

Retail

British Automatic Fire Sprinkler Association

bafsa

ISSUE 1

JANUARY 2018

INFORMATION FILE 4

The Challenge

An outbreak of fire always presents an especially serious threat to both life and property and wherever members of the public congregate in large numbers there is always greater risk. Examples of this can regularly be found in many of our high street stores and out of town shopping centres.

In today's enclosed shopping malls, department stores, large supermarkets and shops, vast quantities of combustible goods and packaging may be found. and many of these materials will be of plastic or foam which can produce dangerous quantities of heat and toxic smoke in a fire.

Indeed, the modern trend to "stack-em-high" creates ideal conditions for any unwanted fire to grow and spread rapidly throughout a building. The fact that many retail premises will also have escape routes unfamiliar to the range of people likely to be found shopping there adds to this hazardous mix.

Following a number of serious fires in retail premises, culminating in February 1996 in the tragic death of a female firefighter, Fleur Lombard QGM, many Chief Fire Officers, officials of the Fire Brigade's Union (FBU) and others, voiced their concerns about the hazards posed by large retail premises and advocated the installation of fire sprinklers.

The Solution

The simplest way of providing protection for retail occupancies and the people who might be there is by rapid application of water, at the earliest possible stage of a fire, by an automatic fire sprinkler system. Water as a fire-fighting agent offers many advantages; it is readily available, inexpensive and can be directed to the seat of a fire with immediate effect. Water is also chemically inert and does not present an environmental hazard.

Guidance to the Building Regulations for England and Wales (Approved Document B) has a specific requirement to install sprinklers in single-storey non-compartmented retail outlets with a floor area exceeding 2,000m². (Scotland and Northern Ireland have their own building standards which make similar recommendations).

More recently the Fire Sector Federation has issued guidance to those involved in carrying out alterations and extensions to retail premises; emphasising the need to assess the risks properly and consider installing sprinklers - even where the floor area might be smaller than the 2,000m² threshold.



FIRE KILLS

On 8th May 1979 fire ripped through the Woolworth store in Manchester with up to 500 persons in the building when the fire broke out.

Eyewitnesses said that the smoke produced by the fire caused breathing difficulties and obscured 'fire exit' signs.

Despite the best efforts of the fire service, 10 persons lost their lives and over 40 casualties were conveyed to hospital for treatment.

The fire was considered to be the worst fire disaster in Manchester since WW2.

This building was not fitted with a sprinkler system.

**SPRINKLERS SAVE LIVES, SAFEGUARD
PROPERTY AND INVESTMENTS,
PREVENT FIREFIGHTER DEATHS AND
PROTECT THE ENVIRONMENT**

The Benefits

Automatic sprinklers are the only fire protection system which will protect property, contents and developers' investments as well as, and more importantly, people. They are also an effective way to protect the environment can be protected from the effects of large fires and damaging interruptions to businesses and local communities.

All fire sprinkler systems detect fires (the sprinkler heads are equivalent to heat detectors in the fire alarm standard BS 5839-1) and those installed in commercial buildings are provided with a local mechanical alarm which will operate even if there is no electrical power available. However, sprinkler systems can easily be provided with a remote signalling facility. This will advise an alarm receiving centre that the sprinkler system is actually operating.

Research conducted by Optimal Economics of Edinburgh for the National Fire Chief's Council and the National Fire Sprinkler Network (NFSN) revealed that in non-residential building the average number of sprinkler heads that operate in real fire situations is less than four heads and that the 'performance effectiveness' and 'operational reliability' was assessed at being 99% and 94% respectively.

This increasing confidence is encouraging the regulatory authorities to recognise the enhanced level of safety provided by sprinklers; as a result, when major projects are at design stage the inclusion of sprinklers will permit alternative approaches to complying with the Building Regulations and can sometimes allow a degree of flexibility in design for both large and small premises alike.

Many fire and rescue services 'call challenging' policies now appreciate the general lack of false calls being made by sprinklers and will respond with an appliance and crew to a known sprinkler activation.

System Design and Installation

Always select a contractor who is not only capable and competent but who also can offer proof of compliance with an established quality assurance system.

For example, all Installer members of BAFSA (commercial and industrial systems) can provide documentary proof of compliance with international quality assurance standards and also hold an approval (Registration or Certification) from a third party certification service which itself is accredited by a Government –approved body, the United Kingdom Accreditation Service (UKAS).

Where sprinklers are installed for life safety, there is a need to ensure that the systems including water supplies are always reliable and must be maintained. Zoning systems means that segments of a sprinkler installation can be isolated for maintenance while the remainder of the system is kept operational.

Types of Systems

Normally 'wet' systems, where the supply pipes are always filled with water, are specified for retail premises and where a fast response is considered necessary. These systems simple to maintain and invariably the most effective. Pipework can be steel or CPVC (chlorinated polyvinyl chloride) which is approved for the purpose. If water pressure and flows are adequate then it is possible that the sprinkler system can be connected (subject to the approval of the water supplier) directly to the service main. However, where water supplies are insufficient, storage tanks and pumps may be required and these can be sourced from a number of BAFSA members who manufacture listed equipment.



Scottish F&RS received a call at 0154 on 27th September 2017 regarding a reported fire at the TK Maxx store in Paisley. Two pumps, an aerial appliance and a salvage unit attended. On arrival it was noted that there was a secondary fire adjacent to a roller shutter door at the store which in turn had ignited cladding on the two-storey, 2150m² terraced building.

The fire penetrated to the first floor internal area where 2 heads on the OH3, mains fed sprinkler installation activated within the first floor ceiling void. FRS crews used one hose-reel jet and the fire was extinguished in 12 minutes leaving fire damage of between 10 to 15m².

Business interruption and costs were estimated at 5 hours and £20k respectively.

Activation of the sprinkler system probably prevented further significant property loss.

THE FACTS

- Only sprinkler heads in the immediate vicinity of a fire operate.
- Sprinkler heads can be concealed.
- Sprinkler systems do not need pumps or tanks if mains pressure and flow is adequate.
- Sprinklered buildings prevent firefighter deaths.
- Sprinklers rarely false alarm; they will detect and raise an alarm for real fires.
- Sprinklers installed in full compliance with third party certification standards may attract insurance premium discounts.