

sprinkler focus

British Automatic Fire Sprinkler Association

bafsa

MAY 2020

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Sprinkler Saves
Standards & Legislation
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& resolutions



Put a
firefighter
in every room

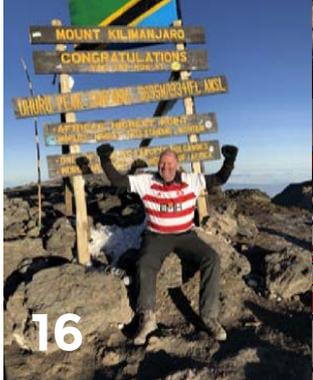
**INSTALL
SPRINKLERS**

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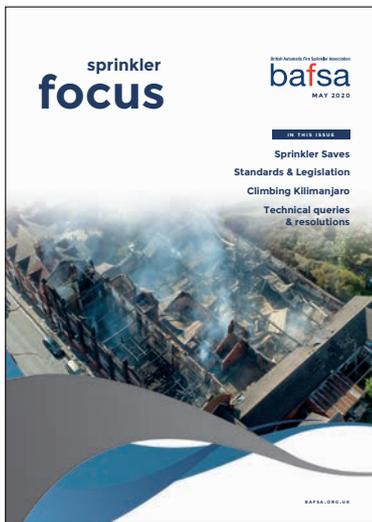
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Sprinkler FOCUS is the biannual magazine of the British Automatic Fire Sprinkler Association. It is the only UK publication which has automatic fire sprinklers at its core with current news, features and opinions along with case studies and product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

British Automatic Fire Sprinkler Association

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From the Chair

THE QUOTE “YOU don’t know what’s round the corner” comes to mind, to sum up these challenging times we find ourselves in. Little did any of us know at the end of 2019 when news of Coronavirus infections began to trickle out of China, what lay ahead, a worldwide pandemic causing so many deaths, and economic destruction, is difficult to take on board.

I hope you and your families have been able to keep safe and well? Sadly, for many people, despite the precautions being taken it was not soon enough or effective enough and many thousands in the UK and Ireland have lost their lives to this pandemic. I am certain there will be many of you who have lost loved ones, relatives and friends throughout this period and our thoughts are with you.

BAFSA have been following the UK and Devolved Government’s guidelines to keep our Members, staff, and families safe. We cancelled all our planned seminars, Members Day and Challenge Day up to the end of July and have carried out our meetings online.

We are now seeing the construction industry in the UK beginning to reopen their sites across the country with recovery plans from all Governments being implemented.

Build UK have said that 86% of infrastructure and construction sites in England and Wales are now open,

in Scotland the figure is 19%, however this will change rapidly as lockdown is eased.

During the shutdown Barbour ABI found that in April more than 4500 projects had been delayed amounting to a total value of £70.7bn. Many contractors are facing major cashflow problems due to delayed payments from contracts and have had to rely on the furlough scheme, and other financial support.

How does the industry come out of this situation? Sadly, we have seen some companies have not survived and have had to close permanently or gone into voluntary or compulsory liquidation. It is clear that the new safety measures and distancing that require to be employed on construction sites will have an impact on productivity. These measures are required in order for building work to continue, however they do mean that construction will take longer and become more expensive, but it also means our workers will be protected from the virus if rules are followed.

We are certainly moving into a new world, how we adapt while keeping safe will determine how successful the outcome will be. There is no easy fix until a vaccine is found.



JOHN McCANN
BAFSA CHAIRMAN



KEITH MACGILLIVRAY
BAFSA CHIEF EXECUTIVE

Since the 16th March UK business life and in particular construction and the sprinkler industry has come to a virtual standstill.

The Government has been keen for construction to continue and has given the green light for more housebuilding and other projects to start, however there is also a need for public sector spending on construction to increase in order to boost the market. This may be balanced by a downturn in the need for office space, the lockdown period has shown many the advantages of homeworking by reducing commuting and travelling. It remains to be seen whether companies will see this as the future and a means for greater productivity at reduced costs coupled with advantages for their employees in spending much less time traveling to and from work. On the sites there will have to be greater distancing, does this mean working longer hours and using shifts systems to ensure that productivity does not slip further behind. It is clear there will have to be many changes and adaptations for the new world of construction in a post viral world.



Changes to Legislation and Standards

The Government has announced the implementation date for a number of changes to Approved Document B (ADB), including the requirement for automatic fire sprinklers in all flats above 11 metres, these changes will be required as from 26th November 2020.

The change requiring automatic fire sprinklers in all new built flats over 11 metres will significantly increase the use of domestic and residential sprinklers in this sector which has already seen a large increase since the disastrous Grenfell Tower fire.

This marks a major success for BAFSA, NFSN, BSA, EFSN, NFCC and all our partners who have campaigned for so long for changes to ADB.

Details of the changes are in the below link:

<https://www.gov.uk/government/publications/approved-document-b-volume-1-and-2-circular-012020>

At the end of April by the second reading of the Fire Safety Bill in the House of Commons.

Again, the Bill is a direct result of the disastrous Grenfell Tower fire and the discussions regarding the responsibility for fire safety that followed. The Bill amends the Regulatory Reform (Fire Safety) 2005 and will result in greater clarity over responsibility for fire safety in buildings containing more than one home.

The key points of the Bill are:

- Define the role of Leaseholders
- Allows the Fire and Rescue Service to take enforcement action
- Defines the Responsible Person for the building
- Clarifies the actions required by private owners of buildings in relation to Fire Risk Assessments
- Confirms the responsibility for common parts of buildings

It is anticipated that the Legislation will require a substantial increase in resources for Fire and Rescue Services

The Bill is broadly welcomed; however, a number of MPs do not feel it goes far enough to prevent another incident such as Grenfell or Lakanal House recurring.

The next stage of the Bill will be the report from the Public Bill Committee which is scheduled for 25th June 2020. Thereafter with any amendments it will make its way through the House of Lords with an anticipated date of becoming legislation in November 2020.

Details of the Bill can be found in the following link:

<https://publications.parliament.uk/pa/bills/cbill/58-01/0121/20121.pdf>

New legislation is also anticipated in Scotland, David Stewart MSP who has strongly supported BAFSA and the requirement for sprinklers in social housing and introduced a Private Members Bill in 2019. David, hopes to see his campaign for installing fire sprinklers in all

social housing come to fruition next year with the implementation of new Scottish Government regulations said "Sprinklers are a vital element of fire safety, they have been proven to be highly effective at preventing the spread of fires and the destruction they cause, with no case of multiple fire deaths in Scotland where automatic fire suppression systems have been installed."

Highlands and Islands Labour MSP, David Stewart, should see his campaign for installing fire sprinklers in all social housing come to fruition next year with the implementation of new Scottish Government regulations.

Mr Stewart has received a letter from Local Government, Housing and Planning Minister, Kevin Stewart, saying that sprinklers will be a requirement in all new build social housing, flats, maisonettes and larger multi-occupancy dwellings including where care is provided.

The regional MSP has heard that the Building Scotland (Amendment) Regulations 2020 are being worked up by solicitors and include clear definitions for new social housing.

David Stewart was told in 2018 that the Scottish Government was taking forward his campaign for greater fire safety methods in social housing.

"I am glad that the government is working on implementing this and I have now been told the new regulations should come into force by May," said David Stewart. "Fire sprinklers have been proven time and time again to be effective in the fight against fire and I know that this move will save lives. There has always been strong backing for these plans from the public, the industry and other MSPs, especially in the light of the Grenfell Tower disaster.

"I would still like retro-fitting sprinklers in older properties to be considered, and although that is my longer term hope I understand the problems this would pose.

"As yet I am not aware if the outbreak of Covid 19 has affected the schedule to implement this, but I do hope not."

David Stewart previously proposed a Member's Bill which would require fire sprinkler systems to be installed into all new-build social housing across Scotland, as a method of tackling Scotland's high rates of fire death and injury.

The plans received overwhelming support, with 94% of the consultation responses in favour and over 50 MSPs, from across all five political parties, signed up in support of the Bill's final proposal.

The Scottish Government then announced it would include the requirement for fire sprinklers in social housing as part of their response to the recommendations from the Building and Fire Safety Review Panels.

Minister Kevin Stewart told the MSP the intention was to put the changes to regulations before parliament before the summer recess, with amendments and work with the construction sector following afterwards.

The Minister is to keep the MSP updated on progress of The Building Scotland (Amendment) Regulations 2020.

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In the Pipeline

Current Status of CEN watermist work TC191/WG10

The status of the suite of watermist standards as at the end of March 2020 is shown below.

FprEN 14972-1

- Water mist system design, installation, inspection and maintenance standard
- CEN administration (CCMC) is preparing the document for formal vote (the last stage in the CEN process)
- There was a delay because the UK objected to the fact that the BSi morror committee has grave doubts about the quality of the standard, but the formal vote will now go ahead - probably in the summer. The UK will continue to object to the standard

EN 14972-16

- Test protocol for open nozzle water mist systems to protect industrial oil cookers
- Published late 2019

EN 14972-8

- Test protocol for open nozzle water mist systems to protect machinery spaces in enclosures exceeding 260 m³
- Published 2020 (e.g. BSI 6 March 2020)

EN 14972-9

- Test protocol for open nozzle water mist systems to protect machinery spaces in enclosures not exceeding 260 m³
- Published 2020 (e.g. BSI 6 March 2020)

EN 14972-14

- Test protocol for open nozzle water mist systems to protect combustion turbines in enclosures exceeding 260 m³
- CEN enquiry will start on 2020-04-02

EN 14972-15

- Test protocol for open nozzle water mist systems to protect combustion turbines in enclosures not exceeding 260 m³
- CEN enquiry will start on 2020-04-09

EN 14972-10

- Test protocol for open nozzle water mist systems for atrium protection with sidewall nozzles
- Passed CEN enquiry in January – comments to be addressed by November 2020

EN 14972-3

- Test protocol for water mist systems with automatic nozzles for office, school classrooms and hotel
- Ballot deadline 2020-04-14 to decide whether to go for formal vote or a second CEN enquiry

prEN 17450-1

- Product characteristics and test methods for water mist strainers and filters
- Passed CEN enquiry in February – comments to be addressed by December 2020

A virtual sprinkler week



The National Fire Chiefs' Council (NFCC) asked fire and rescue services (FRS) to take part in National Sprinkler Week 2020 during the week of 18th May which, due to the COVID-19 pandemic was run as a social media campaign only. The campaign acts as part of the NFCC's longer term aim to push for legislative change so the use of sprinklers becomes more widespread and that sprinklers should be one part of the layered system of fire protection in buildings.

The campaign focussed on

- Improved alignment in standards across the UK
- Myth busting Educational establishments
- Residential premises including high-rise
- Specialised housing and care homes
- Waste management facilities and warehousing

Fire & Rescue Services around the country were urged to issue a press release raising awareness of the benefits of sprinkler systems in keeping people and buildings safer from fire as people are encouraged to #ThinkSprinkler. Twitter and Facebook successfully promoted the week.

Highlighting facts and figures about sprinklers as well as confirming that sprinkler systems help to protect the lives of firefighters thus why they are fully supported by fire services. "Despite this there is some disparity in building regulations and sprinkler systems across the UK. Sprinkler laws in Wales and Scotland are stricter meaning their communities have more fire protection than those of England and Northern Ireland" said Chief Fire Officer of Derbyshire Fire and Rescue Service, Gavin Tomlinson and NFCC lead for Sprinklers "The evidence speaks for itself, our research proves that sprinklers are very effective and provide strong fire safety protections as part of a fire safety package. Wales and Scotland recognise this and have implemented measures to make their communities safer from fire; we want to see these same changes in England and Northern Ireland as matter of urgency. Fire does not discriminate and is just as dangerous in England and Northern Ireland as it is in the rest of the UK."

Newly Published Standards

BS 9992:2020: Fire Safety in the Design, Management and Use of Rail Infrastructure – code of practice has now been published by BSI. It contains significant incentives to fit sprinklers.

Notre-Dame de Paris Cathedral

Jean Louis Georgelin, French general and former military Chief Staff has been appointed to oversee the three year 'FSNP' Project - the French Government's programme in respect of fire safety in the reconstructed Notre-Dame de Paris Cathedral.

The actions include:

- Perform a study on the fire risk in heritage buildings after collecting various national and international data
- Perform a study on the Prevention / Protection / Operations measures adopted in France and abroad in old heritage buildings
- Performing formalised fire tests on the measures to protect the works of art
- Draft a guide on cultural heritage protection
- The establishment of a shared digital space, accessible to firefighters in France, allowing in particular to accommodate 360° intervention plans
- The French Sapeurs Pompier have initiated a survey of Fire and Rescue Service response to Heritage Buildings, this was promoted and distributed in partnership with BAFSA and the UK FRS

Sprinkler Saves

END OF 2019



Office block, London

Four fire engines and around 25 firefighters were called to reports of a fire in the basement of an office block. The sprinkler system had actuated and helped to suppress the fire which was extinguished in just over an hour.



Flat, Croydon

A fire in an 8th floor flat in an 11 storey building was extinguished by one side wall mounted sprinkler head. The source of the fire was a tumble dryer.



School, Hull

Humberside Fire & Rescue Service were called the Kelvin Hall secondary school at around 0445 after a bin fire in one of the ground floor departments, which triggered the smoke alarm. The blaze was swiftly put out by crew but the sprinklers were automatically started at the time of the fire and had controlled the blaze.



Student accommodation, London

A pan of oil ignited in the kitchen of a flat on the 3rd floor of an 11 storey student accommodation block – Chapter Highbury. London Fire Brigade attended but no action required due to the intervention of a single sprinkler head. Smoke damage only, no evacuation required in accordance with the in-house stay put policy. And the sprinkler system reinstated following day.



Hostel, Wales

Three sprinkler heads actuated due to control a fire that had started in a mobility scooter that was on charge. The sprinkler system installed by BAFSA member Triangle and serviced by BAFSA member RSP Sprinklers who reinstated the system.

JANUARY



Flat, Birmingham

A cooking oil fire in the kitchen of Flat 41 of the 12 storey residential block of 71 flats owned by Birmingham city Council was extinguished by a single sprinkler head actuation within 5 minutes – probably nearer 40 seconds. This is BS 2951 installation with a pump in the 2nd floor tank room.



Flat, Flint

A fire at a high-rise block of flats in North Wales has been successfully extinguished thanks to an effective sprinkler system.

North Wales Fire and Rescue Service crews were called to a report of a fire at Bolingbroke Heights, Flint at 1749 – and appliances from Flint, Deeside and Holywell were mobilised to the incident. Firefighters rescued a man in his 70s from a heavily smoke logged flat within the building. He received a precautionary check for smoke inhalation at the scene. The fire was extinguished quickly by the sprinkler system and was confined to a cooker within the flat.

Paul Scott, Senior Fire Safety Manager at North Wales Fire and Rescue Service, said: “In Wales we have led the way in the promotion of fire safety and the protection of our residents and businesses – commercial and domestic sprinkler systems deliver benefits that are far greater than the cost of their installation and maintenance.”

FEBRUARY



Flat, Essex

A BAFSA member, J&J, recently completed a residential installation in Colchester, which has prevented the spread of a chip pan fire after the activation of two sprinkler heads. Events like this highlight the importance of fire protection, where otherwise the fire could have easily grown, causing risk to the building and residents alike.

MARCH



Flat, London

Burnt cooking in the kitchen of a residential block of flats of three floors in Waddon Court Road, was the cause of a fire which, from the limited information provided, was controlled by a Personal Protection system. The fire was all out on arrival with no firefighting action completed by crews.



Flat, London

1 sprinkler head actuated in the kitchen of a 5 roomed flat on the 11th floor of a 21 storey block of flats in Lanterns Way. LFB reported that the fire was out on arrival.



Flat, London

Crews were called to a 5 pump fire on the 25th floor of a 4 roomed flat of a 39 storey high rise residential block in Southwark Bridge Road.

The alarm was raised by the occupier to a kitchen fire, one sprinkler head activated and extinguished the fire prior to the arrivals of crews. Without AFSS the outcome of this incident may well have been more serious with the potential for a full compartment fire which would have seriously compromised the safety of residents and firefighters. no fire related injuries were reported.

On this occasion due to the height/design of the building a BS EN 12845 system was installed allowing extra resilience to be provided for the installation, it should be noted a BS9251 :2014 system is installed for buildings up to 45m in height unless agreed with Authorities Having Jurisdiction.



Flat, London

LFB crews were called to a rapidly developing fire on the sixth floor external balcony of Tweed Walk Tower Hamlets – a twelve storey apartment block. The fire spread horizontally along the balcony from the seat of the fire affecting the balcony of the adjacent dwelling.

Due to the intensity of the fire the patio doors/glazing located adjacent to the seat of the fire failed. The prompt activation of the AFSS, restricted the fire damage to the glazing units/frames with smoke logging confined to the ceiling level of the apartment. The external fire was extinguished using a ground monitor and jets. Without AFSS the outcome of this incident may well have been more serious with the potential for a full compartment fire which would have seriously compromised the safety of residents and firefighters.



Flat, Nottinghamshire

Sprinklers were activated as a result of a fire caused by a portable heater in close proximity to a blanket where the resident was asleep and under the influence of alcohol.

Sprinkler system also raised the alarm to warn the resident (flow switch activating the alarm system).

In extinguishing the fire, damage was mitigated to room of origin, with minimal smoke damage to room but this did not require the resident to be displaced. Property will be cleaned and made available for re-occupation without the need for structural repairs.

“NCH believe that the sprinkler activation saved the life of the resident”

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HAD BEEN FITTED**

Devastated by fire

Four heritage buildings in Northamptonshire are among the more than 400 in the UK to be damaged or destroyed since the Notre Dame blaze in Paris a year ago.

The Kettering Bed Centre blaze on May 13, 2019, was the most devastating of Northamptonshire's fires at heritage buildings in the last 12 months. Around 60 firefighters tackled the fire in the Grade II-listed building, erected in 1890, on Regent Street and it had to be pulled down as a result.

A Government spokesperson said "We know heritage buildings hold great value to communities which is why we are investing £95 million to protect, regenerate and adapt these buildings, as well as protecting them through our planning system," they added.



Roof lost

The head of the Law Society said the organisation had been left "extremely upset this has happened to this wonderful and historic building" after a fire broke out at its offices in Chancery Lane, in central London.

The LFB said about 150 firefighters and 25 engines were sent to tackle the blaze at the six-storey office building at 2240.

The LFB said the fire was brought under control shortly before 1000 the next but said the building's roof and a staircase from the third to the fifth floor were destroyed by the fire.

Assistant commissioner Dom Ellis, who was at the scene, said: "This was a very complex fire due to the age and layout of the building".

**BAFSA comment : sprinklers
will protect our history and our
heritage**

Warehouse destroyed

Twenty fire engines and around 125 firefighters were called to a blaze at a warehouse in Barking, east London. The Brigade's 999 Control Officers took 80 calls to the blaze.

A single-storey builders' merchant warehouse was destroyed by the fire and part of an adjoining warehouse was also damaged. Station Manager Jim Smith, who was at the scene, said: "On arrival crews were faced with a well developed fire and large clouds of smoke. There were no reports of any injuries.

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Types of Sprinkler Installations

Sprinkler System v Sprinkler Installation

A Sprinkler System is the ENTIRE means of providing sprinkler protection on the premises. This includes the incoming water mains, pumps, tanks, supply pipes to buildings and the sprinkler installations within the buildings

Sprinkler Installation is PART OF a sprinkler system comprising a control valve and the downstream pipework to the sprinkler heads, within a building.

Control Valve Set

The supply of water to a sprinkler installation is controlled by a set of valves which varies according to the type of installation. There are two principal valves, the main stop valve and the alarm valve. These can be called several different names but mean the same thing i.e. installation control valves; installation control valve set; valve set; ICV; control valves.

The main stop valve controls water entering the installation. It is a handwheel-operated valve and should be kept locked in its fully open position by a padlock and strap. It should be in a position which is readily accessible, preferably near a building's main entrance. Nearby, on an outside wall, should be the sign:



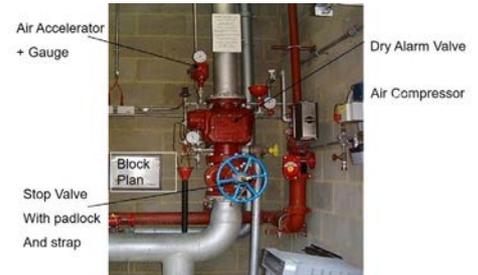
The alarm valve is located immediately above the main stop valve. Its function is to open soon after a sprinkler head is activated and water flows in an installation, some water being diverted to drive an alarm motor, which is a water turbine that rotates and causes a clapper to strike a gong and thus raise the alarm.

Depending upon the design requirements and the environment in which the system is installed, different configuration of valves will be used.

Types of Installation

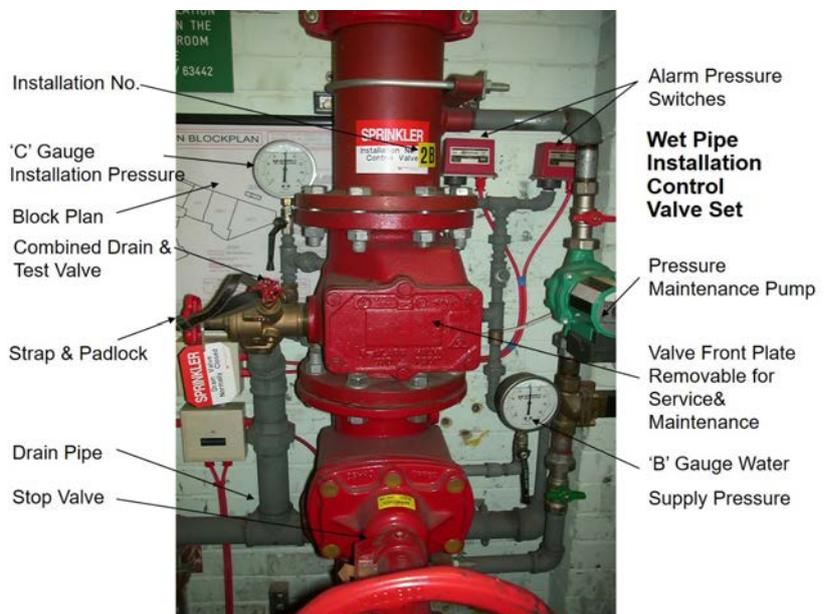
WET TYPE

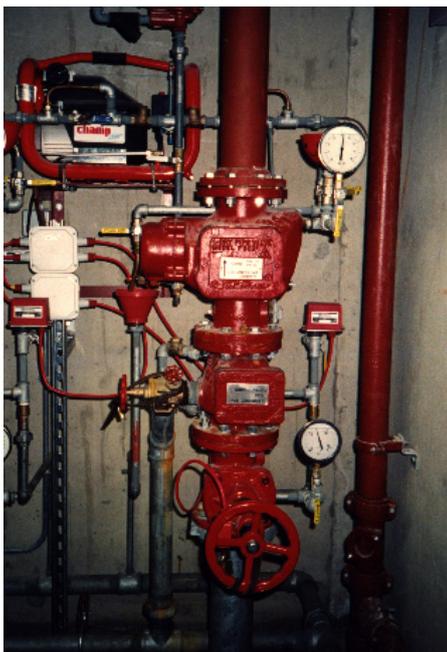
Permanently filled with water under pressure and the most common type of sprinkler installations installed in premises. Used in heated buildings, where there is no possibility of the water freezing, the ambient temperature should not exceed 95°C. Wet installations can deliver water to the fire as soon as a sprinkler head operates and is the preferred type of sprinkler installation.



DRY PIPE

Appropriate for applications either where there is a danger of the water in the pipes freezing or in situations where there may be temperatures above about 70°C. The pipes on the 'downstream' side of the installation control valves are charged with air or an inert gas under sufficient pressure to prevent the entry of water into the delivery pipework. There should be a permanent automatic supply of air or gas to maintain the pressure in the pipework. Once the first sprinkler head operates the compressed air or gas escapes through the open sprinkler head and water discharges on to the fire.





ALTERNATE WET AND DRY

Can operate as either a wet type or a dry type. Commonly used in car parks or loading bays where temperatures vary considerably throughout the year. In the colder months when freezing or near freezing temperatures are encountered the installation is charged with compressed air or an inert gas like a dry type installation. In recent years their use is not generally recommended and they can be high maintenance, as each year they have to be drained and changed over to either their wet or dry mode. This continual draining and charging with fresh oxygenated water can lead to accelerated pipe corrosion even when galvanised pipe is used.

TAIL END ALTERNATE or TAIL END DRY-PIPE

Essentially wet-pipe installations in which a part of the system, the tail end (in conditions, for example, where it is liable to freeze), is dry or alternate wet and dry. They are commonly used in loading bays and under external canopies.

DELUGE SYSTEM

Commonly fitted with open nozzles or projectors and triggered from air/water



detection lines or another type of detection system. Deluge systems provide water to a network of open nozzles which could be for local application or protection to a specific high-risk plant area. Typically, they are used to protect areas such as tanker loading bays; flammable gas tanks; oil storage reservoirs; oil lines; power generation plants etc. There is a wide variety of sprinklers and special directional spray nozzles available for deluge type installations which allows the sprinkler designer a lot of flexibility in his/her hydraulic calculations so they can size the pipework and nozzles to make the most efficient use of the available water. These nozzles can cater for high and low pressures and can be precisely designed to give a very narrow or a very wide angle of water spray. Nozzles or sprinkler can be open type or with thermostatically operated fusible bulbs or metal links.

PRE-ACTION

A dry-pipe system linked to an automatic fire detection system which protects the same area. Operation starts when a heat or smoke detector in the detection system activates, (which will usually happen quicker than a sprinkler head). At this point a 'pre-action' valve opens to allow water to flow into the sprinkler pipework before the first sprinkler head operates. Discharge of water will not occur until a sprinkler head operates. This type of system is quite often used in water sensitive areas such as electrical equipment rooms and computer suites.

There are other variations. Elaborations upon the basic types are a matter for the sprinkler system designer in consultation with his clients and their insurers, or with the authority having jurisdiction (AHJ).



What System to Choose?

From the early days of standardisation in the design of sprinkler installations in the UK, an understanding of the hazards to be protected by a system has been a principal factor influencing system choice and design.

The most commonly used rules/standard to design, service and maintain automatic sprinkler system in the UK is the LPC Rules For Automatic Sprinkler Installations (LPC = Loss Prevention Council). The core National/European standard used to produce these rules is BS EN 12845. This BS EN is the European Standard on system design and installation, service and maintenance published for the UK by the British Standards Institution. The LPC Rules, published by the Fire Protection Association, enjoy the support and endorsement of the insurance industry, specifiers, government departments and sprinkler system installers. The LPC Rules are a combination of BS EN 12845 and UK insurers Technical Bulletins. Other design rules are also used in the UK but less frequently than LPC Rules i.e. NFPA Rules (National Fire Protection Association), FM Rules (Factory Mutual Global). Some end users may have their own in-house sprinkler rules usually based on one of the above standards with their own specific variations.

LPC Rules

Premises which have been assessed and are deemed to have more hazardous conditions would require a system to deliver:

- (a) a higher density of water discharge (in terms of mm depth of water over a given floor area per minute),
- (b) over a longer time period and, possibly,
- (c) over a greater assumed area of operation (the area of an anticipated fire based on how hazardous the product or process is in the premises).

To achieve these objectives the designer would calculate the need to:

- (d) reduce the area protected by each individual sprinkler head,
- (e) specify the use of sprinkler heads with an increased orifice size,
- (f) increase the capacity of stored water supplies and/or the output of the pumps driving the water through the system, and
- (g) increase the pressure/flow requirements of the pipework.

Each of these considerations (e) to (g), in that simple example, will have a bearing on other aspects of the system which the designer needs to plan to protect the risk in question. The conditions prevailing in the premises to be protected will influence the designer's choice of type of system.

Download the BIF here:
<https://bit.ly/3d6RZUc>



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LPS 1048 Cert/LPCB ref. ASC-116

A tale of two schools

Irreplaceable losses

SUNDAY 25TH AUGUST 2019 was a day that will remain in the memory of many people in Dunfermline and have a lasting effect on them and their families. At 1705hrs Scottish Fire and Rescue were called to a fire in Woodmill Secondary School in Dunfermline, the rapidly spreading fire would require the attendance of fifteen fire appliances to bring it under control. There was significant damage to the building which required the relocation of 1400 pupils to other schools and temporary accommodation.

The school also housed a Department of Additional Needs, this unit was absolutely essential for pupils with special needs both physical and mental, the requirements for these pupils were not so easy to accommodate elsewhere both in terms of travel, special equipment and special access requirements.

The local council also highlighted an additional accommodation problem, there had recently been a lot of new built housing in Dunfermline, this had impacted on the ability of the nearby schools to accommodate the 1400 displaced pupils.

Within nine days Fife Council announced plans to build a new £150m educational campus to replace Woodmill and two other facilities, unfortunately the new campus will not be ready until 2024.

In January, part of the old school was reopened using refurbished classrooms and temporary classrooms and it was hoped that many of the pupils would have been able to return to the site by Easter. Sadly, due to the COVID-19 pandemic all schools in Scotland were closed as from the 18th March as was all construction therefore delaying the temporary accommodation and the new campus.

The effect on the pupils and parents was devastating, one mother who had two children with special needs attending the school described the impact the fire had on them.

She said, "The past year has taken its toll and caring for them at home without the school had been immensely stressful." Talking about her 11 year old daughter, she added her daughter was worried about making the transition from P7 to S1 during lockdown, academically she's doing alright but socially it's destroying her. "My son's special needs mean he is very anxious as well as highly tactile so he may have to stay at home for another year."

As is often the case with school fires, the damage is more than just structural, the trauma for pupils and teachers can be extensive, the loss of materials and memories are irreplaceable together with the social networks which are broken due to relocation in different areas.

Following the fire, a fourteen-year-old boy was charged with wilful fire raising.

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An exemplar school

St Nicholas' Primary School has been delivered in partnership with hub West Scotland and East Dunbartonshire Council. The new School in Bearsden has enabled the co-location of two former schools, St Andrews Primary School and St Joseph's Primary School. Designed for 450 students, the 3008m² building includes 17 flexible and open classrooms, a 316m² hall, outdoor learning areas as well as play areas and a 3G synthetic pitch. The new school was designed and constructed by hub West Scotland Supply Chain members Holmes Miller Architects and Morgan Sindall Construction.

The design of this exemplar school has seen fire sprinklers installed throughout the two-storey building, in-line with Scottish Building Standards for non-domestic buildings. The building is protected by a total of 409 sprinkler heads, with the exception of the plant, boiler and biomass rooms which feature early detection systems. The sprinklers are concealed in ceiling voids and the entire system is fed by a water storage tank and electric fire pump which is located in the school's service yard.

Designed to meet the Ordinary Hazard Group 1 (OH1) classification within BS 12845:2004, the sprinkler system has a discharge density of 5mm/min/m² over a maximum area of operation of 72m² for 30 minutes duration.

The automatic sprinkler system will protect this school, both in terms of life and also property. By preventing large fires, sprinklers also protect the environment by avoiding CO₂ emissions, reducing excess water use by the fire brigade and eliminating water supply contamination. In the event of a fire, many schools with sprinkler systems find they are back up-and-running in a matter of hours, so the sprinkler system will maintain the school's continuity and allow students to return to normality far more rapidly and with considerably less disruption to teachers' already hectic schedules. Schools are also vitally important to the community for events, meetings and activities. These can also continue with minimal interruption.

All new built schools in Scotland since 2010 have required to have automatic fire sprinklers fitted, unfortunately Woodmill was built long before this standard came in.

For a new £10 million primary school close to Glasgow, the installation of an automatic sprinkler system will protect both the occupants and the building as well as significantly reduce the potential disruption to the students' school life in a fire event.

Home Office figures show there have been 1900 fires in educational establishments over the past three years. The impact of these fires both financially and in terms of disruption to students, teachers, families and the community can be devastating. The Association of British Insurers says the most expensive school fires typically cost around £2.8 million to address, and over the past four years an average of 24 of these large-loss fires have occurred every year, totalling £67.2 million.

Currently, sprinklers are mandatory in new school buildings in Scotland and Wales, but not in England and Northern Ireland. The government is currently reviewing Building Bulletin 100 (BB100) and both the BSA and BAFSA wants the government to explicitly maintain and enhance the "sprinkler expectation" in the revised BB100 so that fewer schools are damaged and destroyed by fire. Better still, the Government should make property protection a consideration for the fire safety Building Regulations in order to effectively protect all buildings of significant social and/or economic value from fire.

Fire can have a lasting and devastating impact on both schools and communities and must be avoided. The installation of sprinklers at St Nicholas' Primary School could limit the damage from fire, significantly reducing the potential disruption to the students' school life.

*Thank you to the Business Sprinkler Alliance (BSA)
for the St Nicholas school case study.*

In a footnote to the positive actions of installing sprinklers in all new built schools in Scotland. Following the loss of a primary school in the Highlands due to fire and because the school was built prior to the requirement to install sprinklers. David Stewart MSP has called for retrospective fitting of sprinklers into existing schools. David said, "Sprinkler systems are mandatory in schools built since 2010 and while they are not the only answer to preventing fire deaths, I believe there is a strong case for them being installed in all schools."

Mr Stewart continued "The environment is changing where sprinklers in schools will become the norm, rather than the exception, however the retrofitting of these systems in our schools will require additional funding from the Scottish Government and I will continue to make the case for that."



Beware of the Lions



IAN GOUGH, TECHNICAL ADVISER, BAFSA

The Dangerous Wild Animals Act 1976 and a Fire Safety Inspection

One of the consequences of staying in lockdown for the past few weeks has for me been the discovery of Facebook. This is all because he was sent a copy of a 1976 newspaper cutting that had been spotted on the West Midlands Fire Service Pensioners Facebook page. Amusingly, a photograph that accompanied the fading text revealed,

alongside half a dozen other firemen at a fire station in the Black Country, me aged 23.

Consequently, having joined the group, I've enjoyed meeting up online with people from my early years in the fire service, sharing old photographs and swapping funny stories and happy memories.

As one would expect, many of the posts relate to major blazes and other incidents both large and small; together with anecdotes

about colourful characters - many of whom are sadly no longer with us. But, unusually, one recent story features a fire safety inspection initiated by new legislation that had been introduced just as I began to specialise in fire safety work.

A career in fire safety begins

In the summer of 1977 I was posted away from my operational post at Cradley Heath to

the fire safety department that covered the Metropolitan Boroughs of Sandwell and Dudley.

The 'D' Division Fire Prevention Department, as it was then known, was headquartered at Dudley in the West Midlands and just around the corner from Dudley Zoo. On arrival and after my welcoming pep talk I was told I'd be working under the watchful eye of Station Officer Glyn Evans and advised to take onboard everything he told me. This was good advice.

Older readers may remember Glyn because, some years later as senior advisor to the Fire Brigades Union on fire safety matters, Glyn was a staunch advocate for sprinklers and a good friend to what was then BASA. Indeed, through his influence with the Blair Government he helped to bring about changes such as the 2,000m² limit on compartment sizes for single storey retail premises unless they are protected by sprinklers.

So I had an excellent tutor and while gaining experience of inspecting premises and dealing with members of the public, I began to learn about different fire safety legislation, codes of practice and a hundred and one other things expected of a fire safety officer.

One unusual piece of legislation I soon became aware of, sought to regulate the keeping of dangerous wild animals.

The Dangerous Wild Animals Act 1976

During the late 1960s and early 1970s an increasing trade in species of dangerous carnivores emerged with lion, tiger, leopard and puma cubs being widely advertised for sale to the general public. Indeed, a fashion appeared to develop for the keeping of large exotic pets as some of the more flamboyant members of society, such as the recently deceased Marquis of Bath (who inherited Longleat in 1992); and John Aspinall, the famous Mayfair club owner and one time friend to Lord Lucan, took to owning animals such as lions and tigers.

Not to be outdone, a colourful character from Cradley Heath in the West Midlands chose to join in with this and, inadvertently, helped to focus Parliament's attention on this growing trend.

As a consequence, with understandable concern being shared by the British Veterinary Association, the Zoological Society of London, the press, some politicians and, increasingly, members of the public - a "Bill to regulate the keeping of certain kinds of dangerous wild animals" was presented to Parliament in December 1975.

Swiftly gaining Royal Assent in July 1976, The Dangerous Wild Animals Act 1976 consequently came into force on 22nd October that year and owners of 'scheduled'

animals were allowed a period of 3 months to apply for licenses from their local councils.

Lewis Foley, The Lion Man of Cradley Heath

A man of great physical strength with a penchant for publicity, Lewis Foley was a successful businessman in the construction and scrap metal industries. He was apparently a very generous man, was very well known within the community and considered locally to be a 'likeable rogue'.

In July 1975 he was first spotted by a police constable in Cradley Heath's High Street, parked outside the Midlands Electricity Board shop, with a lion cub sitting on the back seat of his vehicle.

The same policeman spoke to Foley again in November of that year when it was reported that a lion was in a motor vehicle and, due to one of the side windows being slightly open, was putting its paw out, touching unwary pedestrians and distracting traffic.

For this second brush with the local constabulary Foley was arrested and taken to court where he was joined in the dock by his 'lion tamer', a man dressed in a long, blonde wig, a spangled shirt, riding breeches and who carried a whip. A reporter said it was like something out of a Monty Python sketch.

His conviction at Smethwick Magistrates' Court for 'breach of the peace' having been found with a lion in his car and heading off to Birmingham allegedly "to see the sights" certainly raised more than a few eyebrows both locally and nationally. And in the House of Commons debate, during progress of the Bill on dangerous wild animals, this case was cited as an example of why legislation was urgently needed.

However, with no legislation to stop him, by now a second lion was acquired to keep the first one company and both were kept in a substantial cage behind Foley's somewhat modest detached house with its painted sign 'Beware of the Lions' affixed to the front gate.

A Regulated Activity

Parliamentary debates about the Dangerous Wild Animals Act make it clear that, from the outset, the legislation was intended only to regulate the keeping of certain kinds of animals (e.g. large cats, wolves, bears etc) and so control would be exercised via a process of licensing rather than any outright prohibition. Furthermore, local councils would be responsible for processing applications, inspections and enforcement.

Today, the Act is usually the responsibility of the Environmental Health Officers or Trading Standards Teams; however, in the very early days some authorities also sought advice from the fire service - similar to many other forms of 'regulated' activity.

It came as no surprise therefore for Sandwell Council to contact our fire safety team and seek a fire officer's report on the fire hazards and risks present at Lewis Foley's house.

Licensing Inspection

Having received the request to inspect the premises, a young officer was duly instructed to "Pop down to Foley's in Cradley Heath, take a look and draft a report". Of course, this was in the days well before such things as 'method statements' were written prior to embarking on any form of task - dangerous or not.

The officer, in full compliance with his instructions, duly arrived at Foley's front door and was greeted by the larger than life character of Lewis Foley who welcomed him in. Being seated comfortably on a large sofa before going outside to inspect the animals' cage, the visiting inspector was offered a mug of tea and relaxed. However, as the tea arrived, a fully grown male lion casually sauntered in via an open back door and, tilting its head slightly, gave the inspector a quizzical look. Of course, having assumed that the animals were happily inside their secure accommodation this came as something of a surprise. "Don't worry mate he won't hurt you", was Foley's reaction as if some over friendly golden retriever had just entered the room.

Fortunately, the means of escape from the premises were more than adequate.

Moreover, 'the means for securing that the means of escape can be safely and effectively used at all material times' (as required by the Fire Precautions act 1971) also proved sound as the lion was strongly tethered by a large steel chain. A 'premises satisfactory' report was subsequently returned to the Council; no doubt adding further to their frustration in being unable to easily get rid of the lions.

Epilogue

It is considered that the Act has been largely successful in protecting the public from extremely dangerous wild animals.

Indeed, a review of the legislation in 2001 revealed that, since it came into force, only 10 local authorities have successfully prosecuted people for keeping such creatures without a licence (apparently one of the reasons being that whereas in the 1970s, large carnivores were widely available from zoos and safari parks, the Secretary of State's Standards of Modern Zoo Practice prevent animals being transferred to private owners except in special circumstances). More important perhaps is the fact there seems to have few if any injuries caused by such beasts.

Lewis Foley eventually parted company with his pets and local folklore has it that he released the animals on the Malvern Hills although there's scant evidence to prove this. He died in 2009.

And this fire officer went on to enjoy a varied and interesting career.



Send three and fourpence, we're going to a dance



RITCHIE O'CONNELL, BAFSA REPRESENTATIVE IN WALES

"THE FIRE ALARM guy says he's done loads of these and this is over the top" So many of my conversations these days seem to start like this.

Generally they occur after I have written a fire strategy for a care home, sheltered accommodation, or similar. It isn't always the fire alarm guy – substitute as applicable – sprinkler fella, dry riser lady, fire door guru, bloke down the pub, my mate's brother ("he used to be in the fire service!") ...

Many people will be familiar with the old allegory where the order "send reinforcements, we're going to advance" becomes, after transmission through a number of phone/radio operators, becomes "send three and fourpence, we're going to a dance".

This cautionary tale often comes back to me when I speak to contractors

regarding their queries/concerns over their particular deliverable.

The fire strategy is essentially the fire safety blueprint for how a building, its management, and occupants, will perform in a fire. The strategy should consider what is required for Building Regulations compliance, the evacuation strategy, how the building will be managed and maintained (with the strategy forming part of the Regulation 38 package informing the fire safety management), and also the characteristics of the prospective occupants.

Quite often though the fire strategy is never provided to the sub-contractor, instead they will receive a request to tender for the provision of their particular element of that strategy. Often the request has been filtered through several intermediary companies, each of whom are often working to a fixed price

and will have already queried with myself and/or the client whether any element of the strategy could be a lower specification, quite commonly the conversation will be along the lines of "couldn't we go for a category 1 sprinkler system instead?" (The answer to which is always NO, unless the occupant characteristics or building layout have changed!) so during the transmission via the, sometimes nuanced, filters of the various contractors 'send reinforcements' becomes 'send three and fourpence!'

I am not suggesting that people should not query what is asked for in the strategy - of course they should, over specifying wastes money both in terms of installation and maintenance costs, and often times it doesn't make the premises any safer to any meaningful degree.

What concerns me is that the fire strategy, even in these post Grenfell times, is still treated as a tick box exercise, and is not widely shared with the people who are, after all, installing life safety systems!

When I query their (alleged) comments with the sub-contractor, they are often surprised to find that the rationale for the higher specification is to account for the vulnerability/inability to escape unaided of the intended occupants because they didn't know the details, or they didn't say it at all and it's just a final bite of the cherry for someone who wants to lower the specification to save a few bob.

Risk assessment is built into many of the standards which apply to fire safety provisions, with a major consideration being the vulnerability of occupants (e.g. BS 9251 and BS EN 16925) and the ability of the resident to escape from a fire occurring in their own flat e.g. BS 5839:6:2019 when discussing the provision of the correct level of coverage states "For example, a Category LD1 system needs to be provided in sheltered housing flats and if the occupants have an impairment or disability that could delay their escape from fire." So, perhaps naively I always expect the person installing the system in question to have some cognisance of that fact, I am often disappointed.

On one memorable occasion whilst carrying out a snagging visit and being concerned about the placement of some(all) of the smoke detector heads, I queried with the 'engineer' what standard he was installing to? he replied, "a really good standard-we get a lot of repeat business" The site foreman who was accompanying me agreed saying "they are good there is never any mess after them".

The installers had never heard of the British Standard but were able to buy smoke detectors and cabling and were competent electricians, so the system would have been well fitted (in terms of electrical connections etc) but would have been poorly designed and may therefore have been missing some detectors, and of those they did fit although the detectors were working their location meant that they would not be actuated soon enough in the event of a fire. The sprinkler industry would do well to avoid similar circumstances.

Similarly on finding a brand new fire door installed with 25mm door stop instead of smoke seals and intumescent strips (on a different project), I raised this with the carpenter, who was in his very early twenties about this, who sagely informed me "I fit them to the old standard see, I'm old school, belt and braces!" When I (politely?) pointed out that the "old standard" went out about 12 years before he was born and his oversized door stop wasn't as good as properly fitted strips and seals, he reverted to "I've fitted thousands of these and no ones ever said anything before"

In both the examples above, rather than be pleased that I had found out that the sub-contractors were not doing their jobs correctly, I had to argue with the site managers to get the work rectified.

I am pleased to report that I seldom encounter this with sprinkler installers, and I attribute this largely to BAFSA's stance on third party accreditation. Where I have on occasion come across some "Butch and Sundance" type characters they have been swiftly replaced with reputable companies.

Fire strategies should not be a tick box exercise, they should inform every part of the build process and should be communicated to all of those who are installing fire safety provisions be they active or passive.

As an industry we should never shy away from querying the strategy, particularly when we feel that the specification may be too low, in order to get to that point every training course which touches on fire safety should include input on fire strategies and their purpose. They should also form part of the ongoing management of the buildings and should therefore be included in courses such as facilities management.

Whilst we would all in the current situation probably like to go to a dance (or the cinema, or the pub) as part of the fire sector we really need to advance!

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Fat boy climbs the mountain

THE FAT BOY IN THE TITLE IS DANNY DOHERTY, BAFSA'S REPRESENTATIVE IN SCOTLAND WHO TOOK ON THE CHALLENGE OF SCALING THE WORLD'S HIGHEST FREE STANDING MOUNTAIN...

ALCOHOL IS A terrible thing. Have you been there? ... When you've opened your big mouth and signed up for something in a drunken state? Then once it has been verbalised the genie is out of the bottle and there is no going back. Foolish pride just doesn't allow it, as its completely against the grain. So, there we have it, in a drunken state of bravado I've signed up to climb Mount Kilimanjaro, the highest freestanding mountain in the world. Thousands have done it so what is the big deal!

The peak of the mountain stands at 19,341 feet above sea level which when said quickly isn't too bad. Some of you reading this may already have stood at the top of Kilimanjaro

and can beam haughtily over your previous achievement. I just wish we had spoken before I opened my big mouth.

So, that is how I found myself signed up to climb this mountain with two of my ex fire service colleagues, one of whom is probably one of the fittest guys I have ever met. The other is a fan of the great outdoors, which is definitely not my strong suit, unless of course it involves a wee white ball and a golf course. Hill walking, mountain climbing, or camping is not my idea of fun. And at this juncture it is worth noting that since retirement from the service, keeping fit or indeed anything strenuous has not been top of my priority list.

Rather, good food and nice wine interspersed with the 'occasional' gin has taken over the focus in my keep fit regime. I now understand why the helpful young lady in the outdoors shop nearly choked when she sold me my new walking boots. When making polite conversation, she politely asked 'why the new purchase?' Her face said it all, I won't be going back. But now I'm committed! I've put a Just Giving page up and money is flooding in for Maggie's Cancer Centres. I cannot bail out now, although I am convinced that they are only pledging cash because I won't make it!

So, the perception is that if 'Fit Boy' or 'Bear Grylls' doesn't make it up the mountain

then everyone will think that is a real shame and must be due to the horrors of the altitude sickness. Whereas if I don't make it to the top people believe it is only because I'm a fat boy and was never going to make it anyway. My training regime for this involved a walk up a wee hill with my new boots on, and 3 x 30-minute sessions on the revolving stepper in the gym while on holiday which kept me off the gin, oh and a couple of laps of the living room, just for good measure.

The flight from Glasgow via Amsterdam to Kilimanjaro was pleasant enough so all good so far. I have never been to Africa so wasn't quite sure what to expect. But after the mad scrimmage at this tiny airport when we arrived, we were picked up and taken to our hotel on the site of a former coffee plantation. Enough credit cannot be given to the driver for getting us there. In the pitch dark he negotiated 'roads' the like of which you have never seen. These roads were a puzzle of two-foot deep pot holes. None of us would have taken this track as a road and would have refused to go down it, even with your fancy SUVs. They were dreadful but yet, he never batted an eyelid.

We had a couple of days in the hotel where we met the rest of our group, acclimatised and rested up before the climb. My prep was to have as much alcohol as possible since it would be my last for a while, no point in changing my training regime at this late stage. Then off we went limited to a 15 kg rucksack for the porter to carry daily for you, and a backpack to keep you going through the day. Now I was 15 years old last time I camped. I am a guy who likes the finer things in life like a bed and a shower and a toilet. Things I would dream of fondly and regularly over the next seven days.

The journey to the base camp for the Lemoshu route, which we were attempting, was very humbling. The roads were lined with hundreds of young men with absolutely no work. Just hanging around marking time and



wasting the day away. It is difficult to describe and as much as you cannot make direct comparisons, these lads could be as happy as Larry for all I know, it certainly makes you put things into perspective and makes you aware of how lucky we are. Seeing the area in daylight makes you understand why the hotel has so many security staff patrolling through the night.

Base camp for me was another humbling experience as a long line of porters lined up to be allocated their workload for the next week, limited to 20kg each porter to ensure that as many as possible got work. You must admire the way that the National Park at least tries to generate as much work as possible for the locals but even when the loads have been allocated there is still a massive queue of people waiting for the next party to arrive.

So off we go, just like that, 10 of us with our guide leading us off setting the pace. All to the cries of 'Polle Polle' or slowly slowly. That was the chant as the slower you walk the greater the chance your body has to acclimatise to the altitude.

We are all busy people, me included and I will confess I didn't do much in the way of research into the trip, rather I relied on the

enthusiasm of the gruesome twosome. I paid my money punctually and when instructed I bought the required equipment. But all the research in the world could not have prepared me for my accommodation on the first night. Basic in the extreme. The food however was fantastic. How the cook prepared such great tasting meals over the trip with such basic utensils was mind boggling. Not a food processor or Actifry in sight.

To put things in perspective, I was born and raised on a housing estate in Glasgow, at times it was the battle of the fittest. I joined the fire service at 19. By age 20 I had received 8 stitches in my eye, a metal plate and screws to hold my leg back together, broken ribs and a stainless steel screw in my right foot. All thanks to the Service. I have seen some horrible sights that still keep me awake some nights, I have feared for my life a few times. I thought I was the toughest kid on the block! However, nothing was as scary as that first night lying in a tent, in the blackest of darkness listening to the animal sounds all around.

Huge animals by the sound of it, monster animals with huge teeth, just waiting to drag me off and eat me. I know they are hungry and been waiting all day for their 'city boy' dinner; I can hear it in their howl. And then of course I need to pee! Of course I do, I'm a man of a certain age, but this is no sleepy eyed barefoot plod across the bedroom carpet, it is boots on and a 100 yard trek through the jungle to the 'portapotty' in the pitch black. Trying to avoid the obstacle course of guy lines, tents and vegetation. Even before I've encountered the gorillas, lions, hyenas etc just loitering around waiting for me to venture out. I genuinely contemplated peeing the bed and then swapping sleeping bags with my tent mate 'fit boy' when he wasn't looking. But I manned up, put on the head torch and headed out to my near certain death, I was absolutely terrified. I confess I never made it to the potty tent, I very rarely ever did. I was never so glad to get to the confines of my sleeping bag and be lulled back to sleep with the bodily noises of my tent mate.

Day 2 was very similar to the rest of the trip. We rose early, washed in a basin of water got on our boots and walked. The route we took was one of the longest, but the benefit is, the time you have to acclimatise. You climb so many thousand feet per day and then descend back down, allowing your body to adjust. I understand the science of 'trek high, sleep low' but it was soul destroying knowing that the first part of the following day was retracing your steps. This took serious mental stamina.

But the entire climb called upon mental strength far more than the physical. The altitude sickness creeps up on you. Starting with a dull ache in your head and getting gradually worse. Every step becomes more and more difficult. So much so it actually proved too difficult to walk and chew a sweet at the



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same time, ridiculous as that seems. My heart rate was constantly racing and the simplest of tasks took real determination. It was no wonder the sight of helicopters flying people off the mountain was not uncommon.

The group dynamics were great. Ann, Bill, Steve, Tash and Leigh from Australia; Ritchie from Taiwan; Laura from Paraguay and myself, Paul (fit boy) and Jim from Scotland. It was a great mix of cultures and there was never a shortage of chat. All good humoured. Apart from the day that one of the group was suffering seriously from acute mountain sickness. He could hardly stand, couldn't eat, extremely painful headaches and so I went to help him. Literally holding him up one step at a time.

This was nothing to do with a fire service background, this was just humanitarian. He was out on his feet. At this point the head guide stepped in and would not let me help him. His logic was that if he couldn't make it up under his own steam then he couldn't continue. He became a liability and that wasn't allowed. This went completely against the grain of the service guys, and if I'm honest I never had the same connection with the head guide again. Having said that, for the

next three miles all I could think of was if he has to go back down the mountain then I'll get to use his tent for myself for the rest of the trip! Ashamed as I was at these thoughts, I found out later that night I wasn't the only one daydreaming of a night without company.

The Porters were fantastic. They could not do enough for us. There was me with every conceivable gadget, head to toe in Gore-tex whilst these guys and girls ran past us carrying our gear with the soles falling off their hand me down trainers. Needless to say we all came home with lighter rucksacks than we went with.

Summit day has almost been cleared from my memory. Well at least the start of it. It began at midnight to make the long slow meandering climb to Uhuru peak. The night is lit by the procession of head torches making their way up the ridges. The goal: to get there and witness sunrise over Africa. It was extremely tough, tougher than anything I had ever done, it called upon all of my mental strength. The slightest of things was irritating beyond reason, but you knew it was the altitude playing games with you.

But team work got us there, everyone was there for each other. Everyone pulled together

to help the group reach the top. And we did. Every one of us, albeit two of the group have no recollection of getting there and if it wasn't for the pictures at the summit, they wouldn't have known they had been there. One guy became blind in one eye due to the altitude, but he recovered fully on the descent. And the icing was that I had to help 'fit boy' for the last 500 yards to the top.

To see the sunrise appear over Africa was spectacular to say the least. It was highly emotional and certainly brought a tear all of our eyes. The three of us toasted our good health at the top of the mountain with a wee dram. My Hamilton Accies jersey was photographed and made it into the match day programme. I even got a new African supporter. We raised thousands of pounds for Maggie's Cancer by climbing Kilimanjaro. I would recommend it as an adventure, it is hugely rewarding and the freedom of no phone calls, internet or email is extremely liberating. Our Crew there would be delighted to see you they need it for their economy. God alone knows how they are coping just now in this current crisis. It was a wonderful experience but not to be done twice, or certainly not by me!!



After the horse has bolted



KEITH MACGILLIVRAY, BAFSA'S CHIEF EXECUTIVE SHARES HIS MEMORIES OF THE DAY OF BRADFORD CITY FOOTBALL STADIUM FIRE. AND REFLECTS THAT, AS HAS ALWAYS BEEN THE CASE, ACTION IS TAKEN AFTER THESE DISASTERS TO PREVENT THEM OCCURRING AGAIN, 'STABLE DOOR' LEGISLATION AS WE WOULD LIKE TO CALL IT.

ON SATURDAY 11TH MAY 1985, I stood on the terracing of a sunny Starks Park in Kirkcaldy watching a very poor Raith Rovers side get soundly defeated by Montrose 3-1, not the result that the home team would have wanted for the final game of the season in which they finished in seventh place in the then Scottish Third Division.

However, my reason for the timeline was not for what happened on the field in Scotland but for the disaster that claimed fifty-six lives in Bradford that

afternoon. Shortly after half time in Scotland the commentator at the Raith Rovers match announced that there appeared to be a major fire in one of the stands at the Valley Parade ground in Bradford.

As was the trend in those days, many supporters carried transistor radios to listen in to other games and results across the country, this being prior to the widespread use of mobile phones. Many at the game listened in disbelief to the commentary that was broadcast live from Valley Parade. Later the

country watched in horror as news broadcasts of the disaster were replayed. The rapidity of the fire spread was incredible to all who viewed the footage.

As a Fire Prevention Officer in Strathclyde Fire Brigade at the time, I had never seen fire move so quickly through an occupied structure.

The day was one of celebration initially for the Bradford City fans, they were to play Lincoln City in the final match of the season and before the kick-off the team would be presented with the League Championship Trophy having succeeded in being promoted to the Third Division. After the presentation of the trophy by the League President the game kicked-off and approaching half-time the score was 0-0. At 3.40pm smoke was seen issuing from the spectator area of the main stand and within four minutes flames were rapidly spreading across the stand and evacuation of the stand had started. Many supporters used the vomitory stairs down into the area below the stand, others spilled out onto the pitch, the referee was alerted to the situation by his linesman and immediately stopped the match. Many fans were seen cheering as the situation developed, however very quickly it was realised that this was an extremely serious situation. Watching the footage, it can be seen that many spectators sustained serious burns while making their escape, Police Officers and spectators can be seen trying to extinguish the clothing on people that had caught fire.

By the time the fire was extinguished, 56 people had died and more than 250 were injured. Last week as it has for the last thirty-four years, a memorial service was held for



Image: Michael715 / Shutterstock.com

the victims and relatives of those who perished in the fire, however due to the current Pandemic the service was a virtual online memorial service.

On my return to work on the Monday following the disaster, I like all my Fire Prevention Officer colleagues were sent out to all the sports grounds throughout Glasgow to inspect their stands. I was based at Parkhead Fire Station and was used to carrying out regular inspections at Celtic Park, which was close by, what did surprise me was the number of sporting venues with timber stands which myself and my colleagues had never visited!

It was very quickly made clear to the owners of these other venues that major work was going to be required in order to make them safe for use, in a number of cases these wooden stands never reopened again for business.

The Bradford City Stadium fire was one of very few fires that occurred in occupied football stadia throughout the world and fortunately lessons were learned very quickly. Previous disasters in football stadia had almost always involved stand or barrier collapses and on occasions crowd trouble. Later the same month in 1985, another football tragedy took place in the Heysel Stadium in Brussels where trouble broke out between Liverpool and Juventus fans resulting in thirty-nine deaths and almost six hundred injuries.

As has always been the case, action is taken after these disasters to prevent them occurring again, stable door legislation as we would like to call it. Although there had not been any major fires in football stadia prior to Bradford there had been many other incidents which had caused large numbers of deaths including:

Rangers FC, Glasgow 2nd January 1971: 66 Deaths and 200 Injuries following a barrier collapse on stairway 13 just after the final whistle of a Rangers v Celtic match.

Rangers FC, Glasgow 2nd January 1969: 24 injured on Stairway 13 during a Rangers v Celtic match.

Rangers FC, Glasgow 16th September 1961: 2 Deaths occurred when a barrier broke on Stairway 13

Rangers FC, Glasgow 5th April 1902: 25 Deaths and 500 Injured following a stand collapse during a Scotland v England international match.

Bolton Wanderers, Bolton 9th March 1946: 33 Deaths and 400 Injured following a crowd crush.

Hillsborough, Sheffield, 15th April 1989: 96 Deaths and 766 Injured by a large-scale crowd crush during a FA Cup semi-final between Liverpool and Nottingham Forest.

Following both the Bradford City Fire and the Hillsborough disaster, public inquiries were held into both incidents by Mr Justice Popplewell and Lord Justice Taylor respectively.

The outcomes of both inquiries had a far-reaching impact on sports grounds in the UK, both in terms of fixed safety precautions and crowd safety. The Green Guide to Safety at Sports Grounds was rewritten and new licensing rules came into play for the grounds. As a result, our stadia in the UK are much safer for those attending events. Ironically some of the precautions and safety measures introduced over thirty years ago, such as the removal of standing terracing have been reinstated recently albeit in a limited format. Recent newly built stadiums have included the installation of automatic fire sprinklers, such as Tottenham Hotspur's White Hart Lane £800m stadium. Again, it is disappointing that we require such disasters to improve on our safety measures. With the third anniversary of the Grenfell Tower fire rapidly approaching, again the Government seem to be dragging their feet in implementing many of the required safety measures with a number of high rise blocks still requiring removal of defective cladding.

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Learning Outcomes

WHAT DOES THE SFJ IQ Level 2 Certificate in Fire Sprinkler Installation qualification cover? A question that BAFSA is repeatedly asked and one which Ruth Oliver, BAFSA's Skills & Qualification adviser now addresses...

A written learning or skills outcome (qualification) has three sections:



What the learner will be able to do, and in what context and how they will do it.

- Learning outcomes have single action verb for each outcome and do not use vague terms such as 'know about, be familiar with, be aware of. These cover such a broad range of meaning that they are useless.
- Learning outcomes are written in short sentences to maintain clarity.

A number of short sentences is much clearer rather than a long complex sentence.

- Learning outcomes are observable and measurable.
- Learning outcomes describe observable behaviours and actions, invisible activity may well be vitally important but we can only assess how the invisible becomes, or impacts on, observable actions.

Irrespective of the style of learning ie block release, day release, short course, EWR etc all learning outcomes must be achieved.

There is a table which contains all of the learning outcomes for the 7 modules comprising the SFJ IQ Level 2 Certificate in Fire Sprinkler Installation.

In this issue we focus on:

Learning Outcome – The learner will :

this clearly states what the learner will be able to do at the end of the module.

There are 2 further columns:

Assessment Criteria - The learner can: this identifies what the learner can do to achieve the objective of the learning ie the first column.

And a third column:

Indicative Contents which provides an indication of the unit content to be covered during learning and so achieve the above.

This table is illustrated in its entirety on the BAFSA website: <https://bit.ly/2WSgdfd>

BAFSA is often asked what the learning outcomes are for those individuals who partake in the IQ L2 certificate in Sprinkler Installation.

RUTH OLIVER, BAFSA SKILLS & QUALIFICATIONS ADVISER

Communicate effectively with others in the workplace D/600/63221.

1. Understand how to communicate with others in the workplace
2. Understand how to record and pass on information
3. Be able to communicate with others in the workplace
4. Be able to record and pass on information

Establish Effective Working Relationships J/601/9694

1. Be able to communicate effectively
2. Be able to establish and maintain positive working relationship
3. Be able to understand relevant organisational procedures for communication and behaviour
4. Be able to provide relevant functional and technical information to the relevant person
5. Understand how to communicate effectively
6. Know about establishing positive working relationships
7. Know about relevant organisational procedures for communication and behaviour
8. Know how to provide relevant functional and technical information to the relevant person(s)

Manage own resources - T/507/3224

1. Understand how to manage own resources
2. Understand how to create and use personal development plans
3. Manage own resources
4. Create and use a personal development plan



Health and Safety in the Workplace - A/505/1483

1. Understand roles and responsibilities for health, safety and welfare in the workplace.
2. Understand how risk assessments contribute to health and safety.
3. Understand how to identify and control the risks from common workplace hazards.
4. Know the procedures for responding to accidents and incidents in the workplace.

Awareness of Regulations in the Fire Sprinkler Industry - A/507/3225

1. Understand legislation and standards in the Fire Sprinkler Industry
2. Be able to apply organisational compliance, policies and procedures with the Fire Sprinkler Industry
3. Understand organisational procedures for dealing with noncompliance within the Fire Sprinkler Industry

Fire sprinkler installation and hand-over - F/507/3226

1. Be able to conduct pre installation checks
2. Be able to prepare work environment for installation of sprinkler system
3. Be able to install pipework and associated components
4. Be able to identify faults after installation
5. Be able to understand limits of responsibility and authority to deal with problems within own role
6. Be able to complete handover procedure for completion of work

Understanding the Fire Sprinkler Industry - J/507/3227

1. Understand the aims and purposes of the Fire Sprinkler Industry
2. Understand the importance of development in Fire Sprinkler Industry
3. Understand the elements of the Fire Sprinkler Industry

European Fire Sprinkler Network

CURRENTLY ALL CONFERENCES and international meetings are cancelled. Despite that, writes Alan Brinson EFSN's Executive Director, the EFSN remains active, contributing to ongoing technical forums in many countries, working on standards and preparing for a time when it will be possible to move around again.

In October I wrote that the Irish consultation on permitting open-plan flats with sprinklers had closed. A revision to Technical Guidance Document B has now been published and includes this option. When a similar approach was published in BS 9991 in 2011 it led to many more flats being fitted with sprinklers in England. We hope that the same will apply in Ireland.

In France there is much discussion on whether and how to permit construction with wood. This is currently not allowed but President Macron has publicly called for wood to be used more widely because it is a renewable material. The French fire service and insurers are insisting that wooden buildings be sprinklered, while the timber industry is only agreeing to sprinklers if the top floor is above 28 m. British experience with unsprinklered timber-framed buildings has shown they are vulnerable to disproportionate damage from fire, only narrowly escaping a major tragedy in one case.

The 2024 Olympic athletes' village is to be built from wood. Will the US delegation agree to stay in an eight-storey, unsprinklered wooden building? Also in France Philippe Moineau, a former Fire Chief friendly to sprinklers, has been appointed to lead the 'Notre Dame' national commission to develop fire safety guidance for cultural heritage buildings.

Dutch fire safety regulations do not call for sprinklers at all but severely limit compartment sizes, typically to 1,000 m². Equivalent solutions are permitted on a case by case basis, forming the basis for much of the Dutch sprinkler industry. We are seeking to codify them. Based on research funded by the sprinkler industry, a few years ago the authorities agreed to relaxations in passive fire protection with sprinklers, and more recently to extended travel distances. We are now looking to codify other incentives, starting with buildings higher than 20m.

In October I wrote that we were looking for someone to lead our campaigns in Spain and Portugal. I am delighted that Alfredo Álvarez has taken on this role. He worked in the UK fire protection industry for many years, mainly in detection. Latterly he has been in Spain, where he has excellent contacts among regulators, fire authorities and other key stakeholders.

Finally, a quick update on standards. Amendment 1 of EN 12845:2015 has been published. This amendment changed the requirement for an annual inspection to be conducted by a third party to one by a qualified person. We added an informative annex to suggest who might be qualified to conduct the inspection; in effect it recommends that it be a third party. Europe does not have guidance for the installation of sprinkler systems in seismic areas. The draft CEN Technical Report has been upgraded to a Technical Specification, passed the comment stage and is set to go for formal vote.

EN 12259-14, the component standard for residential sprinklers, has been published, replacing BS 9252. prEN 12259-12, the pump component standard, is being prepared for a second enquiry. It is referenced in prEN 17451, the pump set installation standard, which will begin comment review once the comments for prEN 12259-12 have been addressed.

Given that the European Commission has stopped citing harmonised standards in the Official Journal, we decided to draft a non-harmonised standard for ESFR sprinklers, reasoning that it is better to have a European standard, even if it cannot be used for CE-marking.

Water mist standards are progressing, with test protocols for industrial oil cookers and machinery spaces published and more applications expected soon. In parallel the design and installation standard is out for formal vote. The UK has objected, claiming the standards are rushed.

Our civil servants are working out future arrangements for CE-marking once the Brexit transition period is over. There will be a British equivalent to the CE-mark but it is not clear whether the government will see it as an alternative or insist that it be placed on all products currently carrying the CE-mark. I have recommended it be seen as an alternative.

Meanwhile the European Commission has published a paper describing options to revise the Construction Products Regulation, the legislation behind CE-marking of construction products. It has invited manufacturers and other stakeholders to comment.

Fire Sprinkler International will now be held on 28th & 29th April 2021, in the Beurs van Berlage, a former corn exchange in the heart of Amsterdam.

eurosprinkler.org.uk



28th & 29th
April 2021

Fire Sprinkler
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Record numbers turn out for seminar

Around 200 delegates from the building and design industries in the region and beyond attended a one-day business seminar on Providing a fire resilient environment for all. It was held at The Burgess Hall in St Ives.

Organised by BAFSA in collaboration with, and hosted by, Cambridgeshire Fire and Rescue Service, the event focused on raising awareness of the life-saving benefits sprinkler and suppression systems can provide to communities.

During the seminar, presenters spoke about the challenges faced by the fire and rescue service in higher risk buildings, protecting vulnerable people, local authority approaches to protecting buildings from fire and case studies sharing lessons learnt. There was also suppliers on hand to answer any questions about what's on the market, and demonstrate the latest technology.

Group Commander Dave Lynch, Head of Fire Protection for Cambridgeshire Fire and Rescue Service commented:

"We were delighted to welcome so many delegates to the event. It's great to see so many people seeing the benefits of sprinklers and how they can protect their business and help us reduce risk within our communities.

"This year we are launching a new sprinkler strategy in Cambridgeshire. We see sprinklers as an integral part of fire protection, not just in commercial premises but also in the home. We are working with developers and the local authority to ensure that sprinklers are considered right at the early stages of developments to ensure that the safety of residents is at the forefront."

The event was supported by BAFSA members: IPS Flow Systems, FloWatch, Rapidrop and SureFire.

From the sprinkler head

A ROUND-UP OF NEWS FROM BAFSA & ITS MEMBERS

Safe water for vulnerable communities



The corporate citizenship programme of global water technology company Xylem Inc. – Xylem Watermark is supporting UNICEF's COVID-19 relief efforts. The partnership will provide access to safe water and sanitation for vulnerable children and families. Xylem's COVID-19 contribution will be directed to the most at-risk communities, providing critical supplies and supporting UNICEF's community health programmes and youth engagement initiatives. UNICEF's COVID-19 water, sanitation and hygiene (WASH) response

targets at-risk, low-capacity countries to secure WASH services and Infection Prevention and Control (IPC) in health facilities, schools, households and community settings.

"The role of water in family and community health is fundamental, and has only become more important during this pandemic," said Patrick Decker, Xylem's president and chief executive officer. "And as communities come together to help each other, we feel privileged to work with partners like UNICEF to bring them some extra help."

Improved Air Maintenance Device

SEP have several different models of air maintenance device, all designed to allow the fine control of air pressure from compressors complete with air receiver but the Standard air maintenance device has been re-designed and incorporates some improvements...

- Tighter configuration – overall dimensions just (approx) 450x270mm
- Removal of superfluous valve on 'maintenance' side
- Better orientation of Y-strainer

Stewart comes a cropper

Stewart Kidd, BAFSA's former Secretary General had an unfortunate accident when undertaking a power station survey in Kogi State, Nigeria. He fell badly and broke his right arm, fracturing both the radius and ulna at the elbow. On his return to the UK three days later he was admitted to hospital and had extensive surgery to pin and plate the fractures, acquiring a small Meccano set in his arm. We are pleased to report that he is making an excellent recovery.

From the sprinkler head

A ROUND-UP OF NEWS FROM BAFSA & ITS MEMBERS

Protecting the tallest building in Europe

The Lakhta Centre in St Petersburg is the northernmost skyscraper in the world and the tallest building in Europe. It has nine-storey tall media screens on its unique, ventilated facades, a planetarium hovering over the atrium of the courtyard, a theatre hall with 494 seats that can be converted from an amphitheatre to a ballroom and panoramic viewing decks under the tower spire.

Fire protection for such a complex building had to be planned with technologies that are modern, effective, reliable and convenient to install and operate and Marioff's HI-FOG® high-pressure water mist fire suppression systems were chosen by the designers at the early stage of the project. These systems suppression efficiency are as reliable as traditional sprinkler systems based on Marioff fire tests, but consume less water, which is an important advantage for the design of complex engineering systems, especially for buildings of such an impressive scale as The Lakhta Centre.

Both the fire suppression system and manual handgun water mist system are HI-FOG systems.

The project was extraordinary, and there are few fire suppression projects of this scale



in the world. It included four pump stations, 355 kilometres of high-pressure pipelines and 57,000 sprinklers.

Major contract secured

Thameside Fire have landed a major retrofit contract in South London.

Engineers will provide residential sprinklers to 204 Apartments complete with water supply in three existing tower blocks in Lewisham Park Towers. The company's sprinkler division is increasingly called upon to ensure new and existing developments are fire-safe.

Window protection sprinklers

Reliable have introduced the Model WP Series Window Protection Sprinklers which is used with fixed glazed assemblies to create a cULus Listed alternative to a fire-rated wall. The Model WP Series is a 5.6K (80 metric) Fast Response Specific Application Pendant Vertical Sidewall Sprinkler that is listed to provide complete wetting of various glass surfaces. "We're excited about this product introduction," commented Paul Sasser, Reliable's Vice President of Engineering. "We were able to achieve an industry-leading Listing of 12 ft (3.7 m) spacing and 15 gpm (57 l/min) minimum flow per sprinkler. That means fewer drops, fewer sprinklers, and less time installing."

Think & take action

With the increased numbers of people at home during the day because of COVID-19, London Fire Brigade has issued a warning of the potential for more fires as people adapt their daily routines and others are in isolation, and calling for people to think, take action and avoid becoming a further casualty for the NHS.

Firefighters are usually called to a larger number of domestic fires between 1800 and 2000 and there has traditionally been an increase in cooking fires during the weekend when people are at home for longer periods of time.

However, in 2020 there has been an increase in weekday fires and fires earlier in the day so firefighters are warning that

common causes of fires in the home such as cooking, smoking, electrical items and heating sources could become even more prevalent as people are spending more time indoors than usual.

The Brigade's Assistant Commissioner for Fire Safety, Dan Daly, said: "It's absolutely vital that in these uncertain and unprecedented times people don't forget about basic fire safety in the home.

"This is about keeping you and your loved ones safe and we must all do what we can to not inadvertently add pressure to our already challenged NHS.

"There are such simple things we can all do to ensure we are keeping safe while we are all spending more time at home. The first thing

you can do is test that your smoke alarms are working."

As people who don't usually work from home set up temporary offices, there is a risk of an increase in electrical fires. Hazards include overloading plug sockets, using counterfeit or incorrect chargers for tablets, laptops and mobile phones and "daisy-chaining" – plugging multiple extension leads together or plugging many multi-socket adaptors into a single socket.

Assistant Commissioner Daly added: "This is all about basic fire safety awareness and the checks we are advising will take just a few minutes to carry out to keep you and your family safe."

From the sprinkler head

A ROUND-UP OF NEWS FROM BAFSA & ITS MEMBERS

New challenges require new thinking



William Makant, the co-founder and chief executive officer of Plumis, one of BAFSA'S newest members shares his thoughts.

Sprinklers are without doubt an amazing invention. Despite refinements, their basic design has remained fundamentally unchanged since 1882, which is testament to the brilliance of Grinnell's original design.

However, the challenges presented to us around fire safety are changing as a result of how we live and how long we live. For example, whilst fires caused by smoking have declined, fires relating to electrical items and white goods have increased.

An ageing population on the other hand requires us to integrate more sophisticated and flexible fire protection solutions. A change in context requires a rethink of what is fit for purpose. This is especially true when considering that the people most at risk of death in domestic fires are the most vulnerable groups in our society; the elderly, disabled and those who are unable to escape easily from a fire.

Typically, sprinklers control the spread of a fire and in some cases, extinguish it completely. They can prevent fire damage and spread to adjacent areas, however, sprinklers can struggle with slow activation times for fires with a slow growth rate and provide limited benefit for smoke control.

To tackle the smoke or toxic gas from fire, the main cause of death reported from

domestic fires, our pre-engineered watermist suppression system – has been designed to ensure tenability in the room of fire origin, reducing heat and smoke, and giving vulnerable occupants more time to escape or be rescued.

Traditional frangible bulb sprinklers require ceiling temperatures to be high before activating, by which time a large volume of smoke and toxic gases may have built up. Automist Smartscan has been designed to activate at the earliest possible opportunity. Connected to a combined smoke and heat detector, its intelligent spray heads feature an infrared sensor and start scanning for a fire as soon as the alarm is raised. The system uses an intelligent algorithm and a double knock trigger to ensure it activates only when several conditions are met.

Unlike other existing watermist suppression systems, our spray heads are mounted lower down on the wall, rather than on the ceiling. Utilising the natural turbulence a fire produces, this means that watermist is entrained into the seat of the fire, helping to suppress it as quickly as possible.

In addition to a system that raises the alarm at the earliest opportunity, limits the build-up of smoke and heat to maintain tenable conditions, we also wanted to address the challenges faced by individual homeowners and landlords who require a flexible system that is quick, easy and cost-

effective to install. As Automist Smartscan is connected to the domestic water supply it can be retrofitted on a flat-by-flat basis.

Our journey has not been without its own challenges though! We have rigorously tested our system, which is installed in more than 10,000 properties and has already saved lives. Although we know how well it performs, the current certification and Standards system makes it difficult for innovators like us to get the third-party verification needed for specifiers to be confident of a product's performance and reliability.

Regulation to ensure the safety of buildings has rightly been under scrutiny since the Grenfell Tower tragedy. Forthcoming reforms to the building safety regulatory system are likely to implement all the recommendations made by Dame Hackitt in her independent review of Building Regulations and Fire Safety, including placing greater accountability on those responsible for building safety.

Whilst changing the regulatory framework – and encouraging greater accountability – will improve safety, it will also create an environment that encourages innovations because it will demand thorough due diligence and verification that the solution is fit for purpose, which will ultimately improve performance and safety standards.

We appreciate that the burden of evidence lies with the innovators and are keen for our system – and future innovations – to be tested as rigorously as possible, but there is a need for an available and accepted route to achieve this. We hope that as an industry, we can begin exploring ways to robustly test and validate new ideas.

As my father worked for Tyco (Mather & Platt) sprinklers for 30 years, it's in my blood, and after all, we are all just trying to improve safety to protect lives and property. As William Pollard once said: "Learning and innovation go hand in hand. The arrogance of success is to think that what you did yesterday will be sufficient for tomorrow."

We are delighted to be members of BAFSA and look forward to working with the organisation and other members to improve fire safety.

From the sprinkler head

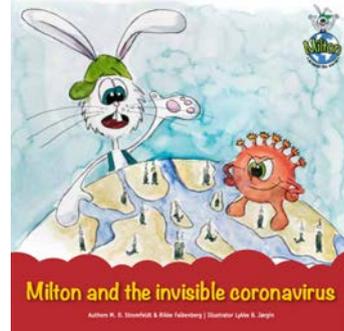
A ROUND-UP OF NEWS FROM BAFSA & ITS MEMBERS

Book sponsorship

Grundfos have sponsored a book aimed at teaching 5-8 year old about coronavirus.

The book, "Milton and the Invisible Coronavirus" is about a rabbit, Milton, who is extra fond of his cozy cave during this time. After all, everyone must stay home most of the time. "There is an infectious virus right now that is affecting many people around the world," he explains.

The publication is supported by Grundfos funds and published by Milton Around The World, and is already being used in the Danish primary school's smallest classes. The purpose of the book and its associated teaching material is in an educational and non-frightening way to explain to children what coronavirus is and why we should be careful about hygiene and contact with others and how and why we should look out for each other. Of course, with rabbit Milton taking centre stage as a fun-loving character.



Hi! My name is Milton and I'm a curious forest rabbit who loves to go on adventures around the world.

I've visited lots of lovely children in different countries. I have a magical world map. When I dive head-first into the map, I can go wherever I want.

I live in a cave in the enchanted forest with my two best friends, Amanda and Conard.



Amanda is a butterfly. She's always in a good mood and her smile fills her entire face. Amanda loves the warmth and sun of summer, and all the games we play outside. When Amanda gets excited, her wings begin to buzz.

Conard is a very wise hedgehog, who always takes good care of Amanda and me. Conard is very careful. He always thinks things through very carefully. Conard reads a lot of books, and when he is eager to learn something new, the tip of his snout starts to vibrate.

Blue chip service & maintenance contract

Another service and maintenance renewal with Hilton Hotels for a 5 year term has been confirmed by A&F Sprinklers Ltd.

Amongst strong competition, Hilton Hotels chose to renew with A&F Sprinklers for their leading and innovative efficiencies, bespoke system reporting packages tailored to suit the client along with a

pro-active approach to routine service and maintenance of which has been developed by A&F investing in its own in-house capabilities.

During the process the company has extended its scope and has developed cloud-based maintenance operations software to suit the client and all of their needs.

Residential flow-switch testing at the flick of a switch.

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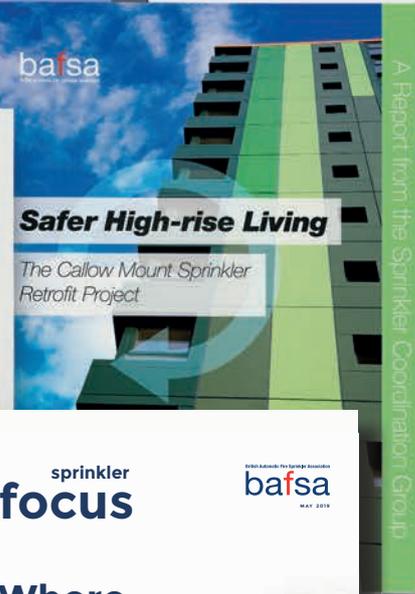
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Technical queries & resolutions

The BAFSA technical support team, Ian Gough and Joe McCafferty, are ever ready to respond to questions and queries which come through the BAFSA website.

Some queries are from BAFSA members, but the majority come from Fire Consultants, M+E companies, FM companies, small domestic sprinkler companies, landlords, developers and house builders.

When the query is about a current contract where a sprinkler system is being installed the advice is usually discuss the problem with the installer so a solution can be agreed.

The BAFSA team always try and avoid getting caught in the middle of contractual issues as these are best resolved by both parties concerned. They will of course give an opinion on interpretation of sprinkler

rules but in the end of the day it's down to the installer and his/her client along with any AHJ's to have the final decision on the best solution.

If you have a question or seek advice regarding automatic water-based fire suppression systems, please email the team: ian.gough@bafsa.org.uk or 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/

? Do the pumps have to be listed/approved or can any pump, valves etc be installed in R+D sprinkler systems? Who should install the pumps and associated equipment?

RESOLUTION

BS 9251 does not specifically state that the sprinkler pump must have any third-party accreditation or approved. It only states that the pump/s must be suitable for use in a sprinkler system (and the same reference to suitability for pipe, fittings, and valves etc.).

The criteria for SUITABILITY are 'sketchy' but is listed in BS 9251 Para. 5.9.1 a) to l).

BS 9251 Para. 3.9 describes a competent person for sprinkler installation work. BS 9251 Para. 6.1.1 states that the system should be installed by a competent person, It is my opinion that only a competent sprinkler installer and a competent qualified electrician (both of whom can issue compliance certificates) are used for the supply, installation and commissioning of the pump and its associated equipment.

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

RESOLUTION

I think 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 Paras paragraphs 2.4.1 and 3.3.14 you will find some guidance on fire protection of Nitrogen Cylinder Storage.

? We want to put together a specification for maintenance of a sprinkler system to comply with LPC Rules TB 203. Are there any advice/documents you can provide to assist with this? Do you have details of capable sprinkler maintenance companies in our locality?

RESOLUTION

You can find a list of BAFSA member companies who undertake sprinkler system maintenance on our website bafsa.org.uk. Most BAFSA member companies operate nationwide and will have sub-offices throughout the UK so you should be able to find one near you. You only have to tell your chosen sprinkler maintenance company that their specification must comply with TB 203, They will do a survey and they provide a unique and comprehensive listing of what needs servicing and when on the premises.

? What type of backflow prevention do I need on a sprinkler water storage tank?

RESOLUTION

Go to these links on the WRAS website for further information and how to arrange acceptable backflow prevention.
wras.co.uk/resources/glossary/backflow_prevention_arrangements/
wras.co.uk/resources/glossary/backflow_prevention_devices/
wras.co.uk/downloads/public_area/publications/general/ign/ign9-04-04-cisterns-issue2.pdf/

Also have a look at the WRAS air gap calculation tool at: wras.co.uk/resources/tools/air_gap_calculator/

? We are a mechanical/electrical contractor and a client has asked us to do some work on their sprinkler system i.e. drain down, modify pipes, and move a few sprinkler heads and reinstate the system. While I feel we are well capable of doing the work I am concerned about the legal aspect of working on a fire protection/life safety system. Can you advise please?

Note: a similar question was received for work on underground sprinkler pump delivery mains

RESOLUTION

Most sprinklers systems will have a Certificate of Conformity issued by the installing firm on completion and handover. LPCB Guidance

Document GN3-5 states: the continued validity of LPS 1048 Certificate of Conformity is wholly dependent on the sprinkler installation/water supply/extension and alteration being maintained and serviced by an LPCB Certified or Registered Sprinkler installer with 'servicing' included in its ISO9000 scope.

BS EN 12845 UK Sprinkler Rules states: only trained and experienced personnel should undertake design and maintenance of sprinkler systems.

I strongly advise that any repairs/maintenance is carried out by a third-party accredited sprinkler installer. This will ensure that any certificates retain their validity. You need to have an installer who knows sprinkler systems so they can setup the system for correct operation when any repair works is completed. The insurer may also have an opinion on this repair work as they must be advised when a sprinkler system is not operational.

You can do work on the sprinkler system but considering the above advice you could unnecessarily expose yourself and your company to legal action should anything not work as designed later. The work done could invalidate any warranties/guarantees given by the system installer or the current system maintenance contractor.

You can find a list of third-party accredited installers on our home page : bafsa.org.uk

? 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. We would appreciate your advice on how we should proceed.

RESOLUTION

I 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 the 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 home page : 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.

RESOLUTION

LPC Technical Bulletins are effective from the date they are issued, or a date specified in TB and are not retrospective. The 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.

My opinion would be that 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.

? Do designers and installers of dry risers need to be a member of BAFSA or not. If not how are levels of competence audited? In addition, I am interested to know whether or not there is a mandatory link for products installed in a dry riser system to be LPCB approved or not or if this is only something products manufacturers do voluntarily.

RESOLUTION

Companies who install and maintain dry risers do not have to be BAFSA members but for reliability and reassurance that the work is done correctly to standards you should seriously consider using BAFSA members as they will have all the third party accreditations and are audited regularly. You can find a list of our member companies on our homepage bafsa.org.uk

All BAFSA member companies would be considered as employing competent persons as required in BS 999. It classifies a competent person as: A person, suitably trained and qualified by knowledge and practical experience, and provided with the necessary instructions, to enable the required task(s)

to be carried out correctly. It also states that: The services of a competent person should be obtained to carry out maintenance and repairs.

Non BAFSA installers may or may not have third party accreditation. If they do not, they might not be considered competent, by an AHJ or in accordance with BS 9990.

As for materials used for dry risers BS 9990 states that Materials for Fire mains and associated pipework and fittings should be of suitable heavy quality steel to meet the pressure, robustness and durability requirements of the system in question, including galvanising where necessary.

BS 9990 does not specifically mention approved materials, but it is most likely that BAFSA installer members would use LPCB or equivalent approved materials as it guarantees the robustness and durability mentioned in BS 9990.

? Do you have any information on the life expectancy of EN 10255 heavy weight steel pipe used for a commercial sprinkler installation.

RESOLUTION

The life expectancy of a sprinkler system depends on many factors.

Atmospheric conditions such as damp, heat, corrosive fumes, salt in air, can have a degrading effect on the external surfaces of steel pipe. External corrosion protection like paint/galvanizing can delay the effects. Water quality, hardness, cleanliness, acidity, trapped air in damp 'dry' pipe systems, air pockets in 'wet' pipe systems, MIC can have a degrading effect on the inside of the steel pipes.

In these cases, the effects can be reduced by ensuring the cleanliness of the supply water, adding corrosion inhibitors to reduce corrosive effects. You can see from the above there are a lot of factors than can influence the life expectancy of the sprinkler system pipework and yes 'heavy' quality pipe will last longer. The most important factor in the life expectancy of any sprinkler system is regular maintenance by accredited and experienced contractors. This will ensure that the regular (3,6,12 etc months) servicing/inspections 'catch' any deterioration at an early stage and it can be rectified.

The sprinkler rules (BS EN 12845/LPC RULES) have requirements for maintenance of systems over 25 years old that include pipe internal inspection and metal thickness testing if necessary. It also includes a requirement to have the sprinkler heads tested to ensure they still meet the operational requirements they are expected to perform.

? Our sprinkler maintenance company has told us that the use of a 'flexible sprinkler drop pipe' to connect the jockey pump is wrong. Is this true and is there some standard that states it incorrect?

RESOLUTION

Flexible connections as you describe are only intended to be connected between a single sprinkler and its supply pipe. They are not intended for any other purpose in a sprinkler system. It states this clearly in LPC Rules TB 227.1.4.2 f).

? Do flexible sprinkler drop pipes have to be supported?

RESOLUTION

All means of fixing the flexible pipe MUST be as approved by the manufacturer.

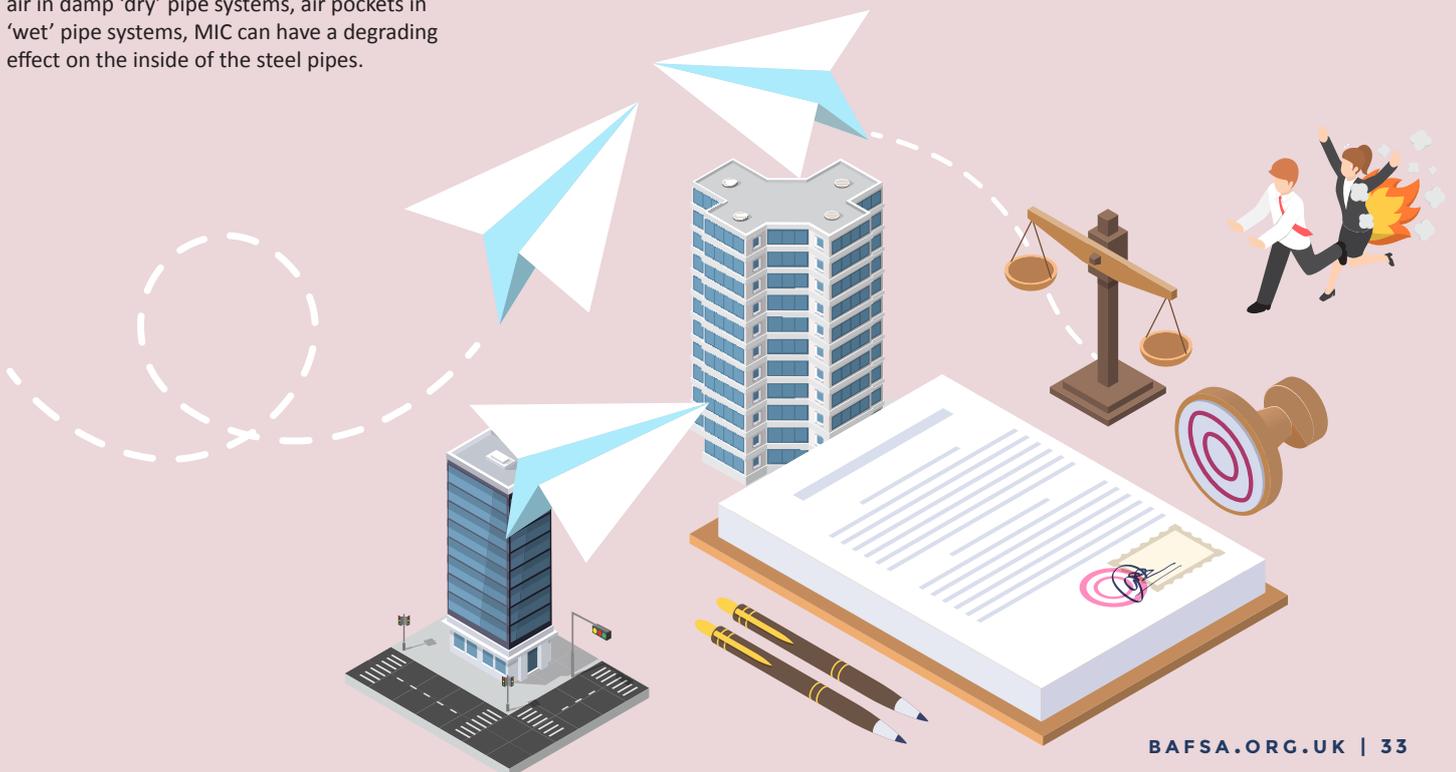
BS 9251 Sprinkler design standard states: Supports should prevent the pipe from being dislodged. Supports should be secured in accordance with the manufacturer's instructions.

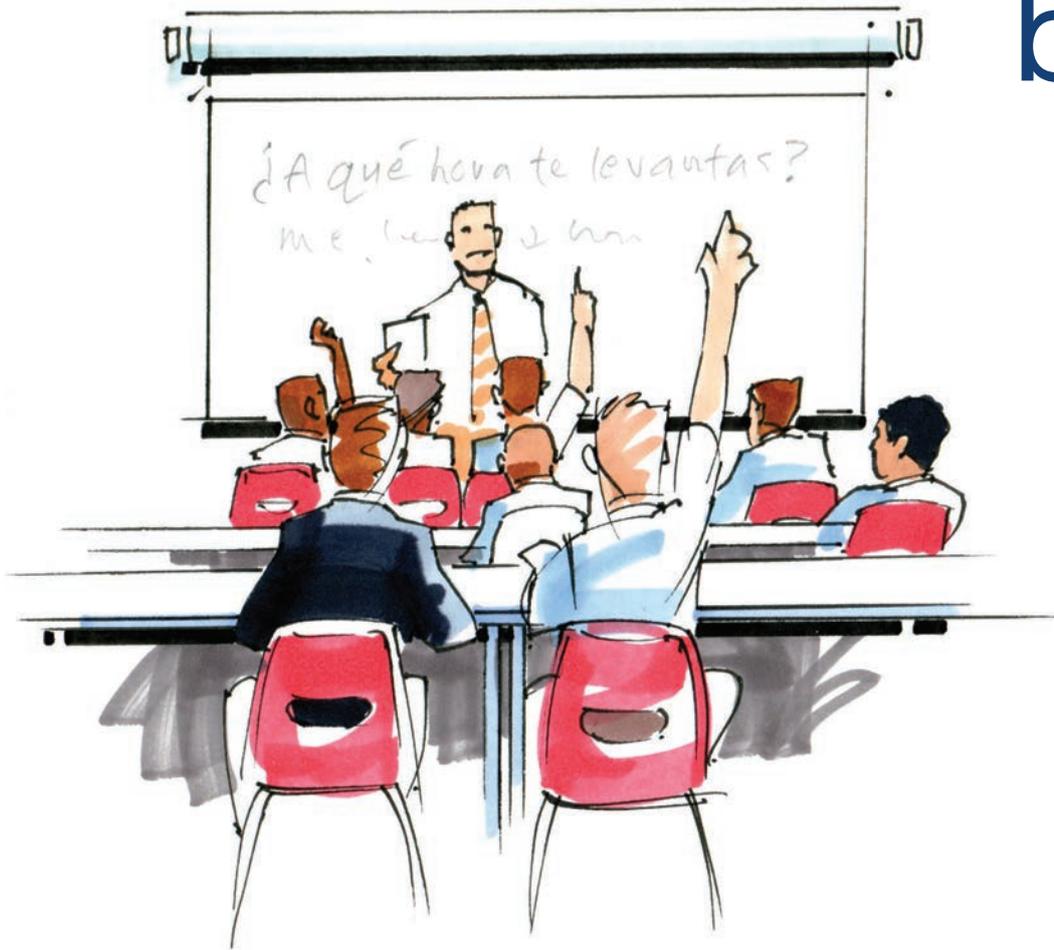
? One of our site team has asked if CPVC pipe is acceptable for use in a domestic sprinkler systems and fillers be used to seal a CPVC pipe passing through a wall?

RESOLUTION

There are a few CPVC pipe and fittings suppliers who have had their products approved in the UK by The Loss Prevention Certification Board (LPCB) scheme LPS 1260. Products approved to this scheme are suitable for use in domestic sprinkler systems. If you go to the CPVC manufacturer's website, you can find a list of acceptable 'filler materials' for wall penetrations. Any mastic or filler must be compatible with the CPVC pipe you are using, and ideally make use of the product recommended by the manufacturer. If you follow their recommendations all should be satisfactory.

Note: Apply caution when pipes pass through walls that may have sharp metal edges.





**We try to protect
children from danger,
sprinklers will protect
them from fire**

**FIRE KILLS
SPRINKLERS KILL FIRES**

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