

SprinklerScene

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British Engineering Report Finds Sprinkler Protection Economical

A study by the British fire protection consulting firm Ove Arup & Partners has concluded that buildings with automatic sprinklers can be built for the same cost as buildings without sprinklers. The study, entitled *Use and Benefits of Incorporating Sprinklers in Buildings and Structures*, was commissioned by the British Automatic Sprinkler Association (BASA). It includes a cost analysis based on design options permitted for sprinklered buildings within the Building Regulations of England and Wales, and also considers reductions in insurance premiums for sprinklered buildings.

Four different types of buildings were considered in the analysis, and the results varied based on the type of building:

1. An 8-story office building less than 30m high – Initial construction cost would be about the same, but insurance savings were likely to favor the sprinklered building.
2. A similar office building with atrium – Sprinklers permitted a reduction in construction costs, enhanced by lower insurance premiums.
3. A downtown department store – Although design constraints would make it difficult to build without sprinkler protection, there would be no appreciable difference in construction costs, although the sprinklered building would probably benefit from lower insurance premiums.
4. A large single-story warehouse – The design constraints would make the unsprinklered version nearly impossible to build, and the hazard would be difficult to insure. The sprinklered version would cost more initially, but insurance savings would be expected to offset the costs within as little as 5 years.

Sprinklers were also credited with benefits of reduced water usage, less environmental pollution, reduced pressures on fire brigade response times, and increased safety for fire brigade personnel.

The report is available at a cost of 20 pounds from BASA, Carlyle House, 235/237 Vauxhall Bridge Road, London, SW1V 1EJ, England (FAX 0171-828-0667).



UL Lists Mist Nozzles

Grinnell Flow Control has obtained the first water mist nozzle listing from Underwriters Laboratories (USA). The AM10 Aquamist nozzle is listed for use in protecting machinery spaces and similar hazard compartments not exceeding 500 m³ containing flammable or combustible liquids no more hazardous than heptane. As such, the nozzle listing corresponds to criteria established by the International Maritime Organization (IMO) for the protection of shipboard machinery spaces. The stainless steel nozzle has a K-factor of 3.4 (0.24 in English units). Each nozzle has a protection volume of 2m X 2m X 5m high, and nozzles are to be a maximum 1 m from walls. Nozzle operating pressure range is 11.7 – 17.2 bar (170-250 psi). The D_v0.99, a measure of droplet size, is not yet available. The nozzle is intended for use as part of a total compartment water mist deluge system. As part of its listing, it has demonstrated compatibility with dry chemical and foam to ensure there will be no breakdown in the effectiveness of a separate bilge protection system.

In an apparent departure from the proposed provisions of NFPA 750, the nozzle is intended to be used in systems sized with Hazen-Williams hydraulic calculation methods. As proposed, NFPA 750 would permit this method to be used only for low-pressure systems, defined as those using pressures up to 12.1 bar (175 psi). For intermediate and high pressure systems, calculation methods using the Darcy- Weisbach formula are required.

BASA Expands Membership Opportunities

At its 21st Annual Meeting in December of 1995, the British Automatic Sprinkler Association (BASA) expanded its membership opportunities to include all companies registered and certificated to ISO 9001 by the Loss Prevention Certification Board (LPCB) within the scope of LPS 1048. Previously, membership was limited to companies on the LPCB's old List of Approved Products and Services.

US Housing Agency Supports Local Sprinkler Requirements

The United States Department of Housing and Urban Development (HUD) has rejected a petition to preempt local ordinances requiring the installation of residential sprinkler systems in manufactured (mobile) homes. According to the December 1995 decision by HUD, federal preemption of state and local safety and construction standards can occur only when there exists an applicable, non-identical federal standard. Although existing federal construction standards for manufactured homes cover the reduction of fire hazards and the need for early detection systems, they do not address requirements for fire extinguishing equipment such as sprinkler systems. HUD concluded that, since federal authority in this area is unclear, decisions on rules for sprinklers should be left to states and localities, "based on their perceived needs for the health and safety of their citizens."

Australian False Alarm Fees Favor Sprinklers

In an article in the January/February issue of the British Fire Protection Association's *Fire Prevention* magazine, Wiltshire Fire Brigade CFO John Craig reports that false alarms, particularly from smoke detection systems are an increasing problem for the fire service. He cites a study by Her Majesty's Chief Inspector of Fire Services stating that unwanted fire signals due to equipment failures for 1994/95 rose by 16% in the UK to 111,700 from 96,700 the previous year. As a possible solution, he pointed to Melbourne, Australia, where legislators granted the fire service the power to levy stiff fees for false alarms. Craig reports that in some cases building owners replaced smoke detection equipment with fast response sprinklers, the cost of which was quickly recouped in not having to pay false alarm charges.

World Fire Organizations Converge for NFPA's 100th Anniversary

Just prior to the 100th Anniversary meeting of the National Fire Protection Association in Boston, Massachusetts, the Confederation of Fire Protection Associations will call its CFPA – I meeting May 15 – 18, 1996. Dozens of countries will be represented as the sessions on international standards, new water-based fire suppression technology, fire safety education and training and other topics. The meeting will include the option of a visit to the Factory Mutual Research Corporation Test Center and Hydraulics Laboratory in West Gloucester, Rhode Island.

Upcoming Seminars and Exhibitions of Interest

May 15 – 18, 1996 – FIREX '95 – NEC Birmingham, England, Blenheim Group
(FAX 0181-747-3856)

May 19 – 23, 1996 – NFPA Centennial Annual Meeting, Boston, MA
(FAX 1-617-984-7030)

September 8 – 11, 1996 – NFSA Annual Seminar, - San Diego, California
(FAX 1-914-878-4215)

September 24 – 26, 1996 – International Conference on Performance-Based Codes and Fire Safety Design Methods, Ottawa, Canada, CIB (Netherlands)/National Research Council (Canada)/Society of Fire Protection Engineers (FAX 1-617-482-8184)

October 15 – 17, 1996 – Fire Safety Conference on Performance Based Concepts, Federal Institute of Technology, Zurich, Switzerland, Swiss Institute for the Promotion of Safety & Security (FAX 41-1-211-70-30) or NFPA (FAX 1-617-984-7777)

November 17 – 20, 1996 – NFPA Fall Meeting, Nashville, Tennessee
(FAX 1-617-984-7030)

March 3-7, 1997 – 5th International Symposium on Fire Safety Science, World Congress Centre Melbourne, Australia, International Association for Fire Safety Science
(FAX 61-3-9690-7155)

The Fire Sprinkler Industry inGermany

The reunified Germany is a country of about 80 million people over an area little more than half the size of the U.S. State of Texas, about 357,000 square kilometers. While Germany is known as the modern economic engine of Europe, its use of fire sprinklers is surprisingly low, on the order of 1 to 1.3 million per year. In a country high in industry, it is estimated that only 9 percent of industrial construction is protected with sprinklers.

Why so little attention to automatic suppression? Fire protection is still largely focused on the construction of fire resistant buildings. There are no national laws or ordinances requiring sprinklers, although there are some regional requirements. The VdS (Verband der Sachversicherer), whose present form was initiated in 1908 by the technical officers of German insurance companies, is the leading body for both product requirements and installation codes and practices. A list of the VdS enforced applications includes distribution warehousing with open spaces exceeding 2500 m², retail outlets with high hazard storage, exhibition centers, office buildings exceeding 7 m in height, and public areas of shopping centers exceeding 2000 m². Insurers also recommend sprinklers for hotels, and forthcoming changes to the VdS rules are expected to mandate fast response sprinklers in old people's homes and other life safety applications.

VdS maintains a list of accredited sprinkler installation companies. There are approximately 40 such companies at present. And VdS demands accountability – one feature of the German sprinkler industry is that each installer must identify sprinklers installed by their companies to provide traceability in the event of a problem.

Between 1980 and 1990, the VdS reported operation of about 1500 VdS approved systems, with 98.1% of the fires extinguished or controlled until the fire brigade could effect final extinguishment. In 61% of the fires only one or two sprinklers operated. Four sprinklers or less controlled 77% of the fires, and 10 sprinklers or less controlled 89.5% of the fires.

In the past two years, the VdS has worked with Factory Mutual Research Corporation to approve ESFR sprinklers. VdS is also one of the leaders in the writing of the CEN (European) sprinkler product and installation standards. One of the differences from North American standards expected in the European standards is a large dependence on “intermediate response” sprinklers, represented by the 4 mm bulb as compared to the 3 mm fast response bulb or the 5 or 8 mm standard response bulbs.

Germany is also home to Minimax GmbH (formerly Preussag), one of the larger European sprinkler manufacturers/installers, and Job GmbH, the leading supplier of glass bulbs to sprinkler manufacturers worldwide.

While there is no organization in Germany directly concerned with the promotion of the fire sprinkler concept, the BVFA (Bundesverband für Feuerlöschanlagen und Geräte) acts as a trade association for a broad range of fixed fire protection devices. Interest has recently been expressed in the formation of a new organization, an organization that could work to increase use of fire sprinklers in the new Germany.