of training opportunities provided through the learning portal to provide the fire sprinkler industry workforce opportunities to evidence its skills, knowledge, behaviour and competency through accredited qualifications or recognised CPD programmes.

Already available via the portal is a free Awareness of Fire Sprinklers online course and also the revised BAFSA Certificate in Fire Sprinkler Installation (Level 2). The revised Level 2 is a competency based qualification approved for learners aged 18+ and who have a minimum of three years sprinkler installer experience. There are no formal entry requirements, although learners must be able to work at heights.

This qualification is intended for those installing fire sprinklers to evidence the knowledge and competences necessary to meet the industry standards for an installation role. The qualification provides an opportunity to follow several pathways (residential, commercial or both). The assessment programme consists of approx 40 hours delivered online.

BAFSA is also in the process of developing a Level 1 Qualification in Principles & Practices of Automatic Fire Sprinkler Systems. This will provide professionals, such as building control officers, fire officers and architects, with an in-depth understanding of fire sprinkler systems.

To ensure the highest standards, this qualification will include an online proctored exam and we plan to seek accreditation from ABBE, our preferred awarding organisation. Stay tuned, as we anticipate launching this valuable resource in January 2025.

Bafsa celebrated 50 years in style at a gala dinner at the Victoria & Albert hotel Manchester in November. The association also took the opportunity to make awards to five Sprinkler Heroes who have made a significant contribution to the automatic fire suppression cause. These were: Ronnie King OBE, Peter Armstrong, Keith McGillivray, Ruth Oliver and Joe McCafferty.

Plumis win at Women in Fire Safety Awards

Kelly Gardiner, a business development manager at fire suppression specialist, Plumis, has won 'Business Manager of the Year' at the prestigious Women in Fire Safety Awards.

The Women in Fire Safety Awards celebrate women who have made significant strides in promoting fire safety, and Kelly's achievement is testament to her ongoing drive and dedication both to Plumis, and the fire safety industry generally.

Since joining Plumis in 2020 to grow the business in Scotland, Kelly has been instrumental in forging new partnerships, increasing turnover, and playing a key role in securing the acceptance of the company's Automist fire suppression system as a compliant alternative within Scottish building standards.

Reflecting on her win, Kelly said: "It's an incredible honour to receive this award and to be recognised alongside such talented and inspiring women in the fire safety industry. Fire safety is not just a job—it's a responsibility to protect lives, and I'm proud to contribute to Plumis' mission of driving innovation in this critical area."

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Sprinklers in care homes

BAFSA's Wales representative Ritchie O'Connell looks at the forthcoming changes to Approved Document B (England) in regards to sprinklers in care homes that are due to come into force in Spring 2025

On 2 September 2024, Rushanara Ali MP, the Parliamentary Under Secretary of State for Building Safety and Homelessness, announced a series of proposed updates to Approved Document B (Volumes 1 and 2), unusually these updates will take place over a number of years, the first of which will come into effect on 2 March 2025, with subsequent changes scheduled for September 2026 and September 2029.

The first tranche of changes requires, amongst other things, the provision of sprinklers in all new residential care homes regardless of height and the removal of a number of allowances or design freedoms where sprinklers are fitted.

The changes are issued as addendums to the text and are shown below;

Bedrooms

2.42 Each bedroom in a care home should be enclosed in fire resisting construction (minimum REI 30) with fire resisting doors (minimum E 30). Every corridor serving bedrooms should be a protected corridor (see paragraph 2.24).

2.43 Bedrooms should not contain more than one single or double bed.

An additional note has now been added to paragraph 2.43 to clarify the intent of the paragraph

Bedrooms

2.42 Each bedroom in a care home should be enclosed in fire resisting construction (minimum REI 30) with fire resisting doors (minimum E 30). Every corridor serving bedrooms should be a protected corridor (see paragraph 2.24).

2.43 Bedrooms should not contain more than one single or double bed.

NOTE: It is not the intention to separate couples who happen to live in a care home by recommending that they sleep in separate bedrooms or beds.

It can be seen that this note has been added to provide clarification of a paragraph which has not previously been clearly understood, in and of itself it does not provide a change to the guidance per se. Whether it will resolve the queries is yet to be seen, it is not the first such attempt at clarification of this paragraph.

The second and very welcome change is more far-reaching requiring as it does the provision of sprinkler systems in all new care homes. The published amendment will have the effect of removing the current paragraph 2.46 i.e.

Sprinkler systems 2.46
When a sprinkler system is provided in accordance with Appendix E, the following variations to the guidance given in paragraphs 2.35 to 2.45 are acceptable.
a. Fire doorsets to bedrooms do not need to be fitted with self-closing devices.
b. Protected areas may contain more than 10 beds.
c. Bedrooms may contain more than one bed.

If any of the variations are made, the management procedures should take account of the larger number of residents that may need assistance, and the need to manually close bedroom doors during sleeping hours.

And replacing it with the following unequivocal requirement;

Sprinkler systems 2.46
Care homes should be fitted with a sprinkler system throughout the building in accordance with Appendix E.

The removal of the variations previously allowed had proved contentious in some areas, in the consultation responses informing this change 43% of responders supported the removal of the allowances, whilst 27% disagreed and 30% did not respond.

Whilst it is evident that the provision of sprinklers into care homes will make those premises safer, any consequential reduction in other fire safety measures would have the effect or diminishing that added element of safety. Would it have made sense when legislating for seat belts to be compulsory in new cars to have allowed reduced performance of brakes and windscreen wipers?, for example.

The reference to Appendix E in the new paragraph 2.46 makes clear that the sprinkler systems referred to are sprinkler systems conforming to BS 9251:2021 i.e.

E3
Where required, sprinkler systems should be provided throughout the building or separated part, unless acting as a compensatory feature to address a specific risk. They should be designed and installed in accordance with the following.
a. For residential buildings, the requirements of BS 9251...

After the implementation of the changes in order to satisfy the requirements of the Approved Document, a sprinkler system will be required, bringing England in line with both Wales and Scotland in terms of new care homes. The changes do not however extend to existing care homes, with the MHCLG stating in the consultation document:

"We do not intend, at this stage, to provide for additional sprinkler provisions for other types of buildings and this consultation does not cover retrofitting sprinklers in existing buildings not undertaking buildings works. There is ongoing work looking at fire risk in specialised housing, and there is a separate discussion and a more complex case on retrofitting fire protection in existing buildings, which will not form part of this consultation for Approved Document B. It may not be a simple case for installing sprinklers in some existing buildings, and therefore a more bespoke approach is necessary."

There will be a six-month transitional period until the guidance comes into effect, followed by a further six months to enable current development projects to continue.

The changes as laid out do not appear to apply to other forms of specialised housing, of which there are many, and there will no doubt be those who seek to exploit this seeming loophole by redefining the nature of proposed premises.

Nonetheless this represents a significant step forward in improving the safety of care homes as is evidenced by the 'sprinkler save' reported by Hampshire & Isle of Wight Fire & Rescue Service on the 30 March this year, as reported on the sprinkler saves website wh https://www.sprinklersaves.co.uk/saves/winchester-care-home-sprinkler-activation/

The change to the approved document is welcome but overdue, sprinklers were reported as cost effective in care homes as long ago as 2015 when a BRE report for the DCLG concluded *(inter alia)*

"The following building types would be expected to experience a net cost benefit from the installation of sprinklers for buildings much less than 10 storeys (30 m) in height:

- Care homes
- Places of lawful detention
- Hostels
- Blocks of flats (comparison control group)."

So on behalf of the sprinkler industry and the wider fire safety community, may I just say to the MHCLG, well done for implementing this eminently sensible provision, what took you so long?

"The changes as laid out do not appear to apply to other forms of specialised housing, of which there are many, and there will no doubt be those who seek to exploit this seeming loophole by redefining the nature of proposed premises."

The culture of change

The behaviour and culture of those that work in the built environment is now under scrutiny. Ruth Oliver, BAFSA's Skills & Qualifications Advisor and Head of the BAFSA Training Centre examines what this means for the sprinkler sector and explains how BAFSA will be supporting this culture of change through CPD

In 2017, over seven years ago, the Hackitt Report stated: *"A cultural and behavioural change is now required across the whole [construction] sector to deliver an effective system that ensures complex buildings are built and maintained so that they are safe for people to live in for many years after the original construction. The mind-set of doing things as cheaply as possible and passing on responsibility for problems and shortcomings to others must stop. Everyone's focus must be on doing the right things because it is their responsibility as part of a system which provides buildings that are safe and sustainable for those who will live in and use them for many decades."*

In 2019 the CITB highlighted that the construction industry needed to be more productive to be more competitive and one way in which this could be achieved was to change the behaviour and culture inherent in the industry, encouraging positive ones and eliminating negative ones. https://www.citb.co.uk/about-citb/construction-industry-research-reports/search-our-construction-industry-research-reports/behaviours-cultures-and-performance-in-the-construction-industry/

A further five years on and the recent publication of the Grenfell Phase 2 Report sees an increased scrutiny into the behaviour and culture within the construction sector and, whether or not you agree, the sprinkler sub sector falls within this category.

A positive workplace culture demands respect, politeness and kindness and BAFSA recognises that culture has influence on our behaviour and shapes our beliefs and norms. A poor workplace culture can lead to high levels of stress, lack of trust, poor communication and may limit the opportunity for growth and development. In extreme situations employees may feel they are being treated unfairly and could even experience bullying or discrimination.

A simple example of poor company culture is gossip. Where gossip is common in

the workplace rumours and negative talk may lead to a lack of trust, a hostile work environment and even damage working relationships.

Changing culture means identifying issues and encouraging open conversation and often involves team working. Initiatives such as training and recognition programmes can reinforce new values. Qualifications and training programmes no longer have at their core, the skills and knowledge required to perform competently but now have a requirement to address skills, knowledge, behaviour and experience thereby recognising the importance of the latter two areas.

In a culture of responsibility and accountability colleagues know they can rely on each other to work towards and put focus and effort into achieving the necessary outcomes.

There is clarity beforehand over the fact they are responsible, rather than being informed after the event. This culture means holding people responsible for meeting their goals, completing their task on time and importantly taking ownership of their mistakes. If everyone is held accountable then it creates responsibility and ownership. For those in the role of leader, it is important to lead by example. Clear expectations, goals and open lines of communication feature strongly within this culture.

Trust is an important consideration within this culture; it is not possible to have a culture of responsibility if you have too much trust, believing that you do not have to review after results of others. Equally you cannot create accountability when there is no trust.

Most senior managers know that accountability is a critical component of high performance culture. Accountability is not easy. It is a key part of building high performance. If you are asking 'who is accountable?' then this is an area of concern. Not only that the question needs

to be asked, but the fact that this question is most often asked when things go wrong, or even worse have been going wrong for some time. This can lead to managers feeling micromanaged or attempting to disproved or come up with explanations for often complex reasons behind the failure. Further up the chain no clear answers are being provided and ultimately frustration is felt all round.

Goals are often unclear, so who knows what success is or what is expected. Teams may have too much work and no clear focus. This is evident where companies have more than one 'priority' initiative and discussion does not lead to action. How often do we hear people say "someone should ….." or "it would be great if …" but not one takes on the task or idea.

These aspects often work together, so if you identify one, it is likely more are present. So getting the right behaviour can promote the right culture.

Behavioural skills can you help you develop professionally and skills related to your behaviour and how you form relationships at work are an important component of your personality at work. Behavioural skills are the abilities you have that influence how you interact with others and how you respond to situations. They direct aspects of your behaviour such as an emotional response, your thoughts, your capacity to socialise, actions and reactions and can include empathy skills as an example.

Whilst many naturally have these skills, it is possible to learn and improve them. Recognising that behaviour has four observable actions is a good starting point.

- Physical (what I do)
- Language (what is say)
- Vocal delivery (how I say it)
- Non verbal (how I do it)

If we look at 'communication' as an example. Communication covers more than simply how you to talk to a person. Writing, picking up on non verbal clues, active listing are all part of behavioural skills. Effective communication involves being able to present ideas, feelings and information whilst properly understanding and appreciating what others are saying to you.

Many of BAFSA qualifications and training programmes include communication as a core module. BAFSA acknowledged the importance of behaviour and culture requirements way back in 2014 when first developing the qualification for installers, the *L2 Certificate in Fire Sprinkler Installation*.

Conflict resolution is a common requirement in the workplace as disagreements and disputes often arise. Being able to handle them positively is key to working effectively. Mitigating any potential negative outcome is also a key point. As part of your behaviour, conflict resolution skills can involve impartially assessing the dispute and suggesting solutions or simply acting as a mediator to facilitate a positive discussion between the disputing parties as they work towards a solution.

In addition to its continuing qualification development activities to ensure the sprinkler sector has the opportunity to evidence the competency of its workforce, BAFSA is now starting to provide specific opportunities for the sprinkler subsector to change, improve and recognise behaviour and culture in the workplace through a programme of CPD opportunities.

A working group is to be drawn from the membership that will define potential areas of CPD training programme development and the appropriate methodology for delivery and assessment. Looking at the list of behavioural skills (Figure 1) will be the starting point, with the long term objective of a CPD library of opportunities being available to the membership.

Figure 1
Further areas of behavioural skills that may be required in your job role

- Accountability; Assertiveness; Asking Questions; Concentration
- Conceptual Thinking; Conversing; Persuasion; Creative Thinking
- Customer Service; Diplomacy; Decision Making; Flexibility
- Gathering Information; Honesty; Improvisation; Initiative
- Interviewing; Leadership; Management; Motivation
- Persistence; Persuasion; Planning; Problem Management
- Problem-Solving; Sales; Self-Esteem; Self-Improvement
- Self-Management; Strategic Planning; Stress Management
- Tact; Training

This will take time, it is not a subject that can be rushed or programmes developed without careful thought and, even more importantly, we must take into account the various programmes and training opportunities that are currently offered by many of the members to their employees. Sharing good practice of programmes already in existence will be an essential part of discussion.

"BAFSA acknowledged the importance of behaviour and culture requirements way back in 2014 when first developing the qualification for installers, the L2 Certificate in Fire Sprinkler Installation"

Ask Joe

Joe McCafferty at BAFSA Technical Support, gathers together some of the varied technical queries submitted to BAFSA over the last few months

Question: We have been asked to replace a booster pump for a domestic sprinkler system. It was installed many years ago. Do we have to upgrade the system to the current standards, or can we replace like for like?

Joe: Old sprinkler systems, whether domestic or commercial, are designed to the set of rules/standards that are current at the time of installation. This means that they probably satisfied all the AHJ's at the time of installation and commissioning. It may have a certificate of conformity. Should any part fail there is no retrospective requirement to bring the system into compliance with whatever the current rules requirements are. This would only happen if any of the AHJ's asks for an upgrade and can justify it because there is, say, a change of use or occupancy of the building. You can replace like for like, BUT I would suggest that the sprinkler maintenance company does a re-run of the system water and flow requirements. NOTE: If any competent person who works on the sprinkler system notices that something is wrong with the system, it would be their responsibility to inform the client. It is then up to the client to arrange whatever remedial action is required.

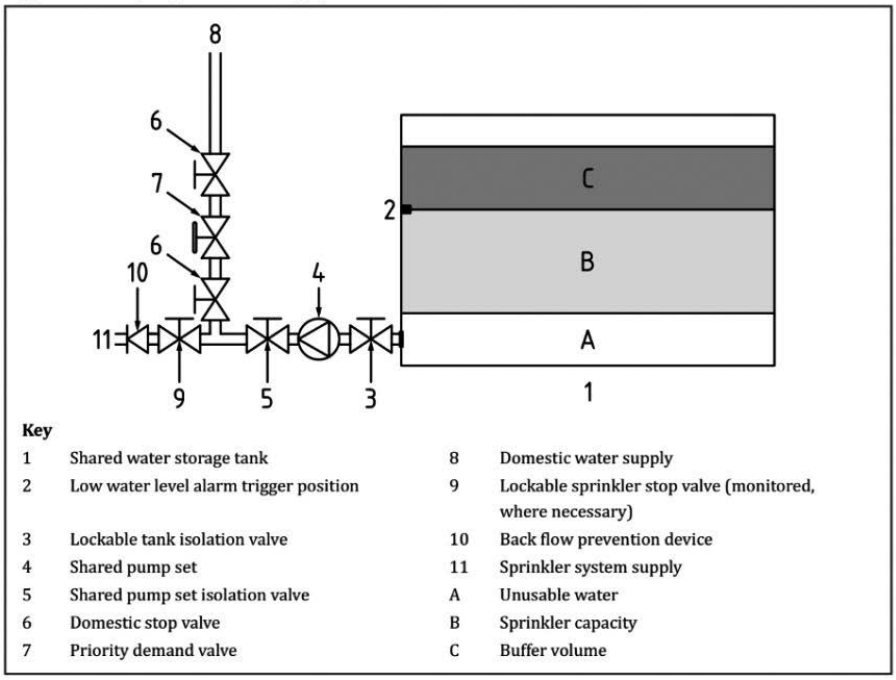
Question: Can you explain why BS EN 12845 paragraph D.3 Requirements for Zoned Installations allows 6000 m² area per zone and paragraph F.2 Subdivision into zones only allows 2400 m² area?

Joe: BS EN 12845 Annex C is for Zoned Installations when the sprinklers are installed

Question: Can we supply the fire sprinkler system from our domestic water booster pump and tank?

Joe: A water storage tank and domestic water supply pump can be used and shared for sprinkler system designed to BS 9251:2021. This is a sketch extracted from BS 9251:2021 Figure 6 on page 27:

Figure 6 — *Typical shared pump and water supply with PDV*



Key			
1	Shared water storage tank	8	Domestic water supply
2	Low water level alarm trigger position	9	Lockable sprinkler stop valve (monitored, where necessary)
3	Lockable tank isolation valve	10	Back flow prevention device
4	Shared pump set	11	Sprinkler system supply
5	Shared pump set isolation valve	A	Unusable water
6	Domestic stop valve	B	Sprinkler capacity
7	Priority demand valve	C	Buffer volume

NOTE: The Priority Demand Valve - item 7 on the domestic supply

for 'Property Protection' for example, when a fire insurer is demanding sprinklers. This allows for zones of up to 6,000m2 or about 500 sprinklers. Annex F is for subdivision into zones when the sprinklers are installed for 'additional measures to improve system reliability and availability (in previous editions of BS EN 12745 this was referred to as 'Life Safety' systems). These are the type of systems that Building Control/Approved Document B would want to see installed to satisfy their requirements. This reduces the maximum zone size to 2,400m2 or about 200 sprinklers so that very large areas are not shut down for say maintenance, repairs or alterations. Have a look at the 'NATIONAL FOREWORD' of BS EN 12845. It mentions the new thinking on 'life safety'.

Question: Do sprinkler systems have to be regularly serviced /maintained. Are there any legal requirements?

Joe: BAFSA continuously encourages proper maintenance of sprinkler systems through trade (builders etc) and regulatory authorities' (Building Control etc) education. There are requirements in the Fire Safety Order that impose the need to maintain any life safety system in proper working order by whoever is deemed to be the responsible person. Sprinkler systems may have a certificate of conformity that could be invalidated if the system is not properly maintained.

Question: I have been asked by my manager to liaise with a sprinkler contractor who is going to install a sprinkler system in our building. What sort of procedures do they carry out from when they get the work to completion?

Joe: This a very general description as all jobs/sites can vary. However this is usually the procedure

- Sprinkler design drawings and hydraulic calculations are produced.
- Sprinkler design drawings and hydraulic calculations are approved by any AHJ's involved ie insurers, building control etc.
- When the drawings and calculations are approved then the pipework pre-fabrication and the physical site installation can start. (Note all safety procedures/HSE requirements should be in place by this stage).
- First fix pipework is installed and maybe the flexible drop pipes for sprinklers to roof/slab.
- When ceiling grid is fitted then the sprinkler heads are installed to tile centres (the cover plates of the sprinklers may not be installed yet in case they get damaged). There may be a red protective cap on the sprinkler heads. Note: The sprinkler installer may cut the holes in the ceiling tiles for the sprinklers or advise the ceiling installer on what's needed.

Fire suppression system with an alarm check valve

- When all the pipework and the pump/tank is completed, the system can be hydraulically/pneumatically tested for pipe/fitting/heads integrity. A visual inspection of the system is advised before proceeding. Any leaks or anomalies should be fixed, and the test repeated. (Note: All necessary warning notices should be in place when testing).
- On successful completion of hydraulic testing the red protective covers can be removed from the sprinkler heads and the sprinkler cover plates can be installed.
- The system 'flow/pressure' test can now be done to prove that the water supplies are supplying the calculated flows at the correct pressure.
- If any of the sprinkler system electrical alarms are connected to a central control station these should be checked and confirmed as working.
- If all goes well a completion/compliance certificate can be issued along with O+M documentation.
- Any necessary training for the client's personnel should then take place.

Question: In a multi-story block of flats does each flat need to have a water flow switch?

Joe: In BS 9251:2021 Paragraph 5.18.3.2 it's an either/or situation and states the following:

A sprinkler flow switch should be provided for:

a) every dwelling to signal the actuation of the sprinkler system within the dwelling; OR

b) a sprinkler alarm zone, rather than each individual dwelling, provided the following recommendations are met:

1) the sprinkler alarm zone should cover no more than a single floor; and

2) sprinkler flow switches should be connected to suitable control and indicating equipment so that a signal is sent to management and any emergency action plan initiated. In multi-staircase buildings, the control equipment should clearly indicate the floor level and appropriate staircase (where staircases serve different zones).

NB: Each individual flat will have fire (smoke/heat) detection that will indicate location of fire as well.

Questions: Is it still acceptable to use a direct connection from a 'town's main' to supply a sprinkler system?

Joe: Towns mains are still allowed in BS EN 12845. The water authority may not do a 'full' water test, but may offer hydraulic calculations that show what is available. Best to check with any AHJ if they find this acceptable.

However BS EN 12845 states:

9.2 Town mains

The town main shall be capable of satisfying the requirements for pressure, flow and duration taking into account any extra flow required for manual firefighting purposes (hydrants, hose reels, etc.) A pressure switch shall be installed and shall operate an alarm when the pressure in the supply drops to a predetermined value. The switch shall be positioned upstream of any non-return valve and shall be equipped

Spade Lane Cold Store built about 30 years and subsequently virtually destroyed in a huge fire. Now fully rebuilt, and largely used by International Produce - a dedicated supply partner to ASDA, the UK's second largest retailer. Credit: Richard Dorrell.

with a test valve (see Annex I and H.2.5). In some cases, the water quality makes it necessary to fit strainers on all connections from town mains. Strainers should have a cross-sectional area of at least 1,5 times the nominal area of the pipe and should not allow objects greater than 6 mm diameter to pass.
NOTE 1 The water demand for manual firefighting purposes are usually determined by the authority. It might be necessary to take into account extra flow required for fire brigade purposes. NOTE 2 The agreement of the water authority will usually be required for town main connections.

Question: Are sprinkler systems necessary in cold storage warehouses with racking?
Joe: Cold storage warehouses are just as susceptable to fire as any other type of warehousing. Visit the National Fire Protection Association (NFPA) to read an article cold store fire risk. www.nfpa.org/news-blogs-and-articles/nfpa-journal/2019/03/01/cold-storage-safety There are many instances on the internet of catastrophic cold store fires. You should speak to the fire insurers and get their opinion on what they find acceptable. In the long-term sprinklers provide a reassurance that any fire is contained and greatly reduces business disruption. The decision is the owners on whether they wish to spend the money at an early stage of construction to install sprinklers. It will be a lot more costly and disruptive if they must be installed when the business is in operation.

Question: Do engineers who carry out maintenance/servicing on sprinkler fire pumps need any formal qualifications?

Joe: Sprinkler systems can have either have electric motor and diesel engine driven fire pumps or both. They can be centrifugal, split case, multi-impeller, multistage and for water mist systems, may be positive displacement. The maintenance (ie diesel engine and electric motor maintenance etc) is normally done by companies sub-contracted by the sprinkler installer company. Their engineers will be fully trained in maintenance of this type of equipment and will probably have been through an apprenticeship and gained qualifications like an electrician and or diesel pump maintenance. Besides the equipment maintenance, they also need to be aware of how the sprinkler system operates, so that it can be safely isolated and reinstated after the work has been completed. Many sprinkler systems are installed for 'life safety' of residents, the public etc and are demanded by local and national regulations. These life safety requirements carry a further responsibility that the work is done by 'competent' persons.

Question: Is there a statutory requirement for the height that a landing valve must be above the floor?

Joe: BS 9990 is the standard for wet and dry risers, and it states the following: In all cases a landing valve should be installed with its lowest point about 750 mm above floor level.

Question: Is there a specific requirement for clear spaces around water mist nozzles. I have seen a job where they have hung large notice boards from the ceiling near the nozzles?

Joe: Obstructions to water spray can have a detrimental effect on the capability of the nozzle. The system designer must take these obstructions into account at design stage and space the nozzles to minimize the impact of the obstruction. The nozzle manufacturer's data sheet will probably have specific requirements about obstructions and spacing. If obstructions are added after the mist system is completed and the installer has left site, then it should be picked up at next the maintenance/inspection visit and corrected. The building owner should be made aware that hanging things from the ceiling may have a detrimental effect on the firefighting system. The water mist design standard BS 8458 mentions obstructions in Paragraph 6.10.3.

Question: Do BAFSA offer a sprinkler drawing review service?

Joe: BAFSA do not offer a design review service for contracts as we are a trade association. But we do have members who could probably do this for you. You can find a list of BAFSA members on our website www.bafsa.org.uk

Question: Do high pressure pipes need to have deeper grooves for grooved joints and are there different colour joints seals for different pressures?

Joe: Best advice is to go to the manufacturer of the fittings you propose to use and download their installation data sheets. These should give you all the technical information you need.

To submit an enquiry or questions to Joe visit the BAFSA website www.bafsa.org.uk

Standard issue

A number of important new European sprinkler standards are about to be published, supporting our efforts to grow the market. Alan Brinson, chief executive of the European Fire Sprinkler Network (EFSN) gives us the inside track

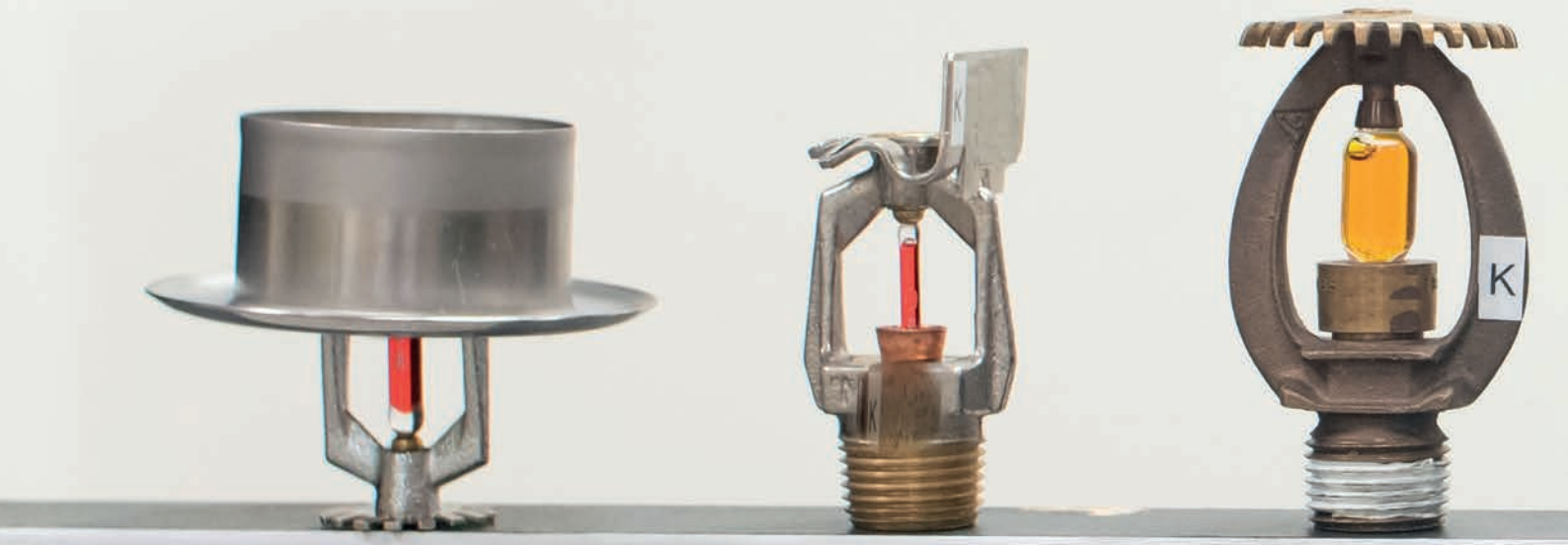
Although standards are a very dry subject people can have strong opinions about them. Yet despite robust discussions in CEN meetings we always reach consensus, with better documents as a result. Today we have a complete suite of sprinkler component standards, with the basic sprinkler range covered by EN 12259 Part 1 now complemented by Part 13 for ESFRs and Part 14 for residential sprinklers, while Part 15 for large orifice, extended coverage and CMSA sprinklers is now out for formal vote, the final step before publication. EN 17451 for pump sets is also out for formal vote, itself referencing EN 12259 Part 12 for bare sprinkler pumps.

Europe now has design guidance for sprinkler system earthquake protection in the form of EN 12845-3. Default guidance or national forewords clarify where it is to be applied. Earthquake protection is perhaps not needed in the UK, but is very necessary in much of southern Europe and guidance is currently absent from EN 12845.

Since EN 12845 was last updated in 2015, hazards and sprinkler protection solutions have evolved, particularly for storage protection. EN 12845-2, a standard for the design and installation of ESFR and CMSA systems, is also out for formal vote and includes all the design options in NFPA 13 and FM data sheet 8-9. This is an area where innovations are frequent, so we created a separate document to enable focussed revisions.

I am often asked why we produce European sprinkler standards when they largely adopt material in NFPA standards and FM data sheets. There are two reasons. Firstly, as we campaign for more regulatory requirements, or incentives for sprinklers to be installed, regulators wish to be clear what is meant by a sprinkler system. Clarification comes in the form of a standard. While a regulator could add NFPA and FM to the list of acceptable standards and countries such as Belgium and Italy have, the UK and other countries have not. At the time of writing we have an issue in Spain where projects using k-480 ESFR sprinklers have been blocked by building control because there is no European standard for their design (fortunately that gap will soon be filled by EN 12845-2). Secondly, some countries have insisted that key system components either be CE-marked or have a national conformity mark. Conformity with what? Standards would help.

On the subject of conformity, since leaving the EU the UK has introduced the UKCA (UK Conformity Assessed) mark, but CE-marking for construction products is still recognised until the end of June next year. The last government recognised CE-marking indefinitely for 21 product regulations and said it would make a decision about construction products in due course. Perhaps our new government will also indefinitely recognise CE-marking for construction products.

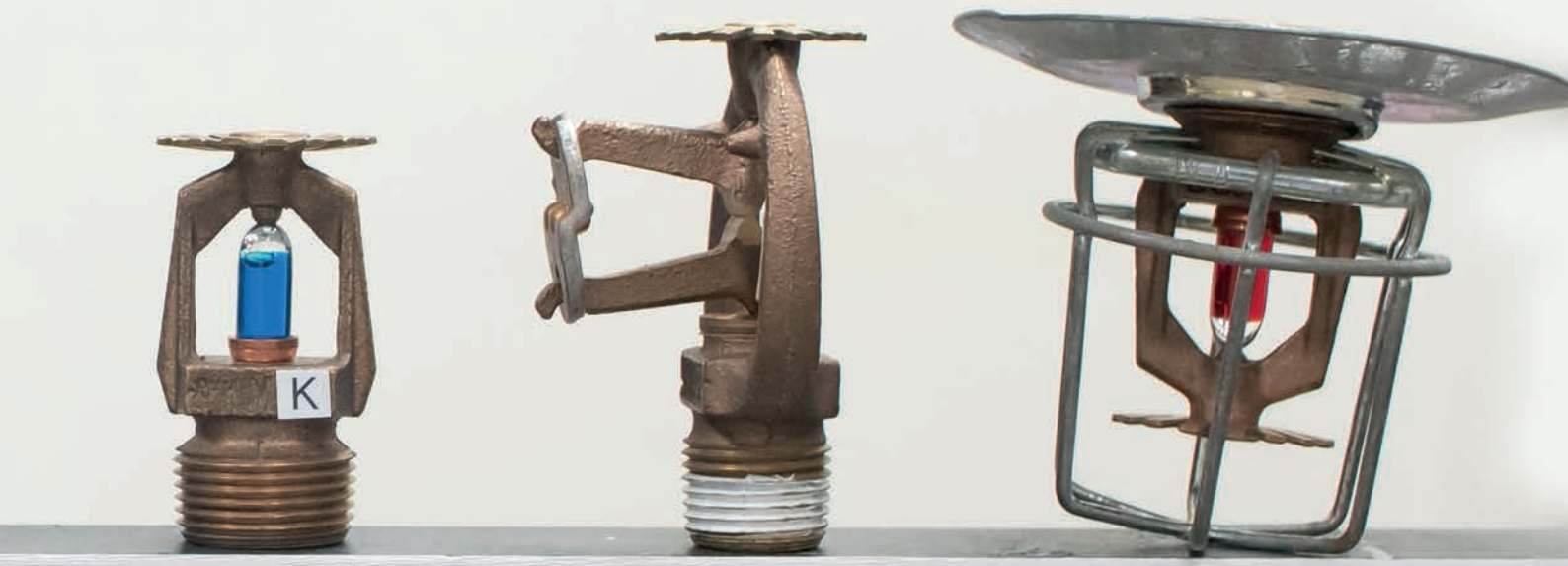


Back to standards. EN 12845-2, mentioned above, relies on a new hazard assessment in EN 12845-1, which is to be the new European sprinkler system design, installation and maintenance standard. While many of the changes made to Part 1 were incremental or for clarification purposes, the new hazard assessment is quite a change. Yet it should, nevertheless, be familiar, since it largely mirrors the approach taken in NFPA and FM data sheets. Change was needed to more accurately account for plastics and to align the hazard classification with the fire protection solution proven against it in fire testing by FM Global and NFPA. We received over 4,000 comments on the draft text, most of them written by CEN committee members, with half from Germany and a quarter from the UK. I am pleased to report that we have addressed over 90% of these comments. While the general approach has not changed, the document is now much better, with errors and inconsistencies removed. The text is also much tighter and clearer, which is essential for it to form the basis of a contract.

Although we expect to complete the review of the comments this year, we will then need to check the document again for internal consistency and translate it before it can be circulated for a second enquiry in the second half of next year. That will generate more comments, but hopefully far fewer than the first draft. Even so, I do not expect publication until 2027. We cannot wait that long to use the other above standards which are referenced in it so we are drafting an amendment to the current EN 12845 to change its number to EN 12845-1, remove the text on pumps and ESFR sprinklers that is now in EN 17451 and EN 12845-2 and introduce references to all the new standards.

Representatives of AXA, FM Global and Zurich, as well as of leading consultancies, installers, manufacturers, test laboratories and inspection bodies across Europe have participated in this drafting process. We have all learned much from each other. Such wide expertise can be hard to find at a national level. That said, too many of us are the wrong side of 60, so new blood would be very welcome! Another advantage of working on a CEN standard is that it becomes a national standard in all 34 CEN member countries. These comprise the EU 27 plus Iceland, North Macedonia, Norway, Serbia, Switzerland, Turkey and the UK. The purpose of CEN standards is to facilitate trade so all CEN members, including BSI, must publish all CEN standards and cannot publish competing standards. While BSI's hands are tied, CEN standards are voluntary so our government could, if it wished, refer to different documents. Yet with state-of-the-art standards there should be no reason to do so.

"As we campaign for more regulatory requirements or incentives for sprinklers to be installed, regulators wish to be clear what is meant by a sprinkler system. Clarification comes in the form of a standard. While a regulator could add NFPA and FM to the list of acceptable standards and countries such as Belgium and Italy have, the UK and other countries have not."



"Representatives of AXA, FM Global and Zurich, as well as of leading consultancies, installers, manufacturers, test laboratories and inspection bodies across Europe have participated in this drafting process. We have all learned much from each other. Such wide expertise can be hard to find at a national level."

Another important European sprinkler standard is EN 16925, for the design, installation and maintenance of residential sprinkler systems, published in 2018 and recently confirmed for another five years. UK representatives contributed much to this standard. We try to supply residential systems from the main to keep costs down, particularly in smaller and domestic buildings. For EN 16925 we had to introduce flexibility in the minimum application density and number of design heads because regulators in different countries had already imposed values, balancing their acceptance of risk with what is typically available from their water main (4,000 l/min in Norway). Today EN 16925 is being successfully used in many European countries with national annexes to clarify these design criteria and to what building height the standard can be applied. The UK could have done this too but decided to update BS 9251 for buildings higher than 18 m.

Water mist standards revealed the greatest differences of opinion within CEN, with the UK objecting to all the CEN water mist standards. Many of those objections are being addressed. EN 14972-1 is the design, installation and maintenance standard, referring to EN 14972 Parts 1 to 17, a list of 16 fire test application profiles, with key component tests in the EN 17450 series. Among the UK objections were the omission of fire test protocol applicability limits in EN 14972-1 and the fact that very few of the fire test protocols and none of the component standards were published. Some of the UK concerns were quietly shared in other countries and the good news is that EN 14972-1 is now being revised to include limits of applicability for each fire test protocol. Meanwhile almost all the fire test protocols have been published and the remainder are to follow in a matter of months. Progress has also been made on the component standards, with EN 17450 Part 1 on strainers and filters published, Part 2 on nozzles about to be published and Part 3 on check valves back from enquiry. BSI has therefore decided not to update BS 8489 and BS 8458, which were due revisions, given that CEN standards are replacing them.

I recognise that the UK had further concerns about CEN water mist standards, including the overlapping scopes of various fire test protocols. This arose because the protocols were originally from BRE, FM Approvals and VdS. Manufacturers had invested in approvals by these laboratories and a change in the protocol would have forced them to retest, so all were adopted. However, manufacturers have also told me that one protocol for an application is harder to pass than another, reflecting differences between the tests such as in fire load. It is clearly not ideal to have as many as three fire test protocols for nominally the same application. Furthermore, the protocols are now up to 20 years old and some experts have said they may therefore need a revision. That is the usual work of keeping standards up to date.

In the past it was fair to question what was going on with CEN standards but today almost all are in place, with the remainder well on their way. Drafting has been by consensus and it has been reassuring to see insurers take a leading role in sprinkler standards. Regulators can reference these standards, secure that they are robust, up to date, and will be maintained in the future.

MEMBER FOCUS

Richard Bradley

Alpine Fire Engineers

Richard Bradley combines his position as Commercial and Procurement Director at fire suppression specialist Alpine Fire Engineers with a front-line role as an on-call firefighter for Lancashire Fire & Rescue. With a 27 year-career in the fire protection industry, here he explains the role that properly maintained fixed fire suppression systems play in improving frontline firefighter safety, and discusses the importance of futureproofing the industry by resourcing for growth

On leaving school, I started a four-year modern apprenticeship as a mechanical engineer with a fixed fire protection contractor. I quickly moved into the drawing and projects office, taking day-release to obtain formal City & Guilds, ONC and HNC Mechanical Engineering qualifications alongside full time work. I worked in design, project management and estimating, before finding my feet as a Quantity Surveyor.

I finally progressed and completed a Masters degree in Construction Law & Practice at the University of Salford, joining Alpine Fire Engineers in 2019 as a Commercial Manager, before being invited to join the Alpine board as Commercial and Procurement Director.

Despite unsuccessfully applying to become a firefighter at 18 years old, my desire to take on an active role was always in the back of my mind. That was until I had an accidental conversation with a fireman at my local gym back in 2010 – this prompted me to apply again as I discovered that on-call firefighting was a thing!

I now proudly give back to the community as an on-call frontline firefighter with Lancashire Fire & Rescue. This important role also serves to enhance my knowledge and experience as a time-served fire protection engineer.

“It’s clear that there is a serious shortage of people entering the sector and whilst Alpine and others sprinkler companies are actively recruiting and creating trainee programs, we need to act fast as an industry to increase awareness of the exciting careers in fire safety”

Bridging the skills gap

Although I have spent most of my professional career working within the industry, I’m aware that it may not be an obvious career choice for young people leaving education or looking for a career change.

0There are likely ‘perception challenges’ and a lack of awareness around the roles and opportunities that are on offer in our great industry. The reality is, there’s such a varied list of opportunities; from design, project management to service and maintenance, sales and marketing procurement and commercial management, to name only a few.

It’s clear that there is a serious shortage of people entering the sector and whilst Alpine and others sprinkler companies are actively recruiting and creating trainee programmes, we need to act fast as an industry to increase awareness of the exciting careers in fire safety. BAFSA and others are doing a stellar job in building and promoting competency-based qualifications, but we need to pause and reflect on whether there is more we can do as a collective.

More ‘apprenticeship type’ opportunities are certainly needed, and we must work together to make such apprenticeships and our industry more attractive. Adopting emerging technologies, AI, for example, which is now widely used by a myriad of sectors, may add additional appeal to younger and tech savvy recruits. Maybe a BAFSA think-tank on the challenge?

Valuing sprinkler systems

BAFSA’s ‘Sprinkler Saves’ campaign is doing a great job of raising awareness around automatic fire sprinklers and how the installation of these systems can save lives and property whilst minimising the environmental damage and economic loss that an uncontrolled fire can have. There is little understanding of the massive carbon emissions from just one uncontrolled fire. The latest campaign is encouraging the UK Fire & Rescue Services and our industry to report all incidents where a sprinkler system has acted as designed and suppressed a fire. This data is vital as it helps us gain a better understanding of the impact and importance of fixed fire suppression systems. For example, from the data we already have we can see that properly maintained sprinkler systems are 99% effective at controlling and even extinguishing a fire.

Spearheading legislation

Whilst it may appear that the UK is slightly behind the curve when it comes to enforcing

I now proudly give back to the community as an on-call frontline firefighter with Lancashire Fire & Rescue.

"BAFSA's 'Sprinkler Saves' campaign is doing a great job of raising awareness around automatic fire sprinklers"

stricter regulations around fire suppression systems, it's going in the right direction, and we are seeing changes.

Recognition of the need in commercial premises is increasing and residential sprinklers are now more commonplace, with legislation being constantly updated and third-party accreditation dictating stricter, approved and more resilient systems being introduced at planning stages.

However, there is still a long way to go. In more rural areas, like where I live, for example, very few buildings have these life-saving systems in place, commercial or residential.

With the rise of alternative fuel sources for vehicles, consumer goods from abroad, lithium-ion batteries and the growth of automation and dense storage configurations, fire risk increases.

Ensuring longevity

When you simply analyse the numbers, installing a sprinkler system in any property may involve a significant upfront cost, but eventually, it can save thousands by preventing fire damage, loss of and risk to life and total building loss. In the UK, there is still a habit of AHJs (authorities having jurisdiction) 'designing out' suppression systems at planning stages.

Fire detection systems are installed everywhere and the box is proverbially ticked. Fixed fire suppression and fire detection should be installed together, the two working harmoniously.

Over my career in the fire suppression industry, it's been a pleasure, to witness the increasing use of fire protection systems and the progression of the industry to the UK's evolving needs.

Legislation and standards appear to be going the right way, but it would be good to see this accelerated where, one day, every commercial and residential building has a sprinkler system in place, patiently waiting, well maintained and ready for action.

To guarantee our industry achieves and resources its growth trajectory, it's our collective duty to positively promote the various career paths and inspire the next generation. This must be done by utilising innovative ways to engage with a wider audience and evolving our recruitment and training methods to be relevant and exciting.

The latest BAFSA Sprinkler Saves Review is out now

Documenting all the sprinkler activations reported to the Sprinkler Saves website and demonstrating sprinklers in action – protecting property and saving lives

British Automatic Fire Sprinkler Association
bafsa

Download your free copy today from www.bafsa.org.uk/bafsa-publications/reports/ or scan the QR code

Sprinkler Saves Update

A round up of Sprinkler Saves news collated by BAFSA's Sprinkler Saves UK ambassador Nick Coleshill

Sprinkler saves needed for annual review 2025

Following the publication of our third *Sprinkler Saves Review 2023/2024*, reinforcing the vital role sprinklers play in fire safety, we are reaching out for the support of our Fire & Rescue Service colleagues to share case studies which could be promoted in our next review (2025/26).

We are particularly looking for incidents identifying where a fire has been successfully contained/controlled, or in some cases extinguished, by the premises' sprinkler system which has been funded from an FRS match funding sprinkler project.

For example, London Fire Brigade provided £84,250, allocated from a fire prevention grant received from The Government in 2014, to the London Borough of Barking and Dagenham for the installation of a residential sprinkler installation within an extra care housing unit.

Seven years after this installation, the premises had a fire within a dwelling involving smoking materials which activated the sprinkler system which was able to contain and control the fire with fire damage contained to the compartment of origin.

The decision taken by the LFB in 2014 to launch the match funding sprinkler campaign should be applauded, without this initiative the outcome of this incident could have been so much different.

The fire risk of emollient creams

The potential fire hazards associated with emollient creams, which are widely used for treating skin conditions, were have been highlighted again over the past few months with the reporting of a number of 'sprinkler saves' which were fires caused by emollients on fabrics such as bedding or towels.

The NFCC has previously campaigned on this issue to raise awareness amongst fire service professionals. Studies by Anglia Ruskin University revealed that emollients, when soaked into fabrics, can significantly increase the fire risk, irrespective of their paraffin content. This challenged the earlier belief that only emollients with more than 50% paraffin posed a risk.

In 2018 NFCC endorsed recommendations for emollient products to carry fire hazard warnings on their labels. This decision was based on research which evidenced that all emollients can pose a fire risk when absorbed by fabrics, even if they contain no paraffin or low paraffin levels.

Example incidents

The examples below illustrate how sprinklers can quickly respond to fire caused by emollients – protecting residents and property

Assisted living complex

BRIGHTON

This is the third reported dwelling fire within this complex in Brighton in the space of 29 months. On each occasion the fire was contained, controlled or extinguished with limited fire damage reported and no injuries.

The fire broke out due to a heat pad coming into contact with bedding contaminated with emollient. One concealed residential sprinkler head was activated inside the bedroom and the fire was successfully extinguished.

This demonstrates again that the operation of a correctly designed residential sprinkler system installed to the appropriate codes and standards, reduces the rate of production of heat and smoke, allowing more time for occupants to escape to safety or be rescued.

Station manager, Louisa Curtis, of East Sussex Fire Rescue Service, Brighton & Hove, said: "ESFRS have consistently promoted for the installation of sprinklers, it is a simple, cost-effective way to save more lives and reduce the risks to firefighters. Fire sprinklers are the only active fire system which detects a fire, suppresses a fire and raises the alarm. This incident demonstrates sprinklers provide protection from fire damage, but most importantly provide time for people to safely self-evacuate if there is a fire."

Credit: East Sussex Fire Rescue Service

Tall building fire

DEVON

If it was not for the decision taken by a social housing landlord in Devon to retrofit residential sprinkler systems following the tragic events of the Grenfell Fire throughout their high-rise residential blocks of flats property portfolio, we could be discussing a totally different outcome following an accidental fire involving a naked flame (lit cigarette) which came into contact with a bathroom towel contaminated with emollient.

The towel ignited immediately, burning quickly and intensely. The resident was able to close the bathroom door and move to a place of safety. Meanwhile, the sprinkler head above the door activated – containing and controlling the fire. No injuries were reported.

National Fire Sprinkler Network (NFSN) lends support to Sprinker Saves UK

NFSN Secretary Terry McDermott QFSM has shown his support for the work BAFSA does in documenting sprinkler saves via the Sprinkler Saves UK website.

He says: "Sprinkler Saves UK demonstrates perfectly the value of sprinklers in buildings. The case studies bring to life the many previous studies into the effectiveness of sprinkler systems with evidence captured at real life incidents where sprinkler have been present.

The case studies also show the broad range of buildings and environments where sprinklers have activated and operated as per the system design and prevented fire growth.

The National Fire Sprinkler Network is a keen supporter of the BAFSA Sprinkler Saves website and encourages all its UK Fire and Rescue members to continue to support the website by submitting reports to create a one stop repository demonstrating the effectiveness of sprinklers.

Further information on the role of the NFSN can be found by visiting: www.nfsn.uk
Or contacting the NFSN Secretary Terry McDermott QFSM at: nfsnsecretary@gmail.com

NFSN
National Fire
Sprinkler Network

Bron Afon Community Housing Association retrofit pays off

Bron Afon Community Housing Association should be applauded for leading the way in fire safety in Wales, having taken the decision to retrofit sprinklers in 2011 in one of their high-rise residential blocks. The housing association worked closely South Wales Fire Rescue Service at the time and set an example to other housing associations in the area.

Some 13 years later, the sprinkler system within this 12-storey residential block of flats was activated when a chip pan that was left unattended by a resident, caught fire. The activation of the sprinkler system gave the residents time to self-evacuate from their flat before the arrival of the Fire & Rescue Service.

Catherine Love, Bron Afon Director of Operations and Deputy Chief Executive said at the time of the sprinkler installation: "Sprinkler systems are the most effective way of fighting fire and preventing loss of life. We are proud that this work is setting an example."

The cost of installing the sprinkler system in 2011 worked out at around £1150 per flat. Should this fire have taken hold the potential cost to an unsprinklered resident building of this type could have been far higher.

Tall building student accomodation save, Nottinghamshire

Credit: Nationwide fire sprinklers, NFRS

Fire crews were mobilised to reports of a confirmed fire within a six-storey purpose-built student accommodation block in Nottinghamshire. On arrival the officer in charge established that one concealed sprinkler head within a cluster flat bedroom had actuated containing/controlling the fire to the room of origin. This allowed the student, who was unaware of the fire until the bedroom door containing the fire was opened, to get to a place of safety.

Minimal firefighting was required by NFRS to extinguish the fire with only superficial fire, heat, and smoke damage sustained within the room of origin. It was established the cause of the fire was due to embers from a stubbed out lit incense candle that had blown onto clothes in a washing basket and caught light.

This incident provides further evidence that the operation of a correctly designed and installed residential sprinkler system installed, maintained in accordance with the appropriate codes and standards reduces the rate of production of heat and smoke, allowing more time for the occupants to escape to safety or be rescued.

British Automatic Fire Sprinkler Association

bafsa

BAFSA Sprinkler Design Courses for 2025

Course: BAFSA FHC Design (Commercial)

Date: 10th March
Duration: Four days
Location: Online
Cost: £1,400 plus VAT
(£1,300 plus VAT for BAFSA members)

This course follows on from the Basic and Intermediate design courses and covers sprinkler designs which use the fully hydraulically calculated (FHC) method of pipe sizing and water supply selection.

Course: ABBE Level 3 Award in Inspection & Commissioning of Commercial Fire Sprinkler Systems

Date: 24th March
Duration: 3 days
Location: Bedford (TBC)
Cost: £1,500 plus VAT
(£1,350 plus VAT to BAFSA members)

This course relates to the inspection, commissioning of commercial fire sprinkler systems design in accordance with the LPC Rules inc BS EN 12845. This course is part of the requirement to get the blue CSCS card.

Course: Sprinkler Classification and Pre-calculated Design for Experienced Workers

Date: 28th May
Duration: 5 days
Location: Online
Cost: £3,600 plus VAT
(£3,240 plus VAT to BAFSA members)

This course will give you the knowledge to classify a fire sprinkler system, and also design a pre-calculated fire sprinkler system. The course will benefit from a national award and also help towards a black managers CSCS card.

Course: ABBE Level 3 Award in Inspection & Commissioning of Commercial Fire Sprinkler Systems

Date: 2nd June
Duration: 3 days
Location: Holiday Inn Manchester
Cost: £1,500 plus VAT
(£1,350 plus VAT to BAFSA members)

This course relates to the inspection, commissioning of commercial fire sprinkler systems design in accordance with the LPC Rules inc BS EN 12845. This course is part of the requirement to get the blue CSCS skills card.

Course: Sprinkler Classification and Pre-calculated Design for Experienced Workers

Date: 16th June
Duration: 5 days
Location: Online
Cost: £,3600 plus VAT
(£3,240 plus VAT to BAFSA members)

This course will give you the knowledge to classify a fire sprinkler system, and also design a pre-calculated fire sprinkler system. The course will benefit from a national award and also help towards a black managers CSCS card.

Course: ABBE Level 3 Award in Inspection & Commissioning of Commercial Fire Sprinkler Systems

Date: 30th July
Duration: 3 days
Location: Newry, N Ireland (tbc)
Cost: £1,500 plus VAT
(£1,250 plus VAT to BAFSA members)

This course relates to the inspection, commissioning of commercial fire sprinkler systems design in accordance with the LPC Rules inc BS EN 12845. This course is part of the requirement to get the blue CSCS skills card.

Course: System Classification & Pre-Calculated Fire Sprinkler System Design (New Entrants)

Date: 2nd September - 9th December
Duration: 15 weeks
Location: Online
Cost: £4,000 plus VAT
(£3,600 plus VAT to BAFSA members)

This one day a week course will give you the knowledge to classify a fire sprinkler system, and also design a pre-calculated fire sprinkler system. The course will benefit from a national award and also help towards a black managers CSCS card.

For entrant requirements and further course details visit www.bafsa.org.uk and go to the BAFSA Training Centre.

Restating the case for reinstating

Nick Coleshill reminds us of the importance of reinstating the sprinkler system follwing a fire

In my role representing BAFSA as the sprinkler coordinator for Sprinkler Saves UK, one of my objectives is to raise awareness of the benefits of sprinklers and the importance of collating sprinkler activations from across the country. Such information can be invaluable allowing trends and anomalies to be identified and forwarded to The National Fire Sprinkler Network and BSI sprinkler system standards committee.

In the Spring edition of *Sprinkler Focus*, I discussed the myth that water damage from the actuation of the sprinkler system following a fire could cost more than the damage from the actual fire. I looked at how poor business continuity management and inadequate emergency planning can result in a real lack of consistency in the provision of emergency response information that needs to be available for the Fire Rescue Service or building manager. The result is that there can be a delay in isolating the sprinkler system after activation and far more damage can be caused to the property than necessary.

Knowing how and when to reinstate the sprinkler system after an activation is therefore crucial. John Newman who represents RSP Sprinklers, actively promotes and reports sprinkler activations via social media and in so doing focuses on the minimal time it takes for his on-call engineers to reinstate residential and domestic sprinkler systems following a fire.

It is paramount that sprinklers and other forms of active fire protection systems in a building can function effectively in the event of a fire at all material times. This is achieved by maintaining these systems in accordance with the relevant standards/codes to ensure they are operational and available at all material times.

In my view, as a sector we should also be focusing on the importance of reinstating the sprinkler system as a matter of urgency. Following activation of the system, the necessary action that needs to be taken should be included in the premises' emergency plan or fire strategy so that the sprinkler contractor can be immediately informed and called out.

For example in BS9251: reinstatement of the system, no reference or guidance is given on an appropriate timescale to reinstate the system following activation. Those who have responsibility for fire safety within a building need to consider that allowing the implementation of the appropriate arrangements for the effective planning, organisation, control, monitoring and review of protective measures is key requirement of the Regulatory Reform (Fire Safety) Order 2005.

I recently reported a successful sprinkler activation within a low-rise residential block of flats involving a fire within the basement carpark, which was extinguished by the activation of the premises sprinkler system. The system was not reinstated for two days after the incident due to a delay contacting the sprinkler contractor to reinstate it. During this period the sprinkler system was offline providing no fire protection which in the event of a further fire within the building could have been catastrophic.

I therefore ask that if you are a building owner and/or manager responsible for fire safety within a building, it is important that arrangements are in place to ensure that following the activation of the premises sprinkler system, provisions are in place allowing for the immediate reinstatement of the sprinkler system following a fire.

British Automatic Fire Sprinkler Association

bafsa

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‘No Sprinklers Wanted’

Stewart Kidd casts a critical eye over the Phase 11 Report into the Grenfell Tower fire and finds references to fire sprinklers seriously lacking

On the 4 September 2024 the Public Inquiry published its final, phase 2 report on the Grenfell Tower fire which occurred on the 14 June 2017.

On closely reading through the report I found that there are disappointingly few references to sprinklers and no recommendations regarding their wider use nor any acknowledgement of their value as a means for mitigating fire safety deficiencies.

Most disappointingly, is the apparent recommendation, repeated in the Phase 1 Report Summary, to consider the value of sprinklers. This remains unfulfilled. This is the only reference to sprinklers or automatic fire suppression in the Phase 1 Report:

14 Sprinkler systems

33.25
The coroner who conducted the inquests arising out of the Lakanal House fire heard evidence about the installation of sprinklers and recommended that the government encourage housing providers responsible for high-rise buildings containing multiple domestic premises to consider fitting them.

It is not surprising, therefore, that some core participants have urged me to go a step further and to recommend that such systems be installed in all existing high-rise residential buildings.

33.26
Sprinkler systems no doubt have a very valuable part to play in the overall scheme of fire safety measures, but whether such a system would be likely to have suppressed the fire in Flat 16 or prevented it from escaping into the cladding before the firefighters could extinguish it is not something that was investigated in Phase 1. I have therefore heard no evidence about the use of sprinklers generally, their effectiveness under different conditions, or about the cost and disruption that would be caused by installing them in existing buildings. In those circumstances I cannot make any recommendation at this stage about the installation of sprinklers in existing buildings, although the government’s response to previous recommendations will form an important part of the investigation to be carried out at Phase 2.

Reviewing the final report there are a number of references to sprinklers:

Volume 1

Part 1: Introduction
Part 2: The path to disaster

4.37
The report acknowledges that the Building Regulations 2000 came into force on 1 January 2000 and contained a number of amendments including:

> “..an important one being the amendment of functional requirement B3(3) on internal fire spread to require a suitable automatic fire suppression system to be installed where reasonably necessary to inhibit the spread of fire within a building, either as an alternative to, or in addition to, the sub-division of the building with fire-resisting construction. As a result, it became necessary to install sprinklers in newly built blocks of flats over 30 metres in height.”

9.41
The report noted that following the 2009 fire at Lakanal House, the coroner wrote a Rule 43 letter to the Secretary for State for Communities and Local Government (Eric Pickles MP, now Lord Pickles) addressing, inter alia, the need for "retrofitting sprinklers in high rise residential buildings".

10.50
In his consideration of the role played by Lord Pickles when Secretary of State with regard to disposing of what the Conservative Government saw as 'red tape', Sir Martin notes the existence of confusion within the Building Regulations and Standards Division of the Department over the Government's deregulation policy and observes that Lord Pickles wrote a letter to the Welsh Government in May 2013:

> "…admonishing it for introducing legislation requiring the installation of sprinklers in all newly built and newly converted homes on the basis that it was increasing the cumulative burden of regulation on the housing market in Wales. He also expressed fear that the burden of red tape would harm the Welsh housing market."

Volume 2

Part 3: The testing and marketing of key products

This contains no references to sprinklers or fire suppression systems

Volume 3

Part 4: The Tenant Management Organisation
Part 5: The management of fire safety at Grenfell Tower

41.86
Discussing the activities of Grenfell's managing organisation (The Kensington and Chelsea TMO) the report notes that the:

> "TMO's Fire Protections Systems Policy & Procedure drafted in 2017, (which) set out the procedure for repairing faults in a number of fire protection systems, including sprinklers, fire alarms, fire extinguishers, hose reels and automatic opening vents."

This suggests that somewhere, at least, in the Kensington and Chelsea property portfolio there is at least one sprinkler system is interesting and might have perhaps been pursued in the light of the Enquiry's findings in 54.46 – 54.48 (below).

46.38 – 46.42
The Report discusses pre-fire correspondence within the TMO and local authority and with London Fire Brigade on matters connected with the safety of vulnerable residents. Part of this discussion includes reference to:

> "identifying vulnerable persons in local authority premises who might be suitable for an LFB initiative promoting sprinklers".

Sadly, no nominations for protected accommodation were forthcoming, possibly in part due to a suggestion that the TMO should:

> "…avoid any questions being asked about why anyone who might qualify had not been identified in the fire risk assessments or received a PEEP."

The report notes, interestingly that there is a suggestion that:

> "…automatic fire suppression systems may have been particularly suitable for use by those who were heavy smokers".

Volume 4: The refurbishment of Grenfell Tower

54.46 – 54.48
In considering the process undertaken in the formulation of the refurbished building's fire strategy, the Report is highly critical of the external fire engineering consultant engaged and concludes that the poor delivery of the fire strategy document by the TMO is a result of this. The report references the 'colourful language used' in an email from the TMO to the external fire engineer:

> "We have just sent through the existing fire strategy for it, basically 1970s 24 storey residential tower with non-residential use to first 4 floors. They are now adding additional levels which merges uses around a single stair. Not great. Basically I have told him we can massage the proposal to something acceptable, with separation, lobbies etc but that there are approval risks to the project on the ff shaft / MOE front. XX has been to site and given some advice, but I don't know what he's said, but it would appear not much. They are making an existing crap condition worse so it's a matter of working the worse bits out and making the new stuff work. No sprinklers wanted."

The enquiry report concluded:

> "However, the message speaks for itself: first, the existing condition of the building raised concerns about fire safety; second, the proposed refurbishment would increase those concerns; and third, the proposals could be altered to make them satisfactory from the perspective of building control but there would remain

a risk that approval would be refused because of dissatisfaction with the fire-fighting shaft and the means of escape."

This is a very important and some might argue the most important lesson from the Grenfell fire. Despite an awareness of the poor state of fire safety, which was likely to be exacerbated by the refurbishment, the single most effective measure to mitigate the risks is dismissed in three words: 'No sprinklers wanted".

In fact, there was a second chance to consider the benefits of automatic fire suppression in the refurbished building. A document described as a 'Design Note' from the external fire engineering consultant is referenced at length in 54.56 – 54.77.

At 54.74 we find:

"The Design Note also pointed out that, as stairs serving residential accommodation should not also serve non-residential accommodation, it might be necessary to provide sprinkler or water mist systems to the boxing club and office suite. Yet in no version of the Outline Fire Safety Strategy did ZZ advise that sprinklers might be necessary and there is no record of sprinklers having been discussed in design team meetings."

Volume 5

Part 7: Replacement of the gas main
Part 8: The London Fire Brigade

This contains no references to sprinklers or fire suppression systems

Volume 6

Part 9: The deceased

This contains no references to sprinklers or fire suppression systems

Volume 7

Part 10: Response and recovery
Part 11: Matters outstanding from Phase 1
Part 12: The fire testing regime
Part 13: International responses
Part 14: Recommendations
Appendices

Part 13: 112.5
The report considers the regulations applying to buildings in other jurisdictions and notes that in the US, buildings are subject to a more prescriptive regime than in England and Wales with the National Fire Protection Association's Codes being applied in most cases. Sir Martin records without comment that in the US:

"…most buildings are constructed in accordance with the requirements of the NFPA codes which require the provision of an extensive range of fire safety systems, such as sprinklers, voice alarm communication systems and two staircases and allow little scope for independent design choices".

Summary and conclusions

As an experienced expert witness who has handled several important cases involving fire suppression systems, I find myself intensely frustrated by the enquiry's narrow focus (instructing solicitors are usually keen to allow an expert to run with a concept even if not immediately within his or her instructions) and apparent unwillingness to investigate what the practical impact might have been had Grenfell's owner decided to comply with Regulations 3 and 4 (Definition of building works and Requirements relating to buildings) of the Building Regulations at the time which should have required the installation of a sprinkler system in the building. I confess it hard for me to understand how the Grenfell refurbishment project costing in excess of £10m would not have been classed as 'building works' and why the enquiry did not pursue this point. Nor why the enquiry did not pursue the lessons from the Lakanal House fire as it promised.

Retrofitting sprinklers in social housing

In the reference to the Rule 43 letter submitted by the Coroner to the Secretary of State, Her Honour Frances Kirkham CBE said:

Retrofit of sprinklers in high rise residential buildings

Evidence adduced at the inquests indicated that retro fitting of sprinkler systems in high rise residential buildings might now be possible at lower cost than had previously been thought to be the case, and with modest disruption to residents.

"It is recommended that your Department encourage providers of housing in high rise residential buildings containing multiple domestic premises to consider the retro fitting of sprinkler systems".

BAFSA wrote to the Secretary of State and the Chief Fire & Rescue Advisor shortly after the inquest offering assistance in accurately determining the practicability of retrofitting sprinklers in high rise social housing. It identified that sprinklers would very effectively mitigate fire risks in those blocks with sub optimal fire compartmentation or single staircases. The response from the Chief Fire & Rescue Advisor was sadly unenthusiastic and devoted to answering a question which had not been asked. The official line was that retrofitting fire sprinklers to all high-rise residential buildings in England was not cost effective or practical.

As a result of this, the UK Sprinkler Coordination Group approached the Department for Communities and Local Government with a proposal to determine the reality of sprinkler retrofits. Initially, this approach was welcomed, and outline agreement was reached to commission research work with shared funding, possibly including a pilot retrofit. Unfortunately, after the 2010 election there were no further discussions and DCLG cited resource availability as the reason for their withdrawal. DCLG were invited to join the Steering Group (see below) set up to manage the project but did not send a representative to any of the meetings.

The SCG decided to proceed with the project and at the end of 2010 identified a suitable housing block in Sheffield, South Yorkshire. Delegating the management of the project to BAFSA, the Steering Group devised and completed the design and installation of a retrofitted sprinkler system in a 13-storey block at Callow Mount, Sheffield. The aim was to determine the real costs, both financial and societal, of retrofitting an automatic fire sprinkler system into an unprotected, older, high-rise social housing block of earlier design

The Callow Mount Project satisfied all its objectives and the report can be read here

Sadly, the enquiry did not fulfil its promise to consider the value of sprinklers nor question any of the witnesses from DCLG regarding the reasons for their lukewarm responses to the lessons from the Lakanal House fire.

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