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**Automatic Fire Sprinkler
Yearbook 2017/2018**

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Neil Beck

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Contents

Foreword	9
Looking back – moving forward : having been in post as the BAFSA Chief Executive for almost twelve months, it is an ideal time for Keith MacGillivray to look at where BAFSA is going and what is already being achieved	10
Skills and development : a vision for the 21st Century	14
Schools : we have much work to do to ensure that we protect not just the safety of children but the continued viability of our education buildings through the use of sprinklers to protect against fire	20
Mobility scooters : the issue of fire safety	24
350 years on : learning lessons from the Great Fire of London	27
Sprinkler Saves : protecting people and firefighters, property and the environment	30
Fire suppression in historic buildings : legislation compliance	34
All-Party Parliamentary Fire, Rescue & Safety Group – APPFRSG	40
Business Sprinkler Alliance – BSA	44
Fire Protection Association – FPA	48
Standards Updates	52
Hydraulic formulae information : sprinkler system design	58
Sprinkler Saves	65

BAFSA People 2016	79
Scotland	82
Technical queries and the Technical committee	84
Wales	86
BAFSA Information Files (BIFS)	90
BAFSA publications	106
BAFSA memberships	110
List of BAFSA members	114



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Henderson Insurance	2
Hydrotech	113
Influx Measurements	51
JEM	37
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Potter	7
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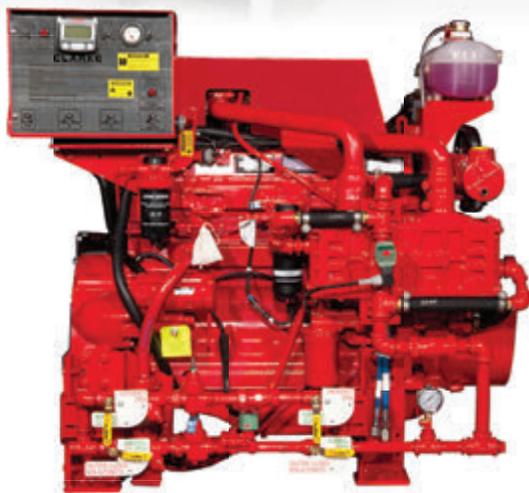
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Foreword

I WOULD LIKE to welcome you to the latest edition to the “blue book” (the Automatic Fire Sprinkler Yearbook from BAFSA) .

This is our seventh edition, and from the feedback we have received, it is very much in demand. It is also another great opportunity to reach out to the wider world and provide a broader perspective of BAFSA and its members.

Since our last edition in November 2015, we have seen a change at the helm at BAFSA with a new Chairman and Chief Executive; streamlining to make the association more efficient; reduction in the number of meetings; better means of communication; and more efficient use of our support team, and very importantly, a welcome increase in membership.

Looking ahead, we will have a new and improved web site, which will provide better facilities for all of our members, and more effective and efficient ways to engage with to our members and a wider audience.

The Wales legislation was passed and came into force early this year. This was a milestone and a great achievement. In Scotland progress continues to be made in more changes to the building regulations and a bigger focus on sprinklers. We continue to make England a major focus where progress lags behind the devolved regions, but we are confident that this will change in the future if everyone joins in the message that “fire sprinklers save lives and property”

BAFSA continues to be involved with other interested parties in making the government aware of the importance of fitting automatic fire sprinklers in all buildings specifically, at the time of writing, sprinkler in schools in England, when there was a suggestion that the current guidance should be relaxed. It would be a terrible shame if we were to go backwards, considering the progress previously made and with the background that arson attacks are still happening in schools.

We continue to work along with other interested parties such as the BSA, FPA, NFSN, EFSN, BRE, and are striking up new alliances, as we move forward.

Since the last blue book was published its interesting to note the number of sprinklers being installed has increased significantly. A large part of this increase has been in the residential and domestic sector. While we expect this trend to continue, there is still much work to be done in getting more sprinklers installed in other properties such as warehousing.

But as I close Its good to note that the association is in great shape to take on the future, We are very thankful to our members, and support team. But we need to continue to be mindful that 24/7/365 sprinklers are our guardians against fire, and have been for over 100 years. Let’s continue to spread that message.

John McCann, Chairman BAFSA

Looking back – moving forward : having been in post as the BAFSA Chief Executive for almost twelve months, it is an ideal time for Keith MacGillivray to look at where BAFSA is going and what is already being achieved

WHAT DO I bring to the post of Chief Executive of BAFSA? Firstly, I bring a real passion for automatic fire sprinklers. Not a passion based on the technical aspects of our product, but a passion gained through my previous experience as a firefighter and seeing what can happen if you don't have automatic fire sprinklers installed.

Having a fire in your home, factory, school, care home or student hall of residence is a life changing experience and sadly, for some people, it will be the last life changing experience they will have.

The experience of having a fire is not something many people would wish to repeat a second time and given the opportunity they would like to prevent this experience recurring.

Sadly for many people the opportunity to install this excellent fast water protection device is not within their gift.

Their landlord; council; housing association; government; or owner controls the installation of automatic fire sprinklers and may not see the full benefit through the same eyes as the resident; firefighter; employee; teacher; student; pupil; or parent.

BAFSA members have made it very clear that they would wish the BAFSA Team and I to lobby for the installation of more sprinklers in premises that pose the greatest risk both to the occupants, firefighters, business and the environment.

Over the past 3 years, we have been campaigning to have the threshold size of warehouses where sprinklers are required reduced to a lower level.

We have worked with many partners to reverse the decision to remove automatic fire sprinklers from schools following a surprise review of document BB 100 this summer.

It has been noticed that following many years of gradual decline in the fire fatality figures in the UK, that this figure has started to rise again. It is clear that a smoke detector is not sufficient to prevent many of these deaths; indeed for many vulnerable people the sound of the smoke detector is a death knell.

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Again we are campaigning to have automatic fire sprinklers installed in the homes of vulnerable people and will continue with this theme throughout 2017.

However, it would be wrong to say that all Governments are treating the rising fire losses with complacency. The Welsh Government have shown the world the way forward by enacting legislation requiring automatic fire sprinklers in many of the 'at risk' premises. In particular, all new built houses in Wales this year are required to have automatic fire sprinklers fitted and despite the outcry of house builders in the lead up to the legislation taking force, the house building market has continued to thrive in Wales.

The membership of BAFSA has continued to grow this year with over twenty new members joining us. I hope that many of these new members will play an active part in developing the organisation.

The new BAFSA office is well established in Aberfeldy and our registered office is now in Peterborough. These moves and the greater use of electronic invoicing and communication will enable BAFSA to achieve some financial savings in the future.

Looking to the future, next year will see us launch a new website which will give members access to webinars and a technical forum, in addition more materials will be available in the members only area. The public part of the site will provide greater information both to the public and potential members. Following our member consultation exercise, it was clear that the majority would not welcome advertising on the website, therefore we will have an advert free website.

We will continue to update and publish new BIFs; this year we have updated seven. Again from our 2016 survey it was clear that members would wish us to continue to supply the public and other interested parties with our materials without charge.

This has been a very successful year for our education and skills programmes, we now have three colleges delivering the Level 2 Installers Course, it is anticipated that a fourth provider will join us in 2017. We are also in the early stages of developing a Level 3 Sprinkler Design Course. In order that we can continue to provide these courses we require the support of all our members by providing students to undertake the studies. It is also pleasing to see that the cost of the courses in England has been substantially reduced by the provision of some government funding to the colleges.

Our focus next year will continue to be Warehouses and Vulnerable People; in addition we will run seminars focussing on Sleeping Risks : hospitals and healthcare premises, residential homes, sheltered housing, student accommodation; Multi Occupancy High Rise : commercial, retail, hotels and private residences; Heritage Properties : covered markets, country houses and piers.

I aim to increase the amount of partnership working we do with like-minded organisations together with increasing our membership numbers. A number of new members have been recommended by our existing members, if you are aware of companies that would benefit from joining BAFSA please let me know and I will happily explain to them the benefits of being part of our excellent association.

Thank you to the BAFSA Team for all their hard work and support throughout the year and most of all, thank you to the members of BAFSA and to the wider fire community, all of whom are working towards protecting people and firefighters, property and the environment from the destructive forces of fire.

Keith MacGillivray MBE MA BSc : Chief Executive BAFSA

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Skills and development : a vision for the 21st Century

THE FIRE PROTECTION sector is a dynamic sector with frequent changes in technology and legislation. It is a sector in which it is safety critical to set standards that reflect best practice and methods which adapt to growth in business opportunities. We all need to constantly consider the need to equip and provide the right skills and training for individuals and organisations directly involved in the various sub sectors across the whole industry.

Since the fire sprinkler evolved into a mass-market product in the late nineteenth century, it has delivered many benefits. Fire sprinkler systems have saved lives, quelled countless fires, boosted economic growth, increased flexibility of building design and given firefighters that bit of deserved relief. No wonder people look to the fire sprinkler as ‘the firefighter in every room’, which is changing the way modern buildings are constructed and used.

But the fire sprinkler industry, as with many other industries, brings with it many challenges.

One such challenge for the future is an ageing workforce. An ageing workforce means people retiring from the industry, taking their skills, knowledge and vast experience with them. With little or no widespread and industry led focus on the development of skills and qualifications there is an urgent need to attract a new generation of young people into all areas of industry including installation, design, project management and maintenance. In doing so we will be ensuring that the workforce remains fit for purpose and ready for the challenges ahead.

BAFSA has already established that there is a shortage of young people within our industry and therefore focus is needed now to ensure the industry raises its profile to encourage and show those looking for job opportunities that the Fire Sprinkler Industry is a career to look forward to with clear career pathways offering potential recruits a glimpse of the diverse range of opportunities within the industry.

Qualification and training development are at the forefront of BAFSA activities so that our continued promotion of the benefits of fire sprinklers is not wasted. Developing a Qualification Strategy for the sprinkler industry has been essential to ensure that we offer opportunities that will lead us to have a fit for purpose workforce equipped for the 21st century and who are able to meet the challenges and business development opportunities ahead. BAFSA’s Skills and Qualification Strategy outlines the vision for the future of qualifications and learning in the fire sprinkler installation sector and is based on research and employer consultation and will drive the development of vocational qualifications, ensuring demand-led development of installer qualifications across all four UK nations.

In 2011, BAFSA instigated the development of the first National Occupational Standards for the Mechanical Fire Sector (NOS), a freely available management tool providing statements of competence for individuals working within the sector. The standards, available from the

BAFSA website, developed with industry representatives clearly state what is required of a worker in terms of performance and knowledge and provide the building blocks for the future development of national qualifications.

In October 2013, the National Assembly for Wales passed new regulations that require a fire sprinkler system to be installed in new and converted houses and flats. In support of this regulation BAFSA in partnership with Neath Port Talbot College Group, developed an 'Award in the Installation of Automatic Fire Sprinklers'. The Award, signposted to the above National Occupational Standards, delivers a qualification for the Active Fire Industry and, over a four day period, introduces qualified and experienced plumbers to the practical skills and knowledge required for installing automatic Fire Sprinkler systems in domestic dwellings. This year has seen a second college, Llandrillo College offer the Award.

In recognition of the relatively unstructured approach to training within the fire industry as a whole, and following the development of the above mentioned National Occupational Standards, BAFSA invested significant funding and, over a two year period worked with an Awarding Organisation (IQ) and two colleges, Neath Port Talbot College Group and The Manchester College, to oversee the successful development and delivery of a competency based industry qualification mapped against the existing industry standards:

- IQ Level 2 Certificate in Fire Sprinkler Installation (QCF)

This qualification, with no formal entry requirements, is intended for new recruits, and those who have recently joined the industry who work in installing fire sprinklers to develop the knowledge and competencies necessary to meet the industry standards for the installation role. To achieve the IQ Level 2 Certificate in Fire Sprinkler Installation (QCF) the learner must achieve seven mandatory units:

- Communicate effectively in the workplace
- Establish effective working relationships
- Manage own Resources
- Health and Safety
- Awareness of Regulations in the Fire Sprinkler Industry
- (This unit develops knowledge and understanding; however some assessment criteria should be assessed in the workplace)
- Fire sprinkler installation and handover
- Understanding the Fire Sprinkler Industry

Assessment for all units in this qualification is through a portfolio of evidence (internally set and marked and quality assured by IQ) which demonstrates the learner's knowledge and understanding or consistent performance in the workplace as indicated in the unit specifications. Assessment must meet the requirements of assessment principles of the BAFSA Assessment strategy.

Currently, the qualification is being delivered at three colleges, Neath Port Talbot, Llandrillo College and The Manchester College. The course is expected to be undertaken over a period of 36 weeks (classroom and work based) and must be completed within a twelve month period. Each college offers the opportunity of day or block release with the next courses commence in October 2016.

Whilst, at this moment there is no delivery of the qualification in the south of England or Scotland BAFSA has the intention that the qualification will be available at further centres in due course. In respect of qualification delivery we are still in early days and need to satisfy potential deliverers that we have the necessary intake of students available to ensure viability. BAFSA would be pleased to hear from any organisation who would like to register an interest in the qualification.

With the development and launch of the Level 2 Certificate in Fire Sprinkler Installation successfully achieved BAFSA remain focussed in their encouragement of fellow members, non BAFSA members and sub contractors to actively support the qualification by enrolling candidates on to the qualification thus ensuring that the qualification kept alive and relevant. The journey of education that BAFSA has embarked on requires continued input to ensure that BAFSA, and the members vision remains at the heart of future developments.

In the not too distant future, and building on the Level 2 qualification, BAFSA will develop a Level 3 qualification of a much wider scope and depth of knowledge. This qualification will appeal to those who have achieved the level 2 qualification and to those experienced in installation skills and who have an element of supervisory experience or team leadership.

However, addressing the recruitment shortage and expanding recruitment opportunities for those seeking work experience or employment is an area of importance, not just for BAFSA but for the entire fire protection sector. Working with employers and training providers to develop specific sub sector Qualification Frameworks and Pathways which clearly communicate the learning opportunities available to both those who already work within the sector and to those considering a career in this varied sector is now essential. A broad reaching initiative across the whole sector would radically change the landscape of vocational qualifications available to those looking to move into sustainable employment with good career opportunities.

Integrated fire protection is an ever emergent characteristic of the fire protection industry which provides scope for collective skills, learning, and accreditation enabling transferability between sub sectors. It also means that many people working in the sector are ex-fire service personnel bringing high level skills which are not necessarily accredited by qualification. This feature also extends to management. Managers appear to be appointed based on high level specialist skills rather than qualifications, and it would appear that many managers acquire professional membership and status rather than accredited qualifications.

A sector qualification strategy would ensure that the qualifications and other learning programmes available across the UK are more effective in equipping people with the skills that employers want and that learners need to secure and maintain employment. In so doing it will contribute to the UK's business productivity, by ensuring that employers are able to make the most of the skills of their employees.

Accurate information about sector specific needs and requirements will be fundamental to ensuring that that the appropriate mix of provision (qualifications, training and other learning experiences) is available to learners. Almost two decades into the 21st century has seen a subtle shift from academic qualification as a signifier of skills. Modern careers are all about competencies and experience and there is no better way to demonstrate these than through vocational qualifications.

In conjunction with the development of nationally recognised qualifications the importance of establishing a clear career pathway within the industry should not be underestimated, particularly if the industry is to attract a new generation of young people.



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BAFSA has already established that there is a shortage of young people within the fire sprinkler industry and therefore focus is needed now to ensure the industry raises its profile to encourage and show those looking for job opportunities that the Fire Sprinkler Industry is a career to look forward to. Whilst BAFSA has developed a career pathway in respect of fire sprinkler installation establishing industry specific career pathways would offer potential recruits a glimpse of the diverse range of opportunities across the entire sector.

Training and development can play a significant part in the opportunities open to people and therefore the ways they can carve out their career path. Choosing a career path can help set professional goals and develop a strategy for getting where you want to be. Part of choosing an appropriate career path involves making an honest self-evaluation of talents, abilities and interests. While elements of a chosen path may change over time due to choice or circumstance, having an overall professional objective with which to guide you will help make critical decisions with greater clarity. Understanding the requirements of a chosen path will allow you to plan to prepare yourself for the career you want.

However, there is no quick fix when addressing either workplace competency or recruitment requirements and, if we are all to ensure that strategy or development is meaningful and to be of value to the sector, then it is important that time is taken by key organisations and associations to have the necessary discussions with industry representatives. The opportunities for cross sector working may well present themselves and whilst sub sectors working together often has its challenges, and balancing interests is no simple feat, collaboration may bring innovation and progress.

BAFSA continues its journey of education with the possibility of a Career Transition Pathway beckoning and still works to turn a vision into reality.

Ruth Oliver, BAFSA Skills & Qualifications Adviser

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Schools : we have much work to do to ensure that we protect not just the safety of children but the continued viability of our education buildings through the use of sprinklers to protect against fire

IT IS FAIR to say that under successive governments, the educational ‘establishment’ has undergone numerous and profound changes to its administration, systems of work and to the built environment. Central government plays a pivotal role in shaping the future of educational services.

In 2011 the *‘Building Schools for the Future’* (BSF) programme, started under the previous Labour administration, was superseded by the current (2016) *‘Priority Schools Building Programme’* (PSBP), funding for which is a reported £4.4 billion (DfE).

‘New’ methods of construction, utilising timber products, seem to predominate and it was recently acknowledged that Building Bulletin 100 (BB 100 : *Design for Fire Safety in Schools*),



The total destruction of the Island Learning Centre on the Isle of Wight following a fire in July 2015

with its expectation that all but the lowest risk schools would be fitted with fire sprinklers, has seen a decline in use. This has been quite dramatic with only an estimated 35% of new schools receiving sprinkler protection, compared with 70% under BSF.

While the number of new schools being built is at a high level, some questions are being raised about the resilience being built into the programme to the threat of fire. There has also been an acknowledged and alarming level of degradation of some fire safety measures, such as compartment wall integrity, in new building stock which has hitherto been less pronounced. This most notably occurred in some notable NHS buildings and in some cases remedial action has involved the cost effect retro fitting of sprinklers!

Whilst it has to be acknowledged that fire losses in educational establishments have decreased over the latter years, the number of fires is still high enough to raise concerns.

Demand for sprinklers

Although most UK education authorities now have policies to install sprinkler systems in new school buildings, the increased use of 'value engineering', the move to 'academise' the educational environment and the lessening influence of local authorities has led to a decline in support for sprinklers in new schools, whilst government continues to take a passive stance for England which is opposite to that in Wales and Scotland.

There has been an continuing demand from insurers, local authorities and others to use automatic fire sprinkler systems in new build schools – a fire safety device that has been effectively used in other commercial premises for well over a hundred years. Clearly, sprinklers prevent large loss school fires.

Additionally the fire and rescue services are keen supporters of sprinklers in the built environment, their reasons being that a well designed, installed and maintained sprinkler system can significantly reduce the impact of fires, especially at a time when FRS resources are being spread more thinly.

Building Bulletin 100 (Fire Safety in Schools)

For over two years now the government have been revising Building Bulletin 100 which in 2007 included 'an expectation that all but the lowest risk schools would have sprinklers fitted'. The latest version, which went out for public consultation that ended on 15th August 2016, appeared to have lessened or removed that expectation and, although sprinklers were mentioned, they had a less than significant place within the proposed document. This is a worrying trend, especially coupled to the fact that the level of sprinkler installation in new schools has significantly declined since 2010.

With this reduction of expectation however arose a new and comprehensive groundswell of opposition from many quarters, confirming that these assumptions needed to be robustly challenged and a concerted effort made to try to bring a reasoned argument to bear for the continued inclusion of sprinklers in new schools. Meetings were arranged between the Education Funding Agency and fire safety professionals from CFOA, BAFSA, NFSN, EFSN and the All-Party Parliamentary Fire Safety & Rescue Group to highlight their concerns and hopefully bring about a positive outcome in favour of sprinklers. Not only that but social media buzzed with adverse comments to the government proposals for BB100 from Chief Fire Officers, the

Fire Brigades Union and the National Union of Teachers. The desire to reverse the government intentions to simplify and streamline BB100 featured high on the priority list for many organisations.

Schools (fire data and sprinkler saves)

In the past five years there have been some significant sprinkler saves at educational premises right across the UK with 18 such occurrences being catalogued since 2010. One school in London had two potentially damaging fire suppressed by the sprinkler system twice in the space of 6 months!

Terry McDermott, CFO of Derbyshire FRS and the recently appointed Chair of the National Fire Sprinkler Network wasted no time in bringing influence to bear by contacting every CFO with a request to supply data from the Incident Reporting System (IRS) on every reported fire where sprinklers have been reported as operating between 2010–2015.

An overwhelming response has been received and this data is currently being analysed with a report due in 2017. Part of that analysis has included sprinkler activations in educational establishments and this data will form part of the evidence to be presented to make the case for more sprinklers in schools.

What has emerged from the collection of this data is that school fires are still a regular occurrence and that more work needs to be done to collate and quantify the data that is available. There is strong evidence too that the IRS requires amendment so that sprinkler activations are more easily understood and recorded by FRS personnel. It is also vital that we continue to record sprinkler saves in all types of premises so if you know of any, no matter how insignificant they may appear, please inform BAFSA FRS Coordinator, Steve Mills who is currently collating such activations.

What is clear is that there is still a body of influential persons who remain unconvinced that sprinklers have a role to play in protecting the UK building stock. This seems at odds with members of the public who, when confronted with the facts, often believe that sprinklers are mandatory in schools and other buildings. We have much work to do to ensure that we protect not just the safety of children but the continued viability of our education buildings through the use of sprinklers to protect against fire.



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Mobility scooters : the issue of fire safety

In December 2010, three people were taken to hospital after they were rescued by South Yorkshire firefighters from a fire on the upper floors of a 14-storey Sheffield tower block. Nine other people, including two firefighters, were treated at the scene for smoke inhalation. Eyewitnesses at the scene reported huge amounts of smoke going into flats and smoke spreading up to the 11th floor. The fire and rescue service subsequently reported that the fire started because of a fault in an electric mobility scooter parked on the 8th floor.

This is just one example of numerous fires in modern mobility scooters. Consequently, many fire and rescue authorities, such as East Sussex and Devon & Somerset, are raising concerns about the increasing risks being posed to persons – many of whom will, of course, be particularly vulnerable to the effects of a fire and unable to escape unaided.

To users, these devices offer an enhanced quality of life (some consider them essential) and so identifying ways to safely accommodate them are a must. Unfortunately, practicable remedies to the problem have hitherto been hard to find. However, BAFSA and an increasing number of other professionals (including some care providers), believe that residential fire



sprinklers can provide an efficient and effective solution and thus protect lives and properties. Despite a lack of comprehensive, reliable commercial data on the size of the mobility scooter market, 'best estimates' put the number of units sold per year at approximately 80,000 and total number of UK users at approximately 300-350,000; it therefore comes as no surprise that this booming market brings with it a range of challenges.

Disappointingly, a recent study by the Research Institute for Consumer Affairs (Rica) - '*Mobility scooters: a market study*' - published in 2014, highlighted a number of safety concerns but failed to identify fire safety as an issue. It did however provide evidence that should be noted by all those with any interest in protecting people from fire. Clearly this problem can only get bigger.

Fire safety guidance

Apart from providing warnings to persons to beware of the hazards posed by mobility scooters, advice to developers and building managers on the topic, it has to be said, is somewhat thin. However, the recently updated Bs991 '*Fire safety in the design, management and use of residential buildings - Code of Practice*' has sought to provide advice on the growing number of buildings that are described as sheltered, extra care and other special housing; and in particular, the emerging trend for the residents of such premises to own and store mobility scooters within their properties is recognised.

Nevertheless, even here, the advice provided is limited and confined only to providing passive protection (to separate the hazard from the remainder of the building) and warnings about electric charging points not being located on escape routes. Bearing in mind the persons who own and operate these machines and the difficulties they often encounter when confronted with self-closing fire doors, albeit sensible advice, in many cases neither of these tactics are practicable or welcomed by tenants.

Lewisham Homes initiative

As a major housing provider, Lewisham Homes had been concerned for some time about the general increase in use of mobility scooters and how the risk of fire is managed. Of particular concern, scooter storage and charging arrangements. But the increasing use of lithium batteries, instead of lead acid batteries to power scooters, also added to their fears because of their unpredictable and adverse reaction when subjected to fire.

A number of solutions for storage have been reviewed and implemented by managers but there is still an ongoing difficulty because external areas do not have the closeness which residents want or require for ease of access to their scooters.

The company therefore decided to fund research to assess the effectiveness of residential sprinklers in suppressing or extinguishing a mobility scooter fire. Consequently, BRE Global was engaged to conduct tests, the outcome of which it was felt, would assist Lewisham Homes in the decision on whether to allow the internal storage and charging of mobility scooters within their sheltered schemes (see '*Fire experiments on mobility scooters protected by sprinklers*' BRE Global Ltd May 2016).

As part of the experiment, the plans for sprinkler installations already installed at four different Lewisham Homes sheltered schemes were provided.

Realistic tests

It was decided to replicate a room from Waverley Court, an existing sheltered scheme, as it presented the most challenging condition due to the area being covered by a single sprinkler head. A life size mock-up of the room was therefore constructed within the 'Burn Hall' at Garston.

The experimental compartment was 4m x 3.55m with a ceiling height of 2.3m (identical with the room in the Waverley Court, but constructed in a simpler manner, i.e. no glazing panels and bricked walls were used). A door opening of 2m x 0.82m was included (without a door). The compartment was lined with a single layer of 15mm plasterboard fixed from the internal side to timber studs.

A single concealed sidewall sprinkler head located at 2.15m height was installed by the client's subcontractor, Domestic Sprinklers Ltd. The sprinkler head was supplied with water via a CPVC sprinkler pipe with 6.5 bar static pressure and 200 litre/min flow rate at 2.0 bar working pressure.

Two experiments were carried out:

- The first experiment involved one mobility scooter being set alight to assess the effectiveness of the sprinkler in suppressing or extinguishing the fire (the seat of the fire was set to replicate a fire starting within the battery housing).
- The second experiment involved three mobility scooters (one scooter had a lithium battery fitted which posed the additional danger of increases in temperature and the possibility of explosion).

In both cases the sprinkler system activated and suppressed the fire. In the first experiment (involving one scooter), the sprinkler activated at about 6 minutes 25 seconds from ignition when the temperature of the gas layer near to the sprinkler head reached 63°C. The fire spread from the battery compartment to the seat but did not significantly affect the remaining body of the mobility scooter.

In the second experiment, the fire spread from the battery compartment to the seat much more quickly resulting in sprinkler activation at about 2 minutes 50 seconds (the temperature of the gas layer near to sprinkler head was about 90°C when the sprinkler activated). The surface of the Li-Ion battery fitted in one scooter was heavily damaged but did not explode.

Conclusion

The two experiments showed that even if two similar mobility scooters are ignited at similar points using identical ignition sources, the fire behaviour and the speed of temperature rise can be significantly different. However, the experiments also showed that in the experimental compartment used in this project, the sprinkler system was able to effectively suppress the fire before the fire reached critical stage.

Both BRE Global and Lewisham Homes believe that the findings from this project, in particular the "raw" experimental results, will provide a data resource for the fire safety engineering of flats, care homes and sheltered accommodation and other types of occupancies where mobility scooters may be expected to be found.

350 years on : learning lessons from the Great Fire of London

MUCH HAS BEEN written about the causes of the Great Fire of London, its spread and the destruction of thousands of buildings across the capital. What is less known, but equally important to the creation of modern London, is how the Great Fire led to the development of the insurance industry we know today.

In 1666, an effective firefighting capacity across the City of London was almost non-existent. There was no organised fire brigade and firefighting skills were rudimentary at best. The first property insurance company, established shortly afterwards, created the very first firefighting teams, the roots of today's London Fire Brigade.

This first insurer was a mutual created by a wealthy property investor, Nicholas Barbon. Policyholders would join and pay a premium into a common fund which was used to buy properties. These properties were held as a pool of investments to provide back-up to the cash resources of the scheme, hence the wisdom of having firefighters available to protect these investments.

As more insurers appeared, basic economics quickly led to the conclusion that a city-wide fire brigade was a public good. All the insurance companies donated their equipment to the City of London, the City hired the firefighters and it was the role of the firefighters to fight fires whether buildings were insured or not.

By around 1720, insurance companies had developed a common procedure for rating the property risks they encountered:

- *'Common insurance'* applied to brick and stone premises that met the relevant regulations and which were used purely for domestic purposes;
- *'Hazardous insurance'* applied to the many domestic buildings made from timber or plaster that had survived outside the areas affected by the Great Fire, or brick or stone buildings used for hazardous trades;
- *'Doubly hazardous insurance'* – an interesting name – applied to all premises used by people like bakers, distillers, potters and glassblowers.

These categories which lasted well into the 19th Century are an early demonstration of insurance being priced on the basis of risk. In modern insurance the underwriting categories are more sophisticated but the principle holds true.

London saw more serious fires in the decades that followed. A blaze on Queen Victoria Street in 1902 left eight people trapped on the top floor of a building, with some throwing themselves to their deaths on the pavement below in an effort to escape. Incidents such as this, and the ways in which insurers judged risk, exerted an influence on building design and on building regulations.

In 1921, a Royal Commission was established to look at the changes necessary to secure the best possible protection of life and property. The report, published in 1923, insisted on the provision of an adequate means of escape from public places of entertainment, hotels, flats, shops and houses.

The insurance industry and fire protection rules have both come a long way since 1666 but neither can now stand still. Insurers continually adapt their practices to new risks and new ways of doing business, whether that is preparing to insure driverless cars or offering customers ways to buy policies from their mobile phones.

In the same way, rules and regulations designed to prevent fire must also move with the times. We know that a good sprinkler system, which will activate at an early stage, can often do a lot to reduce fire damage and to prevent firefighters having to expose themselves to unnecessary levels of danger.

With that in mind, the ABI believes it is high time to have sprinkler systems made compulsory in new buildings such as schools and care homes, and where it makes economic sense in large commercial warehouses such as those over 2000m².

Average insurance pay outs for commercial fires are now above £25,000 for the first time, a rise of 165% since 2004. Schools and care homes house some of the most vulnerable people in our society, while the loss of a school building is a blow for the whole community. And large warehouse fires disrupt homes, businesses and transport networks far too frequently.

The rise in online shopping has led to larger distribution centres with more closely packed goods, increasing the risk of fire spreading. When the Sony warehouse was destroyed by fire during the August 2011 riots, 3.2 million pieces of stock were destroyed along with the building. More than £80 million was paid in insurance claims overall yet the replacement building, opened the following year, remains without sprinklers.

Guidance from the Department for Communities and Local Government (DCLG) for fire sprinkler installation only recommends that warehouses in England and Wales should be provided with a fire sprinkler system if they are larger than 20,000m² and it is not compulsory. These limited regulatory requirements mean that only 20% of warehouses between 2000 and 10,000m² are fitted with fire sprinklers, according to BAFSA.

Meanwhile, the ABI has also warned that changes to guidance governing how schools are built would alarmingly undermine efforts to reduce the risk of fire. The redrafting of document BB100 replaces a Government commitment, *'that it is now our expectation that all new schools will have sprinklers fitted'* with a sentence stating the opposite: *'The Building Regulations do not require the installation of fire sprinkler suppression systems in school buildings for life safety and therefore BB 100 no longer includes an expectation that most new school buildings will be fitted with them.'*

There are more than 1500 fires in schools and other educational establishments every year, equivalent to four a day, and the biggest of these has typically cost around £2.8 million in recent years. Aside from the financial impact, these fires disrupt the education of an estimated 90,000 children and students annually. The cost of a sprinkler system is generally between 1 and 2% of the total construction bill and that can be recouped in less than ten years thanks to the savings which will be made insuring the school.

Instead of watering down fire prevention measures, the ABI is urging the Government to ensure sprinkler systems are fitted as mandatory in all new schools and any under-going major refurbishment.



Legislation making it compulsory to include sprinklers in high risk buildings would be the perfect way to mark the commemoration of the Great Fire of London. More than a dozen organisations including BAFSA, the BSA, several fire and rescue services and the Chief Fire Officers Association, confirmed their support for these ABI proposals. We're confident that Nicholas Barbon, were he alive today, would also see the sense in them

James Dalton, Director of General Insurance Policy, Association of British Insurers (ABI)

A large warehouse interior with yellow metal shelving units. The perspective is from a low angle, looking down a long aisle of the shelving, creating a sense of depth and scale. The lighting is industrial, with overhead fixtures visible.

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A small inset image showing a modern glass skyscraper, likely a shopping centre or office building.A small inset image showing the interior of a retail store, possibly a supermarket or food store, with shelves and signage.

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Sprinkler Saves : protecting people and firefighters, property and the environment

DURING THE YEAR 2015–2016 there were over 70 sprinkler related incidents in a variety of property types notably:

Oxford historic market

At approximately 0815 on Monday 28 December, 2015, Oxfordshire County Council Fire and Rescue Service were called to a reported fire in the Covered Market in Oxford City Centre.

This is an historic single storey complex of various retail premises arranged around a series of interconnecting grid avenues and is owned and operated by Oxford City Council. Some years ago, Oxford FRS had worked very closely with Oxford City Council, to highlight the fire potential within this building, the fire risks posed and the likely significant property loss, should a fire occur, together with the rigorous promotion of the benefits that could be offered by them installing AWSS.

Upon arrival at the incident crews were met by an Oxford City Council manager and a sprinkler engineer, who had been called due to the earlier activation of the sprinkler system installed within the building.

After being escorted to the effected zone, crews discovered the site of where an earlier fire had taken place, but found it had not only been controlled, but also completely extinguished by the operation of a single sprinkler head, thus avoiding a potentially serious fire and loss of business.

The most likely cause of the fire was subsequently attributed to a domestic fridge within a street café igniting, which had then been completely destroyed by fire.



“Heritage buildings continue to be susceptible to huge loss should a fire occur and so the sprinkler save at Oxford’s historic market is notable for the fact that damage was minimal and the market continued to trade shortly after the fire. The sprinkler systems there had undergone refurbishment and improvement and this is at odds with other properties where we have seen systems being decommissioned.”

Newly installed fire safety system saves resident



A recently installed fire sprinkler system, at a Derby street address in Gleadless, Sheffield, activated following a mobility scooter fire, allowing the elderly resident to escape without serious injury.

The mobility scooter, parked outside the front of the top floor property, burst into flames shortly before 0600 on 9th January 2016 due to an electrical fault. The resulting fire then spread to the front of the building causing the front windows to break and allow the fire to spread inside the building.

The fire sprinkler system activated, extinguishing the fire and limiting damage

to the front of the dwelling, when fire crews arrived the fire was all ready under control.

The interior of the property was relatively undamaged by this very severe fire.

The fire sprinklers have been retrofitted in the 540 ranch style properties as part of a ground breaking initiative by Sheffield Council to improve fire safety in the properties, supported by South Yorkshire Fire and Rescue.

The installation of these type of systems is now mandatory in Wales and South Yorkshire FRS are actively promoting the use of this type of protection in all types of buildings to build resilience and safety into our community.

“The Sheffield dwelling save was important in several ways. Firstly the fire occurred in the newly completed project and showed what a benefit sprinklers can provide. The fire started in a mobility scooter outside the property then spread indoors. Mobility scooter fires have been the subject of testing by BRE and Lewisham homes with good results with sprinklers being observed. It is also likely that, without the action of the sprinklers, the occupant may have been seriously injured in the fire.”

One Sprinkler head extinguishes fire at All Saints Academy, Cheltenham

At 2027 on 21 January 2016, Cheltenham crews were mobilised to a fire in a staff shower room at All Saints Academy. The room contained cleaning materials, aerosols and two floor buffers which were damaged by the fire.

When crews arrived, they discovered that the fire had been extinguished by a sprinkler head directly above the fire. As a result of this, no firefighting equipment was used and the damage to the room was contained to the origin of the fire. The cause of the fire is being treated as suspicious.

Gloucestershire’s Chief Fire Officer Stewart Edgar said “This particular incident, yet again demonstrates the effectiveness of sprinkler systems, to extinguish and prevent fire spreading to other parts of the building”.

“With the government trying to ‘streamline’ Building Bulletin 100, the fire safety guidance for new schools, it was good to hear of two sprinkler saves in schools so far in 2016. This is really good evidence in the case for sprinklers and there is much opposition from across the fire safety fraternity to the ‘watering down’ of the guidance on fitting sprinklers in new schools.”

Manchester department store

A fire broke out in a Manchester city centre department store which had to be evacuated for several hours on the afternoon of 19th June 2016. Fire crews were called to the blaze on the third floor of the building at just before noon.

A spokesman for Greater Manchester Fire and Rescue Service said investigations are ongoing into the cause of the fire. He said: “Crew were called to the department store building at 1154 on Sunday.

“The fire was in a third floor stock room. Sprinklers inside the building were activated which put out the flames. Fire crews remained at the scene for several hours to ensure all was safe inside the building.

No one was injured in the fire.

“This successful sprinkler activation at the Manchester department store in June 2016 highlighted the benefits of sprinklers in retail premises and the need to staunchly defend the 2000m² ruling in the Building Regulations. It was also significant in that it occurred just 100m from the old ‘Woolworths’ building fire in Manchester (May 1979) which sadly led to the loss of 10 lives, 26 rescues by the Fire Brigade and a score of injuries.”

Sprinkler save at London underground car park

At 1224 on Saturday 9 July, London Fire Brigade received a report of a fire in the underground car park of a 30m x 30m, 20 storey building in Great Russell Street, in central London. The building is occupied by shops, offices, a hotel and hostel with a 3 level underground car park.

The fire involved a rickshaw (a light two-wheeled passenger vehicle drawn by one or more people) and it is understood that the batteries were the source of the fire. The manager of the rickshaw storage area was alerted to the fire when one of the rickshaw owners informed him they had seen smoke in the car park.

2 LFB appliances attended the incident but the fire had activated one sprinkler head on the buildings wet pipe system and this had controlled the fire which was reported to be Out On Arrival (OOA).

It is understood that 200 people were evacuated from the gym area with the remaining parts of the building not evacuated due to the fire being controlled.

40 % of one rickshaw and 5 % of another were damaged by fire with a total area of 5m² damage.



This is the second sprinkler save involving ‘Rickshaw’s’ in London in the past 4 years, both of which occurred in underground car parks which are notoriously difficult to fight fire within. This again proves the worth of sprinklers covering such areas.

“There tends to be no Building Regulations requirement for sprinklers to be fitted in enclosed car parks, despite clear evidence from BRE testing and the incidence of fires in underground car parks from the UK and abroad. This is due mostly to the emphasis on providing means of escape for occupants and not protection for the building or firefighters. There have been several successful sprinkler activations in enclosed car parks over the past years, this being the latest. It also highlights the potential dangers of Lithium-ion batteries for causing fires”

Suppression system activation at Smugglers Way recycling facility, London

During July 2015, a Wandsworth recycling facility suffered its second fire in just the space of a week.

The first fire at Smugglers Way happened on Thursday 21 July. London Fire Brigade were notified at 2106 of a compressor conveyer belt involved in a fire and crews from Wandsworth, Battersea, Tooting and Fulham responded. The fire was under control at 2246.



The on-site sprinklers helped control the fire until crews arrived while 41 people left the building with no reports of any injuries sustained.

A Brigade spokesperson said: “This incident highlights the clear benefits of sprinklers to businesses and we would urge all companies and business owners to install them.

“In this case the sprinklers successfully helped control the spread of the fire. “As well as limiting fire damage and being potentially life saving devices, sprinklers and other fire suppression systems help with business continuity by minimising disruption and allowing businesses to get back to normal as soon as possible.

“Fires at recycling facilities are quite commonplace and can cause huge amounts of damage and disruption but the evidence emerging from recent suppression system activations show that a correctly designed and installed system can counteract the fire risks associated with such premises. The successful suppression of the fire at Smugglers Way recycling facility in a busy part of London showed once again that water based suppression should be a factor in the risk assessment for these sites.”

Fire suppression in historic buildings : legislation compliance

WHEN THE FPA published 'Heritage Under Fire' in 1994 the concept of installing sprinkler systems in historic buildings was dealt with in a few short paragraphs. Suggesting that sprinklers were particularly suitable for premises where the fire service response might be extended, the advice includes acknowledgement of concerns about accidental or excessive water damage.

Indeed, these concerns have served to mitigate against the wider adoption of automatic fire suppression systems (AFSS) – it's only now, 20 years later that there is a more general understanding of the value of AFSS in heritage protection.

While all modern buildings include the provision of a range of fire safety measures intended to protect the lives of occupants, these are not things that can be taken for granted in the case of structures built before 1961.

Today, Building Standards demand that people in all parts of any building, including dwellings, are able to exit the premises or quickly reach a place of safety without the aid of tools or specialist knowledge and without resorting to features such as vertical ladders, ropes or hoists. Problems can therefore arise where an old building is to be subject to a major refurbishment or where a change of use is to take place (adaptive reconstruction), which may require work to be carried out in accordance with modern building standards. It is the author's contention that AFSS are particularly appropriate in helping buildings undergoing restoration or adaptive reconstruction achieve compliance.

Compliance with Legislation

Compliance with UK fire regulations generally includes:

- The provisions of means of escape
- The structural protection of escape facilities and the structural stability of the building in the event of a fire
- The provision of access and facilities for the fire and rescue service
- Early detection and warning of fire
- Facilities for fighting fires
- An effective fire safety management regime

Traditionally, the first four of these has been imposed on new or altered buildings under Building Standards while the remainder have been the subject of requirements imposed on the building occupier by the fire and rescue authority. In Scotland, the latter requirement is covered by the Fire Safety (Scotland) Regulations 2006 while in England and Wales, the Regulatory Reform (Fire Safety) Order 2005 must be complied with.

However the requirements are to be specified, it is important to understand that all these elements should form important components of an integrated package of fire safety measures. Note that even where fire protection improvements are being undertaken as a statutory requirement, Listed Building Consent must also be obtained.

Prescriptive approach

In the past, a prescriptive approach to building regulations laid out such rules as the maximum distances which an occupant could be required to travel. Invariably this was related to the structure of the building; and reliant on the close proximity of a fire exit in an outer wall, or a doorway into a protected route, where the products of an unwanted fire – particularly smoke – could not enter and overcome persons making their escape. Unfortunately, in historic buildings it is rarely easy to ensure that walls, floors and doors are sufficiently resistant to the effects of a fire. Upgrading existing structures can be both difficult and costly and may cause damage to the very features and fabric which have been deemed worthy of preservation and protection. Moreover, the introduction of new structural materials may be totally inappropriate in a heritage setting. Fortunately, ‘performance based’ criteria may now be used rather than specific requirements and much better use made of active systems such as automatic fire suppression.

Alternative approaches to compliance

In the UK it has been an established principle, for some time now, that when assessing whether a new building is ‘fit for purpose’ in respect of its fire safety provisions, there are three possible ways in which this can be assessed:

- a) The ‘*General Approach*’: This is applicable to the majority of new building work undertaken within the UK. In this case the fire precautions designed into the building usually follow the guidance contained in the documents published by the relevant government departments to support legislative requirements. In the case of Scotland this would be Part 2 of the Technical Handbook Non Domestic 2013, in England and Wales Approved Document B: 2006¹
- b) The ‘*Advanced Approach*’: This is now supported by the publication of *BS 9999 – Code of Practice for Fire Safety in the Design, Management and Use of Buildings*². The information and guidance provided in this document should provide a more transparent and flexible view of fire safety design using a structured approach to risk-based design where designers can take account of varying physical and human factors.
- c) The ‘*Fire Safety Engineering Approach*’: This is the level for which *BS PD 7974: 2001 Application of fire safety engineering principles to the design of buildings – Code of practice*, is provided. This provides an alternative approach to fire safety and can be the only practical way to achieve a satisfactory standard of fire safety in some large and complex buildings, and in buildings containing different uses. Caution should be exercised in adopting this approach without specialist input from a competent fire engineering practice.

1 In this case, the advice in Historic Scotland’s Guide for Practitioners No 7 Fire Safety Management in Traditional Buildings should be utilised.

2 This standard (under review) specifically recognises the value of fire protection systems in the management of fire risk.



Clandon Park is an early 18th-century grade I listed Palladian mansion in West Clandon in Surrey which has been owned since 1956 by the National Trust. The house was substantially damaged by fire in April 2015.

Adaptive reconstruction – the rules

The most difficult question any owner of a traditional property undergoing adaptive reconstruction can be asked is ‘What would you wish to have left after a fire’. Whilst ‘everything’ might be an obvious response, the answer in reality needs to be informed by a complex set of interlinked issues, including the safety of the building structure, the contents of the building and, crucially, human safety. Achieving this balance requires careful consideration of some of the basic principles of fire protection measures such as detection and suppression systems. Primarily, any insertion of fire protection systems (or indeed, any other modern systems or equipment) in historic buildings should be:

1. Essential - the fire systems should be central to meeting the objectives of the protection of life, buildings and contents.
2. Appropriate to risk - any system that is installed should be apposite to the risks being considered.
3. Compliant with legislation - Systems should be installed according to demonstrable performance-based and other legislatively prescribed standards of safety.
4. Minimally invasive - the retrospective fitting of fire systems should involve minimal degrees of physical intervention on the historic structure.
5. Sensitive integrated - installed systems should be designed to be integrated sympathetically with the historic fabric and its detail.
6. Reversible - fire systems should be installed, where possible, according to a reversible, ‘plug-in, plug-out’ installation philosophy.

Use of automatic fire suppression and firefighting systems

It is suggested that recent experience (much of it in Scotland) of the installation of fire suppression systems makes it clear that in many cases, a well-designed fire suppression system can compensate for a range of deficiencies in areas such as means of escape and means of containing fire and smoke spread. In the case of Corgarff Castle, a Scheduled Ancient Monument and Grade A-listed, 17th century property in the care of Historic Scotland, the installation of an automatic fire suppression system provided multiple benefits:

- Compensation for compromised means of escape in the form of a single timber staircase thus avoiding a Prohibition Notice on the use of the upper floors.

- Enabled premises to comply with current fire safety legislation for property open to the public.
- Protection for an asset with no on-site fire water capacity with poor access and very restricted fire service response for three months of the year.

The unique benefits of automatic fire suppression and firefighting systems are that they not only detect and notify the presence of a fire, but actually fight the outbreak. A properly designed, installed and maintained system will, at the very least, contain a fire to a small area and consequently reduce the extent of damage to building and contents. Indeed in many cases the system will often manage to extinguish the fire before the arrival of the fire and rescue service. The damage minimisation potential of suppression systems³ is especially beneficial in the heritage buildings context where historic fabric or contents may be irreplaceable.

There are a number of automatic fire suppression and firefighting systems available employing different extinguishing equipment, techniques and firefighting media. The suitability of each type of protection system for particular circumstances will be determined by a number of factors including the type of fire likely to be encountered in the protected space.

It should also be understood that the introduction of any automatic fire suppression system will also protect the occupants and firefighters called to the premises.

By Stewart Kidd, BAFSA Consultant

³ The impact of fire fighting operations including the application of significant volumes of fire fighting water must also be considered.



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**All-Party Parliamentary
Fire, Rescue & Safety Group - APPFRSG**

Business Sprinkler Alliance - BSA

Fire Protection Association - FPA



The All-Party Parliamentary Fire Safety & Rescue Group : raising fire safety awareness and establishing its importance in a modern society

THE ALL-PARTY Parliamentary Fire Safety & Rescue Group (APPFSRG) is an informal cross-party interest group which has been in operation for over seventeen years. Made up of twenty-nine Members of Parliament and Peers, the Group is very active, well attended and successful, and reportedly more frequently attended than any other All-Party Parliamentary Group. Whilst being properly balanced to reflect the parties of Government, it does take a position on some matters which may not always be consistent with Government current policy or direction. However it is keen to work with Government and not to be in conflict with it.

At the time of writing, Sir David Amess MP is the Group’s Chairman, with Chris Davies MP and Mary Glindon MP its Co-Vice Chairs. Jim Fitzpatrick MP is the Group’s official Secretary and Peter Aldous MP its Treasurer.

The full list of members is as follows:

Government Party:

Sir David Amess MP
 Chris Davies MP
 Peter Aldous MP
 Heather Wheeler MP
 Bob Neill MP
 Will Quince MP
 Amanda Solloway MP
 Nigel Evans MP
 Stephen Phillips QC MP
 Glyn Davies MP
 Jeremy Lefroy MP
 Andrew Rosindell MP
 Nadhim Zahawi MP
 Lord Hunt of Wirral
 (14)

Opposition Party:

Jim Fitzpatrick MP
 Mary Glindon MP
 Lord Howie of Troon
 Lord Brookman of Ebbw Vale
 Lyn Brown MP
 Steve Rotheram MP
 Lord Harrison of Chester
 Rt. Hon George Howarth MP
 Nia Griffith MP
 Lord McKenzie of Luton
 Lord Davies of Coity
 Teresa Pearce MP
 Liz McInnes MP
 (13)

Others:

Baroness Brinton LD
 Margaret Ferrier MP - SNP
 (2)

Three former Fire Ministers are members of the APPFSRG (Bob Neil MP, Jim Fitzpatrick MP and the Rt. Hon. George Howarth MP) and one former Minister having held responsibility for



the Building Regulations (Lord McKenzie of Luton). In addition Teresa Pearce MP is the Shadow Minister with responsibility for Building Regulations and Margaret Ferrier MP is Shadow SNP Spokesperson for the Scotland Office.

The July 2016 meeting of the APPFSRG was attended by the Shadow Secretary of State for Education Angela Rayner MP, to discuss the item on Schools Fire Safety... Something of a 'first' to have a Shadow Secretary of State attend an APPFSRG meeting, but a timely one.

In addition to running launch/commemorative events and parliamentary seminars in the Houses of Parliament, the All-Party Group meets bi-monthly to consider fire safety and rescue issues to bring to Government's attention, as well as receiving updates and news of research and important safety matters arising from live incidents.

The All-Party Parliamentary Group has formed a strong relationship with the Fire Sector Federation, which is proving to have been a constructive and positive step. Individual Fire Sector member organisations have also recently either held events or given short presentations to the All-Party Group about its work, and the issues which are of concern including:

- National Social Housing Group – Impact of Fire on Social Housing
- CFOA – High Risk Accommodation
- BSA – Building Regs ADB
- LFB - Electrical Fires in consumer units
- BAFSA – Heritage and Schools Sprinkler Seminar
- CFOA Recycling Waste Seminar

The All-Party Group maintains its reputation for activity in Parliament by holding meetings, launch events; Seminar participation, receptions, Early Day Motions (EDM's), Backbench business debates, Easter and Christmas Recess Debates, Written Parliamentary Questions (WPs) and Adjournment debates. Some 17 in 2016 alone.

Many of these meetings were attended by public and private sector bodies and individuals with fire safety interests. Also the Group facilitated a number of Fire Sector Federation meetings and workstreams, as an indication of the importance it attaches to such work.

The Group held four separate ministerial meetings during 2015/16 involving DCLG, Education, Defra and Defence and a further meeting with the Home Office (Minister for Policing, Fire, Criminal Justice and Victims) is planned.

Some 25 ministerial letters have been exchanged, maintaining the initiative for further action with the review of Building Regulations Approved Document B, and the influence over the policy on schools and special schools, which is the subject of considerable dialogue and correspondence, culminating in the alarming amendment of BB100, without the involvement of those from the Fire Sector, who were closely involved with the previous review in 2006/7. This galvanised many in the fire sector against such change, with opinions being 'voiced' through the media and national press. A request is currently was placed for the Education Select Committee to intervene, calling to account the various bodies who have an interest in this very important matter, especially following a letter received by the Chairman of the Education Committee, in response to his very logical proposals to the Minister.

Individual APPFSRG members are particularly active in fire safety matters, and have been willing to attend and support fire safety events both inside and outside the Parliamentary Estate with both Peers and MP's either 'opening' the events and/or by chairing seminar sessions, giving political support to the debate and dialogue.

In particular, tribute must be paid to Sir David Amess MP; Chris Davies MP; Mary Glindon MP; Jim Fitzpatrick MP; Peter Aldous MP; Margaret Ferrier MP; Will Quince MP; Heather Wheeler MP; Steve Rotheram MP; Nia Griffith MP; Teresa Pearce MP; Lord Brookman of Ebbw Vale; Lord Howie of Troon and Lord Harrison of Chester for their excellent attendance at meetings and All-Party Group events, over and above that which would normally be expected.

The APPFSRG is supporting discussions on integrated service capability for oil and gas. In the UK North Sea there are 288 operating platform, more than 50% are over 30 years old. Firefighting systems offshore are a critical component of the safety case for an operating oil platform anywhere in the world. These systems use salt water as their means of water supply but this is causing major issues for operators in terms of system reliability and many have problems with salt crystallisation, corrosion, marine growth and other elements of foreign matter caused by the marine environment, and all of these are massively affecting system reliability.

The purpose of these discussions, chaired by a Peer and attended by two MP's and the Chief Executive of the HSE, plus 13 other senior representatives from the fire, oil and gas Sectors, is to explain the issue, talk about solutions and work out how each organisation can support a way of highlighting the problem and some of the solutions that exist.

The relationships which have been developed with the APPFSRG and the range of issues dealt with are pleasing to note. Fire suppression is nearly always an agenda item in one form or another, and the knowledge and understanding of the Group's members, and their support for sprinklers as an effective fire safety measure, both in respect of life, property and environmental protection, is widely shared across all parties.

Looking to the future, the All-Party Parliamentary Fire Safety and Rescue Group will continue to hold regular dialogue with Government Ministers, especially Home Office (Fire), Education (Schools) and DCLG (Building Regulations Approved Document B), to raise fire safety awareness and establish its importance in a modern society, whilst seeking to effect the necessary changes which hitherto remain unresolved.

Ronnie King OBE, O.St.J, QFSM, F.I.Fire E, Hon. Administrative Secretary

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Business Sprinkler Alliance : increasing acceptance and use of fire sprinklers in commercial and industrial premises

THE POLITICAL LANDSCAPE has been shifting in the past two years with a new Conservative government, a vote to leave the EU and a new prime minister with an evolving vision for the country. A far cry from 2010 when the Business Sprinkler Alliance (BSA) was established to gain the increased acceptance and use of fire sprinklers in commercial and industrial premises. Even since 2014, when the research on the cost benefit analysis for sprinklers within warehousing was launched, we have seen a shift in government's attitude to fire safety in commercial buildings, with the long awaited (and much needed) review of Approved Document B being delayed.

However the core elements of our message have not changed. We face a government that is promoting a view that fire is under control, citing the decline in fire incidents and fatalities. Pressure has been put on fire and rescue service budgets and impending structural change will just make matters worse. There is continued pressure for less regulation, while there is increasing demands for new, efficient industrial and commercial premises. However the backdrop for industrial fires is showing that, despite a reduction in incidents, their cost is rising and has continued to do so through the term of the last government into this one.

Therefore a broader strategy has been needed to ensure that we are working across the major stakeholders and key issues. To this end the Alliance is focusing on five key areas; Convincing government; Convincing business; Alternative guidance; Widening the ally base and Building the evidence base.

Convincing government

As a follow up to the research that was undertaken in previous years, the BSA has continued to press with government at local and national levels. At this stage the BSA is also actively pursuing the devolved powers within Scotland, Wales and Northern Ireland to explore the differing attitudes to active sprinkler protection.

The BSA updated the survey of MPs to understand their attitudes to sprinkler protection. Revealing that over 70% agree that sprinkler protection has a positive benefit to the nation, as well as the occupants and the businesses that they cover. A similar number agree that more sprinkler protection should be installed. The crunch comes over the views of MPs as to the role of government in bringing about such enhanced protection within industrial and commercial premises. As we look ahead there are opportunities:

- As the new administration beds in there will undoubtedly be opportunities to look at the shift in emphasis on a new industrial strategy, giving the opportunity to press ahead with arguments around resilience.
- The move of the fire and rescue services to the Home Office will see change. Hopefully this will produce a balanced approach to fire, one in which increased fire protection will have an opportunity to gain ground.
- At the same time pressure is growing from the wider fire and construction sectors for a review of the current building regulations. Again, here is an opportunity to ensure a balanced approach to a future built environment.
- The Association of British Insurers (ABI) has recently joined the call to include sprinkler protection in warehouses over 2000m² based on the evidence produced for the Alliance by BRE and the Centre for Economics and Business Research.

Convincing business

To maintain the work and broaden the appeal the Alliance has been looking towards the business community to understand attitudes to fire and sprinkler protection. A survey was commissioned with YouGov. The survey results were quite stark and revealed that 79% of the 440 businesses surveyed believe that their main business premises are adequately protected from fire if they follow the guidance of the Building Regulations alone. This is quite at odds with the government's assertion that they are focused on life safety only. The survey also highlighted that 13% of respondents had suffered a fire incident, requiring them to call the fire and rescue service. We must use our energies:

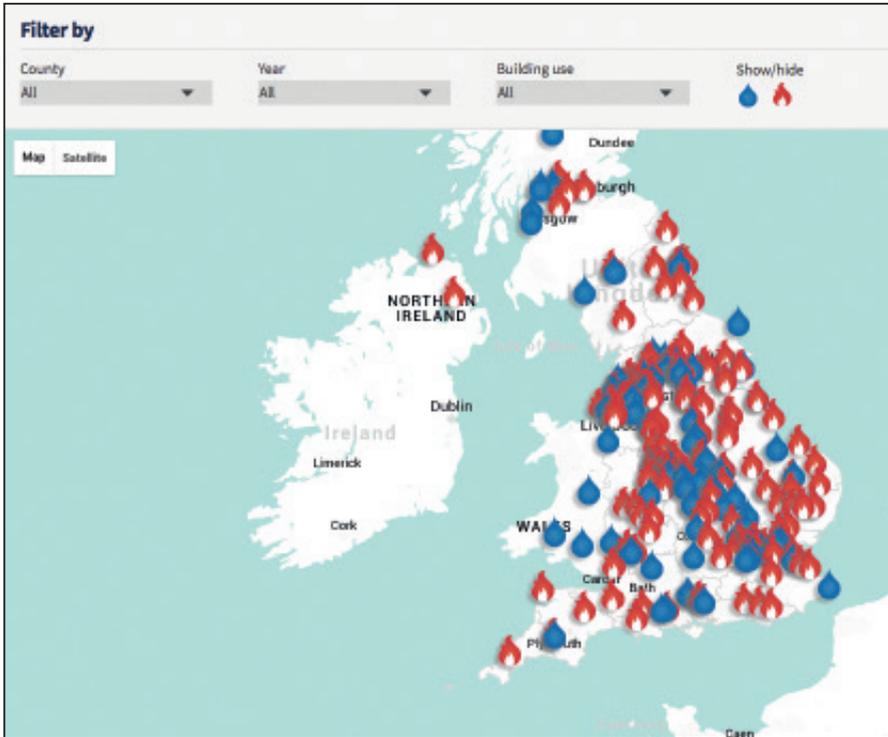
- To address the myths on sprinkler protection within the business community.
- To highlight the purpose of the Building Regulation guidance to the business community and the gaps when balanced against resilience from fire.
- To promote a sharper understanding of the risk of fire and its impact on the business and local community.

Alternative guidance

A key area for the BSA to influence is within the practices of construction, architects and developers. Our aim is to challenge the common view of cost around sprinklers. One cannot help but notice the gains that have been made with installations of sprinklers in high rise living spaces. The construction and developer sector has quickly seen the benefits and freedoms from including them in their designs. Therefore the BSA has commissioned work to look at the benefits that could be derived from building designs that include sprinkler protection in industrial and commercial buildings.

The focus is to look at the benefits to stakeholders in terms of building use, useable space, design freedoms and construction. The principle difference to previous work will be in the area of cost, where we are aiming to highlight the savings from these benefits and aligning them to the cost of fire protection. Our aim is to allow a new perspective to be gained for this sector on sprinkler protection and to change the conversation. We believe sprinklers will be installed far more widely if they are considered from the very start.

The work is currently at the end of the first phase and the BSA is looking to publish the findings in 2017 along with a strong campaign to promote this within the targeted audiences.



Widening our ally base

During the first half of 2016 the BSA launched the Sprinkler Save Map. This interactive map is the first of its kind in our sector globally. The map highlights incidents where sprinklers have operated to protect industrial and commercial businesses. This information is provided by the National Fire Sprinkler Network. On the same map, the number of fires which the Fire and Rescue Services attend with four or more fire pumps are shown, information being gleaned from media reports. We know that our data is currently incomplete, even so, it paints a compelling picture of the prevalence of fire and the effectiveness of sprinklers.

As the BSA moves forward we are working to expand and enhance the map. We see it as a key element in the conversation on the threat of fire to a number of organisations and stakeholders and their need to act. Our key focus remains to use it as a vehicle to address three key areas:

- The frequency of fire across the country and its impact on the business community.
- That fire is not restricted to one particular building type or occupancy.
- The positive contribution sprinklers make in a fire situation in the reduction of damage and business interruption.

Building the evidence base

The research the BSA commissioned and launched in 2014 on warehouse fires, their environmental impact and the cost benefit for sprinkler protection in these spaces has served us well. It has been cited a number of times and continues to attract attention as core pieces of work in the case for sprinkler protection.

The work on a similar study for industrial buildings has been slow and there are technical challenges to bring it to life. That said we have continued to pursue opportunities to bring new evidence to the table to highlight the impact of fire. The Business Sprinkler Alliance is currently working on a suite of case studies featuring major fires across the UK. The aim is to bring more colour to these stories and to help include elements that are not adequately expressed by data; community impact, road closures, job impact etc. Fires cost more, in financial, environmental, social and commercial terms, than people realise. We firmly believe that sprinklers are a protective strategy that is underused in the UK.

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The Fire Protection Association : working with automatic sprinkler systems

THE FIRE PROTECTION ASSOCIATION (FPA) is the UK's national fire safety organisation and we work to identify and draw attention to the dangers of fire and the means by which their potential for loss can be kept to a minimum. The FPA has an unrivalled reputation for quality of work and expertise in all aspects of fire including research, consultancy, training, membership, publications, risk surveying, system inspections and auditing. Our services and products are designed to assist those with fire, security, safety and risk management challenges achieve and maintain the appropriate standards. We strive to help improve levels of fire safety and protection.

LPC Rules for Automatic Sprinkler Installations

One of our notable publications of interest to BAFSA members remains the *LPC Rules for Automatic Sprinkler Installations*. This publication is important to the insurance industry who are still heavily reliant upon sprinkler protection as a technical risk management tool. Sprinkler protection to the LPC Rules continues to deliver world-class protection. It is worth remembering that even today a very significant proportion of suppression system market share is directly a result of or traceable back to the need of businesses or insurers to protect their large-scale operations (where the consequences of a fire would be large). The successes of the sprinkler protection have been noticed, and these days are also increasingly applied in life safety scenarios. The Welsh Fire Safety measure, requiring sprinklers (or suppression) in all new homes being a very prominent example.

It must be acknowledged that the LPC Rules is produced and maintained in close cooperation with the UK Insurance Industry and BAFSA; the support of both is essential. Recently developments to the LPC Rules include:

- TB234 for High Hazard Storage; in response to modern large warehouses and distribution centres.
- TB236 for Confirmed fire signals; drawing upon the high reliability of fire signals from sprinkler systems and offering a trustworthy source of automatic fire alarm signalling.
- TB209 for ESFR (Early Suppression Fast Response) sprinkler protection is nearing the completion of an extensive update to bring it in line with current best practice from around the world (and also offering system cost saving opportunities where appropriate).

In the area of fixed firefighting systems (e.g. suppression systems like sprinklers, extinguishing systems like gaseous systems), probably the biggest ongoing technical challenge faced by the UK (and an emerging issue elsewhere in some other parts of the globe) is fixed firefighting system selection. By this we mean choosing (and designing) a system suitable for the risk(s) in question. Previously, as a simplification, it used to be the case that sprinkler systems protected buildings. 'Tricky' areas within buildings (i.e. where water would be dangerous) were protected by gaseous systems. Then there were a few exceptions to these rules in the form of special risks, which required protection by a combination of standardised and bespoke special systems (e.g. deluge, foam, powder, etc). That was pretty much the end of the selection problem. However, these days there are an increasing number of approaches on the market claiming to be suitable for ever increasing and overlapping scopes of application. Water mist, pyrotechnical aerosol, oxygen reduction systems to name a few would all like some of the market share enjoyed by gas systems and probably more so, sprinkler systems. In some specific circumstances, these technologies are good choices. However, in many cases, when poor selections or designs are made equivalent levels of fire protection and fire safety cannot reasonably be expected. FPA research in this area is active and ongoing. In response FPA has produced freely available guidance in various forms to users and those faced with such selection challenges: an 'Expert System'; a prototype software tool (known as the FFSST) which guides users through the important decision making steps in selecting a suitable fixed firefighting system for a number of given risk types.

FPA has also produced a suite of 'questionnaires' (known as the IQ series) intended to interrogate the design of proposed innovative fixed firefighting system solutions. These resources encapsulate a wealth of information and knowledge borne of FPAs practical, testing and loss history experience. The contribution to such knowledge and experience made by wider society and notable bodies such as BAFSA and the Insurance industry must also be acknowledged.

FPA has long been an active and authoritative participant at various national and international industry standards setting forums. Behind the scenes this work is relentless because there are numerous technical challenges that require solutions. With public bodies increasingly facing cuts, deregulation initiatives and weaker regulations these freedoms can bring advances in technology. However these factors also open the door to abuse. There are always those seeking to promote and market their technologies. Increasingly standards forums are used to achieve this end. Increasingly FPAs role in this work as a 'moderating voice' is critical.

Sprinkler head testing

Another area where FPA is having a strong positive effect on levels of fire protection is in the testing of so-called 'old and doubtful' (or in fewer cases 'new and doubtful') sprinkler heads. Testing undertaken in our laboratory is now routinely detecting greater numbers of sprinkler heads due for replacement than ever before. This testing is valuable to installers and system users as it serves as reasonable identification and justification of when heads should be replaced. It allows sprinkler systems to be maintained in a satisfactory state. Happily, the vast majority of heads we test will have performed satisfactorily for a very long life (50 years or more is not uncommon) before our testing detects it is time for a replacement. More controversially, we do also detect problems with a few newer designs of heads (such as those incorporating "o-rings") and support users through the process of rectifying problems.



Fixed firefighting inspection service

FPA has long provided a fixed firefighting inspection service, by those competent in mechanical engineering, hydraulics and firefighting system design. Our service is independent and focused on the objective of determining that the firefighting system remains in an appropriate operative state and, beyond these maintenance considerations, that its design remains appropriate to the risk as it is now found. Building contents, use and configuration do commonly change and firefighting system design and hazard review expertise is required to properly assess and recommend upon such factors. Our inspections have identified a wide range defects or changes which would render the firefighting system compromised. These range from very serious to minor, but always the user is alerted and given the opportunity to remedy the situation.

Practical sprinkler training facility, Gloucestershire, UK

We provide sprinkler systems and maintenance training and hold practical facilities to give our delegates the opportunity to practice some of the theory on real equipment in addition to classroom learning elements. Collaboration with industry specific suppliers and manufacturers has permitted us to replicate much of the equipment likely to be encountered in the field and also demonstrate cutting edge items intended to broaden the knowledge sphere of the learner.

Courses are held regularly at our sprinkler laboratory in Blockley, Gloucestershire and are open to bookings from all industry sectors.

By Dr Simon Bird, FPA Principal Consultant, Convenor of the RISC Authority Active Working Group responsible for production of the LPC Rules for Automatic Sprinkler Installations, FPA

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250	1/2 125	13
300	3/4 100	16
450	1 125	25
500	1 125	25
750	1 1/2 150	38
1000	2 150	50
1250	2 150	63
1500	2 1/2 200	75
2000	3 200	100
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3000	3 1/2 250	150

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Standards update : current activity within these standards bodies and their committees

THE SPRINKLER STANDARDS most widely used in the UK are published by CEN (*European Committee for Standardisation*) and BSI (*British Standards Institute*).

CEN committees

CEN/TC 191 has several working groups for various extinguishing media. WG 5 is responsible for standards relating to sprinklers, including systems and components. This working group has one task group (TG) responsible for sprinkler components and another for the sprinkler Rules (systems). Water mist was included in WG 5 but was set up as a separate group in 2016 as WG 10.

Other WGs **1** – Powder; **2** – Foam systems; **3** – Foam media; **4** – Powder systems; **6** – Gas systems and components; **9** – hydrants and hose reels; **10** – Water mist systems and components (this was previously TG 3); **12** – Mandate; **SC1** – Smoke Control

The current activities of each Task Group of WG 5 are summarised below:

CEN/TC191/WG5/TG 1 - Sprinkler Components The main responsibility of this task group is to oversee the development and revision of standards in the EN 12259 series for various components. These component standards are now required to be written in accordance with the requirements of the Construction Product Regulations. The task group has also been working on a new standard, prEN 12259-12 for pumps. The BAFSA / BSI representative on this group is BAFSA Council member Alex Playfair of SPP.

prEN 12259-9 deluge valves, has been circulated for enquiry and at its next meeting TG1 will begin to address the comments. The deadline for submittal of a draft for a final vote is May 2017. Work on drafting this standard began almost 20 years ago, during which time the rules for CEN standards have changed, as has their interpretation.

Earlier in 2014, prEN 12259-14: *Fixed firefighting systems — Components for sprinkler and water spray systems. Residential Sprinklers* was issued for consultation. Resolution of the comments is proceeding in parallel with the drafting of the residential sprinkler system design standard (see below). The publication of the draft prEN 12259-14 means that the equivalent British Standard, BS 9252, will not be revised as the standstill rule restricting the development of national standards applies.

CEN/TC191/WG5/TG2

This task group is currently revising EN 12845:2015, *Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance*. The UK had expressed some concern over proposals for changes to the Hazard Groups and the fact that seven sub-groups were working independently of each other. These concerns have been addressed and the TG is now working as one going through the draft line by line. This is a slow but necessary process and it is expected that a first draft will not be ready until the end of 2017 or early 2018.

Residential sub-group

prEN 16925 was circulated for enquiry (comment) in 2015. Based on the Nordic INSTA 900-1 but with many changes it received over 550 comments, most from Germany and the UK. The comment review is almost complete and a revised draft is expected to be circulated for enquiry in 2017. In some countries, such as the UK, national regulators have influenced the values for design densities and numbers of design heads. To enable countries to use different values if they wish, flexibility has been introduced so that they can write a national annex with national figures. The UK has already drafted an A-deviation, which is the CEN paperwork to enable a country to draft a national annex.

CEN/TC191/WG10 – Water Mist This task group has recently received approval for 12 preliminary work items, covering:

- wet benches
- commercial kitchen protection systems
- industrial oil cookers
- machinery spaces
- atria
- cable tunnels
- car park garages
- non-storage occupancies
- offices
- shopping areas

Due to an administrative error, BSI did not vote. Drafts already exist for most of these work items, so several should be circulated for enquiry in 2017.

BSI committees

As with the CEN committees, BSI FSH 18 has several working groups identified for different extinguishing media. FSH 18/2 is responsible for sprinklers and FSH 18/5 for water mist. The role of FSH 18/2 is to consider national standards work and the standards developed by CEN for both components (EN 12259 series), sprinkler systems (BS EN 12845) and to consult and coordinate UK responses and brief UK delegates accordingly. A separate task group FSH/18/2/1 was responsible for the 2014 revision of BS 9251, *Fire sprinkler systems for domestic and residential occupancies*.

Code of practices

In 2015 FSH 18/5 – Water Mist was responsible for bringing DD 8458 to a full BS with the issuing of BS 8458:2015, Fixed fire protection systems, Residential and domestic water mist systems. Code of practice for design and installation and in 2016 for issuing BS 8489 Parts 1,4, 5, 6 and 7

Engagement in CEN/BSI Representation on full CEN committees is limited by country, the UK has three places. UK representatives are mandated on how to respond to proposals by FSH/18 and FSH 18/2. BSI committees have nominated representatives from organisations such as BAFSA and other interested parties in the fire protection sector including insurers and regulators.

BSI FSH Committees are: FSH 18/2 Sprinkler Systems and Components: FSH 18/5 Water mist systems and components: FSH/18/2/1 TG Domestic and residential Revision BS 9251. Other FSH 18 sub committees 6 - Gaseous media & systems 7 – Foam media & systems 8 – Powder media & systems 11 –Hose -reels

When attending CEN and BSI working groups, representatives and independent experts are not required to adhere to collective views, although clearly they may be mandated by their individual organisations. As an organisation BAFSA needs to ensure it plays a full and active part in the various committees and task groups and that the broader membership has the opportunity to comment on documents issued for consultation. Members also have a responsibility to ensure that BAFSA is well represented to ensure that the views of the industry are taken account at each stage of the development process.

International standard-making bodies

ISO/TC 21/SC 5 Fixed fire-fighting system using water. 20 participating countries are involved in preparing these standards, with a further 17 countries observing the work. European and UK involvement is limited, although there has been some discussion over the possibility of adopting ISO standards where equivalent versions have not been published by CEN.

Other commonly used sprinkler standards

- NFPA: NFPA has several sprinkler-related standards. Most notably, NFPA 13, NFPA 13R and NFPA 13D relate to sprinkler systems widely used throughout the world including some used in the UK. NFPA also publishes a standard for inspection, testing and maintenance of water based fire protection systems, NFPA 25.
- Other national standards: In Europe, INSTA (Scandinavia) and NEN (Netherlands) have standards relating to sprinkler components and systems.
- Insurance body standards: In addition to national standards bodies, several insurance bodies publish sprinkler related standards. These include FM Global, UL, VdS and in the UK, The Fire Protection Association, which publishes the LPC Rules/Technical Bulletin on behalf of the RISC Authority.

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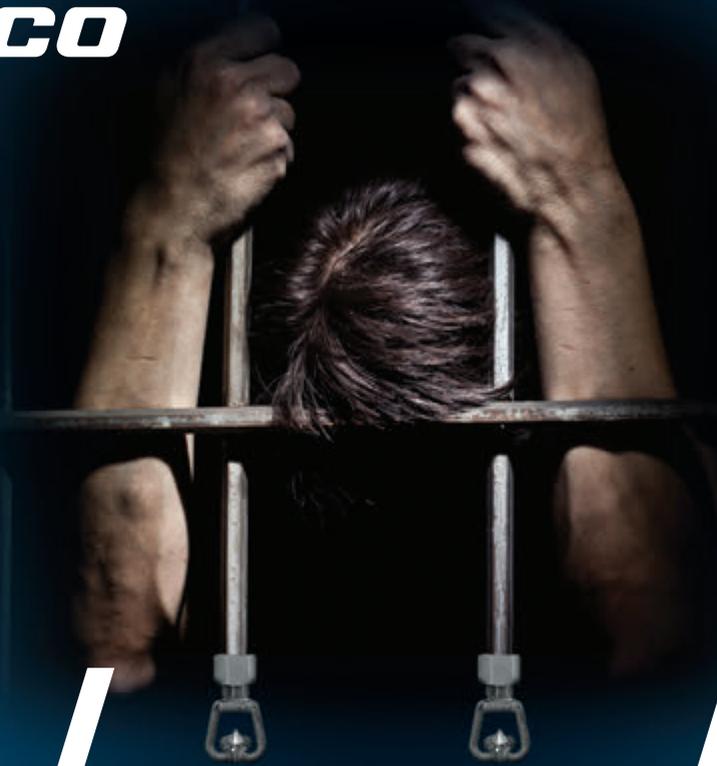
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Clearly, this cannot go on. It only takes one non-functional nozzle for a fire to get out of control. If duty holders don't improve their deluge systems, they risk condemning not only their assets, but their staff as well.

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OmniPass-equipped nozzles, even with the old system and existing debris being present.

Tyco is the only company in a position to provide the industry with an effective and achievable solution to this pressing issue. Current systems are not designed for salt water and have never been adapted to meet the challenges of salt water corrosion and marine life. While the system still requires maintenance, Tyco delivers a deluge resilience programme that meets with HSE requirements, which includes a move from annual wet testing to every five years, yearly and annual internal dry inspections to ensure no pipe blockages exist in the pipes. Only OmniPass can quickly and cheaply transform your deluge system from a dangerous liability into a fully operational life-saving asset. OmniPass gets water to the fire, first time, every time.

Don't let blocked nozzles condemn your employees and assets

It is unacceptable for lives to be endangered by a minimal administrative oversight of the difference between water types. Freshwater and saltwater systems must be regulated separately. In the meantime, rig operators must consider how they can inexpensively safeguard their deluge systems against blockage as they look to balance their economic and safety obligations.

The world cannot afford another Piper Alpha or Deepwater Horizon. Enough lives have been lost to procedural and technical inadequacy. Only Tyco OmniPass can quickly, simply and cheaply address all of these concerns. Now is the time to consider: would you rather head off a fire now, or wait until it's too late?



This technology is globally provided to the market via Tyco and is licensed exclusively to Tyco from the inventor of the technology at Rig Deluge Limited. Tyco is proud to offer this innovative solution to a global issue, invented locally in Aberdeen, that enables organisations to get water to the fire - first time, every time.

Hydraulic formulae information : sprinkler system design

THIS PART OF the Yearbook shows various hydraulic formulae and information that should be of value to a wide audience in the sprinkler industry. Suggestions for additional items in future editions of the Yearbook will be gratefully received by the editor.

1. Hazen-Williams formula for calculating the friction loss in pipework

The Hazen-Williams formula has long been used for calculating the friction loss in pipework for fire sprinkler systems. This equation uses the coefficient C to specify a pipe’s roughness.

$$p = \frac{(6.05 \times 10^5)}{(C^{1.85} \times d^{4.87})} \times L \times Q^{1.85}$$

Where:

p is the pressure loss in the pipe, in bar;

Q is the flow through the pipe, in litres per minute;

d is the mean internal diameter of the pipe, in mm.

C is a constant for the type and condition of the pipe

L is the equivalent length of pipe and fittings, in metres.

2. Value of C for use in the Hazen-Williams formula

Table 3 lists the values for the coefficient C, which can be used in the Hazen-Williams formula for different design standards. The value of C represents a pipe’s roughness, with higher values of C giving lower friction losses. The values allow for pipe degradation over a period of approximately 20 years.

Table 3. Values of C for various pipe types

Type of pipe	C (BSEN 12845)	C (BS 9251)	C (NFPA 13)
Cast-iron	100	-	-
Cement-lined cast-iron	130	-	140
Copper	140	140	150
Ductile iron	110	-	100
Galvanised steel	120	-	120
Mild steel	120	120	120
Mild steel (dry and pre-action systems)		-	100
Plastic (CPVC, MDPE)	-	150	150
Spun cement	130	-	-
Stainless steel	140	-	150

4. Hazen-Williams Simplified formula

The Hazen-Williams formula can be simplified to:

$$p = k \times L \times Q^{1.85} \text{ using the } k \text{ values shown in Table 3.}$$

Where:

p is the pressure loss in the pipe, in bar;

Q is the flow through the pipe, in litres per minute;

k is the constant in Table 16.4 in columns 3,5 and 7.

L is the equivalent length of pipe and fittings, in metres.

Table 5. k values for various pipes

Nominal diameter	EN 10255 Series M		EN 10255 Series H		CPVC	
	ID mm	C = 120 value of k	ID mm	C = 120 value of k	ID mm	C = 150 value of k
20	21.70	2.67 x 10-5	20.50	3.52 x 10-5	22.20	1.58 x 10-5
25	27.35	8.66 x 10-6	25.75	1.16 x 10-5	28.00	5.11 x 10-6
32	36.05	2.25 x 10-6	34.45	2.81 x 10-6	35.40	1.63 x 10-6
40	41.95	1.08 x 10-6	40.35	1.30 x 10-6	40.60	8.36 x 10-7
50	53.05	3.44 x 10-7	51.25	4.07 x 10-7	50.90	2.78 x 10-7
65	68.75	9.72 x 10-8	66.95	1.11 x 10-7	61.50	1.11 x 10-7
80	80.75	4.44 x 10-8	78.75	5.02 x 10-8	75.00	4.21 x 10-8
100	105.05	1.23 x 10-8	103.25	1.34 x 10-8		
150	155.20	1.84 x 10-9	154.40	1.89 x 10-9		

6. How is the Mean Internal Diameter (ID) calculated?

BS EN 10255 specifies the manufacturing tolerances for pipes. It shows the maximum and minimum outside diameters allowed and also the wall thickness required, these are used to calculate the number in the Internal Diameter (ID) column of Table 5. For 100mm (4”) pipe the maximum OD is 115.00mm and the minimum OD is 113.10mm, the wall thickness is 4.5mm. This is how the ID for 100mm Medium pipe is calculated:

$$\left(\frac{Max\ OD + Min\ OD}{2} \right) - 2 \times Wall\ Thickness$$

$$\left(\frac{115.00 + 113.10}{2} \right) - 2 \times 4.5 = \left(\frac{228.1}{2} \right) - 9 = 114.2 - 9 = 105.05mm$$

7. How is the value of k in Table 5 calculated?

i.e. 1.23×10^{-8}

Using this part of $\frac{6.05 \times 10^5}{c^{1.85} \times d^{4.87}}$ of the H+W formula the value of k can be

$$\text{calculated } \frac{6.05 \times 10^5}{120^{1.85} \times 105.05^{4.87}} = 1.23 \times 10^{-8}$$

8. Pressure loss calculation example

Use Hazen-Williams simplified formula to calculate the pressure loss in 25m of 50mm EN 10255 Series M pipe at a flow rate of 500 L/min:

The k value for 50mm pipe in the table 5 is 3.44×10^{-7} .

Calculate as follows:

$$p = k \times L \times Q^{1.85}$$

p = Pressure loss to be calculated

$k = 3.44 \times 10^{-7}$ (from table 16.5)

Q = Flow (500 l/min) to the power of ^{1.85}

$$500^{1.85} \times 3.44 \times 10^{-7} \times 25 = 0.846 \text{ bar} = 846 \text{mb pressure loss.}$$

9. Velocity in pipe

Some sprinkler rules limit the velocity through pipes and valves in sprinkler systems. BS EN 12845 limits velocity to 6m/s through valves and flow switches and 10m/s at any other point in the system. The velocity limits for pump suction pipes are 1.8 m/s for Positive Head and 1.5 m/s for Suction Lift conditions.

Note: Pressure loss due to velocity is normally ignored when designing sprinkler systems to BS EN 12845 sprinkler rules.

The case for limiting velocity is that the Hazen- Williams formula is less accurate outside its normal range and equivalent pipe lengths for fittings, which are generally used, start to lose their validity. Some authorities believe that velocity is self-limiting since pressure losses increase exponentially as velocities increase, so pipe size must be increased to make use of available water supply pressure.

$$v = 21.22 \frac{Q}{d^2}$$

v = velocity m/s

Q = flow of water in L/min

d = internal diameter of pipe in mm

10. Examples of how to calculate Velocity, Flow and pipe ID.

To calculate V (m/sec) in 155.22 ID M pipe with a flow of 2250 (L/min).

$$v = 21.22 \times \frac{Q}{d^2}$$

$$v = 21.22 \times \frac{2250}{155.2^2}$$

$$v = 1.98 \text{ m/sec}$$

To calculate ID (mm) with a known flow (L/min) and Velocity (m/sec)

Example: What ID pipe is required for: flow = 6811 L/min, maximum velocity = 6 m/sec.

$$d \text{ (mm)} = \sqrt{\frac{21.22 \times Q}{v}}$$

$$d \text{ (mm)} = \sqrt{\frac{21.22 \times 6811}{6}}$$

$$d \text{ (mm)} = 155.2\text{mm}$$

To calculate FLOW (L/min) with a known ID (L/min) and Velocity (m/sec)

Example: What FLOW is required for: ID = 155.2 mm, maximum velocity = 10 m/sec.

$$Q = \frac{v}{21.22} \times d^2$$

$$Q = \frac{10}{21.22} \times 155.2^2$$

$$Q(\text{L/min}) = 11351 \text{ L/min}$$

Table 11. Maximum flows for velocities of 6 and 10m/s in M and H pipe

Nominal diameter mm	EN 10255 Series M 6m/s	EN 10255 Series M 10m/s	EN 10255 Series H 6m/s	EN 10255 Series H 10m/s
20	133	222	119	198
25	212	353	187	312
32	367	612	336	559
40	498	829	460	767
50	796	1326	743	1238
65	1336	2227	1273	2122
80	1844	3073	1767	2923
100	3120	5201	3014	5024
150	6811	11351	6741	11234

12. Sprinkler head and nozzle calculations

The discharge from, K factor and pressure for sprinkler heads or nozzles can be calculated using the following formulae:

$$Q = K \times \sqrt{p}$$

Example: $K = 80$, $P = 0.5$ gives a flow Q of 56.57 L/min

$$p = \left(\frac{Q}{K} \right)^2$$

Example: $K = 80$, $Q = 100$ gives a pressure P of 1.563 bar

$$K = \frac{Q}{\sqrt{p}}$$

Example: $Q = 113$, $P = 2$ bar gives a Sprinkler K factor of 80

Where $Q =$ Flow in L/min,
 $p =$ Pressure in bar

$K =$ K factor for sprinkler head or nozzle

Always refer to the sprinkler head manufacturers' data sheets for 'k' factor and operating pressures.

13. Unit Conversions

Pressure conversions

bar x 14.5	=	psi	kPa x 0.01	=	bar
bar x 100	=	kPa	m Head x 0.098	=	bar
bar x .001	=	mbar	mbar x 1000	=	bar
ft head x 0.02986	=	bar	psi x 0.06895	=	bar

Table 14 BS EN 12845 k-factors for sprinkler heads

When a sprinkler system is designed using The Loss Prevention Council Rules (LPC Rules) Technical Bulletin TB207.Table TB207.T1 must be used.			
Hazard Class	Design Density mm/min	k-factor L/min/bar ^{0.5}	Minimum pressure bar
Light Hazard	2.25	57	0.7
Ordinary Hazard	5	80	0.35
High Hazard Process (HHP) Roof Sprinklers	≤ 10 > 10	80, 115, 160 115,160	0.5
High Hazard Storage (HHS) Roof Sprinklers	≤ 10 > 10	80, 115, 160 115,160	0.5
High Hazard Storage (HHS) In-Rack Sprinklers	Calculated with a minimum in-rack head pressure	80 115	2.0 1.0

Table 15 LPC Rules k-factors for sprinkler heads

When a sprinkler system is designed using The Loss Prevention Council Rules (LPC Rules) Technical Bulletin TB207.Table TB207.T1 must be used.			
Hazard Class	Design Density mm/min	k-factor L/min/bar ^{0.5}	Minimum pressure bar
Light Hazard	2.25	57	0.7
Ordinary Hazard (O.H)	5	80	0.35
TB 222 (EPEC) O.H Room protection	6.0 and 6.5 See TB222	115 (EPEC)	FHC See TB222 Table T3
TB 223 (EPEC) O.H Ceiling voids	See TB223 Table T1	80 and 115 See TB223 Table T1	FHC See TB223 Table T1
High Hazard Process (HHP)Roof/ Sprinklers	≤ 10 > 10 ≤ 12.5 >12.5	80 and 115 115 160	0.5 0.5 0.5
High Hazard Storage (HHS) Roof Sprinklers	7.5 ≥ 10 < 12.5 ≥ 12.5 ≤ 18.5 ≥ 19 ESFR	80 115 160 ≥ 240 ≥ 200	FHC See TB234 See TB.209
High Hazard Storage (HHS) In-Rack Sprinklers	Calculate with a minimum in-rack head pressure	115	1.0

Sprinkler Saves

March 2015



13th – factory: Tyne & Wear

A manufacturing company in Tyne and Wear experienced a fire in a wall mounted process heater at their 5000m² single storey factory. One sprinkler activated and successfully suppressed and extinguished the fire. In addition the sprinkler cooled 2 barrels of solvent which had the potential to further fuel the fire. The intervention of the sprinkler system kept the total damage to under 10% of the building and no injuries were reported.



29th – retail: Carlisle

A single sprinkler head activated in a lavatory in a shop unit in the Lanes Shopping Centre when a fire started in a defective extractor fan which had been left running after business hours. The fire was contained to the toilet. The FRS attended when the flow switch operated the AFD system, but the fire had been extinguished by the head.

April 2015



28th – recycling: London

A fire occurred within a paper shredding machine at a large 30,000m² recycling warehouse in East London. Staff responded quickly and operated the machine's fire suppression system which controlled and extinguished the fire. London Fire Brigade crews attended, gained access to the machine and spent a few hours damping down and turning over.

May 2015



15th - mill: Lancashire

A single head actuation in an ESFR system suppressed a fire in a bulk waste area at the paper mill in Ramsbottom. The system was installed two years ago and upgraded fire measures included a new ring main, water supply and the ESFR upgrade when SCA acquired the premises.



17th - college: Middlesborough

While the building was occupied by about 100 students, a fire occurred in a waste bin in a second floor toilet area at a sixth form college. One pendant sprinkler head activated and extinguished the fire before the arrival of fire service personnel in two pumps and one aerial appliance.

Noel Cornforth at Cleveland Fire Brigade said "without sprinkler intervention the fire could have spread to cause significant damage to the fire floor, interrupting the day to day function at the college".



18th - warehouse: London

Ten fire appliances from seven fire stations and over 70 firefighters and officers were called to a fire in a large distribution warehouse on Lombard Wall in Charlton. At its height the fire, which also damaged six lorries, produced plumes of smoke and businesses and residents were advised to keep doors and windows closed as a precaution and local road closures were put in place.

Crews wearing BA brought the fire under control within 2.5 hours.



19th - recycling: Bilston

Three sprinkler heads activated when a fire occurred in a pile of about 110 tonnes of material in a 100m x 120m building at a textile recycling plant in Bilston.

From his post fire inspection Dave Marsh, Fire Safety Officer with West Midlands FS, noted that the sprinklers had controlled the fire, limiting the damage to a couple of tonnes of textile ready for recycling. Crews damped down the fire whilst utilising some on-site machinery to dig the pile out.



21st - retail: Nottingham

At a retail unit within East Midlands Airport a fire occurred in a store room which appeared to have started in an extractor fan within the store room but was extinguished by the operation of two sprinkler heads close to the seat of the fire. Fire damage was confined to the area immediately around the seat of the fire.



23rd - mill: North Wales

A fire occurred on the production line which produces laminated plastic and paper within a 50,000m²

breeze-block and sheet metal construction building on a major paper manufacturing site.

The heat from the fire set off two sprinkler heads on the wet pipe system in the fully sprinklered premises and the staff assisted to put out the fire with extinguishers. The attending fire crews from North Wales FRS reported the fire to be OOA (out on arrival).

June 2015



9th – warehouse: London

Four fire engines and 21 firefighters, from Poplar, Plaistow, Stratford, and Shadwell fire stations, were called to Bradfield Road after a recycling machine caught alight inside the warehouse.

Station Manager Tim Frost, who was at the fire said the building’s sprinkler system helped prevent *“considerable damage. As well as being potentially life saving devices, sprinklers and other fire suppression systems help with business continuity by minimising disruption and allowing businesses to get back to normal as soon as possible.”*

“This incident highlights the clear benefits of sprinklers to businesses and we would urge all companies to install them”.



11th – retail: King’s Cross Station, London

LFB responded to an AFD to find smoke issuing from a retail unit within the concourse area. Some 5000 – 8000 people were evacuated uninjured and trains were put on caution. After investigation crews found a fire damaged air conditioning unit with a sprinkler head directly above the unit which had actuated and fully extinguished the fire.



16th – flats: Motherwell

Three pumping appliances were mobilised to a fire occurred in a kitchen on the fourth floor of a five storey block of flats housing homeless persons. Two breathing apparatus wearers were committed to ventilate but no fire-fighting action was recorded as the fire had been doused by the block’s sprinkler system.



20th – retail: Ayr

A fire occurred in stacked waste cardboard in an enclosed loading bay area in a three-storey department store in the High Street. An upright sprinkler head on the mains fed sprinkler system suppressed the fire and attending fire crews were able to extinguish it within 11 minutes of arrival. There were 100 persons in the shop at the time of the incident, none of whom were injured. Damage was limited to about £1000 with the total stock value at the store being put at £900,000.



23rd – factory: Cheshire

Eight fire crews were sent to a fire at the Mitras factory on Road One, Winsford Industrial Estate. Firefighters in BA worked inside the building to detect and extinguish the flames, which went from the machine and up through ducting affecting the roof.

Keith Brooks, Head of Protection and Prevention, Cheshire FRS said : “This factory contained highly flammable products which, if a fire had got to them, could have been disastrous. Thankfully, a sprinkler system contained the flames”.

Mitras Managing Director Andrew Goodier is feeling the benefits of having sprinklers. He said: “Whilst manufacturing has been paused for one week, without the sprinkler system we’d be talking two years, if not longer. We are opening a new factory in Winsford very soon and have already fitted sprinklers as standard”.

A fire involving machinery at Jiffy Packaging, also on the Winsford Industrial Estate, was kept confined thanks to a sprinkler system. The systems which saved these two premises is a fixed pipe sprinkler system which runs through the premises, protecting the manufacturing areas.



28th – factory: Livingstone

A fire occurred on the Brucefield Industrial estate in raw plastic material at a factory which recycles materials to produce high quality packaging. The Scottish FRS mobilised three pumping appliances and on arrival found that one mains fed pendant sprinkler head had suppressed the fire and prevented it from spreading. The fire was out in 30 minutes from the arrival of the fire crews.

July 2015



7th – recycling: Warrington

An over-heated conveyor belt caused a fire at Shred-It on the Barleycastle Trading Estate. The damage at the Appleton shredding company was dramatically reduced thanks to them having a deluge system installed in the machinery. [a deluge system is a type of sprinkler system where all the heads open simultaneously]. Four fire engines, three from Cheshire FRS and one from Greater Manchester FRS attended and firefighters, two wearing BA, isolated the electricity supply to the machinery unit and used a hose reel jet to make sure the fire was completely out.

Keith Brooks, Head of Protection and Prevention at Cheshire F&RS said: “As a Service we are very proactive in the promotion of sprinkler systems as they drastically reduce the damage caused by a fire and therefore minimise the disruption and time taken to achieve business continuity.”

In addition to the deluge system, the company has a conventional sprinkler system installed across the building which is an additional safeguard.



12th – recycling: Alfreton

Derbyshire FRS received a call to a fire in the main waste processing area at a recycling plant in Somercotes, Alfreton which is used for the storage of ‘recyclable bulky waste’ and ‘brown waste’ prior to it being relocated to the appropriate recycling centres, turned into renewable fuel or onward disposal. The fire was initially controlled by two heads on a wet pipe sprinkler system and the operation of two fixed water monitors.



Firefighters extinguished the fire in less than 4 hours.



19th – factory: Kings Lynn

The on-site sprinkler system confined a fire to a single pulp storage area of a paper producer in Kings Lynn. All the storage bays were mostly full of pulp, potentially providing a massive fire loading in a building understood to be one of the largest in Norfolk.

Damping down operations completed by Norfolk FRS personnel. It is thought likely that without the sprinklers intervening there may have been a huge loss.

August 2015



5th – multi- occupancy high rise: London

Firefighters from LFB were called to a small oven fire in a restaurant in Europe's tallest building, the Shard in Southwark. The oven fire was on the 33rd floor and it was extinguished by sprinklers fitted in the building. Staff on site evacuated around 100 customers from restaurants on levels 31, 32 and 33 and there were no injuries. The rest of the building was unaffected.

“The building’s sprinkler system did its job and suppressed the fire in its early stages, which prevented any serious damage”



5th – workshop: Nottingham

Nottingham FRS mobilised two appliances to a report of fire in a dust extraction unit at a joinery workshop in Catton Road, Arnold. Crew manager Zac Goodspeed reported that upon arrival they found one sprinkler head above the unit had been set off and had prevented the fire from spreading to other plant and materials. The unit was on fire internally and had badly smoke logged the workshop but, because the fire was contained, firefighters were able to extinguish it without too many problems.



7th – leisure: Leicester

On 7th August, Leicester FRS were called at 01:47 to a fire at a kickboxing club in Leicester. They found a fire in the roof space, where a single sprinkler had operated to prevent spread to the rest of the roof space. Only a small area of the roof was damaged.



19th – high rise: London

At 1052hrs, London Fire Brigade was called to a report of ‘water issuing from fourth floor’ of a 12 storey purpose built block of flats (built circa 2004).

On investigation, crews found that there was a fire inside flat 14 on the 4th floor of the building. The fire had occurred in the kitchen of the two bedroom property and one sprinkler head had opened and suppressed the fire leaving the flat lightly smoke logged.



24th – retail: Glasgow

Scottish FRS received a call to a report of fire on the first floor at a 20m x15m mobile phone retail outlet in the Forge Shopping Centre, Gallowgate.

Initial investigations appear to point to the seat of the fire being a lap top computer which had been left on.

On arrival crews found that the fire had been subdued by the action of one pendant sprinkler head on the wet-pipe system.

There was minimal disruption/ business interruption to the shop in question and an estimated £20k of damage/value to stock,

“If there had been no sprinkler intervention and the fire been allowed to grow, the plate glass front could have failed, allowing possible fire ,heat and smoke spread within the upper area shopping mall”

September 2015



14th – sheltered housing: Croydon

London Fire Brigade advise that a sprinkler system in a flat in an ‘Extra Care’ sheltered housing scheme owned by the London Borough of Croydon successfully operated to extinguish a fire in a kitchen unit. The fire occurred when an electric toaster had ignited a tea towel in close proximity. The occupant was asleep at the time. Responding firefighters, alerted by the waterflow alarm connected to the building’s fire detection system, evacuated the resident.

An LFB senior officer later said that there is no doubt that the sprinkler system saved the occupant’s life.



15th – flat

Initial information has been received from AES Sprinklers regarding a sprinkler save in a former Workhouse recently converted into 26 flats. A resident who had been smoking in bed went through to the kitchen where he suffered an epileptic seizure. The bed caught fire but was extinguished by a single head operating before the arrival of the fire service. Notably, the resident has not had to be re-housed.

October 2015



7th – mill: Manchester

At just after 0930 on Wednesday 7th October, Greater Manchester FRS mobilised five appliances to a report of fire at Rank-Hovis flour mills in Trafford Park, Manchester. On arrival, fire was observed in machinery in the pellet press area and ducting on several levels. It is reported that hose-reels were used to extinguish the fire(s).

Firefighters were greatly assisted as 7 sprinkler heads activated, as did fire dampers in the locality, contributing significantly to controlling the fire prior to their arrival. Due to the combined work of the active systems and fire service actions the plant is reported to have been back in full production after a few days.

November 2015



21st – residential care home: Cheam

An elderly man had a lucky escape from a fire caused by a cigarette

in his flat thanks to a sprinkler system. Firefighters from Sutton and New Maldon were called to a fire at the residential care home in Mickleham Gardens at 2312 hrs and the fire was over at 2347hrs. Fortunately the man had already escaped the flat and his sprinkler system had put out most of the flames. He was treated for shock at the scene and taken to hospital as a precaution.

Sutton fire station manager Richard Field said: "People living in sheltered accommodation and extra care facilities are often very vulnerable to fire. They may have limited mobility or a disability which makes it difficult for them to notice a fire and react quickly".

"It appears the careless disposal of cigarettes was the cause of the fire and if it wasn't for the flat's sprinkler system this fire could have had a very different outcome.

January 2016



9th – house: Sheffield

A recently installed fire sprinkler system, at a Derby street address in Gleadless, Sheffield, activated following a mobility scooter fire, allowing the elderly resident to escape without serious injury.

The mobility scooter, parked outside the front of the top floor property, burst into flames shortly before 0600hrs due to an electrical fault. The resulting fire then spread to the front of the building causing the front windows to break and allow the fire to spread inside the building.

The fire sprinkler system activated, extinguishing the fire and limiting damage to the front of the dwelling, when fire crews arrived the fire was under

control and the interior of the property was relatively undamaged.

The installation of these type of systems is now mandatory in Wales and South Yorkshire FRS is actively promoting the use of this type of protection in all types of buildings to build resilience and safety into our community.

March 2016



3rd – flat: London

Cooking oil in a pan ignited in the kitchen of a 9 storey block of flats in Blackwall. The lady occupier rushed to raise the alarm but even as she was on the phone to the fire service the single sprinkler head in the kitchen activated to extinguish the fire. There was some smoke damage within the kitchen but no one was injured among the 75 reported residents in the block.



5th – apartment block: London

London FB received a call to a report of fire in a 9 storey block of serviced apartments in the Borough of Westminster. 4 pumping appliances were mobilised.

The seat of the fire was located in an air conditioning unit contained within an adjacent store room and that the fire had spread through about 5m of ducting into the reception area. The heat and flame produced was enough to actuate all 3 'sprinkler' heads at ceiling level above the reception desk. These heads extinguished the fire at the outlet.

The concierge instigated the evacuation of the 180 persons in the building and no injuries were reported.



8th - school: London

At just before 1300hrs on March 8th, London London FB were called to a report of fire in a 2nd floor toilet block at a secondary school in Hackney. One pumping appliance was mobilised. The school is equipped with a full sprinkler system and one head on the wet pipe system had operated within the toilet area to extinguish the fire. The fire was reported as Out on Arrival (OOA) and there were no reported injuries.



25th - hotel: London

London FB received a call to a fire in a second floor bin store at a 6 storey hotel in Islington.

Crews found that a large bin, among a group of four, was involved in the fire but that one sprinkler head above the bin had activated and suppressed it. This had prevented fire spread to the other nearby receptacles and possibly beyond. Firefighters were able to extinguish the fire without difficulty using one hose-reel. The premises were evacuated when the alarm was raised but it is understood that the hotel was fully up and running again after about 1 hour. The cause of the fire is being attributed to carelessly discarded smoking materials.



25th - care home: London

A fire involving cooking fat occurred in a staff kitchenette at a 3 storey, 23 bed supported living scheme in Hillingdon. The flash fire was severe enough to activate the single sprinkler head within the room of origin and this extinguished the fire, limiting damage to about 5m².

Premises staff were unaware of the isolation procedures for the sprinkler system which led to a delay on shutting off the supply once the fire had been confirmed as out by FRS personnel.



27th - apartment block: Chelmsford

A chip pan caught fire in a kitchen at a 14 storey tower block in Chelmsford, Essex at around 2240hrs on March 27th.

The block of 81 flats is one of a number within Essex that have been fitted with residential sprinklers by BAFSA member, Triangle Fire Protection. Once the pan ignited, one sidewall sprinkler head activated within the kitchen and completely extinguished the fire. The sprinkler system is fed by pump from a storage tank within the building.

Fire damage is reported to have been confined to the room itself (5m²) and no injuries are reported to have occurred.

April 2016



9th - underground car park: Oxford

Oxfordshire County Council FRS were called to a reported car fire. Upon arrival at the incident crews were faced with dense smoke issuing from the building and the sprinkler system flowing.

Crews in breathing apparatus, utilising thermal image cameras, battled through the poor visibility to find the affected vehicle and fully extinguish the fire, which had earlier been controlled by the sprinklers.



11th – office block: Glasgow

A small fire occurred in an electrical circuit inside a light fitting in a fifth floor corridor of a 100x125m, 6 storey premises comprising of stone floors and staircases and having multiple access & egress points.

Scottish F&RS mobilised 3 Rescue Pumps, 1 Aerial Appliance & 1 Station Manager to the incident.

As a result of the fire, one sprinkler head activated on the mains fed system and this, combined with the use of a dry powder extinguisher, ensured the fire was swiftly extinguished.

Fire damage was limited to 2m² and smoke staining to 20m². The total cost of the fire was estimated to be less than £5k.

May 2016



7th – mill: Denby Dale

A multi-seated fire broke out at the two storey Hartcliffe Mills.

After hearing the bells on the sprinkler system sounding, the owner used a fire extinguisher to put out a fire on one of the floors while he waited for the fire crews to arrive. West Yorkshire F&RS mobilised crews and a spokesperson said: “The sprinkler system had done its job and put most of the fire out and our positive pressure ventilation (PPV) fans then blew the smoke out. Only minor damage was caused, with slight burning to the flooring as well as some smoke damage.



11th – printing works: Bolton

A printing and dyeing works in Adlington had to be evacuated after a machine caught fire. FRS crews were called after reports that one of their wrapping machines was involved in a blaze.

The premises were evacuated and the fire was contained to just one machine, which was badly damaged. Fire service watch manager Glyn McGann said: “The sprinklers were activated and we used thermal imaging cameras and fans to help extinguish the remainder of the fire.



12th – warehouse: Purfleet

Firefighters were called to a fire at the Tesco's where an accidental fire had been caused by an industrial cleaning machine catching fire. The Office in Charge reported: ‘The warehouse did have a working sprinkler system fitted and one head activated directly above the mechanical sit-on floor sweeper this prevented the fire from spreading, but could not extinguish it as the fire was shielded by the floor sweepers’ roof. The fire residue was quickly extinguished with one hose reel jet, by attending crews using breathing apparatus.



17th – commercial hatchery: Grantham

Lincolnshire F&RS mobilised two fire appliances from Grantham Fire Station following the report of a fire. The seat of the fire was discovered to be a commercial tumble dryer within a laundry at the hatchery.

The fire had developed sufficiently to also activate the sprinkler system, with a single head nearest to the tumble dryer

operating automatically to control and contain the fire. FRS personnel were able to extinguish the fire using a CO₂ extinguisher and they sent the 'stop' message at 0513 hours.

The room in question is of sandwich panel construction and without the sprinkler activation it is thought likely that the fire would have spread from the dryer to the room panels and possibly beyond to the full factory.



20th – industrial laundry: London

London Fire Brigade received a call to a report of fire in an industrial dryer at a 2 storey laundry building. A towel had become entangled in the drum machinery causing it to catch alight through friction.

Fortunately the fire was contained to the dryer and immediate vicinity by the presence of a single sprinkler head nearby, fed via storage tank and pump. Crews extinguished the fire and were on site for a total of just over two hours. The amount of damage caused was listed as between 11 and 20m² and none of the 70 occupants are reported to have been injured.



24th – factory: Belfast

A person was treated for shock following a fire at a factory to which Northern Ireland FRS were called. Two fire crews were deployed to the scene and firefighters using breathing apparatus, thermal imaging cameras and a hosereel jet dealt with a fire in a chemical treatment room.



27th – dwelling: Corby

A fire involving a wok in the kitchen of a house in a sprinklered development set back from the main road.

The report says that 'last Friday night our customer was cooking with a wok, things got out of hand and the wok caught alight setting off the kitchen sprinkler. The customer turned off the sprinkler system as the wok fire was out in moments, redecorated the kitchen ready for a family event the following evening.'



31st – multi occupancy: London

London Fire Brigade mobilised two pumps to a fire in a ground floor brasserie at a multi-purpose group occupancy. The 10 storey (plus basements) building has retail outlets at lower levels and the fire had developed in electrical cabling in a refrigeration unit in the coffee shop area. It was extinguished by one head on the buildings wet pipe sprinkler system.

Fire damage is reported to be 5% of the refrigeration unit. There were an estimated 1100 persons in the building at the time of the fire and all evacuated safely.

June 2016



19th – retail: Manchester

A city centre department store had to be evacuated after fire crews were called to the fire in a stock room on the third floor of the building at just before noon. A spokesperson for Greater Manchester FRS said *"The fire was in a third floor stock room but sprinklers inside the building were activated by the fire and put out the flames. "Fire crews remained at the scene for several hours to ensure all was safe inside the building. A fire investigation involving the police is ongoing to determine the cause of the fire."*



26th – leisure: London

London Fire Brigade responded to reports of a fire in a basement gymnasium at a 4 storey office and leisure complex. An evacuation of the estimated 400 persons in the large ground floor night club took place before the arrival of the two appliances that were mobilised.

One sprinkler head operated in response to a fire in a light fitting within the gymnasium and that this had extinguished the fire.



29th – flat: Surrey

A fire occurred in a flat in a 3 floor 26m x 27m supported living property in a sprinklered development designed to BS9251 and one concealed head activated in the open plan kitchen area, extinguishing the accidental fire. On arrival the fire service ensured the fire was out and used PPV to remove the smoke from the property.

July 2016



5th – tunnel: Kent

Drivers are reported to have fled after a vehicle went up in flames inside the Dartford Tunnel. People abandoned their cars after they spotted smoke billowing out of a vehicle. Drivers were told to leave their cars and evacuate the tunnel as firefighters worked to battle the blaze

A spokesman from Kent FRS said: 'The tunnel's automatic fire safety suppression system activated, quickly knocking back the small fire, and preventing it from spreading to other vehicles or damaging the tunnel.

There were no reports of any injuries.



9th – warehouse: Lancashire

A fire was reported at a distribution facility in Oldham used for the storage of 'high end' household electrical goods such as TV's with an estimated £6 million value.

Although the original part of the building was not protected by sprinklers, a new extension was fitted with roof sprinklers with a 2hr separating firewall at the insistence of local Building Control and the F&RS. The cause of the fire is understood to have been a faulty transformer under one of the work benches and it developed sufficiently to operate 14 heads on the sprinkler system. This controlled the fire and the FRS attended to provide final extinguishment. Business was up and running that same day with business interruption described as minimal.



9th – car park: London

London FB received a report of a fire in the underground car park of a 30m x 30m, 20 storey building in Great Russell Street. The building is occupied by shops, offices, a hotel and hostel with a 3 level underground car park. The fire involved a rickshaw and it is understood that the batteries were the source of the fire.



19th – factory: Kirkcaldy

A fire was detected by automatic alarm system in a machinery room at a factory producing flooring products in Kirkcaldy, Scotland. The fire was in a standby diesel generator used to back up the main electrical supply and jockey pump for the sprinkler pump house.

One sprinkler head actuated above the diesel generator and extinguished the fire.

This fire highlighted the need to install further relays to the alarm panels to identify that the diesel generator had started and to also ensure sprinkler coverage extends to the associated machinery spaces.



21st – recycling: London

A fire on a compressor conveyer belt in a recycling centre demanded attendance from fire crews from Wandsworth, Battersea, Tooting and Fulham. The on-site sprinklers helped control the fire until crews arrived while 41 people left the building with no reports of any injuries sustained.

August 2016



3rd – retail: Hounslow

A fire broke out in a 5m x5m storeroom at a department store at the Treaty Shopping Centre in Hounslow High Street.

London FB mobilised 4 pumping appliances to the incident but on arrival it was noted that one sprinkler head on the wet pipe system had activated within the storeroom and suppressed the fire. 1 hose-reel jet was used by attending crews to extinguish. Fire damage was limited to the room of origin and less than 5m² damage was recorded.

The shopping centre was occupied by approximately 1700 persons at the time of the fire and all evacuated safely and the store itself suffered four and a half hours business interruption.



29th – office: Ipswich

Suffolk FRS received an AFA signal to a 6 storey office block towards the centre of the town. On arrival at the premises operational crews were faced with smoke issuing from the car park at ground floor level and upon investigation it was identified that an amount of cardboard and rubbish had been placed within the car park and set alight.

This had activated a single head from the sprinkler system which had controlled the fire to the point of extinction with only remedial action and checking of hotspots/turning over from the operational personnel required.

September 2016



1st- sheltered housing: London

A fire occurred on the cooker in the flat of an 82 year old resident at residential specialised housing scheme in Canterbury Place. LFB also report that there were some issues with hoarding.

The block had been fitted with automatic fire sprinklers to BS9251 as part of a scheme to protect elderly and vulnerable residents in Southwark and one sprinkler head activated to extinguish the fire. This was all the more extraordinary as it is reported the system was not fully commissioned at the time of the fire. London FB reported that due to the excellent signage within in the block, the attending crews were able to quickly locate the stop valve and isolate the water supply to the sprinkler head.



3rd- factory: Wiltshire

An electrical fire in a ground floor test area of a semi conductor manufacturer in Langley Park, Chippenham activated one pendant sprinkler head on the wet pipe system within the two storey factory and the fire was reported to be ‘out on arrival’.



6th – factory: Shrewsbury

A fire broke out in a GRP manufacturer sending thick black smoke across the town. Crews were in attendance within minutes and observed that the fire had vented through a production extraction chimney. Two firefighters entered the building and were able to extinguish the fire using a hose reel jet as the area of the fire were being suppressed with the sprinkler system. A total of 7 sprinkler heads activated, effectively saving the building.



13th – flats: Birmingham

West Midlands FS reported a successful suppression system activation which partially extinguished a fire in the ground floor bin room of a 10 storey block of flats in Millmead, Woodgate. Full extinguishment with 1 hose-reel and ventilation of some of the upper floors was carried out by attending crews.



18th – mill: Oxford

Oxfordshire FRS were called to a fire at Worsham Mill, Minster Lovell. Four fire engines from Burford, Witney and Oxford, attended the scene.

The building was protected by a sprinkler system that activated and contained the fire until the arrival of the fire service. Only one head was needed to control the blaze. Without this automatic water suppression system more of the factory, goods and products would have been destroyed thus leaving the company in a vulnerable state.

Incident commander Nathan Crockford said *“the quick thinking of their staff helped to reduce the impact of the fire on the business and the activation of the sprinkler system prevented the fire from spreading to other areas of the site”*.

A firefighter in full gear, including a silver helmet and a black jacket with yellow reflective stripes, is shown from the side, spraying a powerful stream of water from a hose. The background is a stylized city skyline silhouette in shades of blue, set against a warm, orange-to-yellow gradient sky. The overall composition is vertical and framed by a thin black border.

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BAFSA People 2016

IT BECAME CLEAR in 2016 that the current structure of BAFSA was becoming unsustainable due to the pressure on members to attend and chair numerous meetings.

It was decided to streamline the structure by removing the Executive Council layer and reducing the Council meetings to four per year in a central location. In addition, members of the BAFSA team would now chair all committees. It is hoped that this change will allow more members to attend, albeit on fewer occasions.

John McCann, Chairman

Keith Plater, Vice Chairman

Kate Scourfield, Treasurer

Keith MacGillivray, Chief Executive

Karen Taylor, Council Minutes Secretary

Danny Doherty, Scotland

Ian Gough, Technical Adviser,

Chair of the Technical Committee

Joe McCafferty, Technical Adviser

Ritchie O'Connell, Wales

Ruth Oliver, Skills & Qualifications Adviser,

Chair of the Skills & Development Committee

Steve Mills, FRS Co-ordinator

Steve Seaber, BIF publisher

Stewart Kidd, Special Projects

Wendy Otway, Marketing & Events, Chair of the
Communications & Market Development Committee

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British Automatic Fire Sprinkler Association

bafsa

BAFSA has been supporting the sprinkler industry for 42 years and now has in place a highly effective volunteer leadership supported by a team of specialists to ensure the Association's objectives are delivered. Its structure incorporates a number of permanent committees and other groups where volunteers from the industry and supportive organisations meet together to work on tasks and projects in support of the Association's objectives and to deliver the policy set out by BAFSA's Council.

BAFSA Council

The Council is made up of representatives of all categories of membership elected by all the membership. There are up to nine installer members, five manufacturer and supplier members and three associate members.

A new Council is elected at each Annual General Meeting.

The Chairman, Vice Chairman and Treasurer are elected by Council at its first meeting each year. Where there are two or more members employed by the same company or group, a resolution is required to confirm the right of the member to sit on Council. This requires a majority of 75%. Keith MacGillivray is BAFSA's chief executive and in this role Keith is responsible to the Council for its day to day administration, with particular emphasis on meeting the association's primary objectives of promoting the wider and more effective use of sprinklers. There are also statutory, formal duties under the Companies Acts as the Company Secretary. The Chief Executive's role is part-time and paid and involves him in all aspects of BAFSA's activities.

The Chairman, Vice Chairman and Treasurer are all directors of BAFSA together with the Chief Executive.

Permanent Committees

Technical Committee

The purpose of the Technical Committee is to understand, review, advise and comment on all technical aspects of fire sprinklers with respect to:

- Current UK sprinkler standards
- Current European sprinkler standards
- Technical Bulletins to the LPC Rules
- Government departments' initiatives and documentation
- Schemes of third-party approvals bodies such as FIRAS and LPCB

In addition, the Committee is resourced to attend and be involved in working groups with other organisations involved in the development of standards for sprinklers in the UK and Europe, such as:

- LPCB/BRE Certification Ltd
 - British Standards/CEN/ISO
 - FPA/RISC
- 

Under its current Chairman, Ian Gough, and with support from Joe McCafferty, this committee meets four times a year and new members are most welcome to join the group. Email ian.gough@bafsa.org.uk for more information. Staff support is provided by Joe McCafferty. Attendance is generally 12 or more individuals and new members are most welcome to join the group.

Residential and Domestic Sprinklers Group

The R&D Group is the part of the Technical Committee that deals with matters affecting residential and domestic sprinkler installations. Under its current Chairman, Ray Hammond from FIRAS (Exova Warrington fire), it meets approximately four times a year.

Communications and Market Development Committee

This committee meets four times each year and the Chairman is Wendy Otway, BAFSA's marketing advisor. Meetings are on average attended by 12 or more members from a wide background, including the fire & rescue services, manufacturers, commercial/industrial contractors, residential and domestic member contractors and BAFSA staff. The Committee works on a wide range of tasks, which include:

- Development of new marketing and promotional literature
- Production of new BAFSA Information Files (BIFs)
- Promoting the benefits of sprinklers by attending target market exhibitions
- News/editorial developments
- Arranging annual members' meetings and conference
- Production and promotion of the BAFSA Yearbook and other ad hoc reports

All members are welcome to attend the Communications & Market Development Committee. To be kept up to date on current issues email [Wendy Otway marketing@bafsa.org.uk](mailto:Wendy.Otway@bafsa.org.uk)

Skills and Development Committee

The Chairman is skills specialist Ruth Oliver. The Committee meets four times a year and its role is to understand, review, advise and comment on all training aspects of fire sprinklers. Skills and Development Committee meetings are generally attended by up to 10 members and new recruits would be most welcome - please contact Ruth Oliver on qualifications@bafsa.org.uk

Scotland

MANY PEOPLE WILL be aware all new residential care premises in Scotland are required under Building Regulations to have automatic fire suppression systems fitted. We strive to see this being extended to existing premises albeit the emphasis at present within Health & Social Care seems to be the establishment of people being cared for in their own homes. In effect becoming small residential care premises within their own right. The question would then be are those people being looked after in their own homes safer than what they were in a well-staffed, fire safe environment which has been highly legislated for? Only time will tell and some have pondered if this strategy may indeed see an increase in fire deaths in the coming years amongst our most vulnerable.

The Scottish Government commissioned Optimal Economics to carry out a Review Project into the cost effectiveness of sprinklers in residential properties. (www.gov.scot/resource/0047/00477.pdf) Similar to the BRE report of April 2012 the report has generated considerable discussion and debate, particularly as it found that, while sprinklers were cost effective in new care homes and due to the low unit costs, there is a relatively strong case for requiring sprinklers in halls of residence, they were not cost effective in single occupancy houses. For HMOs in flats and purpose built HMOs the gap between cost and benefit is narrower and there is a marginal cost benefit case for sprinkler installation if costs can be driven down. However this report also echoes its predecessor in that the the figure used to determine the statistical value of a life in Scotland is lower than that figure used in many other countries.

The report however does recognise that particular elements of the community – e.g. people living in deprived areas, single men and people with problems related to alcohol and drugs are disproportionately affected by fire risks, targeted installation of sprinklers to benefit these groups, if achievable, would be likely to be cost effective. If Building Regulations are to provide a means of achieving this it will be necessary to find a way to relate property characteristic to the presence of households highly vulnerable to or at high risk of fire. This more targeted response would be much more likely to be justified in cost benefit terms and could involve a requirement for installation of sprinklers in new social housing, specifically flats and accommodation for single person households, and a requirement for installation in new bedsit HMOs. We look forward to the revision of the Scottish Building Standards which has currently started and hope that there will be a wider adoption of sprinklers whilst we will strive to ensure that in future Scotland will emulate Wales in its forward thinking of sprinkler adoption within domestic premises.

Scottish Fire & Rescue are strong supporters of sprinklers and recently chaired a strategic level meeting to discuss the way forward for those partners out with the Industry. They



appreciate not only their valuable benefits in life and property protection but the contribution they make to firefighter safety. An issue that has become more concerning over the past years.

Scotland has recognised not only the life safety aspect that sprinklers can bring to educational establishments but should a serious fire occur, the impact not only in terms of the loss of capital asset but also the huge impact on the society that surrounds the school. The loss of coursework, classrooms, after school clubs, community groups as well as the issues around relocation, meant that the rippling impact, particularly in our more rural areas was too sizeable a risk to tolerate and therefore the Scottish Government requires the installation of sprinklers in all new establishments. When the number of incidents of school fires in England and Wales is highlighted it is somewhat bewildering that Westminster has not followed suit.

Scotland has recognised in its building standards that the loss of life is not the only criteria for the adoption of sprinklers. It has been at the forefront in its use of suppression within historic buildings, schools, care homes, warehouses and high rise buildings. We are sure in the fullness of time it won't stop there and we will not remain complacent until it does.

Danny Doherty is our representative in Scotland. His role is to promote the wider and more effective use of sprinklers through engagement and lobbying of those decision makers at a local and national level. In his former role Danny was a Senior Fire Safety Officer with Strathclyde Fire and Rescue where he was Head of Enforcement. He was also Chair of the CFOA(S) Legislative Forum and he has worked with politicians at both local and national government levels. He comes with a wealth of experience in both the fire service and fire safety.

Technical queries and the Technical committee

BAFSA TECHNICAL SUPPORT devotes much time responding to online technical queries and helping to improve sprinkler rules and standards through the BAFSA Technical Committee. The technical queries are varied i.e. obstructions to sprinkler heads; protection of ceiling voids; power supplies for pumps; high bay storage; water supplies; loft conversions; tank maintenance; anti-freeze in systems and many more.

Besides the sprinkler technical queries, it has been noted that there are a lot of questions about wet and dry riser systems, especially about materials and location of pipes and valves. There would seem to be a need for more in-house training in wet and dry risers as some of the queries are quite basic.

With the increasing number of domestic sprinkler systems being installed, there are always many enquiries about sprinkler head locations; water supply pressures; testing of water supplies; sprinklers in ceiling voids and location of water supplies. BAFSA training seminars and qualifications are improving the standards of design, installation and commissioning of residential and domestic systems.

The BAFSA Technical Committee members sit on many BSI committees improving and revising standards like BSEN 12845, BS 9251, BS 8489, BS 8458 and others. This committee also reviews new documents that have/can have an impact on sprinkler systems design and installation i.e. the use of CPVC and training of installers.

BAFSA has also assisted in the preparation of a new LPC Technical Bulletin for flushing of underground sprinkler mains and worked on a tank maintenance document that will clearly define the minimum requirements and tasks that must be done at fixed intervals.

BAFSA has a suite of documents (BAFSA Information Files) which the Technical committee are constantly monitoring to keep them up to date with current standards whilst collaborating on preparing proposed new BIF's.

Participation in the BAFSA Technical Committee is open to all members and everyone is welcome. The committee would particularly like to encourage more sprinkler installer members to attend as the committee is under represented by this sector of the membership.

Currently the representation on the committee includes insurers, national fire associations; approval bodies; sprinkler head and component manufacturers; tank manufacturers; pump manufacturers; trace heating installers; CPVC manufacturers – but too few sprinkler installer members.

Installer members bring the 'real world' situation to the committee and they can relay the problems they encounter when using the sprinkler rules and standards or any issues with sprinkler components. These are the types of issues the committee needs to know about so they can be put on the agenda, thoroughly discussed and resolved.

Attending a Technical committee meeting is a great opportunity for technical staff from installer member companies to air their views on standards etc. and network with similarly experienced staff from other member companies. Meetings are only two or three days a year and this short investment in time could help enormously to improve our trade association.

With representation on sprinkler rules' committees and component approval bodies, the committee can easily relay members concerns and get a resolution in most cases. All committee members sign a 'Confidentiality Agreement' so only matters of a technical nature are allowed to be discussed at these meetings.

Joe McCafferty, BAFSA

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Wales

THE DOMESTIC FIRE Safety (Wales) Regulations 2013 were enacted in October 2013 making it a legal requirement that all new and converted dwellings in Wales are required to be fitted with an automatic water suppression system (AWSS).

The legislation was introduced in two stages:

The first stage, which came into effect on 30th April 2014, mandated sprinklers in all new and converted residential care homes, children's homes, hospices, student accommodation, boarding houses and hostels (other than those used for short stay leisure accommodation, such as backpackers' hostels).

Stage 2 of the Regulations came into effect on 1st January 2016, this phase of the legislation requires all new and converted residential property, including houses and flats, to be protected by AWSS.

Building Regulations

The Domestic Fire Safety (Wales) Regulations 2013, more commonly referred to as the Sprinkler Regulations, were enacted via a change to the Building Regulations. This was done by the insertion of a new clause into the Building Regulations, part 7A *Provision of Automatic Fire Suppression Systems*, which applies to Wales only, comprising new Regulations 37(a) & (b).

Regulation 37(a) provides the scope for the sprinkler requirements, listing the types of premises where sprinklers are required, and providing detail regarding what would, for the purposes of this Regulation, constitute a 'material change of use'. A material change of use is considered to have taken place where '*a change in the purposes for which or the circumstances in which a building is used, so that after that change*' the building or part of the building is used for the first time as a dwelling; a hotel or boarding house; an institution; or for the first time the building contains a flat. Or if the building, which previously contained at least one dwelling, contains a greater or lesser number of dwellings.

Put more simply, if you build a new dwelling or residence where none previously existed, if you create a new dwelling by change of use (conversion), or if you create a new dwelling by knocking one or more existing dwelling into a greater or fewer number of dwellings, then sprinklers will be required.

The Regulation also provides some exceptions to the requirement, AWSS are not required to be fitted in temporary buildings with a planned time of use of two years or less, Regulation 37a also allows sprinklers to be omitted for ancient monuments, Section 1 listed buildings and buildings in a designated conservation area. This is however not the carte blanche removal of the

requirement to fit AWSS. Sprinklers are not required in these buildings only *‘where installation of a fire suppression system would unacceptably alter their character or appearance.’*

Regulation 37b is more succinct, stating *‘the requirements of an automatic fire suppression system are the requirements set out in any document approved and issued under section 6 of the Building Act 1984 for the purpose of providing practical guidance as to the requirements of regulation 37a.’*

The documents referred to in Regulation 37b are the approved Documents B Vols 1 and 2 (Wales), which provide more detailed guidance on the requirements. The approved documents can be downloaded free of charge from the Welsh Government website <http://gov.wales/topics/planning/buildingregs/approved-documents/part-b-fire/?lang=en>

Currently the standards called up by the approved documents are:

- *BS 9251: 2014 Sprinkler systems for domestic and residential occupancies – Code of practice.*
- *BS 9252: 2011 Components for residential sprinkler systems – Specification and test methods for residential sprinklers*
- *BS EN 12845:2004 Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance.*

The documents also allow the use of water suppression systems designed and installed to equivalent standards, and a water mist system conforming to *BS 8458:2015 Fixed fire protection systems – Residential and domestic water mist systems – Code of practice for design and installation* would also be acceptable, as may other recognised standards, subject to the building control bodies approval.

Transitional provisions

Whenever legislation is amended or replaced, provisions are often needed to deal with the transition from the old law to the new law. These are called transitional provisions.

For projects where Regulation 37a applies and sprinklers are a requirement arising from the 30th April 2014 (phase 1 of the enactment) or 1st January (phase 2) transitional provisions were put into place.

If a building notice, an initial notice, an amendment notice or a public body’s notice has been given to a local authority, or if full plans have been deposited with a local authority in accordance with the Building Regulations or the Approved Inspectors Regulations, before 30th April 2014 or 1st January 2016 as applicable, and work commences on site within twelve months then sprinklers or AWSS will not be required

The Welsh Government has recently released a circular providing further guidance on what is deemed to be commencement of work, to satisfy the transitional provisions. The Circular (WGC007/2016) provides the following guidance

‘Commencement of building work is the point at which the project requires building control input and without such control would be a case for enforcement. The work should be permanent in the sense that it will be incorporated into the completed building.’



The circular goes on to give examples of works which would be considered by the Welsh Government to be building works, such as the laying of foundations or pile driving. The circular also provides examples of works which would not be considered to constitute commencement of building work such as removal of vegetation, removal of top soil and general site servicing works. The full circular is available for download at <http://gov.wales/topics/planning/buildingregs/circulars/building-regulation-circular-wg-007-2016/?lang=en>

Householders' guidance

To support the implementation of the second stage of the legislation, the Welsh Government produced and distributed the *'Householders Guide to Fire Sprinklers'* (available here <http://gov.wales/docs/desh/publications/151218householders-guide-to-fire-sprinklers-en.pdf>). This document which is written in non-technical terms sets out the benefits of sprinklers, dispels some of the pervasive myths which surround sprinklers and provides the householder with information on what to do if they alter or extend their home. It also provides the householder with simple guidance for the care and maintenance of the sprinkler system, offering advice such as *'always avoid painting over the circular plates, set against the ceiling, behind which the fire sprinkler heads are hidden.'*

Usefully the document also provides a maintenance record for the householder and contact information including the BAFSA website, where the householder may obtain further information.

The householder guide is a useful document which will go some way to allaying some of the concerns householders in Wales may have about sprinklers. The guidance can be downloaded from the Welsh Government website.

Pilot study

In preparation for the introduction of phase 2 of the legislation in January 2016, the Minister for Housing and Regeneration undertook to run a pilot study to identify the design and installation costs of installing sprinklers in a number of new social housing schemes, and uncover any issues, together with solutions, involved in sprinkler installation.

The pilot study project was funded by the Welsh government who commissioned BRE Global to monitor and report on the project.

A project steering group was appointed with representatives from the water providers; registered social landlords; building control bodies; housebuilders; the fire and rescue services. BAFSA was also present on this steering group, representing the sprinkler industry.

Within the study project there were twelve individual pilot schemes across Wales involving 175 dwellings in total, in addition there were two non-funded schemes.

The systems were designed to British Standard 925, the majority of the schemes used BS 9251:2014 whilst two installations used BS9251:2005.

Whilst the original intention was that the broad geographic spread of pilot projects would allow all three water providers within Wales to participate in the project, in practice only two of the water companies were involved due to the location

An interim report was published in December 2015 and the final report expected in the autumn of 2016. The lessons learned in the study will no doubt prove invaluable to those involved in the commissioning, specifying, designing and installing sprinklers not only in Wales but in the UK as a whole.

Schools

The ill-considered decision to remove the expectation for sprinklers in schools from the next edition of BB100 will have significantly less impact in Wales. In line with Welsh Government policy, where grant funding is being provided for the investment in new school buildings or significant refurbishment the grantee will be required to install fire sprinklers.

Summary

Wales has taken a major step in becoming the first Country in the world to mandate sprinklers in all new dwellings. The country wide installation of sprinklers will it is hoped provide a body of evidence on the effectiveness of sprinklers, providing statistical ammunition which will assist those campaigning for similar legislation in the U.K and beyond. The attitude of the Welsh Government towards sprinklers is laudable, and it is to be hoped infectious.

Ritchie O'Connell, BAFSA Wales Adviser

BAFSA Information Files (BIFS) : technical documents specific to a subject, ie, care homes, schools or sprinkler facts and also information on sprinkler systems and components

BAFSA Information Files (BIFS) are produced to provide information for members, the fire and rescue services and other people whose professional role encompasses protecting life and property from fire. They are available online at www.bafsa.org.uk and can be read or downloaded from there. Members and the wider fire community can request hard copies of individual BIFs, multiple copies for use at conferences and seminars will also be provided free of charge.

There are currently 33 BIFs, which are subject to regular scrutiny and updating. In 2017 the following BIFs are scheduled for review:

Schools (On completion of the Government’s review of BB100)	BIF 1
Heritage	BIF 3
Retail	BIF 4
Hotel	BIF 7
CPVC	BIF 8d
Water Storage	BIF 8f
BAFSA and its members	BIF 12
Third Party Certification	BIF 20
Protecting Vulnerable People	New BIF

BIFs that have been most recently updated are summarised below:

Dwellings

BIF 2

Over the past 20 years the number of fires in domestic dwellings attended each year by the Fire and Rescue Services in Great Britain has fallen considerably.

However, each year they still have to fight around 40,000 blazes in houses and flats which inflict injuries on nearly 800,000 including the loss of over 250 lives and BAFSA insists there is no room for complacency.

BAFSA seeks to dispel some of myths used as excuses by builders of new homes and existing householders not to install fire sprinkler protection. BIF 2 also emphasises how sprinkler systems cannot just compliment but also improve upon the efficiency of fire alarms which are currently more often already installed inside dwellings.

Furthermore, sprinklers which can detect fires and potentially extinguish them quickly can also help the protect the more vulnerable members of society who are more likely to be injured or killed by a blaze in the home.

Evidence shows that the people most at risk are the elderly, very young people under the age of five, and the disabled. People who are also affected by substance or alcohol abuse also tend to feature widely in the grim tally of victims either injured or killed every year.

It is not just the case that many of the people afflicted as above do not hear fire alarms when they first go off. Mostly likely it is a case that they are not able to move quickly enough to leave their homes before it is too late and a blaze has started to spread.

In such instances reacting to the alarm by throwing a bowl of water over the first sight of flames or reaching for a fire extinguisher would not come into the equation. In many instances, however, the injuries and deaths along with the grief suffered by relatives of victims could have been avoided by the installation of a sprinkler system.

Had there been one installed, the sprinkler closest to the outbreak of the fire would have reacted to the rise in temperatures and spread water on the early flames before they could spread beyond control to cause destruction of lives and property.

Given the history of fire sprinklers it is somewhat perplexing why they are not already subject to UK wide legislation that insists they are installed in domestic properties. Since January 2016, in Wales, it is now mandatory under the Welsh Measure.

Due to changes in design and construction (e.g. open-plan living and timber frame), many fire safety experts are warning that the likelihood of fire spreading beyond the 'room of origin' may be increasing.

There is a growing case to be made for homes to be fitted with smoke detection and sprinklers so that both lives and properties can be saved.

The design of most individual sprinkler heads includes a small thin glass bulb filled with liquid which when it is heated by the outbreak of fire to a set temperature, usually around 68 degrees Celcius, the bulb breaks and the sprinkler sprays water over the fire below. Sprinklers operate while the fire is small, so little heat and smoke are generated.

However, many people still believe that sprinklers will regularly go off by accident. But BAFSA confirms only those sprinklers close to the fire will operate and they only react to heat – and certainly not to smoke from burnt toast or cigarettes!



Another common misconception is that all the sprinklers in the building operate together as seen in films and on TV causing more water damage than fire damage. In fact two-thirds of fires are dealt with by one or two sprinklers and they release far less water than a single fire service hose.

Concerns about water leakage from heads and distribution pipework are also frequently aired. In fact, a properly installed sprinkler system should be less likely to leak than any other water supply service within a building as the components of the system will have been subjected to a rigorous quality assurance regime and are listed by a third party certification body.

The designer and installer of the system will also have been subjected to the scrutiny and approval process of the appropriate certification body.

As a final safeguard, systems are provided with an automatic alarm to give warning of water leakage from the system. Modern residential systems are easily connected to the fire detection system and can even summon the fire and rescue service should the sprinkler system operate.

Warehouses and logistics facilities

BIF 5

It is not just the owners of the buildings or the companies using them to store goods that get their bank balances hit hard when a fire breaks out in a warehouse.

Recent research has revealed that there are on average 621 warehouse fires in England and Wales every year and Scotland does not escape either having around 40 such blazes.

There are even more fires every year in factories, but the impact on business in financial terms, spelled out in BIF 5, is disproportionately higher through costs involved with lost stock and business interruption when a blaze shuts down a warehouse particular one which did not have a sprinkler protection system installed.

A 2014 Cebr1 study, commissioned by the Business Sprinkler Alliance, looked at the financial and economic impacts of fires in unsprinklered warehouses in England and Wales and the figures it came up with revealed the devastating effect warehouse fires have in different areas of the economy. They cause a direct financial loss to business of £230m per year, which leads to a loss to the national economy of £190m per year in productivity and the impact is has the goods supply chain.

In addition the fires lead to the approximately 1,000 direct and indirect jobs losses annually through disruption and business failure which in turn causes the Treasury to lose £32 million in income tax receipts - equivalent to the wage cost of 1,320 nurses in the National Health system.

It also been estimated that the fire cause 135,000 tonnes of carbon dioxide to be releases into the atmosphere annually which is roughly equivalent to the emissions resulting from the annual domestic electricity consumption of a city the size of Portsmouth.

And the cost of cleaning that up along with the water used by firefighters in trying to extinguish the fire is around £11 million a year.

The report has also analysed the causes of the fires and the largest of them is defective electrical installation and equipment which accounted for 25 per cent of the blazes while another 25 per cent were cases of arson started deliberately.

Further down the list of causes were misuse of equipment (11%), smoking materials (10%), cooking (10%) and hot work like cutting and welding (10%) and with a third of them starting between midnight and 6am often there were few staff available to provide any effective response.



However, the report does contain case studies of several warehouse fires which BAFSA uses as examples of how the installation of a sprinkler system can limit the damage to buildings and the goods stored in them.

One of the examples was a fire which started in an compound which was part of Tesco grocery distribution depot at Kilsby in Northamptonshire in 2012.

The compound which was 15 metres high and built on a 36,000m² site contained highly volatile products like aerosols which saw it listed as a COMAH site which could be vulnerable as a 'Major accidental hazard'.

But two sprinklers activated on the 'fast response inline system' that covered the compound controlled the fire within seconds as a result none of the 300 occupants of the building at the time were injured and no stock was destroyed. Furthermore the Northants fire and Rescue service described their attendance at the incident as minimal.

Government legislation such as Document B of the Building Regulations issued in 2000 and The Regulatory Reform (Fire Safety) of 2005 addresses fire safety requirements in buildings such as warehouses.

They emphasise that the onus is on the employer or owner to ensure that fire precautions are taken to provide safety not only for people using the premises but also those in the immediate vicinity of them.

And BAFSA have said that experience has shown that the most cost effective of protecting property from fire is to install an automatic sprinkler system.

They provide reliable detection, local and remote alarm responses and fire suppression at all hours of day and night 365 days a year and statistics show that 97-99 per cent of fires in springler protected building are controlled or extinguished by the systems.

The reason for that success is that because sprinkler systems do not involve computers or wiring there are no false alarms and the cost of maintenance is extremely low running at less than £1000 per year for the average system.

They also have a long service life and many of the systems in use today were originally installed in the 1920s and they are still efficient because there has to be a strict adherence to standards for components, design and installation.

While the figures for the costs of damages related to warehouse fires are very high there are cost benefits to be gained by the protecting buildings sprinklers systems. Installing sprinklers allows building projects to be designed with more open space, extended fire escape travel distance and reduce building costs due to a reduction in passive fire protection elements and ratings.

Furthermore there can be increased revenue and profit due to a greater number of units developed, improved sustainability credentials of a building, which can be more marketable as it offers a unique selling point to the customer.

One other key benefit of a sprinkler system is that they can reduce the dangers to which firefighters are exposed to in large single storey buildings because often by the time the fire service arrives at a warehouse fire the sprinklers have already extinguished the flames.

Watermist

BIF 9

Over the past twenty five years, water mist technology has increasingly been considered a viable method of protecting buildings. BIF 9 provides a quick introduction to what mist systems can (and cannot) do and also provide a guide to existing equipment availability and the standards that are presently available for use. The BIF also provides some helpful guidance for end-users and authorities on what to look for when specifying and reviewing systems. Further, more detailed information and guidance will be provided in an update to BAFSA Technical Guide No 3 Water Mist Systems and their Applications. Unlike sprinkler systems, water mist systems are “application specific” and each particular hazard or occupancy requires its own very specific design. It is therefore not possible to design a mist system simply by reference to one of the various standards available – unlike sprinkler systems where reference to BS EN 12845 or BS 9251 enables a full design to be produced and a fully compliant system to be installed. Water mist manufacturers set out their application specific designs in their Design Manuals.

Sprinklers & Water Supplies

BIF 13

To help property owners and occupiers understand the fundamental water element of fire safety BAFSA has produced BIF 13.

There has been a significant growth in the use of ‘life safety’ sprinkler systems in residential and domestic premises over the last 10 years. This trend is expected to continue as local authorities and housing providers throughout the UK use sprinklers to protect vulnerable people in their properties. The introduction in Wales of legislation requiring sprinklers to be fitted in all new residential and domestic properties will further increase the number of such installations.

One of the major obstacles to wider use has been the ability to use water for residential and domestic systems directly to the water main. Where this was not possible, the alternative

solution of a tank supply was often prohibitively expensive. The sprinkler industry together with the fire and rescue service identified a need for closer liaison with the water industry with the aim of ensuring that whenever possible direct mains connections could be utilised.

The Water Liaison Group was established with the help of Water UK and has membership from the sprinkler industry, fire and rescue service and National Fire Sprinkler Network (NFSN) together with representatives from individual water companies. WLG have established effective links with the water industry which have led to the adoption by Water UK of a policy position paper “Water supply to domestic fire sprinkler systems”.

This policy position statement commits the individual water companies in the UK to publish policies on connections from the mains to sprinkler systems and to nominate an individual as primary contact for those specifying and installing systems.

It points out that while some systems are fed directly from the water main that services all other areas the properties like bathrooms and kitchens others have been installed with a storage tank and pump arrangements.

And owners should be aware that the Fire and Rescue Service may have based its firefighting tactics on the assumption that an effective fire sprinkler actuation will control the fire, whilst the availability of adequate water supplies for conventional firefighting will also be crucial.

A failure of either or both of these components at a critical time could seriously jeopardise operations and endanger the lives of occupants and firefighters.

Similarly, fire safety requirements made under the Building Codes used in England, Wales and Northern Ireland as well as Building Standards in Scotland relating to fire safety measures to be incorporated into the design and construction of buildings may have been relaxed in acknowledgement of the fitting of an automatic fire sprinkler system.

Therefore, because the importance of automatic fire sprinkler systems as an efficient means of quickly detecting, controlling or extinguishing fires it is important to secure the water supply, both for maintaining the effectiveness of existing systems and for ensuring that new systems are installed and maintained correctly.

Water supply capacities, pressures and flow requirements vary, according to the classification of the fire hazard in the protected premises. In the UK systems in commercial buildings were designed and installed originally to the requirements of British Standard 5306 Part 2 which has now been withdrawn and updated to BS EN 12845.

Sprinkler systems that are intended for the protection of domestic and residential property are to be designed, installed and maintained to BS 9251:2014.

For operational reasons such as the minimisation of leakage, the reduction of disruption due to burst mains and the reduction of power usage, water suppliers actively manage water pressures in the mains network. And their aim is to maintain water pressure at a level commensurate with the provision of an adequate supply to domestic users whilst meeting regulatory standards.

However because mains water supplies may be occasionally interrupted by pressure fluctuations, or maintenance work, or events beyond the water supplier's control system designers should bear such possibilities in mind when specifying automatic fire sprinkler systems which are to be supplied directly with water from a service main.

To guide them in that process are The Water Supply (water fittings) Regulations 1991 which contain certain key elements that should ensure compliance with the rules when a sprinkler system is installed.

BAFSA say advanced notification should be given to a water supplier of any proposals to install or alter firefighting systems, all materials and components used must comply with the requirements set out in the regulation and that all below and above ground water pipes used on private ground solely for a sprinkler system should be identifiable my marking tape or some other appropriate means.

But they do insist that the system must be fitted with an isolating valve and appropriate check valve to protect against backflow from the system into the potable water supply.

Because fire sprinkler systems are designed to supply water at various rates depending on the premises and hazards they contain the flow of water to the sprinkler heads from pumps and storage tanks has to be calculated in accordance with several standards and guidelines.

The pumps can be either electric or diesel driven or a combination of both while the water tank water storage for the system's design flow with variations. It could be a storage tank, with reduced capacity that depends on the inflow from a water supply to make up the design capacity, supply from an elevated storage tank or an inexhaustible supply pumped from reservoirs near the property such as a lake, canal or river.

BAFSA does say that the preferred supplier for a sprinkler system is a water main but in the past water supply companies have said they would like to see the water used to be measured by a meter to minimise the loss to them through leakage or water theft.

The Water UK policy position paper "Water supply to domestic fire sprinkler systems".

supports the provision of a water supply for firefighting and in particular to a well-designed domestic fire sprinkler system, that it will engage with the interested parties to agree standards, good practice, guidelines and frameworks for the water supplier, the system designer and installer, the system user and the system maintainer.

It also acknowledged that a fire controlled by a sprinkler would generally have a much lower demand on the water network than one controlled by water taken from a fire hydrant.

The adoption of the Water UK Policy Position statement by the chief executives of individual water companies has provided a strategic way forward for both the water and sprinkler industries.

As a result member companies have provided a named primary contact for the provision of water for sprinkler installations and the majority have published new or revised policies. A current list of contacts and web links is maintained on the BAFSA website.

Care Homes

BIF 14

The vast improvements in preventative health care and the scientific knowledge how to live longer as a result of a diet has seen in a huge rise in life expectancy in the United Kingdom and many other developed countries worldwide.

During the 20th Century the average life expectancy in the UK increased by thirty years and it is expected to increase again during this century.

However, the older people get the more vulnerable they become to meeting death from other sources beyond their control and statistics show that a fire breaking out in their place of residence could still be lethal.



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The risk of dying in a fire for people aged eighty and over is more than four times the national average and those aged between sixty-five and seventy-nine also have a higher than average chance of dying in a fire.

The figures are generally considered to be the average for persons living at home but over the years there has been increasing number of persons dying while in care homes because they have not been protected by fire alarm or prevention systems.

Government figures for England in 2013-2014 show that fire and rescue services carried out 8000 safety audits during the twelve-month period in care homes care homes in the country.

That is less than a third of the total number of care homes in England and among them only 67 per cent of the premises that were inspected were found to have satisfactory fire precautions in place and residents in care homes are still suffering premature deaths when legislation could have helped them live longer.

An automatic fire sprinkler system provides protection for a building by a series of pipes and sprinkler heads throughout all the rooms, corridors, cupboards, service areas and roof spaces. The system is fed from the town' water mains and may also be by a pump and a water storage tank.

When automatic fire sprinklers are installed in care homes they give the residents and staff an increased time to escape or be evacuated from the home and that is important as many care home residents may have mobility problems and a lack of awareness understanding of the dangers they could be facing especially when woken suddenly in the middle of the night.

The sprinkler system will minimise the fire damage to the care home, therefore allowing the home to get back to normal operations as quickly as possible.



By fitting automatic fire sprinklers to a care home also minimises the risk to the firefighters who come to tackle the fire, sprinklers don't just save the lives of residents and staff they save the lives of firefighters.

Many insurance companies will provide discounts on insurance premiums if you fit an approved automatic fire sprinkler system in a care home.

But in its campaign to see legislation passed that insists all care homes contain sprinkler system BAFSA makes one other key point that it should not just be applied to new buildings.

Maintenance of Sprinkler Systems: Domestic and Residential – The Fundamentals

BIF 16A

Sprinkler System Maintenance to BS EN 12845

BIF 16B

There is little doubt that sprinklers are inherently reliable and have a well-deserved reputation for controlling or suppressing fires. The most recent quantitative data from the US National Fire Protection Association suggests that sprinklers did not operate as designed in only 7% of fires.

However, the same report indicated that on 11% of those occasions the system failed due to lack of or inadequate maintenance. BAFSA is publishing guidance to owners and occupiers of premises protected by sprinkler systems outlining their responsibilities and best maintenance practice.

The guidance is to take the form of two BAFSA Information Files (BIFs):

BIF 16A Maintenance of Sprinkler Systems: Domestic and Residential – The Fundamentals

BIF 16B Maintenance of Sprinkler Systems: Commercial and Industrial – The

Fundamentals; *This is a revision of an existing document updated to take account of the changes in BSEN12845 and LPC Rules.*

To maintain the Certificate of Conformity issued at the time a system is commissioned it must be maintained by an approved sprinkler servicing contractor under a maintenance contract.

Both BIF documents highlight the end users responsibility to ensure the correct maintenance procedures are carried out. For some properties there is a legislative requirement for this maintenance to be carried out. Article 17 of the Regulatory Reform (Fire Safety) Order 2005 which came into effect in England and Wales on 1st October 2006, imposes significant liabilities on 'the responsible person' (read employer or property owner) who fails to maintain fire safety equipment (including sprinkler systems) intended for the protection of life from fire.

Where systems are installed for life safety or property protection purposes Insurers will also make requirements for routine maintenance to be carried out.

The BIFs include references to the appropriate sections of relevant standards outlining their maintenance regimes and requirements, these include:

BS 9251: 2014 Fire sprinkler systems for domestic and residential occupancies – Code of Practice: *Section 7 Maintenance and Annexe E*

BSEN12845: 2004 Fixed firefighting systems. Automatic sprinkler systems: *Section 20 and Annexe J*

Loss Prevention Rules for Automatic Sprinkler Installations incorporating BSEN12845
(Published by the Fire Protection Association): *Technical Bulletin 203*

Most systems installed in the UK are to the above standards but some may be installed to NFPA (National Fire Prevention Association) and FM Global standards. In such cases the maintenance requirements they specify should be followed.

In addition the two BIFs provide guidance on the frequency of testing and maintenance required by the different standards together with how the tests should be carried out.

It is hoped that the BIFs provide useful documents for BAFSA members when explaining the maintenance requirements or as reference documents to end-users. Adherence to the maintenance requirements will clearly ensure that building owners and employers will comply with the regulatory or insurance requirements related to their sprinkler system. For the industry it will help to minimise the risk of systems failing to operate as designed due to a lack of maintenance.

Hospitals and Health care

BIF 17

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Around one million patients are treated in hospitals in England every 36 hours hoping that existing ailments in their bodies can be cured or removed in an operating theatre. Few of them would ever realise that while being treated by the National Health Service they run a heavy risk of being exposed to injury by fire.

However, statistics have revealed that in 2015 there were 3,648 fires in hospitals and healthcare premises which averaged out at around ten per day which resulted in 412 casualties including four deaths.

BAFSA does accept that four per cent of the fires were started deliberately, but in many cases the damage caused by all the fires and the difficulty of safely evacuating 'very high dependency' patients could be considerably reduced if all health facilities were fitted out with automatic fire sprinkler systems.

Although sprinklers have been used to protect lives and property for more than a century

and their use is recommended and encouraged by all of the UK's fire and rescue services they have to date not been as widely used in the healthcare environment as they have been for instance in the retail sector.

Yet the benefits of a sprinkler installation are widespread not least of all in the programme of Progressive Horizontal Evacuation (PHE) which most hospitals use to try to move patients to safe areas when a fire does break out. That is not an easy task because patients



undergoing surgical procedures of looked in intensive of critical care units are more often than not unable to physically evacuate themselves.

The PHE procedure is designed to move patients to an adjoining compartment or sub compartment that could provide shelter for an extended evacuation period . For instance in a building over 12 metres high there is requirement that at least four such compartment should exist with a minimum floor are of 500 square metres.

But the difficult task of moving patients to them along with the beds and equipment required for their care is made easier if a sprinkler system has been installed which can quickly detect the outbreak of fire, set off alarms and douse the flames before they have been to able to spread.

This is recognised in regulations which state that where sprinklers have been installed the floor area of the fire compartments can be reduced to 350 square metres.

Currently there are no statutory requirements for sprinklers to be provided in hospitals with the exception of high rise buildings that are more than 30 metres tall and in certain commercial enterprises that operate within hospitals.

BAFSA, however, point out that hospital designers are expected 'to consider the advantages that might be gained by installing life-safety sprinklers throughout the building or to specific areas.

The British Standard EN 12845, does require sprinkler protected areas to be separated from non-sprinkler protected areas by at least 60 minute fire resisting construction although this does not apply in small areas such as en-suite facilities in patient rooms.

Where sprinklers are used there are often design freedoms or compensations available in The Firecode which can offset the cost of the sprinkler system and allow for greater flexibility in design, increased use of open space planning and extended travel distances.

They include an allowance that if a healthcare building is fully sprinkler covered the fire resistance integrity and insulation on walls on floors up to 12 metres above ground can by reduced from 60 minutes down to 30 and in some locations thermally activated dampers may be provided instead of fire and smoke dampers linked to the fire alarm and detection system

The maximum size limits on un-insulated glazing located in sub-compartment walls is not applicable where sprinklers are provided which offer significant cost savings and greater design flexibility.

Also the number and location of firefighting shafts required may be reduced, subject to their height above ground. That number is determined by the floor area and maximum hose layout distances. For instance where one shaft is required every 1,000 square metres that increases to one shafte every 1500 square metres where sprinklers have been installed.

There are several types of sprinkler system but the one most commonly used in healthcare premises is the wet type, where the installation is permanently filled with water.

Other advantages that could benefit healthcare facilities once a sprinkler system has been installed are identified in BIF 17.

It states : "All sprinkler protected parts of the building are covered by a pipework grid with sprinkler heads fitted at regular intervals. Water is fed to the sprinkler heads from a dedicated water supply, either by way of a dedicated tank and pump system or from the local area's water main.

"Sprinkler heads open independently when their operating temperature is reached and water is sprayed on to the fire but only the sprinklers in the direct vicinity of the fire open, the others remain closed. This limits the water damage to areas where there is a fire and reduces the amount of water used."

However, many fires are actually extinguished by sprinkler systems leaving little work for the fire and rescue service to do on their arrival.

Skills and qualifications for the sprinkler industry

BIF 24



The decision by the Welsh government to make the provision of fire sprinklers a mandatory requirement in all new domestic and residential premises has been the catalyst behind the launch of a new training programme to improve the skills and qualifications of workers in the fire suppression industry.

Two colleges in Wales and another in Manchester are now offering a specific course in fire sprinkler installation with the end goal of students acquiring a national and vocational qualification which confirms their competence to work to set standards.

Primarily the course is aimed at attracting youngsters aged 18 or over to enter the fire protection work force, but it is also available to those already working in the industry who want to improve their existing skill levels.

The only entry requirement is the insistence that students must feel comfortable working at height since many sprinklers have to be installed in ceilings.

The thinking behind the new programme has been laid out by the BAFSA Skills and Development Committee in its document BIF 24.

From the outset that states : “Against a background of an ageing work force, greater demands for higher quality work and more complex installations there will be few in the fire suppression industry that are not aware of the need for greater professionalism and a structured set of qualifications and relevant high quality training for operatives at all levels.”

Fire Suppression Systems for the Waste Management Industry

BIF 25

There is a large raft of government regulations in England and Wales involving elements of fire protection and prevention in the construction of new industrial and public buildings. But there is one big hole in it that needs to be filled.

Most of the rules are solely concerned with life safety and where there is no historic evidence of fire-related injuries and deaths there tends to be little legislation beyond ensuring that the occupants of a structure can escape safely and neighbouring buildings are not at risk from fire spread.

However recycling is one growing industry which has become an essential part of the UK's economy and is also critical in helping the country meet international obligations to reduce the volume of refuse going into landfill.

BIF 25 acknowledges that as is the case with all workplaces, it is essential for the operator or owner of a recycling site to manage fire safety in a structured manner.

Among the basic principles to be adopted is the development and practice of a written fire safety policy with effective internal procedures ensuring it is properly implemented both for the normal operating regime at the location and taking into special or occasional events.

Site operators should also undertake a fire risk assessment and review it regularly. For instance, they should take into account changes that may be required when new materials are included in the recycling process.

The most effective way of dealing with any fire is to attack it in its earliest stages and in doing so minimise the damage caused by heat and smoke but also the collateral damage caused by water. It is a well-established fact that the application of water from a sprinkler system on to a developing fire two or three minutes after it starts uses up to 90% less water than will be applied by the fire service when they arrive.

BAFSA have said that some far-sighted and enlightened operators of recycling operations have in fact already installed fire suppression systems in their plants and point out that in 2013, successful actuations of sprinkler systems prevented serious damage to a wood pellet plant in Bridgend, recycling plants in Stockport and Shropshire and a paper recycling plant on Deeside.

A major fire was also averted in a Wiltshire, recycling plant after which the fire service said: "The sprinkler system saved the day - a number of sprinkler heads were operating, containing the fire to one area". However, many recycling plants in the UK have much work to do before they can hope to have the same level of protection.

Sprinklers: A Guide for Owners and Occupiers

BIF 27

Given the unobtrusive design of modern sprinkler systems people moving into newly built houses or flats protected by them often may not notice they have been installed. Yet to ensure the sprinklers are fully effective to safeguard both the occupants and buildings in the event of an outbreak of fire it is important that the system is regularly inspected and subjected to a routine maintenance programme.

The responsibility for the inspection and maintenance programme rests with the home owners or occupiers and to help them make sure their sprinkler systems will operate as designed BAFSA has produced BIF 27.

It says systems require little maintenance with the exception of an annual inspection which should be undertaken by a competent person. However, occupiers should be aware of how the system works and to assist them the installers should have provided them with a logbook containing essential information.

It covers the system's design components and water supplies, a statement confirming the system is compliant with the British Standard 9251:2014, results of commissioning tests and the details of the authorities consulted before it was installed.

The book should also contain details of the required inspection and maintenance programme along with a 24-hour emergency contact number which could be used to obtain assistance.

British Standard 12845 requires that the installation is visually checked each week and that action is taken to activate the water-driven motor alarm.

BAFSA warn that where systems have self-monitoring pumps, occupiers should be aware that the system will test itself each week and will sound a local alarm if any faults occur

during the self-test. Some systems may automatically report faults to the installation company.

BS EN 12845 also requires any pumps to be tested at a 'full load' condition on a yearly basis. Additional checks are required on water storage facilities.

Tanks should be visually externally checked for corrosion every three years and refurbished as necessary. All storage tanks should be cleaned and examined internally by a competent person not less than every three years.

Occupiers should know where the sprinkler system shut-off valve is which would enable firefighters to shut the system down once they are sure that the fire has been extinguished.

BAFSA advises paint should not be applied to sprinkler heads or their cover plates and nothing should ever be hung on the sprinkler heads.

No attempt should be made to modify any equipment except in accordance with 9251:2014 or any other standard utilised and reinstatement of the system following maintenance or actuation should only be undertaken by a competent person and the log book annotated to indicate the reason for reinstatement and any actions taken.

Occupiers are also advised to be aware that the system will test itself each week and will sound a local alarm if any faults occur during the self-test while some systems may automatically report faults to the installation company.

BAFSA suggest that the following the actions be taken in the event that a system does become impaired for any significant period of more than one hour long.

There are two principle, specified duties which will be a feature of all insurance policy wordings where the presence of sprinklers is mandated or where a premium discount has been allowed in respect of the fitting of sprinklers.

In the event of an impairment the insured must advise the local fire and rescue service that a problem exists and notify their insurers.



BAFSA members who feel there is a need for other BIFs to be updated or new ones to be created should contact Steve Seaber the BAFSA staff member responsible for producing BIFs on steve.seaber@bafsa.org.uk

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BAFSA publications



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This role, of providing authoritative information on the benefits of sprinkler systems and how sprinklers can play a significant role in protecting people, property and the environment from the devastating effects of fire, is key to BAFSA's success.

This wealth of information is available to view and download on the BAFSA website www.bafsa.org.uk

Sprinkler News is continuously updated in the News & Events section of the BAFSA website. Here it is possible to keep abreast of developments on a full range of sprinkler-related topics, covering matters such as legislation, fire industry news, sprinkler saves, technical reports and much more.

More in depth information and documents are available to download free of charge from the 'Publications' area of the website.

Sheffield Low Rise Sprinkler Installation

As a result of the outcome of the Callow Mount project a number of housing authorities and housing associations installed sprinklers in an increasing number of high and low rise social housing properties. Sheffield City Council identified a serious fire risk potential in a specific type of property in their portfolio. These 'ranch style' properties are sited in four locations around Sheffield; Gladless Valley, Westfield Centre, Stannington and Netherthorpe. There are 23 blocks in these locations with a total of 540 individual properties. This report documents a major retrofit project of these properties.

Safer High-rise Living

This report documents the background to, and progress and successful conclusion of, the Sprinkler Coordination Group's project to demonstrate the cost-effectiveness and practicality of retrofitting sprinklers in an existing high-rise tower block at Callow Mount, Sheffield. The report has been very well received and is essential reading for those with responsibility for fire safety in high-rise social housing blocks.

Sprinklers for Safer Living

This report from BAFSA – another commissioned from Arup Fire – describes the unique fire safety challenges which are posed by residential care homes, particularly with respect to the elderly and infirm people who live in them. It shows why an automatic sprinkler installation is considered by the fire safety community to be the single most effective fire protection feature in such premises. This volume is required reference for those who have a stake in assessing fire risks and planning fire prevention in the design, construction or management of residential care homes.

Sprinklers for Safety

The primary purpose of this book produced by international consultants Arup Fire, is to promote an informed decision-making process regarding the benefits of incorporating sprinklers in the design of buildings. It provides evidence to aid those professionals involved with decisions about the incorporation of sprinklers in different building types/designs. In particular, the document reviews the application of sprinklers in the context of the Building Regulations and proposes examples of the use of sprinklers as a means of alternative compliance ('trade-offs') with Approved Document B (2006), which lists this book as a reference source.

Guidelines & Codes of Practice

These are BAFSA and third party codes of practice, all of which are available, free of charge. These can be downloaded, printed and can be used as web references. BAFSA's three Technical Guidance Notes (TGNs) are:

TGN1: The design and installation of residential and domestic sprinkler systems

TGN2: Using sprinkler systems in buildings and structures. Compliance with current fire safety guidance

TGN3: Watermist systems: Compliance with current fire safety guidance

General BAFSA Publications

BAFSA's full range of general publications is available to download from this section of the website. These include BAFSA reports, Yearbooks, newsletters and e-newsletters:

BAFSA Sprinkler Focus issued up to three times a year, serves to keep BAFSA members and the wider fire community abreast of a wide range of sprinkler-related topics. To receive the FOCUS magazine regularly email marketing@bafsa.org.uk.

BAFSA e-focus provides a regular round-up of sprinkler information from the UK and beyond. All BAFSA members receive the e-newsletter. To request a subscription email marketing@bafsa.org.uk

General Third Party Publications

Third party reports on issues of interest to the sprinkler community and publications with which BAFSA has been involved in developing are available to download from this section of the website. This includes reports from the Business Sprinkler Alliance (see page 9), the UK Water Policy Statement and other research and guidance sponsored by third party organisations.

The Automatic Fire Sprinkler Yearbook which is published biennially and is an essential source of reference for anyone whose professional role encompassed the protection of life and property from fire.

BAFSA Information Files – BIFs

There are 33 BIFs which cover a range of sprinkler related topics, some premises-related and others on technical subjects. All are written in plain English, presented and illustrated appropriately, to inform the non-expert audience. Free single copies of any BIF will be provided on request. Multiple copies for use at conferences and seminars will also be provided to members free of charge, subject to availability.

Schools	BIF 1
Dwellings	BIF 2
Heritage buildings and sprinklers	BIF 3
Retail premises	BIF 4
Warehouses	BIF 5
Frequently asked sprinkler questions	BIF 6
Hotels	BIF 7
Flexible connections	BIF 8A
Pumps and pumphouses	BIF 8B
Sprinkler heads	BIF 8C
Use of CPVC pipe	BIF 8D
Steel tube and fittings for sprinklers	BIF 8E
Water storage tanks	BIF 8F
Water mist	BIF 9
Retrofitting sprinklers	BIF 10
Sprinklers in car parks	BIF 10A
Sprinklers and the Fire & Rescue Service	BIF 11
BAFSA and its members	BIF 12
Sprinklers and water supplies	BIF 13

Residential care homes	BIF 14
Types of sprinkler systems	BIF 15
Sprinkler system maintenance	BIF 16A & BIF 16B
Hospitals and health care premises	BIF 17
Fire sprinkler systems in timber framed buildings	BIF 18
Sprinkler reliability	BIF 19
Third Party Certification	BIF 20
Wet and dry risers	BIF 21
Biodiesel fuel and sprinkler pumps	BIF 22
Sprinklers in student accommodation	BIF 23
Qualifications & Development	BIF 24
Fire suppression systems for the waste management industry	BIF 25
Sprinklers and the Insurance Industry	BIF 26
Managing Sprinkler Protected Premises	BIF 27

DVD Presentations

BAFSA offers a wide range of advice and information in its DVDs. A copy of each BAFSA DVD is supplied free of charge to each BAFSA member. Single copies of DVDs are usually supplied on request to info@bafsa.org.uk, although multiple copies may be charged. Sections of the DVDs can be viewed or downloaded from the BAFSA website.

DVD 1: Sprinklers for Safety

This DVD describes the overall benefits of fire sprinkler protection, stressing its combined functions of detecting, alerting, suppressing, controlling and possibly extinguishing fires. For potential commercial/industrial end users it promotes the resilience of an organisation by protecting the business and its assets against fire. For specifiers, developers or planners, it will show the practicality of a sprinkler installation in protecting against the hazard levels determined by a pre-design risk assessment.

DVD 2: Sprinklers for Safer Living

Revised in 2013, this DVD promotes the suitability of sprinklers to cope with the types of fires which are likely to occur in places where people live. It emphasises the efficiency and success rate of sprinkler systems and demonstrates their application in a range of premises, including: dwellings; houses in multiple occupation; social housing; residential care homes; and heritage buildings. The presentation also includes details of the major sprinkler retrofit project carried out by BAFSA at Callow Mount.

DVD 3: Fire Safety in Warehouses and Large Single Storey Buildings

New in 2014, this presentation focuses on fire safety challenges facing those who own, manage and occupy large single storey buildings. It uses data from the reports commissioned by the Business Sprinkler Alliance (BSA) from BRE and CEBR to focus on the true cost and impact of fires in warehouses. It includes interviews with an MP, Insurer and Loss Adjuster, together with fire officers and occupiers of warehouses which have experienced fires in sprinklered and unsprinklered premises.

BAFSA memberships

BAFSA WELCOMES APPLICATIONS for membership from all parts of the industry and from any organisation which has an interest in the promotion of sprinkler protection as the most effective way of protecting life and property from the effects of fire.

Current Membership Grades are based largely on the LPS 1048 scheme. Companies which are listed under the FIRAS or IFCC Domestic and Residential Installer scheme are classified together with LPCB Level 1 installers. Unlisted companies installing such systems are classified as Associate Members and pay a lower level of subscription. All unlisted installer members (sprinklers and watermist) are required to obtain third party certification within two years of joining the association.

For more information regarding the benefits of joining BAFSA email info@bafsa.org.uk

Installer Members

- Certificated (Level 4)
- Registered (Level 3)
- Registered (Level 2)
- Registered (Level 1/1P)

Water Mist System Installers: Companies solely in the business of installing water mist systems are most welcome to apply for membership.

Suppliers and Manufacturers of Listed Equipment

Manufacturers of sprinkler heads and watermist heads/nozzles
Suppliers/manufacturers of listed components for sprinkler systems and watermist systems

Associate Members

Installer: Unlisted installers of Domestic/Residential systems
Trade: Suppliers of unlisted equipment and services not holding third party certification
Organisations : Fire Brigades/Insurers/Certification Bodies/Others, Individuals/Consultants

Installer level 4

A&F Sprinklers Ltd
 Armstrong Priestley Ltd
 Compco Fire Systems Ltd
 Domestic Sprinklers Ltd
 Hall Fire Protection Ltd
 J&J Design Limited t/a J&J Fire Engineering
 Mercury Engineering Nationwide Fire
 Sprinklers Ltd
 Project Fire Products Ltd
 Pyro Protection Limited Tyco Fire &
 Integrated Solutions (UK) Ltd
 TPT Fire Systems Group Ltd
 Vipond Fire Protection Limited

Installer level 3

AD Sprinkler Protection Ltd
 Automatic Fire Control Ltd
 Blue Shield Fire Protection Ltd
 D I S Sprinklers
 EMTEC Fire Systems
 Eton Fire Ltd
 FVS Limited
 Marioff Ltd (Watermist Installer)
 Solent Fire Protection Services Ltd
 Thameside Fire Protection Ltd
 Thermotech Fire Protection
 Ultra Surefire Ltd (Watermist Installer)
 Writtech Industrial Services Ltd

Installer level 2

FireFighter 247 LLP
 First Fire Protection Ltd

Installer level 1

Adima Group Ltd AFT Group (Wales) Ltd
 AL Fire Systems
 Automatic Sprinkler Solutions Ltd
 Aquablaze
 Alpha Sprinkler Protection Ltd
 B&C Fire Engineering Ltd
 BMS (E.A) Ltd Trading as AES Sprinklers
 Fire Prevention Works Ltd

Fire Protection Services Ltd
 Fire Sprinkler Systems (UK) Ltd
 Indigo Fire Systems Ltd
 Phoenix Fire Services Ltd
 (t/a Interserve Sprinkler Division)
 RAD Fire Sprinkler Co Ltd
 React Fire Sprinklers Ltd
 Residential Sprinkler Protection Ltd
 Residential Sprinkler Solutions
 Sharp Construction Scotland Ltd
 Triangle Fire Systems Ltd
 UK Sprinklers Ltd

Sprinkler head manufacturer

Rapidrop Ltd
 Reliable Fire Sprinkler (UK) Ltd
 Tyco Fire Protection Products Ltd
 Victaulic
 Viking SupplyNet Ltd

Manufacturer and/or Supplier

Armstrong Integrated Ltd
 Bailey & Mackey Ltd
 Balmoral Tanks
 Booles Tools & Pipe Fittings Ltd
 Clarke UK Limited
 CST Industries (UK) Ltd
 Fire Protection Centre Ltd
 Firemain Engineering Ltd
 Franklin Hodge Industries Ltd
 Fire-Mech Fixings Ltd
 Grundfos Pumps Ltd
 International Plastic Systems Ltd
 (IPS Flow Systems)
 JEM Fire Pumps Ltd
 Lubrizol Advanced Materials Europe BVBA
 MagiCAD
 Pegler Yorkshire Group Ltd
 Potter Electric Signal Company
 Pro Fire Solutions Ltd
 Sale Engineering Products Ltd
 Shawston (International) Ltd
 SPP Pumps Ltd
 Thermocable Flexible Elements Ltd
 Triple P Projects Ltd

Tubetrade plc
Universal Fixings Ltd

Associate Individual

Aquaspray Fire Protection Ltd
Argus Fire Protection Ltd
Andrew Billingsley Ltd
DKP Associates
Mark Bedford
MJA Designed Solutions
Risk Consulting (davidsmith) Ltd

Associate installer

Associated Fire Systems Limited
Amsco Fire Ltd
Dragon Sprinklers
Flamefast Fire Systems Ltd
FSE Fire Safety Systems Ltd
Gas World
GRC Plumbing and Heating
K Hewitt and Co Ltd
M&P Dry Risers Limited
PEL Services Ltd
Residential Sprinklers Ltd
Snowdonia Fire Protection Ltd
Tandi Sprinkler
UK Sprinklers Ltd

Associate organisation

Automated Material Handling
Systems Association
Avon Fire & Rescue Service
AXA Insurance UK plc
Bedfordshire and Luton Fire and Rescue
Service
Buckinghamshire Fire & Rescue Service
Cheshire Fire & Rescue Service
Cornwall Fire & Rescue Service
Cumbria Fire & Rescue Services
Cambridgeshire Fire and Rescue Service
Derbyshire Fire & Rescue Service
Dorset & Wiltshire Fire and Rescue Service
East Midlands Fire Ltd East Sussex Fire &
Rescue Service

Essex County Fire & Rescue Service
Fire Protection Association
FM Global (FM Insurance Co Ltd)
HDI-Global SE
Hertfordshire Fire & Rescue Service
Humberside Fire & Rescue Service
Hydrostore Tanks
IFC Certification Ltd
J T Fire Consultants Ltd
Kent Fire & Rescue Service
Lancashire Fire & Rescue Service
Liberty Mutual Insurance
London Fire and Emergency Planning
Authority
Marsh Risk Consulting
Merseyside Fire and Rescue Service
Michael Slattery Associates
Mid & West Wales Fire & Rescue
Neath Port Talbot College
North Wales Fire & Rescue Service FSHQ
Nottingham Fire & Rescue Service
RiskSTOP Group Ltd
Royal Berkshire Fire & Rescue Service
Scottish Fire & Rescue Service
South Wales Fire & Rescue Service
South Yorkshire Fire & Rescue Service
Staffordshire Fire & Rescue Services
Suffolk Fire & Rescue Service
Swann Consultancy Ltd
Sweco
The Henderson Group
Tokio Marine Kiln Insurance Ltd
UK Warehousing Association
EXOVA Warrington Certification Ltd
Warwickshire Fire & Rescue Service
West Midlands Fire Service
West Sussex Fire & Rescue Service
West Yorkshire Fire & Rescue Service
Xact Consultancy and Training Ltd
Zurich Risk Engineering

Associate trade

Applications Engineering Ltd
ASLR Fabrication Services Ltd
Asset International Ltd

Canute LLP
CertifiedProInstalls Ltd
CFCS (Contaminated
Fuel Conditioning Services)
Fire Halt Installations Limited
Firetech Pump Services Ltd
First Insurance Solutions Ltd
Groundbreaker and Firebreaker Systems
Hydrotech Fire & Mechanical Ltd
Influx Measurements Ltd
Independent Tube & Fittings Ltd t/as
International Tube Fittings
Integral Pump Solutions

Liquitech Ltd
Pipeline Plus
Powerpro UK Ltd
Powertec Pumps Ltd
R Tindall Fabricators Ltd
RadiusPlus Ltd
Xylem Water Solutions UK Ltd

Honorary members

Leslie Heaviside MBE
John Stephens



**The UK's largest Provider
of High Quality Dry & Wet
Riser components**



With global manufacturing and distribution facilities along with our expertise in product development, Hydrotech Fire & Mechanical LTD are proud to supply several well-known professional distributors with a high quality and competitive range of products into the Fire Protection industry. Our distribution network supports some of the largest Fire Protection companies with bespoke Dry Riser and Wet Riser packages.

When you think Dry & Wet Riser systems think Hydrotech!

We also manufacture the largest range of Residential Sprinkler valves, visit www.hydrotechfire.co.uk for more details.

List of BAFSA members

A&F Sprinklers Ltd

Unit 4, Trans Pennine Estate,
Gorrels Way, Rochdale
OL11 2PX

Tel: 0845 5051550
Fax: 0845 5051660
Email: mstansfield@afsprinklers.co.uk
Istansfield@afsprinklers.co.uk
cmooney@afsprinklers.co.uk
Web: afsprinklers.co.uk

Category: Installer level 4
Accred: LPCB - Level 4
Contact: Mark Stansfield,
Managing Director
Chris Mooney, Sales Director

Installs domestic/residential systems,
commercial and industrial systems

AD Sprinkler Protection Ltd

2nd Floor Heaton Mill,
Grey Street, Denton
M34 3RG

Tel: 0161 336 0001
Fax: 0161 336 6608
Email: lee@sprinklers.co.uk
mail@adsprinklers.co.uk
Web: adsprinklers.co.uk

Category: Installer level 3

Accred: LPS 1048-1

Contact: Lee Redikin, Sales Manager

Design, supply, install, test, commissioning
and servicing of sprinkler systems.

Adima Group Ltd

12-13 King Square, Kingswood,
Bristol BS2 8JH

Tel: 0117 317 8140
Fax: 0117 317 8093
Email: enquiries@adima-group.com
Web: adima-group.com

Category: Installer level 1
Accred: FIRAS (domestic and residential)
Contact: Steve Lloyd-Jones

Specialists in the design, installation and maintenance of domestic and residential sprinkler systems in accordance with BS 9251: 2005 and NFPA 13D/R. We work closely with builders, architects, local authorities, regulatory bodies and private householders. Clients and projects range widely by type and size, from small homeowners to major residential developments. The company has installed systems in a variety of listed/heritage buildings, from country cottages to churches and water mills. Other services are also available.

AFT Group (Wales) Ltd

Unit A1, Trecenydd Business Park,
Caerphilly CF83 2RZ

Tel: 0844 911 9991
Fax: 0844 911 9992
Email: sales@advancedfiretech.co.uk
Web: advancedfiretech.co.uk

Category: Installer level 1
Accred: FIRAS Domestic & Residential
Fire Sprinklers
Contact: Andrew Mock, General
Manager

Multi-disciplined fire safety services

AL Fire Systems

Unit 2, Southhook Road,
Kilmarnock
KA1 2NN

Tel: 01563 542207
Fax: 01563 558896
Email: andrewlusk@alplumbing.co.uk
admin1@alplumbing.co.uk
Web: alfiresystems.co.uk

Category: Installer
Accred: FIRAS - Domestic and
Residential Scheme
Contact: Andrew Lusk
Managing Director

- Operates nationwide
- Installs Domestic/Residential systems
- Installs Commercial & Industrial systems

Alpha Sprinkler Protection Ltd

Suite G26, Innovation Centre, Evolution
Park, Haslingden Road, Blackburn,
Lancashire BB1 2FD

Tel: 01254 584669
Email: info@alphasprinklers.co.uk
Web: alphasprinklers.co.uk

Category: Installer Level 1
Accred: LPCB Level 1 Installer
Contact: Mebs Yusuf, Project Engineer

Alpha Sprinkler Protection Ltd is an LPCB listed and ISO 9001 certified to design and install sprinkler systems, conforming to BSEN12845 and BS9251 rules.

All projects are managed nationwide, covering residential, retail, commercial properties and schools.

Alpha Sprinkler Protection Ltd gives clients the assurance that all projects will be managed with quality in a cost effective and timely manner.

Amsco Fire Ltd

Unit G9, Atlas Industrial Park,
Rye Harbour Road, Rye
TN31 7TE

Tel: 01424 813131
Fax: 01424 858101
Email: kaj@amsco.co.uk
info@amsco.co.uk
Web: amsco.co.uk

Category: Associate installer
Contact: Kaj Haines, Managing Director

Designers and Installers of Mist and
Sprinkler fire suppression systems

Andrew Billingsley Ltd

Cyncoed, Dolau,
Llandrindod Wells, Powys
LD1 5TL

Tel: 01597 851561
Email: andrew.billingsley@aol.co.uk

Category: Associate
Accred: BS9251:2014
Contact: Andrew Billingsley

Residential and domestic sprinkler
designer.

suppression systems, dry and wet risers, Water Mist. High and Low Pressure. Special Hazard systems including water, foam. To BSEN 12845, NFPA, FM and BS9251 standards. We provide a first quality installation, service and training for the operation and maintenance of customers' fire protection systems. Our dedication ensures that our customers receive the most advanced, custom-designed fire protection system using the best products available. Among our specialisms is the installation of sprinkler systems in new and existing buildings, both commercial and residential.

API Vipond Fire Protection Ltd



10/12 Glenfield Road,
Kelvin Industrial Estate, East Kilbride
G75 0RA

Branch Offices: Birmingham, Belfast,
Cardiff, London, Swansea

Tel: 01355 237588
Fax: 01355 263399
Email: john.mccann@vipondltd.co.uk
Web: vipondfire.co.uk

Category: Installer level 4
Accred: LPS 1048 certificated sprinkler
installer. LPS 1014, LPS 1204,
FIRAS Residential & Domestic.
LPCB ISO 9001:2000.

Contact: John McCann

Total Fire Protection by means of design,
supply, install, commission and service
of Fire Sprinkler, detection and gas

Applications Engineering Ltd

16 Horsted Square,
Bellbrook Industrial Estate, Uckfield
TN22 1QG

Tel: 01825 764737
Fax: 01825 768330
Email: ccocklin@appeng.co.uk
jgoddard@appeng.co.uk
Web: appeng.co.uk

Category: Associate Supplier
Accred: ISO 9001:2008
Contact: Chris Cocklin, Sales Engineer
James Goddard, Managing
Director

Suppliers of flow switches and manifolds
(valve sets), check valves, pressure
gauges and pressure switches

Aquablaze

Munnieston,
Thornhill, Stirling
FK8 3QG

Tel: 07771 666238
Email: william@aquablaze.com
Web: aquablaze.com

Category: Installer level 1
Contact: William Ferguson, Director

Design, installation and maintenance
of fire sprinklers systems. Third party
certificated through FIRAS.

Aquaspray Fire Protection Ltd

61 Horringer Road,
Bury St Edmunds, Suffolk
IP33 2DQ

Tel: 01284 754335, 07811 679644
Email: jscmonteiro@aol.com

Category: Associate
Contact: Joaquim Monteiro, Director

We have been carrying out design works
and engineering services on a sub-
contract basis for the sprinkler industry
over the past 17 years.

Argus Fire Protection Ltd

Hendglade House,
46 New Road, Stourbridge
DY8 1PA

Tel: 01384 376256
Fax: 01384 393955
Email: d.kinnersley@argusfire.co.uk
info@argusfire.co.uk
Web: argusfire.co.uk

Category: Associate individual
Accred: LPCB - Level 4
Contact: Dale Kinnersley,
Technical Director

Design, Installation, Commissioning,
Testing and Servicing of automatic
sprinkler installations with over 30 years
experience.

Armstrong Integrated Ltd

Wolverton Street,
Manchester
M11 2ET

Tel: 08444 145145
Fax: 08444 145146
Email:

nsyson@armstrongfluidtechnology.com
kgingell@armstrongfluidtechnology.com
Web: armstrongfluidtechnology.com

Category: Manufacturer
Accred: LRQA ISO 9001: 2000, ISO
14001: 2004. Pumps
approved to FM
1311, 1319 and 1371: LPS
1131

Contact: Neil Syson (UK North)
Ken Gingell (UK South) -
Global

Manufacturer of centrifugal and
reciprocating pumps, pressurisation
units, booster sets and packaged pump
room enclosures for fire protection
installations

Armstrong Priestley Ltd



Seventy Seven,
Leeds
LS11 9UL

Tel: 0113 394 4040
Fax: 0113 394 4041
Email: info@armstrongpriestley.co.uk
Web: armstrongpriestley.co.uk

Category: Installer level 4
Accred: LPS 1048 Level 4 certificated
sprinkler installer and
supervising body.
Contact: Terry Bennett,
Commercial Director

FIRAS Certificated for the installation
of residential and domestic sprinkler
systems designed to BS 9251, BSI ISO
9001:2008 Quality Management

Armstrong Priestley are specialists in
automatic fire suppression systems and
with over 38 years of experience we are
able to offer clients a wealth of expertise.
From our head office in Leeds and our
Newcastle office, we design and install
automatic fire sprinkler systems, hose
reel and hydrant packages, low and high
pressure water mist and gas suppression
systems which are all designed to
recognised national and international
design standards throughout the UK.

- 24 hour call-out service
- Planning supervisor service for CDM
contractors
- In-house fabrication
- Own directly employed workforce
- Authorised Ultramist and Viking/
Minimax Econaqua Partner

- Member of the Confederation of
Construction Specialists
 - Safecontractor, CHAS and
Construction Line approved
-

ASLR Fabrication Services Ltd

Opal Way, Stone Business Park,
Stone, Staffordshire
ST15 0SS

Tel: 01785 286060
Fax: 01785 818728
Email: sales@aslr.co.uk
Web: aslr.co.uk

Category: Associate Supplier
Accred: BRE Global assessed to ISO
9001: 2008, Quality
management
Contact: Chris Shenton

ASLR are a leading supplier of powder
coated pre-fabricated steel pipework to
the fire protection industry. All aspects
of fabrication are carried out at our
purpose-built facility in Staffordshire
where we continually strive to create an
efficient and service-driven package to
our clients, utilising our state-of-the-art
equipment. An in-house powder coating
facility gives our pipework the tough,
durable and attractive finish which befits
the high standard of fabrication which we
set ourselves and apply to all contracts.

Asset International Ltd

Stephenson Street,
Newport,
NP19 4XH

Tel: 01633 273081
Email: emma-jane.brown@weholite.co.uk
Web: weholite.co.uk

Accred: Associate
Contact: Emma-Jane Brown

A water solutions company, manufacturer of HDPE pipes, chambers, attenuation tanks, sprinkler tanks.

AMHSA is the voice of the automated materials handling industry.

The Association is committed to promoting excellence in the automated material handling industry in terms of solutions, after sales support, reliability and safety. AMHSA promotes the interests of its members, defines and upholds best practice in the industry and aims to be a leading example of excellence.

AMHSA gives access to the latest information and industry intelligence, as well as superior technical knowledge and support.

Membership of AMHSA assists in improving business operations and management practices. AMHSA provides networking and collaboration opportunities to facilitate the sharing of best practice, improving the profile of the industry, as well as both individuals and companies in our sector and beyond.

Associated Fire Systems Ltd

4a Oakwood Parade,
Loughton, Essex
IG10 3EL

Tel: 0208 508 3330
Fax: 0208 502 5074
Email: ppatten@afs-ltd.co.uk
Web: afs-ltd.co.uk

Category: Sprinkler and High Pressure
Water Mist Installer
Contact: Peter Patten, Director

Automated Material Handling Systems Association

Harborough Innovation Centre, Airfield
Business Park, Market Harborough
LE16 7WB

Tel: 01858 414229
Email: secretary@amhsa.co.uk
Web: amhsa.co.uk

Category: Associate Organisation
Contact: Dave Berridge, Secretary

Automatic Fire Control Ltd

Unit 4, Shrivenham Hundred Business Park, Majors Road, Shrivenham SN6 8TZ

Tel: 01793 821588
 Email: Kevin@automaticfire.co.uk
 guy@automaticfire.co.uk
 Web: automaticfire.co.uk

Category: Installer level 3

Accred: LPS 1048 approved sprinkler installer: ISO 9001: 2000; Quality System

Contact: Kevin Cummins, Director
 Guy Watson, Sales & Marketing

LPS ISO 9001:2008; Quality Management System Environmental ISO 14001:2004;

Occupational Health & Safety OHSAS 8001:2007

Automatic Fire Control Ltd is an LPCB listed sprinkler installer approved to Design, Install, Maintain and Service sprinkler systems conforming to the LPC Rules for Automatic Sprinkler Installations. Established in 1984, Automatic Fire Control Ltd supports commerce, industry, retail and residential sectors, together with education and school establishments. Working from a UK base it covers the whole of the UK and Ireland and offers bespoke services in the design, installation and commissioning of sprinkler systems, inspection, testing and servicing. Quality is the key and the company has ISO 9000: 2000 by the LPCB, together with a full Integrated Management System.

Automatic Sprinkler Solutions Ltd

144 Brownspring Drive, New Eltham SE9 3LD

Tel: 07738 369784
 Email: micksheaf_assl@btinternet.com
 Web: autosprinklersolutionsltd.co.uk

Category: Installer

Contact: Mick Sheaf,
 Managing Director

- Operates nationwide
- Installs Domestic/Residential systems
- Installs Commercial & Industrial systems

Avon Fire & Rescue Service

Patchway Fire Station, Rodway Road, Patchway, Bristol BS34 5PE

Tel: 0117 926 2061 ext 8409
 Fax: 0117 925 0980
 Email: steven.noble@avonfire.gov.uk
 Web: avonfirebrigade.gov.uk

Category: Associate organisation

Contact: Steve Noble,
 Technical Fire Safety

Avon Fire & Rescue Service is active in providing advice and consultation to employers and owners of industrial and commercial premises on a wide range of safety topics. It also gives specialist advice about workplace fire risk assessment as part of its objective of assisting employers to comply with their legal obligations. With regard to automatic sprinkler protection, the

Service has a number of officers qualified to advise about the design, installation, commissioning and maintenance of domestic/ residential sprinkler systems to BS 9251.

AXA Insurance UK plc

5th Floor St. Philips Point,
Temple Row, Birmingham
B2 5LR

Tel: 07795 013796

Email:

duncan.mcintyre@axa-insurance.co.uk

Alan.Beattie@axa-insurance.co.uk

Web: axa.co.uk

Contact: Duncan McIntyre,
Risk Control Surveyor

Bailey & Mackey Ltd

Baltimore Road,
Birmingham
B42 1DE

Tel: 0121 357 5351

Fax: 0121 357 8319

Email:

alan.pithers@baileymackey.com

Web: baileymackey.com

Category: Manufacturer/Supplier

Accred: LPCB; BSI

Contact: Alan Pithers,
Managing Director

Bailey & Mackey are manufacturers of LPCB-approved pressure switches, pressure gauges and pressure transducers for fire protection use in sprinkler, deluge and extinguishing gas systems.

B&C Fire Engineering Ltd

Unit 12 Hampton Street,
Joiners Square, Stoke on Trent
ST1 3EX

Tel: 01782 206144

Fax: 01782 201311

Email: alan.heath@bandcfire.net

Web: bandcfire.net

Category: Installer

Accred: FIRAS - Domestic and
Residential Scheme; FIRAS -
Level 4

Contact: Alan Heath, Managing Director

- Operates nationwide
- Installs Domestic/Residential systems
- Installs Commercial & Industrial systems

Balmoral Tanks

Rathbone Square,
24 Tanfield Road, Croydon
CR0 1AL

Tel: 0208 665 4100
Email: n.ross@balmoral.co.uk
c.milton@balmoral.co.uk
Web: balmoralfiretanks.com

Category: Manufacturer/Supplier
Accred: Assessed to LPCB/LPS 1276; BS
ISO 9001: 2008 Quality
Management
Contact: Clive Milton, Sales Manager

Balmoral cylindrical sectional tanks for fire sprinkler protection application are manufactured in accordance with LPCB and FM standards. Designs in accordance with NFPA 22 can also be supplied. Balmoral Tanks strives to provide the best quality product on the market. To achieve this, the company adheres to a production Quality Management System that is accredited to ISO 9001: 2000 standards. Thus, all panels and accessories are produced under the most stringent quality audit to meet the required structural and durability performance

Bedfordshire and Luton Fire and Rescue Service

Southfield Road, Kempston,
Bedford MK42 7NR

Tel: 01234 845000
Fax: 01234 845035
Email: tim.birchall@bedfire.com;
Web: bedfire.com

Category: Associate organisation
Contact: Tim Birchall,
Fire Safety Technical Officer

Bedfordshire Fire & Rescue Service is working to increase the number of domestic sprinklers in 'at risk' premises, as well as sprinklers in newly built schools and residential care premises. The Service is working with the National Fire Sprinkler Network, local councils, building control departments, social care services, schools, landlords, architects, construction companies and others to achieve this.

Blue Shield Fire Protection Ltd

Blue Shield House,
Queen Street, Tring
HP23 6BQ

Tel: 01442 828000
Fax: 01442 828001
Email: sales@blueshieldfire.co.uk
Web: blueshieldfire.co.uk

Category: Installer level 3
Accred: LPCB ISO 9001: 2000.
Contact: Ashley Gorton, Director

From its base in Hertfordshire Blue Shield Fire Protection delivers its services of design, supply, installation and maintenance of safety systems to all types of premises - office blocks, factories, warehouses and shopping malls are its main areas of work - throughout Great Britain.

Blue Shield's expertise embraces fire sprinkler systems, hose reels, wet and dry rising fire mains and fire alarm and detection systems. Since it is not affiliated to any equipment manufacturer its clients can be reassured that it gives independent advice on equipment matters.

BMS (E.A) Ltd trading as AES Sprinklers

Part of Anglian Energy Services, Cedar Cottage, Church Street, Eye, Suffolk IP23 7PS

Tel: 01473 614446, 07815 115773

Fax: 01743 620443

Email: aessprinklers@aol.com

Web: aessprinklers.co.uk

Category: Installer

Contact: Mark Bedford, Director

Operates nationwide

Services Offered:

- Installs Domestic/Residential systems
- Installs Commercial & Industrial systems
- Holds Third Party Certifications: FIRAS - Domestic and Residential Scheme

Booles Tools & Pipe Fittings Ltd

Haigh Avenue, Whitehall Industrial Estate, Stockport SK4 1NU

Tel: 0161 480 7900

Fax: 0161 474 7142

Email: enquiries@booles.co.uk

david.yates@booles.co.uk

Web: booles.co.uk

Category: Manufacturer/Supplier

Contact: David Yates, Sales Manager

Operates nationwide

Boole's supplies a wide range of steel tube, fittings, flanges, valves and allied pipeline equipment to a vast array of

industries, operating from a 67,000 square foot office and distribution centre in Stockport.

Boole's has exceptional expertise within the industry, which ensures that its high levels of customer service meet the evolving demands of the sector.

Buckinghamshire Fire & Rescue Service

Headquarters,
Stocklake, Aylesbury
HP20 1BD

Tel: 07940 781274

Email: rpriest@bucksfire.gov.uk

kwilliams@bucksfire.gov.uk

Web: bucksfire.gov.uk

Category: Associate organisation

Contact: Richard Priest, Community Safety & Business Support Manager
Keith Williams, Prevention Policy Manager

The Fire & Rescue Service Prevention Department is looking to be more involved in portable misting systems for vulnerable people and seeking opportunities to support sprinkler installation to protect vulnerable people through advice and potentially assistance

Cambridgeshire Fire and Rescue Service

Hinchingsbrooke Cottage, Brampton Road,
Huntingdon, Cambridgeshire
PE29 2NA

Tel: 01480 444500

Email:

giles.grainger@cambsfire.gov.uk

Web: cambsfire.gov.uk

Category: Associate Organisation
(Fire and Rescue Service)

Contact: Giles Grainger

A core objective of Cambridgeshire Fire and Rescue Service is to reduce deaths, injuries and property damage by fire and to support this we actively encourage the provision of sprinkler protection and other suppression systems in both domestic and commercial properties (where appropriate). We will continue to promote and influence the installation of sprinklers in existing premises undergoing material alterations or refurbishment (where proportionate), and in new developments, with particular emphasis on those persons who are most vulnerable in our society.

Canute LLP

Seventy Seven,
Holbeck Lane, Leeds
LS11 9UL

Tel: 0113 328 0350

Email: info@canutesoft.com

Web: canutesoft.com

Category: Associate trade
Contact: John Moore, Partner

Canute provides FHC, a hydraulic analysis package suitable for calculating water-based fire protection systems including

all types of fire sprinkler systems, deluge, water-mist, hydrant and foam monitor systems. FHC has hundreds of users in over 40 countries and is accepted by all major design authorities and fire insurers.

- Complies with international standards such as EN 12845, LPC, NFPA, BS 9251 and FM
- Any type of pipe network can be modelled, such as trees, loops, grids or any combination
- Can use Hazen-Williams or Darcy-Weisbach pressure loss equations
- Easy to read and inclusive reports.

CertifiedProInstalls Ltd

Unit 9, Tile Cross Road, Tile Cross Trading Estate, Birmingham, West Midlands
B33 0NW

Tel: 0121 7796548

Email: info@certifiedproinstalls.co.uk

Web: certifiedproinstalls.co.uk

Category: Installer
Contact: Chris Bagnall

CFCS (Contaminated Fuel Conditioning Services)

8-10 Gatley Road, Cheadle, Cheshire
SK8 1PY

Tel: 0800 2461008

Email: cfcs@contaminatedfuel.co.uk

Web: contaminatedfuel.co.uk

Category: Associate
Accred: OFTEC NFPA UKAS Testing
Contact: Kevin Harrison, Director

ON-SITE fuel testing and fuel Conditioning

Cheshire Fire & Rescue Service

Winsford, Cheshire
CW7 2FQ

Tel: 01606 868700

Email:

Simon.gibbins@cheshirefire.gov.uk

Mark.abram@cheshirefire.gov.uk

Web: cheshirefire.gov.uk

Category: Associate organisation

Contact: Simon Gibbins, Head of
Protection

Mark Abram, Policy,
Partnerships & HQ Manager

Cheshire Fire Authority has a vision of 'a Cheshire where there are no deaths, injuries or damage from fires or other emergencies'. Sprinkler systems are proven to save lives and property; they improve firefighter safety, minimise environmental damage and reduce economic loss. In support of these aims, Cheshire Fire & Rescue Service proactively endorses the installation of sprinkler systems in domestic, educational, commercial and industrial premises.

Clarke UK Ltd

Grange Works, Lomond Road,
Coatbridge, North Lanarkshire
ML5 2NN

Tel: 01236 429946

Fax: 01236 427274

Email: jblackwood@clarkefire.com

Web: clarkefire.com

Category: Manufacturer/Supplier

Accred: Diesel Engines Approved /
LPS 1239 and UL FM.

Contact: John Blackwood,
Managing Director

Clarke Fire has the world's largest range of LPCB & UL-FM Approved Diesel Fire Pump Engines.

We cover LPCB Fire Pump requirements from 5KW to 205KW and operating speeds from 1760 to 3000 RPM.

We cover UL-FM Fire Pump requirements from 31KW to 764KW and operating speeds from 1470 to 3000 RPM.

All of our Engines are supplied with a Standard 2 Year Manufacturer's Warranty.

Clarke Mission - To Protect People and Property from the Hazard of Fire.

Compc Fire Systems Ltd



Cleeve House, Malvern Road,
Lower Wick, Worcester WR2 4YX

Tel: 01905 741600

Fax: 01905 741620

Email:

john.sinclair@compcofire.co.uk

High Banks House, Lawn Lane,
Hemel Hempstead, Hertfordshire
HP3 9HR 01442 242821

Cadzow House, Cadzow
Industrial Estate, Hamilton
ML3 7QU 01698 368790

Web: compcofire.co.uk

Category: Installer level 4

Accred: LPCB - Level 4

Contact: John Sinclair,
Managing Director

COMPCO Fire Systems is an independently owned fire engineering company based in the Midlands with branch offices in Hemel Hempstead, Swansea, Wetherby, and Hamilton.

Founded in 1988, the company has carried out work in the UK and Europe. Its team of engineers has a wealth of experience to carry out contracts for active fire protection systems of any size or complexity, with expertise in automatic sprinkler systems being a particular strength. COMPCO works closely with clients at every stage of a project to provide them with a quality yet competitively priced package of solutions and support.

Cornwall Fire & Rescue Service

Old County Hall, Truro,
Cornwall
TR1 3HA

Tel: 0300 1234 232

Email: kthomas@fire.cornwall.gov.uk

Web: cornwall.gov.uk/fire

Category: Associate organisation

Contact: Kevin Thomas, Area Manager

Cornwall Fire & Rescue Service strongly encourages the fitting of fire sprinklers in all types of buildings at the design stage, and points out that the fitting of sprinklers can often lead to benefits arising in other aspects of fire safety design.

Cumbria Fire & Rescue Services

Service HQ - Fire Safety,
Carleton Avenue, Penrith
CA10 2FA

Tel: 01768 812612

Email: Justin.robinson@cumbria.gov.uk
enquiries.fire@cumbria.gov.uk

Web: cumbriafire.gov.uk

Category: Associate organisation

Contact: Justin Robinson, Group
Manager in Fire Safety

Derbyshire Fire & Rescue Service

Butterly Hall, Ripley,
Derbyshire
DE5 3RS

Tel: 01332 771221

Fax: 01332 270360

Email: gplatts@derbys-fire.gov.uk

Web: derbys-fire.gov.uk

Category: Associate organisation

Contact: Gary Platts,
Group Manager Fire Protection

Promotion of domestic and residential
sprinklers through the DF&RS Think
Sprinkler campaign

DIS Sprinklers

183 Westgate Street,
Gloucester
GL1 2RN

Tel: 01452 304927

Fax: 01452 306692

Email: sprinklers@dis-ltd.co.uk

Web: dis-ltd.co.uk/sprinklers

Category: Installer level 3

Accred: LPCB - Level 3

Contact: Wayne Davies, Manager

DIS Sprinklers is a division of the DIS Group and was formed to complement the group's building services package. Since formation in 1985, the division has completed a large range of automatic sprinkler projects in industrial, retail and commercial buildings, covering all hazard categories.

Design is carried out by highly qualified personnel to the appropriate national and international standards. All designs implement sprinkler system design software and the DIS team have the resources to meet today's needs for fast-track design and installation. They achieve close cooperation and coordination with all trades in order to meet the requirements of the authorities having jurisdiction, the client and/or the end user.

DKP Associates

2 Stratton, Marston Moretaine,
Beds MK43 0XH

Tel: 07966 961780

Email: despotten@aol.com

Category: Associate individual

Accred: OSHCR Registered Health
and Safety Consultant

Contact: Des Potten

DKP Associates provides Quality Management (ISO 9001), Environmental Management (ISO 14001), LPS 1048 and Health & Safety Management (OHSAS 18001) Consultancy to the Fire Protection Industry.

Domestic Sprinklers Ltd



6 Kent Close, Weymouth, Dorset DT4 9TF

Tel: 01305 765763

Fax: 01305 777700

Email:

email@domesticsprinklers.co.uk

Web: domesticsprinklers.com

Category: Installer level 4

Accred: FIRAS - Domestic
and Residential Scheme

Contact: Colin Taylor, Director

FIRAS - Level 4

The company designs and installs:
domestic and residential sprinklers to
BS 9251: 2014; and restricted ordinary
hazards commercial and industrial
systems to BS EN 12845: 2009.

Dorset & Wiltshire Fire and Rescue Service

Five Rivers Community Health & Wellbeing Centre, Hulse Road, Salisbury, Wiltshire SP1 3NR

Tel: 01722 691000
Email: mike.bagnall@dwfire.org.uk
Web: dwfire.org.uk

Category: Associate organisation
Contact: Mike Bagnall, Technical Fire Safety Manager

Dorset & Wiltshire Fire and Rescue Service actively promotes the inclusion of fire sprinklers within homes as well as in commercial or public buildings, such as schools. We work with our local authority building control departments to consider the use of sprinklers where appropriate.

This approach has been successful, as a large percentage of schools within the county are now fitted with sprinklers.

Dragon Sprinklers

46 Fronhaul, Swiss Valley, Llanelli, Carmarthenshire SA14 8LF

Tel: 01554 562362
Email: dragonsprinklers@mail.com
Web: dragonsprinklers.co.uk

Category: Installer
Contact: Claire Yeo, Procurement Manager

Dragon Sprinklers is a family run company, who offer the whole package from start to finish. We design, install and commission sprinkler systems for domestic and residential projects.

East Midlands Fire Ltd

16 Millers Close, Rushden, Northants NN10 9RP

Tel: D: 07788 595884
M: 07557 413005

Email: eastmidlandsfire@hotmail.co.uk
Web: eastmidlandsfire.com

Category: Associate
Accred: Chaz, Safe Contractor
Contact: Dan Pitchford, Director
Matt Lander, Director

Specialising in the installation and maintenance of fire sprinkler systems, commercial and residential.

East Sussex Fire & Rescue Service

20 Upperton Road, East Sussex BN21 1EU

Tel: 01323 462404
Fax: 01323 462044
Email: jo.fowler@esfrs.org
Web: esfrs.org

Category: Associate organisation
Contact: Jo Fowler, Fire Engineer

East Sussex Fire Authority is committed to reducing the impact of fire on people, property and the environment. We will play a key leadership role in promoting a better understanding of the benefits of sprinklers and will encourage building managers, owners and developers to install sprinklers where there is a risk-based case for doing so. Wherever it is able to influence, the Authority will lobby for the creation of a legal requirement to

fit sprinklers in domestic dwellings, high rise premises, care homes, schools and other buildings where the risk to life and property from fire are most significant.

EMTEC Fire Systems

Ellismuir Way, Tannochside Park,
Uddingston, Glasgow
G71 5PW

Tel: 01698 808030
Fax: 01698 808040
Email: ac@emtecfire.co.uk
Web: emtecfire.co.uk

Category: Installer level 3
Accred: LPCB - Level 3
Contact: Alan Crichton

Emtec Fire Systems offer a complete and comprehensive service in relation to the design, supply, installation and maintenance of all fire limiting and suppression systems, including automatic sprinkler systems. Our systems, processes and staff operate to provide a friendly, efficient and professional service throughout the UK, tailoring solutions to that of our customers' needs while ensuring compliance to the related requirements of the Loss Prevention Council, National Fire Protection Association and Factory Mutual as appropriate.

Essex County Fire & Rescue Service

ECFRS HQ, Kelvedon Park,
Rivenhall, Witham CM8 3HB

Tel: 07785 977419
Fax: 01376 570466
Email:

mike.sparrow@essex-fire.gov.uk
mark.earwicker@essex-fire.gov.uk
Web: essex-fire.gov.uk

Category: Associate organisation
Contact: Mike Sparrow, ADO Fire Safety
Essex County Fire and Rescue Service are responsible for delivering fire safety and fire prevention guidance, in both homes and businesses, to more than 1.7 million people throughout Essex. Our professional fire safety officers provide advice and guidance to assist business achieve compliance with fire safety regulations. We support sprinklers as a method of reducing the impact of fires on our communities and to date have match funded their installation in over 600 premises assisting a diversity of projects from high rise to almshouses.

Eton Fire Ltd

Suite 602 Tower Bridge Business Centre,
46-48 East Smithfield, London
E1W 1AW

Tel: 0207 517 6300
Fax: 0207 538 5231
Email: fire@etonfire.com
Web: etonfire.com

Category: Installer level 3
Accred: LPCB - Level 3
Contact: Mike Ballard,
Managing Director

Aynsley House, Waterside Business
Centre, Wolverhampton Rd, Cannock
WS11 1SN

Tel: 01543 431340
Fax: 01543 571680
Email: fire@etonfire.com
Web: etonfire.com

Category: Installer level 2
Accred: LPCB - Level 2
Contact: Brian Crumley,
Divisional Manager

**EXOVA Warrington
Certification Ltd**

Holmesfield Road,
Warrington
WA1 2DS

Tel: 01925 646666
Fax: 01925 646667
Email: jonathan.osborn@exova.com
Web: warringtonfire.net

Category: Associate organisation
Contact: Jonathan Osborn

Warrington Certification Ltd offers a
comprehensive range of certification

schemes for fire protection systems
including CERTIFIRE for products, FIRAS
for installers and certification to ISO
9001: 2001. Warrington Certification
Ltd is part of the Exova Warringtonfire
Group, the UK's largest independent
fire testing, consultancy, research and
certification organisation.

Fire Halt Installations Ltd

Hanson Close, Middleton,
Manchester, Lancashire
M24 2HD

Tel: 07957 137312
Email:
jason.henson@firehaltinstall.co.uk
Web: firehaltinstallationsltd.co.uk

Category: Installer
Contact: Jason Henson

- Operates nationwide
- Installs Domestic/Residential
systems
- Installs Commercial &
Industrial systems

Fire Prevention Works Ltd

3 Long Craig Rigg,
West Shore Road, Edinburgh
EH5 1QT

Tel: 0131 552 7772
Email: info@fireprevention.scot
emily@fireprevention.scot
Web: firepreventionuk.scot

Category: Installer level 1
Accred: FIRAS - Domestic and
Residential Scheme, SMAS,
ISO9001, Constructionline
Contact: Gary Bennett, Director

Specialists in the design, installation and maintenance of sprinkler systems, focusing on BS9251:2005 and BS9251:2014. We design and install bespoke systems fit for the purpose of the specific premise. Completed several large scale housing projects in the Edinburgh/ Fife area in the past 2 years.

Fire Protection Association

London Road, Moreton-in-Marsh
GL56 ORH

Tel: 01608 812500
Email: jphillips@thefpa.co.uk
Web: thefpa.co.uk

Category: Associate
Contact: Jimmy Phillips,
Marketing Manager

The Fire Protection Association (FPA) is the UK's national fire safety organisation and we work to identify and draw attention to the dangers of fire and the means by which their potential for loss is kept to a minimum. The FPA are author and supplier of the UK's most significant sprinkler installation standard, the LPC Sprinkler Rules, which incorporate the BS EN 12845 standard and additional technical bulletins, for a comprehensive and authoritative guide to best practice in Sprinkler installation and maintenance.

The FPA is able to offer:

- 3rd party sprinkler inspections
- Sprinkler head testing
- Training on the design, installation and maintenance of sprinkler systems

Fire Protection Centre Ltd

Atkinsons Way, Foxhalls Industrial Estate,
Scunthorpe
DN15 8QJ

Tel: 01724 854199
Fax: 01724 854213
Email: sales@fireprotectioncentre.com
Web: fpccdatacentre.co.uk

Category: Manufacturer/Supplier
Contact: Tim Lincoln,
Commercial Director
Barry Holden,
Managing Director

Fire Protection Centre is an established, independent supplier of quality, approved fire sprinklers, fire sprinkler valves, flow control valves, fire ring main and ancillary products. With our unrivalled customer service and industry expertise we offer customised solutions and personal service to help you satisfy project, contract and budget demands.

Fire Protection Services Ltd

Unit 16, Oxwich Court, Enterprise Park,
Valley Way, Swansea
SA6 8RA

Tel: 01792 774085
Fax: 01792 344401
Email: simon@fpsfire.co.uk
Web: fpsfire.co.uk

Category: Level 1 Installer
Accred: FIRAS - Domestic and Residential Scheme
Contact: Simon Gwinnett,
Managing Director

Fire Sprinkler Systems (UK) Ltd

11 Westfield Gardens, Inverurie,
Aberdeenshire AB51 4QL

Tel: 01467 530383
Email: terry@firesprinklers.uk.com
Web: firesprinklers.uk.com

Category: Installer level 1
Accred: FIRAS - Domestic and
Residential Scheme
Contact: Terry Wallace,
Managing Director

Fire Sprinkler Systems (UK) Ltd are leading residential fire sprinkler installers and system designers in north east Scotland. The company's work is carried out in compliance with BS 9251: 2005 and BAFSA Technical Guidance Note No 1. We use fully approved system components, all our installations are fully tested and certified, and our designers and installers are fully trained. We also hold FIRAS Third Party Certification.

FireFighter 247 LLP

Unit 4 Old Sawmills Estate, Broughton
Gifford, Melksham SN12 8PY

Tel: 01225 782120
Fax: 01225 783711
Email: dp@fssuk.net
Web: firesprinklersystemsuk.com

Category: Installer level 2
Accred: FIRAS - Level 2
Contact: Dean Price, Operations Partner

Fire Fighter 247 specialise in the design, installation of Residential & Domestic Fire sprinkler systems & Dry Risers systems. We are a FIRAS accredited company, our main area of coverage is south west & East of England, Wales and London.

Firemain Engineering Ltd

Unit 6, Harrier Court, Eurolink Business
Park, St Helens, Merseyside WA9 4YR

Tel: 01744 850063
Fax: 01744 812014
Email: sean@firemain.com
chris.makin@firemain.com
Web: firemain.com

Category: Supplier
Contact: Chris Makin,
Internal Sales Engineer
Sean McCool,
Project Sales Manager

Firemain specialises in providing the fire trade with foam system equipment for all types of foam applications. We offer a complete service including design advice, site surveys, equipment supply, commissioning, discharge testing and maintenance. Foam concentrates of all types, with quality brands and UL/FM approvals, are available. Foam enhancement of your sprinkler system, either new build or retrofit, is a speciality. Proportioning and discharging foam is the major part of our portfolio.

Fire-Mech Fixings Ltd



Unit 4, Gorrels Way, Transpennine Trading
Estate, Rochdale, Lancashire OL11 2PT

Tel: 03331 233472
Email: phollis@fire-mechfixings.co.uk
Web: fire-mechfixings.co.uk

Category: Manufacturer / Distributor

Accred: LPCB ISO Approval Pending
 Contact: Paul Hollis

Manufacturers & distributors of
 fabricated brackets & pipe supports.

Stockists and distributors of pipe supports
 and associated products including
 unistrut, channel bracketry, allthread
 rod, fasteners & fixings, tube & fittings,
 grooved fittings, gate, lockable ball &
 non return valves, sprinkler guards &
 baffles, fm approved products, galvanised
 supports & consumables all available for
 nationwide next day delivery.

Distributors for: Unistrut, Rawlplug,
 Fischer Fixings, Erico & Walraven

Firetech Pump Services Ltd

Unit 1 Warehouse 2 , Bottomsmill Estate
 Woodhead Road, Holmfirth HD9 2PX

Tel: 01484 680666
 Fax: 01484 680665
 Email:
 harry@firetechpumpservices.com
 Web: firetechpumpservices.com

Category: Associate trade
 Contact: Harry Murray, Director

We are an independent diesel engine
 repairer and supplier of associated
 equipment to the diesel power
 generation, industrial, firefighting and
 marine sectors. Our engineers are factory
 trained to LPCB and NFPA standards, and
 we are competent suppliers and installers
 of approved control panels, fire pumps
 and associated equipment to the fire
 protection industry. We specialise in fire
 pump service and maintenance and the
 overhaul of all rotating and reciprocating

equipment. We offer a comprehensive
 set of related services, including 4-hour
 7-days a week emergency call-out.

First Fire Protection Ltd

Unit 3, Network 4, Lincoln Road,
 Cressex Business Park, High Wycombe
 HP12 3RF

Tel: 01494 522031
 Fax: 01494 452752
 Email:
 enquiries@firstfireprotection.co.uk
 Web: firstfireprotection.co.uk

Category: Installer level 2
 Accred: LPCB - Level 2
 Contact: Mr R P Tickner, Director

We are an LPCB registered company
 specialising in the design, installation
 and servicing of water spray equipment,
 designing systems for all types and
 makes of sprinkler installations. From
 consultancy to contract handover and
 planned maintenance, we are able to
 provide a concise, competitive and
 professional service.

Our Services Department operates the
 servicing, maintenance and repair of:
 standard wet and alternate dry pipe
 sprinkler installations in all commercial
 premises, including pre-action and
 deluge sprinkler installations, diesel
 and electric fire pumps, dry riser installations,
 fire hydrants, hose reels, fire alarm
 installations and Hazard reviews. We also
 offer Sprinkler Service Agreements.

First Insurance Solutions Ltd

FIS House, St Leonards Road
Allington, Maidstone
ME16 0LS

Tel: 01634 862525
Email: ckot@firstins.co.uk
Web: firstins.co.uk

Category: Associate trade
Contact: Cecylia Kot

We are a specialist commercial insurance broker which specialises in providing cover for sprinkler installation contractors/fire protection contractors and fire protection consultants. Our expertise in commercial insurance and the markets available, combined with our understanding of the sprinkler industry and the work undertaken, as well as the main risk exposures, makes us ideally positioned to help contractors obtain the right cover at the best available price. Please contact us for independent and industry specific advice as well as any quotations.

Flamefast Fire Systems Ltd

9 Brunel Close, Park Farm North
Wellingborough
NN8 6QX

Tel: 01933 420733
Fax: 01933 400540
Email: Stewart.king@flamefast.co.uk
salesouth@flamefast.co.uk
Web: fire-systems.co.uk

Category: Associate installer
Accred: BAFSA / ISO9001 / FIA / BAFE
Contact: Stewart King, Director of Sales

Flamefast have over 40 years experience in supplying engineering workshop solutions to the UK education sector for

schools, colleges and universities and are widely regarded as one of the most respected and established suppliers within this market.

Flamefast have four offices in the UK, Warrington, Wellingborough, Sheffield and Glasgow and with over 100 employees and an annual turnover of approx. £9M.

The company has four distinctive divisions:

- Fire Suppression/Detection/Protection
- Extraction systems
- Gas Proving/Gas Detection systems
- Engineering workshop

FM Global (FM Insurance Co Ltd)

1 Windsor Deals,
Windsor
SL3 1RS

Tel: 01753 750330
Fax: 01753 868700
Email:
allan.macpherson@fmglobal.com
thomas.roche@fmglobal.com
Web: fmglobal.com

Category: Associate organisation
Contact: Allan Macpherson, Tom Roche

FM Global believes its understanding of property loss prevention is unmatched. Its scientists and engineers work to advance loss prevention practices and establish new industry standards through state-of-the-art research and testing. Automatic fire sprinkler systems and their components are among the subjects of such research. FM's client servicing teams share this knowledge with clients to help them make confident, well-informed

decisions about how to reduce risk and exposure and prevent potential business interruption.

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Franklin Hodge Industries Ltd

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Jubilee Building Westfields Trading Estate
Faraday Road, Hereford
HR4 9NS

Tel: 01432 269605
Fax: 01432 277454
Email: sales@franklinhodge.com
Web: franklinhodge.com

Category: Manufacturer/Supplier
Accred: LPCB – Tanks
Contact: Nigel Snee

Franklin Hodge design, manufacture and install a comprehensive range of site-bolted liquid storage tanks, which are used for the storage of all types of water. Cylindrical and rectangular tanks can be offered in various sizes to suit customers' individual site requirements. Benefits offered by Franklin Hodge tanks include flexibility in design, rapid installation and long life.

.....

FSE Fire Safety Systems Ltd

.....

Unit 8, Wilford Industrial Estate,
Ruddington Lane, Wilford, Nottingham
NG11 7EP

Tel: 01159 812624
Email: stuart@fsefiresystems.co.uk
Web: fsefiresafetysystems.co.uk

Category: Associate installer
Contact: Stuart Rye, Managing Director

FSE Fire Safety Systems Ltd have a number of years' experience installing

sprinkler systems in to residential and domestic premises. Sprinklers are being specified in an increasing amount of new build properties as well as retrospectively in traditional houses where additional living space is planned.

FSE design install and commission fire sprinkler system to BS 9251.2014 for all UK domestic and residential applications. We offer free site surveys and comprehensive quotations returned to clients in a timely manner.

FSE can also offer commercial systems designed to BS EN 12845 and BS 9281 as well as Safe Contractor accreditation.

As a company we have been involved in some challenging projects from colleges and schools to large manufacturing plants, and the company works with some of the UK's leading national companies and manufacturers installing and servicing effective sprinkler systems throughout the UK.

.....

FVS Ltd

Broom Street, Off Huddersfield Road
Newhey, Rochdale OL16 3RY

Tel: 01706 848599
Fax: 01706 843747
Email: gareth@fvsLtd.co.uk
fvs@fvsLtd.co.uk
Web: fvsLtd.co.uk

Category: Installer level 3
Accred: LPCB - Level 3
Contact: Gareth Fitton, Director

FVS Ltd is an LPCB approved fire sprinkler installation and servicing company with over 30 years' experience. It aims to provide the best service available from a sprinkler company and it seeks to deliver the highest level of professionalism in the design, installation, commissioning and servicing of fire protection sprinkler systems, meeting the requirements of national, international and insurance specifications.

Quotations are produced free of charge and the company aims to put forward the best engineered solution in accordance with the statutory standards and the customer's requirements, with the objective of completing automatic sprinkler systems in the most cost effective and efficient manner possible.

Gas World Ltd

1 Avon Valley Business Park,
Chapel Way, St Annes, Bristol, Avon
BS4 4EU

Tel: 01179 725340
Fax: 01179 725341
Email: daveramplin@gasworldltd.co.uk
enquiries@gasworldltd.co.uk

Web: gasworldltd.co.uk
Contact: Dave Ramplin
Installs Domestic/Residential systems.

GRC Plumbing and Heating

Unit 2, Castle Court,
Caer Graig Radyr, Cardiff
CF15 8RE

Tel: 07525 265354
Email: grcplumbing@hotmail.co.uk
Web: plumbing&heating.co.uk

Category: Installer
Contact: Graham
Installs Domestic and Residential Systems

Groundbreaker and Firebreaker Systems

3 Fairways, The Common
Stuston, Nr Diss
IP21 4AB

Tel: 01379 741993
Email: steveleigh@groundbreaker.co.uk
sales@groundbreaker.co.uk
Web: groundbreaker.co.uk

Category: Associate trade
Contact: Steve Leigh, Managing Director

Firebreaker is the only surface mounted sprinkler management system allowing external control. It is a passive, mains fed and boosted (as required) system providing external access to control valves etc. Compliant with Water Regulations and BS 9251, Firebreaker avoids the use of storage at any given site, and eliminates the need for duplication of water supply and fire service pipes to a property. Ideal for use

on any new property or as a retrospective installation on an existing one.

Grundfos Pumps Ltd

Grovebury Road,
Leighton Buzzard, Beds
LU7 4TL

Tel: 01525 850 000
Fax: 01525 853 981
Email: rcrighton@grundfos.com
Web: grundfos.co.uk/fire

Category: Manufacturer/Supplier
Accred: Pumps approved to LPS 1131
Contact: Ross Crighton

Grundfos Fire Systems manufacture a comprehensive range of pumps to meet the requirements of the fire sprinkler market. From its bespoke UK manufacturing facilities, Grundfos undertakes in-house assembly and testing of a full range of diesel and electrically driven pumps, which can be offered individually or as packaged hydrant/sprinkler sets or even as complete drop in place packaged plant rooms.

Grundfos fire pumps have approvals from all leading accreditation bodies including LPCB, FM and VdS. Diesel and electrical control panels are built in-house, with 24/7 servicing call-out available via Grundfos Service. The Grundfos Group, founded in 1945, is now the largest producer of pumps globally, employing over 17,000 people and turning over more than €3.3 billion in sales each year.

Hall Fire Protection Ltd

Holloway Drive,
Wardley Business Park, Worsley
M28 2LA

Tel: 0161 793 4822
Fax: 0161 794 4950
Email: mike.green@hallfire.co.uk;
Web: hallfire.co.uk

Category: Installer level 4
Accred: LPCB - Level 4
Contact: Mike Green

Hall Fire are specialists in the design, fabrication, installation and maintenance of all types of fire suppression systems including sprinkler, foam/water deluge, inert gas and water mist systems. Our project portfolio covers all major market sectors with an emphasis on retail, commercial, distribution, industrial, hotel, school, petrochemical and heritage applications. Partnering principles underpin our approach with approximately 70% of orders being on a repeat basis. With a 40 year pedigree as an independent company and founding member of BAFSA, we have a long-term commitment to the fire protection industry and have been at the forefront of the development of the new L2 qualification in sprinkler installation. We have invested heavily in the recruitment of new people into the industry through local colleges, schools and organisations such as Walking with the Wounded where we are providing the opportunity for ex-military people to get into the sprinkler industry.

Hampshire Fire and Rescue Service

HFRS Headquarters, Leigh Road,
Eastleigh, Hants
SO50 9SJ

Tel: 02380 644000

Email:

charles.forster@hantsfire.gov.uk

Web: hantsfire.gov.uk

Contact: Bart Forster,
Fire safety support unit

HDI-Global SE

10 Fenchurch Street,
London
EC3M 3BE

Email: alan.king@uk.hdi.global
chris.tomkins@uk.hdi.global

Web: hdi.global

Category: Associate organisation

Contact: Chris Tomkins, Alan King

As an expert in industrial, commercial and construction insurance we endeavour to differentiate ourselves through our approach to underwriting, claims and risk management. HDI-Gerling has a network of some 170 risk engineers worldwide. The UK Risk Engineering team is made up of six engineers specialising in chemicals, fire engineering, machinery & boiler, civil engineering and health & safety. We pride ourselves in adopting a pragmatic approach towards client risk management issues; we work flexibly within the framework of recognised international standards and local codes employing a mutually beneficial strategy to solve potentially complex problems in a practical manner.

Hertfordshire Fire & Rescue Service

Fire Protection, Mundells
MU103

Fire Protection,
Welwyn Garden City
AL7 1FT

Tel: 01707 292310

Fax: 01707 292477

Email:

administration.cfs@hertfordshire.gov.uk

Web: hertsdirect.org/fire

Accred: Associate organisation

Contact: Tony Morrison,
Group Commander, FP

In addition to its traditional role of compliance, audit and enforcement, HF&RS actively provides recommendations and advice on fire suppression systems to developers, architects, insurers, premises' occupiers etc in relation to buildings which require or would benefit from the fitting of sprinklers. HF&RS supports formal technical training of specialist fire officers in sprinkler systems and their design principles. HF&RS works in partnership with developers, licensing bodies etc successfully to install sprinklers in county built schools, residential developments, private dwellings and bespoke systems for vulnerable persons. The Service is proud to be a member of BAFSA and is actively involved in various technical committees, groups and other sprinkler networks.

Humberside Fire & Rescue Service

Business Safety,
Summergroves Way, Hessle
HU4 7BB

Tel: 01482 567468
Fax: 01482 617010
Email:
dpurchon@humbersidefire.gov.uk
Web: humbersidefire.gov.uk

Category: Associate organisation
Contact: Dominic Purchon

Humberside Fire & Rescue Service is actively engaging with stakeholders to improve the safety of all dwellings and business premises within its service area. It employs personnel who are tasked with reducing risks in those buildings by the most appropriate and cost-effective method. This often means the recommendation of fitting a building with a sprinkler system. The installation of sprinklers is recommended on our corporate website and is included on our statutory consultations where relevant.

Hydrostore Tanks

Valley Forge Business Park, Reedyford
Road, Nelson, Lancashire
BB9 8TU

Tel: 01282 677093
Email: kevin.dwyer
@hydrostoretanks.com
Web: hydrostoretanks.com

Category: Associate Organisation
Accred: LPCB - Tanks
Contact: Kevin Dwyer, Sales Manager

Hydrostore tanks - design, manufacturers and installers of LPCB approved cylindrical fire water sprinkler tanks.

Development of a full range of cylindrical FM tanks available from the end of 2016.

Hydrostore offer a ROV (remotely operated vehicle) tank survey service enabling tank surveys to be completed without the need to drain the tank. Tank survey reports along with a full refurbishment including relining, replacement roofs and ancillary items available.

Hydrotech Fire & Mechanical Ltd

35 Back Grafton Street,
Altrincham, Cheshire
WA14 1DY

Tel: 0161 413 6960
Email: swalker@hydrotechfire.co.uk
Web: hydrotechfire.co.uk

Category: Associate Supplier
Contact: Steve Walker,
Managing Director

Hydrotech Fire & Mechanical LTD are a leading Supplier & Manufacturer of Dry/Wet Riser and Sprinkler products for the EMEA Fire market via our key distribution partners.

IFC Certification Ltd

20 Park Street,
Princes Risborough, Buckinghamshire
HP27 9AH

Tel: 01844 275500
Fax: 01844 274002
Email: ian.woodhouse@ifcgroup.com
Web: ifccertification.com

Category: Associate organisation
Contact: Ian Woodhouse,
Director of Certification

IFC Certification Ltd is a UKAS accredited and internationally recognised provider of high quality and customer focused independent third-party certification of products and installers, also quality management certification. IFC Certification Ltd is also a Notified Body for assisting clients in the CE Marking of products under the Construction Products Regulation. The company is a member of the IFC Group of companies including International Fire Consultants Ltd, which has established an enviable independent position offering clients across the world impartial, expert advice.

Indigo Fire Systems Ltd

Unit 16 Cooperage Green,
Weevil Lane, Gosport PO12 1FY

Tel: 02392 602944
Fax: 02392 526960
Email: simon@indigofiresystems.com
jon@indigofiresystems.com
Web: indigofiresystems.com

Category: Installer level 1
Accred: FIRAS - Domestic and
Residential Scheme
Contact: Simon Shoemsmith, MD

- FIRAS – Commercial & Industrial Scheme
 - FIRAS – Approved FHC
 - Design, installation & maintenance of commercial, residential and domestic fire sprinkler installations; wet/dry risers; and water supplies.
 - Influx Measurements Ltd
-

Influx Measurements

**Forge Works, The Dean, Alresford,
Hampshire SO24 9BH**

Tel: 01962 736736
Fax: 01962 736737
Email: sales@influxmeasurements.com
Web: influxmeasurements.com
Category: Associate trade
Contact: Mark Towner,
Managing Director

**Manufacturer of FM- and LPCB-
approved flowmeters for sprinkler
system testing, LPCB approved
'SprinklerSense' intelligent flow switch
and test system for sprinkler water flow
detection.**

Integral Pump Solutions

720 Birchwood Boulevard,
Birchwood, Warrington
WA3 7QY

Tel: 07920 563293
Email: peter.fletcher@integral.co.uk

Category: Associate
Contact: Peter Fletcher, Service Director

International Plastic Systems Ltd (IPS Flow Systems)

Seaham Grange Industrial Estate,
Seaham, Co Durham SR7 0PT

Tel: 01915 213111
Fax: 01915 213222
Email: pwright@ipsflowsystems.com
Web: ips-blazemaster.com

Category: Supplier
Accred: LPCB - Training in CPVC
Pipework Installation
CPVC Installer Training
accredited under ISO 9001
Contact: Paul Wright, Business
Development Manager

Master European distributor of
CPVC Fire Sprinkler Systems

Independent Tube & Fittings Ltd t/a International Tube Fittings

Unit 1 Leabrook Road, Wednesbury,
West Midlands WS10 7NB

Tel: 0121 505 9940
Fax: 0121 556 1110
Email: rosemary@itf.uk.com
Web: itf.uk.com

Category: Associate trade
Accred: Suppliers
Contact: Steve Hytch, Sales Director

Stockists of EN10255/10217-1 tube in red, self colour, or galvanized with plain, grooved or threaded ends, and API up to 12". On site machine shop for cutting and machining approved to British Standard. Comprehensive stock of all associated fittings including malleable iron, Victaulic grooved, valves and devices, flanges, bracketry and consumables.

J&J Design Ltd t/a J&J Fire Engineering

Ewood Bridge Mill,
Ewood Bridge, Lancashire
BB4 6LB

Tel: 01706 223414
Email: adrian@jjsprinklers.co.uk
Web: jjsprinklers.co.uk

Category: Installer
Accred: LPCB - Level 4
Contact: Adrian Lucas, Director

Sprinklers, Water Mist, Dry and Wet
Risers

JEM Fire Pumps Ltd

**JEM House, 4 Rochdale Industrial
Centre, Albion Road, Rochdale
OL11 4HN**

**Tel: 01706 860534
Fax: 01706 712970
Email: admin@jempumps.com
aleech@jempumps.com
SLee@jempumps.com
Web: jempumps.co.uk**

**Category: Manufacturer/Supplier
Accred: LPCB - Pumps
Contact: Andrew Leech, Director
Simon Lee, Engineering
Team Leader**

Jem Fire Pumps Ltd is an independent company providing service and support to the fire protection industry, a market leader in the provision of service and maintenance to all types of fire pumping equipment. We offer national, international and offshore coverage; with the back-up of our service centre we can provide a quick turn round on major repairs and overhauls for new and obsolete equipment. Pumps, engines, motors, control equipment or foam systems – whatever your problem our experienced team will handle it.

J T Fire Consultants Ltd

**Rodborough,
Post Office Lane, Kempsey
WR5 3NX**

**Tel: 07342 997905
Email: julian@jtfireconsultants.co.uk**

**Category: Associate
Contact: Julian Taylor,
Managing Director**

The Managing Director has a wealth of knowledge in the Sprinkler and Water Based Extinguishing Industry of some 40 years Plus.

Fully competent and approved in:

- Management Auditing
- Health & Safety including Accident Investigation

John Stephens

**Honorary Member
110 Eastmoor Park, Harpenden,
Herts AL5 1BP**

Email: j.n.stephens@ntlworld.com

Kent Fire & Rescue Service

**Headquarters, Straw Mill Hill,
Tovil, Maidstone ME15 6XB**

**Tel: 01622 692121 ext 8358
Email: colindodds@kent.fire-uk.org
Web: kent.fire-uk.org**

**Category: Associate organisation
Contact: Colin Dodds, Fire Safety
Technical Officer**

Kent Fire & Rescue Service is responsible for delivering fire safety and fire prevention guidance to more than 1.5 million people in Kent and Medway. Our professional fire safety inspectors provide advice and guidance to assist business to remain safe from fire. We support sprinklers as a method of reducing the impact of fires on our business community.

K Hewitt and Co Ltd

Clyde House, Gibbon Street,
Bishop Auckland, Durham DL14 7DL

Tel: 01388 663109

Fax: 01388 607709

Email:

dave.wade@hewittplumbing.co.uk

ray.dobson@hewittplumbing.co.uk

Web: hewittplumbing.co.uk

Category: Associate Residential/Domestic

Contact: David Wade

Lenpart Ltd prides itself on being one of the leading fire protection suppliers in London and the home counties. Lenpart's business is to supply a full range of Sprinkler & Dry Riser Products including Cabinets/Valves/Tube/Fittings as well as the full complement of Bracketry. Lenpart Ltd also stock a full range of hydraulic and industrial hose and fittings and recently have introduced Fire Alarm panels and devises.

Lancashire Fire & Rescue Service

Headquarters, Garstang Road,
Fullwood, Preston PR2 3LH

Tel: 01772 - 862545/866956

Email:

listerhaworth@lancsfireandrescue.org.uk

jimfowler@lancsfireandrescue.org.uk

Web: lancsfireandrescue.org.uk

Category: Associate organisation

Contact: Lister Haworth / Jim Fowler,
Protection Support

Leslie Heaviside MBE

Honorary Member

Woodlands End, 43 Fulshaw Park South,
Wilmslow, Cheshire
SK9 1QP

Local fire authority service

Lenpart Group

Unit 14-15 Ramac Industrial Estate,
Ramac Way, Charlton, London SE7 7AX

Tel: 0208 853 5005

Fax: 0208 858 9824

Email: info@lenpart.co.uk

Web: lenpart.co.uk

Category: Associate supplier

Accred: ISO 9001 CHAS FORS

Contact: Sean Siddons

Liberty Mutual Insurance

Commercial Risk Engineering, Level 21,
20 Fenchurch Street, London,
EC3M 3AW

Tel: 01535 647723

Email:

kevin.helme@libertyglobalgroup.com

Web: libertyspecialtymarkets.com

Category: Associate organisation

Contact: Kevin Helme, Senior Risk
Engineer – Property

Liberty Mutual Insurance is the trading name for the UK commercial lines division of Liberty Mutual Insurance Europe Ltd (LMIE), part of Liberty Specialty Markets which offers specialty and commercial insurance and reinsurance products across key UK, European, Middle East, US and other international locations. It is part of global insurer, Liberty Mutual Insurance Group, a Boston-based US Fortune 100 company. Managing risk is fundamental to Liberty's strategy. Together with our underwriters, our experienced risk engineers work with clients to identify exposures, assess risk and provide recommendations to help reduce risk.

Liquitech Ltd

The Old Post Office House, East Street
Pembroke, Herefordshire
HR6 9HA

Tel: 01544 388883

Fax: 01544 387977

Email: andrew@liquitech.co.uk

Web: liquitech.co.uk

Category: Associate trade

Contact: Andrew Searles, Director

Liquitech Ltd was formed in 1996 and has since carried out inspection or maintenance work on more than 700 sprinkler tanks. Tanks are inspected internally with the use of an ROV submersible camera, or by gaining access. Inspections include readings of material thickness using highly accurate ultrasonic test equipment to determine levels of corrosion in tank walls. Typical tank maintenance includes small works such as replacement ball valves, immersion heaters and contents gauges, through to cleaning and painting, lining and re-roofing etc. We also inspect sprinkler pipework using ultrasonic equipment, avoiding the need to remove sections of pipe for testing purposes.

London Fire and Emergency Planning Authority

Business Support Group, Fire Safety
Regulation, 169 Union Street, London,
SE1 0LL

Tel: 0208 587 8555 x 30818

Email: SPRINKLERS@london-fire.gov.uk

Web: london-fire.gov.uk

Category: Associate organisation

Contact: Nicholas Coleshill,
Sprinkler Coordinator

Responsible for enforcement of fire safety legislation in London and promotion of fire safety measures, including sprinklers. Details of our fire stations and local offices are on our website.

Lubrizol Advanced Materials Europe BVBA

Chaussee de Wavre 1945,
1160 Brussels, Belgium

Tel: 0032 26781911
Fax: 0032 2678201
Email: cpvc.emena@lubrizol.com
Web: blazemaster.com

Category: Manufacturer/Supplier
Contact: Alexander Crisp,
Market Development Manager

Lubrizol manufactures the CPVC compound and owns the BlazeMaster® trademark. BlazeMaster® CPVC was the first plastic to be approved worldwide for use in fire sprinkler systems and has proven its performance in the marketplace since 1984. Manufacturers of BlazeMaster® pipes and fittings follow the Lubrizol quality programme and, in parallel with their distributors, offer the BlazeMaster® training programme for sprinkler installers.

M&P Dry Risers Ltd

Unit 12 Viewpoint, Boxley Road,
Maidstone ME14 2DZ

Tel: 0800 0431974
Fax: 01634 669631
Email: paul@mpfireprotection.com
info@mpfireprotection.com
Web: mpdryrisers.com

Category: Installer
Contact: Paul Atkins, Director

- Operates nationwide
- Installs Domestic/Residential systems
- Installs Commercial & Industrial systems

MagiCAD

Progran Software UK Ltd, Manchester City Tower, 13th floor, Piccadilly Plaza, Manchester M1 4BT

Tel: 07500 833263
Email: gavin.doherty@magicad.com
Web: magicad.com

Contact: Gavin Doherty,
Area Manager (UK and Ireland)

MagiCAD Sprinkler Designer software for Revit MEP and AutoCAD combines world-leading MEP BIM and 3D drawing capabilities with a built-in sprinkler calculation engine, enabling comprehensive, standards-compliant sprinkler design and calculations.

- Fully integrates with Revit MEP & AutoCAD
- Design in wire-frame, 2D and 3D
- Calculation of required system pressure based on the hydraulically most remote area
- Calculation of actual flow density for each sprinkler head
- Weakest sprinkler head automatically identified
- Average density for the 4 weakest sprinkler heads is calculated with the heads automatically identified
- Design areas can be freely defined
- Smart automated routing tools for connecting multiple sprinkler heads to a system simultaneously
- Easy and fast bills of materials, collision control and section tools
- Support for BS 9251:2014, EN 12845, NFPA 13 and CEA 4001 standards
- Equivalent length tables for CPVC, copper and steel in accordance with BS 9251:2014
- The operating point on the pump curve is identified
- All data for calculations, quality control and design approvals is available in the model
- Metric system

Marioff Ltd

**Badentoy Crescent, Badentoy Place,
Portlethen, Aberdeen AB12 4YD**

Tel: 08453 880 880
Fax: 01224 784885
Email: ryan.conaghan@marioff.co.uk
gavin.morrison@marioff.co.uk
Web: marioff.com

Category: Installer level 3
Accred: FIRAS - Watermist Installations
Contact: Ryan Conaghan, Sales Director
Gavin Morrison, Managing Director

Marioff manufacture, design and install a range of HI-FOG high pressure water mist fire suppression systems for the building and construction market, Offshore Oil & Gas as well specialist Industrial Applications. With over 7,000 fire tests and over 100 approvals, Marioff's HiFog High Pressure Water Mist is the most tested and approved in the market place.

Mark Bedford

**Cedar Cottage, Church Street,
Occold, Eye IP23 7PS**

Tel: 07815 115773
Email: bmsealtd@aol.com

Category: Associate individual
Contact: Mark Bedford

Sprinkler designer with 14 years' experience. Trained by the RSA in Canute, ICIOB

Marsh Risk Consulting

Marsh, Client Advisory Services, UK & Ireland, Tower Place, Lower Thames Street, London EC3R 5BU

Tel: 07713 329729
Email: hugh.forster@marsh.com
Web: marsh.com

Category: Associate organisation
Contact: Hugh Forster, Practice Leader

Marsh is a global leader in insurance broking and risk management in more than 130 countries. We work with clients of all sizes to define, design, and deliver innovative solutions to better quantify and manage risk. Marsh Risk Consulting, a business unit of Marsh, can assist clients in determining the appropriate specification of sprinkler protection for a given risk and in providing a technical specification that would enable 'like for like' tenders to be obtained. We can review specifications and designs to ensure that the most effective protection is provided. We can also negotiate and discuss with insurers to assist in the approval process.

Mercury Engineering

Mercury House, Sandyford Industrial Estate, Foxrock, Dublin 18 D18XH79

Tel: 00353 1 2163000
Fax: 00353 1 2163006

Email: fireprotection@mercuryeng.com
Web: mercuryeng.com

Category: Installer level 4
Accred: LPCB - Level 4
Contact: Hugh Forster, Practice Leader

Mercury Engineering is a multi-service engineering company. Our Fire Protection Division is LPS 1048 certificated, level 4, authorised to self-certificate sprinkler installations for all hazard classifications to LPC, FM, NFPA and VdS standards. Mercury Engineering is also LPS 1014 certificated, authorised to issue LPCB Certificates of Conformity for fire detection and alarm installations and LPS 1204 certificated, authorised to design, install and commission gas suppression systems. Mercury's head office is in Dublin, Ireland and we have offices in the UK and Europe, including Poland, Moscow.

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Merseyside Fire and Rescue Service

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Service HQ, Bridle Road,
Liverpool L30 4YD

Tel: 0151 296 4626
Email: andygroom@merseyfire.gov.uk
Web: merseyfire.gov.uk

Category: Associate organisation
Contact: Andy Groom

Merseyside F&RS fully endorses the utilisation of automatic water suppression systems as a means of enhancing community and firefighter safety. The Service actively promotes suppression as a viable fire safety solution for the most vulnerable members of society by engaging with relevant stakeholders. It will aim to strengthen the profile and benefits of such systems by offering match funding incentives, education and publicity.

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Michael Slattery Associates

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MSA Leeds, Calls Wharf,
2 The Calls, Leeds
LS2 7JU

Tel: 0113 237 2838
Fax: 0113 237 2701
Email: MSalisbury@msa.ie
leeds@msa.ie
Web: msa-fire.co.uk

Category: Associate organisation
Contact: Matthew Salisbury, Associate

Michael Slattery Associates is Ireland's largest fire safety engineering practice, with offices in Dublin and UK offices in London, Leeds and Belfast.

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Mid & West Wales Fire & Rescue

Fire Service HQ, Lime Grove Avenue,
Carmarthen
SA31 1SP

Tel: 0370 6060699
Fax: 01267 220562
Email: d.hancock@mawwfire.gov.uk
b.jones@mawwfire.gov.uk
Web: mawwfire.gov.uk

Category: Associate organisation
Contact: David Hancock,
Head of Business Fire Safety
Byron Jones, Technical Officer

The Service is committed to enhancing the safety of its communities and is proactive in both preventative and protective fields of activity. It has introduced a risk based audit regime for the enforcement of the Regulatory Reform (Fire Safety) Order in commercial premises while becoming increasingly involved in safety work to reduce risk in the community as a whole. The Service recognises the important role sprinklers can play in protecting communities and actively promotes their installation, particularly in schools and premises that house the more vulnerable members of society.

MJA Designed Solutions

22 Highcliffe Close, Wickford,
Essex SS11 8JZ

Tel: 07938 734607
Email: mark@MJA-Designed.co.uk
Web: linkedin.com/in/
mark-ashdown-031a714a

Category: Associate Individual
(Fire Protection Designer)
Accred: Revit MEP Accredited Training

Canute FHC - BAFSA Accredited
Training
Effective Sprinkler Design – FM
Global Accredited Training
BIM Level 2 Fundamentals –
BRE Certified
Fully Qualified LPCB, Basic, Int
& FHC Exams

Contact: Mark Ashdown

- 2D & 3D Design, Surveying and Consultancy
 - for the Fire Protection Industry
 - AutoCAD 2D & 3D design
 - Autodesk - Revit, MEP, Fabrication MEP & Navisworks
 - BIM Level 2
 - Full Hydraulic Design and Analysis using Canute FHC
 - SprinkCAD & SprinkCALC
 - Surveying & Consultancy
 - Over 25 Years Experience
 - FM & NFPA Experience
-

Nationwide Fire Sprinklers Ltd

Grinnell House, Private Road No 7,
Colwick Industrial Estate, Nottingham
NG4 2JW

Tel: 0115 9408220
Email: sales@nationwide-fire.co.uk
Web: nationwidefiresprinklers.co.uk

Category: Installer level 4
Accred: FIRAS - Domestic and
Residential Scheme
FIRAS - Level 4
Contact: Keith Rhodes, Senior Engineer

A pre-eminent contractor in the domestic and residential sector, Nationwide Fire offer exclusive, industry-leading innovations including world-beating remote monitoring and reporting control systems.

Neath Port Talbot College

Afan Campus, College Green,
Margam, Port Talbot, Neath
SA13 2AL

Tel: 0800 6125949
Fax: 01639 648209
Email: energycentre@nptcgroup.ac.uk
peter.snowball@nptc.ac.uk
Web: nptc.ac.uk

Category: Associate
Accred: BAFSA Approved
Training Centre
Contact: Peter Snowball,
Head of School, Building Eng.

Education and Training

North Wales Fire & Rescue Service

FSHQ, Ffordd Salisbury, St Asaph Business
Park, St Asaph LL17 0JJ

Tel: 01743 535259
Fax: 01743 535296
Email: stuart.millington@nwales-fireservice.org.uk
Web: nwales-fireservice.org.uk

Category: Associate organisation
Contact: Stuart Millington,
Sr Fire Safety Manager

North Wales Fire and Rescue Authority's mission statement is to make 'North Wales a safer place to live, work and visit'. There are approximately 28,000 non-domestic properties in North Wales and our Business Fire Safety activities are targeted at those premises that we believe present the greatest risk of death or injury from fire. To achieve this we use educational events, signposting to relevant guidance and the checking or

auditing of fire protection measures. Our Home Safety Support Workers carried out over 26,000 Home Safety Checks last year to protect people in their homes.

The requirement for all new residential properties, in Wales, to be fitted with sprinklers will help us to maintain the safety of people living and working in our area. And is a measure that we wholeheartedly support.

Nottingham Fire & Rescue Service

Fire Brigade HQ, Bestwood Lodge,
Arnold, Nottingham NG5 8PD

Tel: 0115 9670880
Fax: 0115 9261081
Email: Richard.melanaphy@notts-fire.gov.uk
Web: notts-fire.gov.uk

Category: Associate organisation
Contact: Richard Melanaphy,
Head of Fire Protection

The Fire & Rescue Service aims to reduce the incidence of fires and their effects by providing services which inform, encourage and support people, organisations and communities to take actions themselves to reduce the risk of fire. Sprinkler systems are an important weapon in the fight against fire and the Service maintains formal liaison with building control bodies and environmental health departments to promote the benefits of sprinklers. The Service is a member of the National Fire Sprinkler Network, seeking support for greater inclusion of sprinklers within the Building Regulations and the sharing of initiatives to promote wider provision of sprinklers in buildings.

Pegler Yorkshire Group Ltd

St. Catherines Avenue, Balby
Doncaster, South Yorkshire

Tel: 01302 560560

Fax: 0844 243 9870

Email:

uk.sales@peglyorkshire.co.uk

Darren.Woodward@peglyorkshire.co.uk

Web: peglyorkshire.co.uk

Category: Manufacturer/Supplier

Accred: LPCB - Other

Sprinkler Components

Contact: Darren Woodward

Supplier/manufacturer of Xpress carbon galvanised and stainless steel sprinkler tube and fittings

PEL Services Ltd

Units 1-2 Belvue Business Centre,
Belvue Road, Northolt
UB5 5QQ

Tel: 0333 123 2100

Fax: 020 8841 1948

Email: pel@pel.co.uk

Web: pel.co.uk

Category: Associate installer

Contact: David Jarman, Director

PEL engineer and combine electronic technologies for Fire, Sound and Security, to unlock real efficiencies and guarantee compliance with governing standards. From critical life safety systems to essential property protection, PEL's Fire, Sound & Security systems safeguard people and premises throughout the UK and Republic of Ireland.

Phoenix Fire Services Ltd (t/a Interserve Sprinkler Division)

Interserve Sprinkler Division, Unit 9
Mercia Business Village, Torwood Close,
Westwood Bus Pk, Coventry CV4 8HX

Tel: 07525 277019

Email: ken.mears@interserve.com

colin.packer@interserve.com

Web: interserve.com/

how-we-help/fire-safety

Category: Installer level 1

Accred: LPCB - Level 1

Contact: Ken Mears, Bid Manager

Operating on a fully national basis and within the Fire Services Division of Interserve, as well as the design, Installation service and maintenance of Sprinkler systems, we are also accredited to provide Design, Installation, Service and maintenance and of Gaseous Suppression Systems; Fire Detection & Alarm systems and Emergency lighting systems, as well as the Service and Maintenance of Fire Fighting Equipment.

Pipeline Plus

North Street, Whitworth,
Rochdale, Lancashire
OL12 8RE

Tel: 01706 853322

Fax: 01706 853344

Email: sales@pipeline-plus.co.uk

Web: pipeline-plus.co.uk

Contact: Brian Whitehead,
Joint Managing Director

Pipeline Plus Ltd was established, following the success of its parent company – Woodford Plastics.

Our traditional business model is based on the supply and fitting of underground plastic pipes across the UK.

Due to expansion into the North East, we have opened a new branch and set up a new company, trading under the name Pipeline Plus.

We have a wealth of knowledge and experience across the Woodford group. Our vision is to grow the Pipeline Plus company, and establish ourselves as the number one provider for plastic pipeline products and plastic fire sprinkler systems in the UK.

For more information on our wide range of fantastic products or to hear more about our service, please contact our friendly sales team

Potter Electric Signal

**5757 Phantom Drive, St Louis,
Missouri, USA
63042**

Tel: 001 314 595 6900
Email: seanh@pottersignal.com
brucel@pottersignal.com
Web: pottersignal.com

Category: Supplier
Accred: LPCB - Other
Sprinkler Components
Contact: Sean Heskett, Executive VP

Established in 1898, Potter Electric Signal Company produces a wide array of products including fire sprinkler monitoring systems, corrosion monitoring, MIC testing, and corrosion mitigation. At Potter, we supply our customers with products that provide real world solutions and unequalled service and technical support. Our

employees are committed to providing the very best product and service available for the protection of life and property.

Powerpro UK Ltd

Middlemore Lane West,
Aldridge, Walsall
WS9 8BG

Tel: 01922 454585
Fax: 01922 454586
Email: James@powerprouk.com
Web: powerprouk.com

Category: Associate trade
Contact: James Roberts, Director

Our engineers are fully conversant with all types of fire pumps and design specifications including high pressure water mist. This enables us to offer our customers a comprehensive maintenance facility which includes - but is not Ltd to - routine servicing, and major and minor overhauls on engines, pumps and control panels. We believe that our service – established over 24 years - is effective, efficient and available on demand, supported as it is by our experienced team of engineers 24 hours a day, 365 days a year.

Powertec Pumps Ltd



Units 7 & 8 Powertec House, Calleva
Park, Aldermaston, Reading
RG7 8PN

Tel: 01189 409970
Fax: 01189 814893
Email:
davidnewman@powertecumps.com
markspiers@powertecumps.com
Web: powertecumps.com

Category: Associate trade
Contact: David Newman,
Managing Director
Mark Spiers,
Operations Manager

Powertec are specialists in the
maintenance and service of pumping
plant for both on-site and off site
operations including 24 hour call out
response teams.

We specialise in Fire pump systems
incorporating, pumps, diesel engines,
electric motors, pipe work, and other
ancillary equipment associated with fire
sprinkler systems.

We can truly offer a competitive edge for
all your Mechanical and Electrical supply,
service and maintenance requirements
including turnkey projects from the
initial site survey and removal of existing
equipment right through to the supply,
installation and final commissioning.

Project Fire Products Ltd

Pasturefields Industrial Estate,
Pasturefields Lane, Hixon
ST18 0PH

Tel: 01889 271140
Fax: 01880 270974
Email: brian.smith@projectfire.co.uk
Web: projectfire.co.uk

Category: Installer
Accred: FIRAS - Domestic and
Residential Scheme
LPCB - Level 4
LPCB - Other
Sprinkler Components
Contact: Brian Smith, Quality Manager

Project Fire are recognised worldwide
as leading innovators in the field of
fire protection. With over 30 years of
experience, Project Fire have successfully
developed a portfolio of products
designed to improve or simplify the
installation, testing and use of sprinkler
systems. All products are fully tested and
approved to meet international safety
standards and codes.

Pro Fire Solutions Ltd

49 Grasmere Crescent, Winton Village,
Manchester, Lancashire
M30 8DQ

Tel: 07734 255829
Email:
service@pro-fire-solutions.co.uk
quotesteam@pro-fire-solutions.co.uk
Web: pro-fire-solutions.co.uk

Category: Supplier/Manufacturer
Contact: Tom Sutherland

Pyro Protection Ltd

Saddleworth Business Centre, Huddersfield
Road, Delph, Oldham OL3 5DF

Tel: 01457 879222
Fax: 01457 879888
Email: info@pyroprotection.co.uk
Web: pyroprotection.co.uk

Category: Installer level 4
Accred: FIRAS - Level 4 –
Commercial & Industrial
FIRAS - Domestic and
Residential Scheme

Contact: Matthew Smith

Pyro Protection Ltd are independent specialists in the provision of fire sprinkler protection and allied fire suppression fields. We provide consultation, proposals, design, project management, commissioning, training and ongoing service and maintenance. Our area of expertise encompasses not only sprinkler systems but also deluge systems, foam enhancement, low/medium/high expansion foam systems, wet/dry risers, fire hydrants and hosereels. We are engineers and although we often produce innovative solutions to fire protection problems we also ensure that all our system designs are compliant with recognised international standards, including BS EN 12845, NFPA and FM Global, and we only install approved equipment.

R Tindall Fabricators Ltd

Unit 1 Westpoint Industrial Estate
Hargreaves Street
Oldham, Lancashire

Tel: 0161 6243961
Fax: 0161 6272978
Email: joe@tindall-fabricators.co.uk
lee@tindall-fabricators.co.uk

Category: Associate Trade
Contact: Joe Yearn, Director

RAD Fire Sprinkler Co Ltd

58a St John's Road,
Tunbridge Wells, Kent
TN4 9NY

Tel: 01892 680090
Email: paul@radfiresprinklers.com
Web: radfiresprinklers.com

Category: Installer level 1
Accred: FIRAS - Domestic
and Residential Scheme
Contact: Paul Hummerstone, Director

Covering south-east England, we specialise in the design, installation and maintenance of domestic and residential fire sprinkler systems. We work closely with architects, developers and local authority building control departments and provide advice on mains water provision issues. We are registered in the FIRAS third-party certification scheme.

RadiusPlus Ltd

Radius House, Berristow Lane, South
Normanton, Alfreton, Derbyshire
DE55 2JJ

Tel: 07584 212178
Fax: 01773 582489
Email:
david.macdonald@radius-systems.com
Web: radius-plus.co.uk

Category: Associate

Accred: Constructionline,
SafeContractor

Contact: David Macdonald

We supply and install underground
sprinkler and hydrant pipework systems
in Polyethylene and Ductile Iron to
FM and BS standard. We specialise in
providing live under pressure solutions
reducing the need to shut down fire
fighting systems.

Rapidrop Ltd

Rutland Business Park,
Newark Road, Peterborough
PE1 5WA

Tel: 01733 370444
Fax: 01733 553958
Email: rapidrop@rapidrop.com
Web: rapidrop.com

Category: Sprinkler head manufacturer

Accred: LPCB, UL, FM and VdS
Assessed to ISO 9001

Contact: Keith Plater

Rapidrop Global Ltd are a British sprinkler
head manufacturer and supplier of
fire protection equipment. The range
includes UK manufactured sprinkler
heads and sprinkler equipment including

the market leading Rapidrop flexible
sprinkler connections, alarm control
valves, butterfly, gate and check valves,
deluge equipment, grooved couplings
and fittings, pump room equipment and
Wet & Dry Risers.

Rapidrop have supplied sprinklers and
fire suppression systems to thousands of
projects to hundreds of cities worldwide,
serving; residential, commercial,
warehouses, manufacturing, retail,
shopping centres, schools, hospitals,
airports, entertainment and sporting
venues.

The Rapidrop range includes products
with approvals and listings from FM/UL/
VDS and LPCB.

React Fire Sprinklers Ltd

20-22 Wenlock Street,
London
N1 7GU

Tel: 0203 6330969
Email: Jackie@react-fs.co.uk
gene@react-fs.co.uk
Web: react-fs.co.uk

Category: Associate Residential/Domestic

Contact: Gene Clout

Reliable Fire Sprinkler (UK) Ltd

Unit 25 Birches Industrial Estate, East
Grinstead, West Sussex
RH19 1XZ

Tel: 01342 316800
Fax: 01342 314679
Email:
rsandalls@reliablesprinkler.com
Web: reliablesprinkler.com

Category: Sprinkler head manufacturer
 Accredited: LPCB – approved to ISO 9001
 Contact: Roy Sandalls

Reliable is a manufacturer of automatic fire sprinklers, valve and accessory products, and a major distributor of sprinkler system components. In the sprinkler area Reliable produces both of the industry's two basic types - the solder type and the frangible bulb - for virtually every type of building applications. Reliable also produces a broad range of valves including alarm, dry, deluge, preaction, and check valve that control water flow to sprinkler systems and actuate alarm signaling.

Residential Sprinkler Protection Ltd t/a RSP Sprinklers Wales

Unit F Valley House, Pantglas Industrial Estate, Bedwas, Caerphilly CF83 8DR

Tel: 02921 432048
 Email: john@sprinklers.wales
 anthony@sprinklers.wales
 Web: sprinklers.wales

Category: Associate installer
 Accredited: FIRAS - Domestic and Residential Scheme
 Contact: John Newman, Business & Technical Development

Design and installation of automatic sprinkler systems to domestic & residential occupancies. We also have particular expertise in 'one stop shop' retrofit installations to fully occupied high rise blocks of flats and extra care apartments.

Residential Sprinkler Solutions

Unit 6a, Copthall Farm,
 Breaksperear Road South, Ickenham
 UB10 8HB

Tel: 0208 8643914
 Email: info@residentialsprinklers.co.uk
 Web: residentialsprinklers.co.uk

Category: Installer level 1
 Accredited: FIRAS - Domestic and Residential Scheme
 Contact: Paul Moody, Director

Residential Sprinklers Ltd

16 Engleton Lane,
 Brewood, Staffs
 ST19 9DZ

Tel: 07855 807945
 Email: mat@residentialsprinklersltd.co.uk
 Web: residentialsprinklersltd.co.uk

Category: Installer
 Contact: Mat Rushton, Director

Design, install, commission, service and maintain domestic and residential sprinkler systems to BS 9251:2014.

Risk Consulting (davidrsmith) Ltd
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7 Rectory Close,
Barby, Warwicks
CV23 8TY

Tel: 07872 012720
Fax: 01788 891702
Email: david@riskconsultingltd.co.uk
Web: riskconsultingltd.co.uk

Category: Associate individual
Contact: David Smith,
Managing Director

Project management of sprinkler installations including conceptual drawings/calculations, site inspections and commissioning. Also independent evaluation of existing systems, as well as general fire risk reviews including fire risk assessments.

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RiskSTOP Group Ltd
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Mey House, Bridport,
Poundbury
DT1 3QY

Tel: 01305 215500
Email: david.reynolds@riskstop.co.uk
Andy.Cope@riskstop.co.uk
Web: riskstop.co.uk

Category: Associate
Contact: David Reynolds, Business
Unit Leader (Surveys)

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**Royal Berkshire
Fire & Rescue Service**
.....

Newsham Court, Pincents Kiln,
Calcot, Reading RG31 7SD

Tel: 0118 9384406

Email: bunyanc@rbfrs.co.uk
waltersl@rbfrs.co.uk
Web: RBFRS.co.uk

Category: Associate organisation
Contact: Chris Bunyan,
Group Manager, Protection

RBFRS plays a key role in promoting a better understanding of the benefits of sprinklers and will work to encourage building owners and developers to install systems where there is a case for doing so. While the installation of sprinklers is beneficial in any building, we believe our focus should be directed at those premises where the most significant impact can be achieved, such as schools, residential care homes, domestic housing and higher risk commercial premises. We believe more should be done to promote the wider use of sprinklers in these premises and are actively working to support this aim.

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Sale Engineering Products Ltd
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Unit 4, Brookfield Business Park
Brookfield Road, Cheadle,
Cheshire SK8 2PN

Tel: 0161 428 1180
Email: info@saleengineering.co.uk
Web: firesprinkler.co.uk

Category: Manufacturer/Supplier
Contact: Rob Bell, Managing Director

SEP is a market leader in the design and manufacture of specialist fire protection products.

Our key products are air compressors, false alarm booster pumps, uniquely designed pump initiation boards and residential/domestic products; we also supply a wide range of accessories such

as pressure gauges and switches, orifice plates, orifice unions and valves of all types - our range is constantly expanding.

Scottish Fire & Rescue Service

Headquarters, Westburn Drive,
Cambuslang
G72 7NA

Tel: 0141 646 4501

Email:

david.mcgown@firescotland.gov.uk

martin.millar@firescotland.gov.uk

Web: firescotland.gov.uk

Category: Associate organisation

Contact: David McGown, DACO

Martin Millar, AM,

Prevention & Protection

Shawston (International) Ltd

Great Norbury Street,
Hyde, Cheshire
SK14 1BW

Tel: 0161 3684545

Fax: 0161 3678114

Email: info@shawston.co.uk

Amanda@shawston.co.uk

Web: shawston.co.uk

Category: Manufacturer/Supplier

Contact: Amanda Dyer

Shawston designs, manufactures and distributes support systems for fire sprinkler, mechanical and electrical engineers. In addition, Shawston carry in-depth stock of steel tube, malleable iron fittings, Victaulic grooved fittings, sprinkler heads and devices, as well as Rapidrop flexibles.

Sharp Construction Scotland Ltd

Unit 20 Ore Valley Business Centre, 93
Main Street, Lochgelly, FIFE
KY5 9AF

Tel: 07718 663723 / 01592 786704

Email:

krys.wallace@sharpconstruction.eu

Category: Installer

Accred: FIRAS – Domestic

and Residential Scheme

Contact: Krys Wallace, Services Manager

Snowdonia Fire Protection Ltd

The Old Smithy,
Waunfawr, Caernarfon
LL55 4YS

Tel: 01286 650235

Fax: 01286 650413

Email: peter@snowdonia-fire.co.uk

Web: snowdonia-fire.co.uk

Category: Installer

Contact: Peter Greasley, Director

Solent Fire Protection Services Ltd

12 Heritage Business Park,
Herigate Way, Hampshire
PO12 4BG

Tel: 023 9251 0230
Fax: 023 9251 1510
Email: info@solentfire.co.uk
Web: solentfire.co.uk

Category: Installer level 3
Accred: LPCB - Level 3
Contact: Simon Tooth,
Managing Director

Solent Fire specialises in the installation and maintenance of automatic sprinkler systems. It is an LPS 1048 registered sprinkler installer, recognised to design and install sprinkler systems in compliance with the LPC Sprinkler Rules.

South Wales Fire & Rescue Service

HQ, Forest View Business Park
lantrisant, Pontyclun
CF72 8LX

Tel: 01443 232700
Fax: 01443 232180
Email: sa-rossiter@southwales-fire.gov.uk
Web: southwales-fire.gov.uk

Category: Associate organisation
Contact: Stephen Rossiter,
Head of Business Fire Safety

South Wales Fire & Rescue Service is the regulatory body responsible for fire safety enforcement and fire safety advice across the ten unitary authorities of: Rhondda Cynon Taf; Merthyr Tydfil; Blaenau Gwent; Caerphilly; Monmouth;

Torfaen; Newport; Cardiff; the Vale of Glamorgan; and Bridgend. SWF&RS actively promotes and endorses the widespread adoption of automatic water suppression systems as an integral part of wider fire safety solutions.

South Yorkshire Fire & Rescue Service

Training Centre, Beaverhill Road,
Handsworth, Sheffield
S13 9QA

Tel: 0114 2532935
Fax: 0114 2691899
Email: rbrason@syfire.gov.uk
Web: syfire.gov.uk

Category: Associate organisation
Contact: Roger Brason,
Technical Fire Safety (TFS)

Among the statutory duties of South Yorkshire Fire & Civil Defence Authority is its duty to provide an efficient and effective Fire & Rescue Service to its population. The Service is responsible for delivering fire protection advice to the domestic and commercial sectors, including advice about fire detection, alarm and suppression systems, including the provision of guidance concerning the suitability of automatic sprinkler systems to protect particular premises and risks.

SPP Pumps Ltd

1420 Lakeview, Arlington Business Park,
Theale, Reading RG7 4SA

Tel: 0118 932 3123

Fax: 0118 932 3302

Email: alex_playfair@sppumps.com

Web: sppumps.com

Category: Manufacturer/Supplier

Accred: LPCB - Pumps

Contact: Alex Playfair

SPP has been manufacturing and supplying pumps and associated equipment for well over 100 years. Focused on market requirements, it has grown to become a recognised world leader in the design and production of centrifugal pumps and fluid handling systems for a variety of applications across a wide range of industries. The fire protection and firefighting applications include pumps suitable for automatic sprinkler systems, and SPP manufactures pumps that have been approved to LPS 1131. Thus the company has control of and responsibility for the design, construction, testing and performance of fire pump sets incorporating its LPCB approved fire pumps.

Staffordshire Fire & Rescue Services

Central Risk Reduction, Headquarters,
Pirehill, Stone, Staffordshire
ST15 0BS

Tel: 01785 898767

Fax: 01785 898395

Email:

stuart.ruckledge@staffordshirefire.gov.uk

Web: staffordshirefire.gov.uk

Category: Associate organisation

Contact: Stuart Ruckledge, Fire Engineer

Staffordshire Fire & Rescue Service plays a key leadership role in promoting better understanding of the benefits of automatic fire sprinklers and, accordingly works to encourage homeowners, building owners and developers to install these systems where there is a risk-based case for doing so. For example, where the risks to people are unacceptably high, or where there is a clear business case in terms of cost and benefit. While automatic fire sprinkler systems play a positive role in reducing the human impact, economic, environmental and business resilience costs of fire in any building they are installed in, our focus is directed to those properties where the most significant impact can be achieved. In addition to this we support the advancement of the industry, and playing our part in developing new technologies.

Suffolk Fire & Rescue Service

Endeavour House,
8 Russell Road, Ipswich
IP1 2BX

Tel: 01473 260588 / 07776 474995

Email:
matthew.canham@suffolk.gov.uk

Web: suffolk.gov.uk
PolicingAndPublicSafety/
FireAndRescueServices/

Category: Associate organisation
Contact: Matthew Canham,
Watch Commander

Suffolk Fire & Rescue Service is committed to protecting the community of Suffolk and it is our vision to make Suffolk a place where people live safe and fulfilling lives. We proactively endorse the installation of sprinkler systems and firmly believe that they save lives and improve public and firefighter safety. Where installed they reduce the environmental, social and economic impact of fires in commercial, educational and domestic premises. This authority is an active member of the National Fire Sprinkler Network which aims to raise the profile of sprinkler systems and their associated benefits.

Swann Consultancy Ltd

66 Burntwick Drive,
Lower Halstow, Kent
ME9 7DX

Tel: 01795 842869

Email:
amartin@swannconsultancy.co.uk

Web: swannconsultancy.co.uk

Category: Associate
Contact: Andy Martin

With over 30 years experience within the fire sprinkler industry, Swann Consultancy are well equipped to offer unbiased guidance and technical advice for any of the following:

- Automatic fire sprinkler installations
- Wet / dry risers
- Fixed firefighting systems
- We offer expert advice including a full review of sprinkler plans and hydraulic calculations for insurance approval or conformity to relevant Standards.

We are fully conversant with AutoCAD 2D, 3D & Solid Modelling Software, Canute FHC Hydraulic Calculation Software

Sweco

1 Bath Road, Maidenhead,
Berkshire SL6 4AQ

Email: thomas.phillips@sweco.co.uk
Web: sweco.co.uk

Category: Associate
Contact: Tom Phillips, Project Engineer

Tandi Sprinklers

37 The Noke, Stevenage,
Hertfordshire
SG2 8LJ

Tel: 07823 555189

Email: tandi-sprinklers@hotmail.com

Contact: Ian Hemmingfield

Installs Domestic/Residential systems.

Thameside Fire Protection Ltd

Unit 4 Sovereign Park, Cranes Farm Road,
Basildon, Essex
SS14 3JD

Tel: 01268 597999
Fax: 01268 597998
Email: andy.belsey@thamesidefire.co.uk
johnallen@thamesidefire.co.uk
Web: thamesidefire.co.uk

Category: Installer level 3
Accred: LPCB - Level 3
Contact: John Allen, Chairman
Andy Belsey, Managing
Director

Design, fabrication, installation and maintenance of all sprinkler systems. All related fire protection work undertaken: fire alarms, extinguishers and dry risers etc. Established 1985.

- System designed to BS 5306, BS EN 12845, BS 9251, and NFPA and FM Standards.
 - Fabrication facilities
 - National coverage; including service contracts and 24 hour breakdowns
 - Directly employed installation and service staff
 - Special risk work and confined space operations
 - Health and safety paramount
 - Environmental accreditation to BS 14001
 - Emphasis on client satisfaction, which brings 85% repeat business
 - All market sectors covered, from high street retail to petrochemical
-

The Henderson Group

Trueman House, Capitol Park,
Tingley, Leeds LS27 0TS

Tel: 0113 393 6329
Email: neil.beck@HIBL.co.uk
Web: hibl.co.uk

Category: Associate
Contact: Neil Beck, Director

Thermocable Flexible Elements Ltd

Pasture Lane, Clayton, Bradford
BD14 6LU

Tel: 01274 882359
Fax: 01274 882229
Email: philipwilkie@thermocable.com
info@thermocable.com
Web: thermocable.com

Category: Manufacturer/Supplier
Accred: UL - FM - ATEX
Contact: Philip Wilkie, Technical Director

Thermocable is a world leading, UK manufacturer of cable based sensing and detection technology. Our vertically integrated approach through design, development and manufacturing provides reassurance of responsive solutions to customers' needs worldwide. Over the last five years Thermocable has launched the ProMinder range of monitored trace heating systems onto the market which exceed the requirements of British Standards.

Our family of products with UL, FM and IEC approval is based upon 45 years of experience and knowledge, and a factory conforming to ISO 9001:2008, through which we deliver significant customer benefits.

Thermotech Fire Protection

Prestbury House, Bamford Business Park,
Stockport SK4 1PL

Tel: 0161 476 5551
Fax: 0161 476 2998
Email: info@thermotechsolutions.co.uk
Web: thermotechsolutions.co.uk

Category: Installer level 3
Accred: LPCB - Level 3
Contact: David Prendergast

Thermotech Fire Protection Ltd was formed in 2000 to offer retail companies a reliable cost effective planned and reactive maintenance service covering the whole of the UK. Our engineers all have a minimum of 10 years experience within the fire protection industry and are fully conversant with all fixed firefighting systems. The management have all worked through the ranks and can offer a technical back up second to none.

Tokio Marine Kiln Insurance Ltd

20 Fenchurch Street, London EC3M 3BY

Tel: 0207 280 8844/8500
Fax: 0207 398 2940
Email: peter.whalley@tokiomarinekiln.com
Web: tokiomarinekiln.com

Category: Associate organisation
Contact: Peter Whalley,
Head of Risk Engineering

Tokio Marine Kiln is a leading international provider of specialist and corporate insurance for clients within the Lloyd's and Company markets. Formed in 2014 through the integration of Kiln (founded in 1962)

and Tokio Marine Europe (recognised as Japan's oldest insurer, founded in 1879), Tokio Marine Kiln has been established on empowered expertise and the strength of its relationships. We have seven underwriting divisions focused on Specialist Property, Liability & Motor; Corporate Property & Liability; Construction; Marine & Enterprise Risk; Aviation & Space; Accident, Health & Life; and Reinsurance products. Automatic fire protection in the form of sprinklers is regarded by Tokio Marine Kiln as a key feature of its' property loss control programmes, by virtue of the effectiveness and reliability.

TPT Fire Systems Group Ltd

Avocet House, Aviary Court, Basingstoke,
Hampshire RG24 8PE

Tel: 07500 949732
Fax: 01256 365045
Email: gareth.richards@tpt-fire.co.uk
maintenance@tpt-fire.co.uk
Web: tpt-fire.co.uk

Category: Installer level 4
Contact: Gareth Richards, Service
Director

- Operates nationwide
- Installs Domestic/Residential systems
- Installs Commercial & Industrial systems

Triangle Fire Systems Ltd

Haywood Way, Hastings TN35 4PL

Tel: 01424 812557
Fax: 01424 812557
Email: colin@trianglefiresystems.co.uk
jenna@trianglefiresystems.co.uk

Web: trianglefiresystems.co.uk

Category: Installer level 1

Accred: FIRAS – Domestic
and Residential Scheme

Contact: Colin Chantler, Director

Triangle Fire Systems are one of the UK's leading specialists in residential & domestic fire sprinkler systems. Our technical expertise, the support we offer, the quality of our workmanship and site supervision, has seen us establish a reputation second to none in the industry and become the preferred specialist contractor for a number of clients. We have a strong track record of successful installations for a wide range of clients including: Barratt Homes, Telford Homes, Ardmore Construction, Willmott Dixon, Gracewell Healthcare, Care UK, Hill Partnerships, Imtech Meica and Galliford Try. We are also installers of dry and wet rising mains.

Triple P Projects Ltd

Old County Police Station,
15 Neath Road, Resolven, Neath
SA11 4AW

Tel: 07774 935222

Email: hdavies@triplepprojects.com

sarah@triplepprojects.com

Web: triplepprojects.com

Category: Manufacturer/Supplier

Accred: LPCB – Pumps,
WRAS Approved Products

Contact: Huw Davies, Director

Triple P Projects Ltd supply a range of intelligent fire pumps for connection directly onto the town's main negating the need for a tank. Our SD range covers sprinkler systems from OH3 through to residential and domestic applications,

utilising fully tested and approved fire pumps and equipment. Our units are installed throughout the UK and Ireland. We have over 30 years' experience in the fire industry and offer our clients an engineered solution to water supplies.

Tubetrade plc

Ten Acres, Berry Hill Industrial Estate,
Droitwich WR9 9AQ

Tel: 01905 791000

Fax: 01905 827715

Email: david@tubetrade.com

Web: tubetrade.com

Category: Manufacturer/Supplier

Contact: David Howells, Director

Stockists of EN10255 red, self colour and galvanised tubes in plain, grooved or threaded ends. Full cutting service available.

Tyco Fire & Integrated Solutions (UK) Ltd

Tyco Park, Grimshaw Lane Newton
Heath, Manchester M40 2WL

Tel: 0161 455 4567 / 07980 716959

Fax: 0161 455 4448

Email: BWhiteley@tycoint.com

Web: tycofis.com

Category: Installer level 4

Accred: LPCB - Level 4

Contact: Bob Whiteley, Engineering
& Standards Manager

Range of sprinklers, installation valves,
alarm motors and gongs, sprayers and
associated equipment.

Tyco Fire Protection Products Ltd

Tyco Park, Grimshaw Lane
Newton Heath, Manchester
M40 2WL

Tel: 0161 259 4000
Fax: 0161 875 0491
Email: Ksc@tyco-bspd.com
Web: tyco-fire.com

Category: Sprinkler head manufacturer
Accred: LPCB –
Other Sprinkler Components
LPCB – Sprinkler Heads
Contact: Kate Scourfield, Key Account
Manager Fire Protection

Tyco Fire Protection Products is a strategically aligned business unit of Tyco International with globally recognised products sold under leading brands, including ANSUL, CHEMGUARD, DBE, ZCare, FLAMEvision, GRINNELL, HYGGOOD, NEURUPPIN, PYRO-CHEM, RAPID RESPONSE, SIMPLEX, SKUM, SPRINKCAD, THORN SECURITY, VIGILANT, Williams Fire & Hazard Control, and ZETTLER. Tyco Fire Protection Products produces fire protection, detection and mechanical building construction solutions for commercial, industrial, institutional, governmental and residential customers. Heavy emphasis is placed on research and development, resulting in innovations and global approvals. Key products include manual firefighting equipment, detection/suppression systems, extinguishing agents, sprinkler systems valves, piping products and fittings.

UK Sprinklers Ltd

Unit 1 Bridge Trading Estate,
Bolton Road, Bury
BL8 2AQ

Tel: 0161 762 0225
Fax: 0161 763 7419
Email: sgriffiths@uksprinklersltd.co.uk
sales@uksprinklersltd.co.uk
Web: uksprinklersltd.co.uk

Category: Installer – Residential
Accred: FIRAS – Domestic and
Residential Scheme
Contact: Steve Griffiths, Director

Design, supply and installation of
residential fire sprinkler and wet riser
systems.

UK Warehousing Association

11 Gower Street,
London
WC1E 6HB

Tel: 0207 636 8856
Fax: 0207 636 7865
Email: pward@ukwa.org.uk
Web: ukwa.org

Accred: Associate
Contact: Peter Ward, CEO

A trade association for the third-party
logistics sector.

Ultra Surefire Ltd

Unit 4, Barnes Wallis Court,
High Wycombe
HP12 3PR

Tel: 01494 444123

Fax: 01494 444345
 Email: info@ultrasurefire.co.uk
 Web: ultrasurefire.co.uk

Category: Installer level 3
 Accred: FIRAS – Level 1
 FIRAS – Watermist Installations
 LPCB – Level 2
 Contact: Paul Ruttley

Ultra is a specialist suppression provider, being an experienced installer of high and low pressure water mist, gaseous (including FM200 and inert) and sprinkler systems. Its project management team provides comprehensive design and system support to suit clients' requirements.

Universal Fixings Ltd

New John Street, Halesowen,
 West Midlands
 B62 8HT

Tel: 01384 422284
 Fax: 01384 897446
 Email: sales@universalfixings.co.uk
 richard@universalfixings.co.uk
 Web: universalfixings.co.uk

Category: Supplier
 Contact: Richard Farmer

Manufacturers and suppliers of pipe supports and channel bracketry including nonstandard fabrications and presswork. Universal Fixings provides a complete service to sprinkler installers. Its situation in the heart of the West Midlands and at the centre of the national motorway network permits fast and efficient delivery countrywide.

Victaulic

Units B1 & B2, SG1 Industrial Estate,
 Off Gunnels Wood Road, Stevenage
 SG1 2NB

Tel: 01438 310690
 Fax: 01438 310699
 Email: nick.scull@victaulic.com
 Web: victaulic.com

Category: Sprinkler head manufacturer
 Accred: LPCB – Other Sprinkler
 Components
 LPCB – Sprinkler Heads
 Contact: Nick Scull

Since 1919 Victaulic® has been committed to innovation in the pursuit of faster and easier ways to join piping systems. Specifically within the fire protection industry Victaulic continues to simplify the installation process by reducing individual pieces and parts by engineering unique products that serve multiple functions and have smaller footprints. Victaulic technology includes a complete offering of sprinklers, couplings, fittings, valves including wet, dry, deluge and pre-action alarm valves, accessories and tools to meet the needs of any fire protection application. Recent additions to the Victaulic fire protection range include VicFlex sprinkler fitting systems, providing 100% kink resistance and the tightest bends in the market, and the FireLock Installation-Ready Fittings. These one piece fittings require fewer steps to install, resulting in consistently faster pipe joints, and up to 75% less jobsite inventory

Viking SupplyNet Ltd

Unit 2, Byram House, Newborn Court,
Chapel Street, Epworth DN9 1HQ
Tel: 01427 871000
Fax: 01427 873917
Email: pearson@viking-emea.com
Web: viking-emea.com

Category: Sprinkler head manufacturer
Accred: LPCB –
Other Sprinkler Components
LPCB – Sprinkler Heads, Foam,
Gas Suppression & Detection
Contact: Eddie Pearson, Sales Manager,
North Europe

For over 80 years the name Viking has represented global leadership in fire protection. Today, the Viking Group provides the independent fire sprinkler contractor with integrated solutions to any fire suppression challenge, be it Sprinklers, Foam, Gas or Detection. The core of Viking’s strength is the dedication, expertise and commitment of our people. We’re passionate about what we do, because fire protection is all we do. We believe that protecting people and property from fire is a purposeful commitment that transcends the bottom line. Our singular, undivided focus gives us a ‘professional edge’ that continues to set the Viking Group apart in a very competitive industry.

**Warwickshire
Fire & Rescue Service**

Fire Service HQ, Warwick Street,
Leamington Spa CV32 5LH
Tel: 01926 423231
Email:
firesafety@warwickshire.gov.uk
davefinnerty@warwickshire.gov.uk

paulbragnall@warwickshire.gov.uk
Web: warwickshire.gov.uk
fireandrescue

Category: Associate organisation
Contact: Paul Bagnall
Dave Finnerty,
Fire Protection Manager

Warwickshire has close contacts with industry experts who can provide technical specifications and costs. We will consider ways in which we can keep development costs low or cost neutral by seeking reductions in other ways e.g. extending the distances between fire hydrants where sprinklers have been fitted to housing sites. We will encourage the use of sprinklers in all residential properties but especially social housing, houses in multiple occupation and large residential developments of more than 500 homes.

West Midlands Fire Service

Fire Service HQ,
99 Vauzhall Road, Birmingham
B7 4HW

Tel: 0121 380 6722
Email: nick.hunt@wmfs.net
Web: wmfs.net

Category: Associate organisation
Contact: Nick Hunt,
Policy /Fire Safety Officer

West Midlands Fire Service is responsible for delivering fire safety enforcement and fire prevention guidance within the metropolitan West Midlands, with its’ fire safety personnel serving the seven constituent boroughs of Birmingham, Coventry, Sandwell, Wolverhampton, Solihull, Dudley and Walsall. The

importance of fire suppression is emphasised and promoted by its' officers in their regular roles in planning/ Building Regulations and enforcement, and they offer advice wherever needed. West Midlands Fire Service promotes the wider use of automatic sprinklers in commercial, educational, heritage and residential premises through legislation, partnership working and lobbying. It has a policy of fitting sprinklers in fire service properties when building new or refurbishing existing premises.

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West Sussex Fire & Rescue Service

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Business Fire Safety, Horsham Fire Station, Hurst Road, Horsham West Sussex RH12 2DN

Tel: 01243 786211
 Email: paul.fuller@westsussex.gov.uk
 debi.booker@westsussex.gov.uk
 Web: westsussex.gov.uk/fire

Category: Associate organisation
 Contact: Paul Fuller, Group Manager,
 Head of Fire Safety
 Debi Booker, Business
 Support Officer

West Sussex Fire & Rescue Service is responsible for delivering fire safety and fire prevention guidance to more than 800,000 people in West Sussex. Our professional fire safety inspectors provide advice and guidance to assist business to remain safe from fire. We support sprinklers as a method of reducing the impact of fires on our business community.

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West Yorkshire Fire & Rescue Service

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Fire Service HQ, Oakroyd Hall, Bradford Road, Birkenshaw BD11 2DY

Tel: 0113 3874397
 Fax: 0113 3875777
 Email: nigel.charlston@westyorksfire.gov.uk
 Web: westyorksfire.gov.uk

Category: Associate organisation
 Contact: Nigel Charlston,
 Head of Fire Engineering,
 Planning and Licensing

West Yorkshire Fire & Rescue Service works to provide an efficient and effective emergency service to its population. It is responsible for delivering fire protection advice to the domestic and commercial sectors, including advice about fire detection, alarm and suppression systems, including the provision of guidance concerning the suitability of automatic sprinkler systems.

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Writtech Industrial Services Ltd

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Newbrook Business Park, Mullingar Co Westmeath

Tel: 00 35344 934 4854
 Fax: 00 35344 934 9858
 Email: tedwright@writtechltd.com
 Web: writtechltd.com

Category: Installer level 3
 Accred: LPCB - Level 3
 Contact: Ted Wright, Joint MD

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Xact Consultancy and Training Ltd

3 Abbey Lane Court, Evesham,
Worcestershire
WR11 4BY

Tel: 01386 277980
Fax: 0845 0941887
Email: info@xact.org.uk
Web: xact.org.uk

Category: Associate organisation
Contact: Trevor Norwood, Director

Xact offers both open and in-house courses in: BS 9251 residential and domestic sprinklers for designers and installers; checking sprinkler systems for building control, fire service and fire risk assessors; Canute FHC design software for sprinkler and watermist systems; BS EN 12845 commercial sprinklers for designers. Courses are approved by BAFSA, FIRAS third-party accreditation scheme and awarding bodies for national and specialised qualifications. Open courses at hotel and conference facilities offering good communication links around the UK.

Xylem Water Solutions UK Ltd

Millwey Rise Industrial Estate,
Axminster, Devon
EX13 5HU

Tel: 07899 862482
Fax: 01297 630200
Email: darren.haydon@xyleminc.com
Web: xylemwatersolutions.com

Category: Associate trade
Contact: Darren Haydon

We work with a number of fire OEMs and installers to deliver a high quality, reliable fire sprinkler pump system offering. We have residential and commercial fire packages compliant with the European standards.

Zurich Risk Engineering

126 Hagley Road, Edgbaston,
Birmingham
B16 9PF

Tel: 0161 683 5214
Email: stuart.1.lloyd@uk.zurich.com
Web: zurich.co.uk

Category: Associate organisation
Contact: Stuart Lloyd, Principal Fire Protection Engineer – Europe Middle East and Africa

Zurich Risk Engineering, part of the Zurich Insurance Group Ltd, is a leading provider of risk management solutions. It enables its customers to operate safer, more effective workplaces and, ultimately, reduce the total cost of risk. Its technical and operational risk management products and services sit in a range of risk areas, including property protection. Zurich Risk Engineering combines over 80 years' experience in the safety inspection industry with 30 years' expertise in risk management. It employs over 1,000 customer facing field staff, offering specialist support in all aspects of risk management to our customers across more than 170 countries.



Protecting people, property and business continuity

*HI-FOG® water mist fire protection system
safely controls and suppresses fire*

Fire destroys commercial assets worth billions of Pounds every year with the damage caused by both fire and the water used to fight it. Traditional water-based systems rely on wetting to fight fire, but the flooding is devastating and can spread far beyond the fire area. This leads to downtime or loss of business because weeks or even months can pass while the damage is repaired.

There is a way to make water more effective in fighting fire. HI-FOG® suppresses fire by discharging a fine water mist at high velocity swiftly controlling and suppressing a fire while minimising smoke-related damage. With minimal clean up, HI-FOG® helps reduce downtime so for example hotels can get back to normal operation soonest as HI-FOG® uses significantly less water compared to conventional sprinkler systems.

Marioff has a vast experience in protecting cultural heritage sites. HI-FOG® protects internationally renowned places as well as historic sites of local importance. In cultural heritage sites, collateral damage can never be a secondary consideration. Along with heritage sites, high-rise buildings, data centers, libraries and archives can all be protected with HI-FOG® water mist fire protection systems.

Thanks to the use of small diameter tubing, compact pump units, small water tanks and discrete sprinkler and spray heads, HI-FOG® is easy to install into retrofits and new structures alike, therefore minimising structural impact and preserving aesthetic integrity.

About Marioff and HI-FOG®

Marioff is a leading developer of water mist fire protection technology and supplies system solutions worldwide. The company's innovative HI-FOG® water mist fire protection system safely controls and suppresses fire using significantly less water than conventional sprinkler systems, reducing water damage, cleanup time and operational downtime.

Marioff is a part of UTC Building & Industrial Systems, a unit of United Technologies Corp., a leading provider to the aerospace and building systems industries worldwide. For more information, visit www.marioff.com.



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www.marioff.com



This is the seventh Automatic Fire Sprinkler Yearbook published by BAFSA and, as in previous years, we intend that it will become an essential reference source and form a valued part of any fire safety professional's library.

Despite the changes in new technology, BAFSA members were keen that we continue to provide a paper copy of the book, however this year we will also provide electronic copies and ensure it is available on our website.

British Automatic Fire Sprinkler Association

bafsa

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