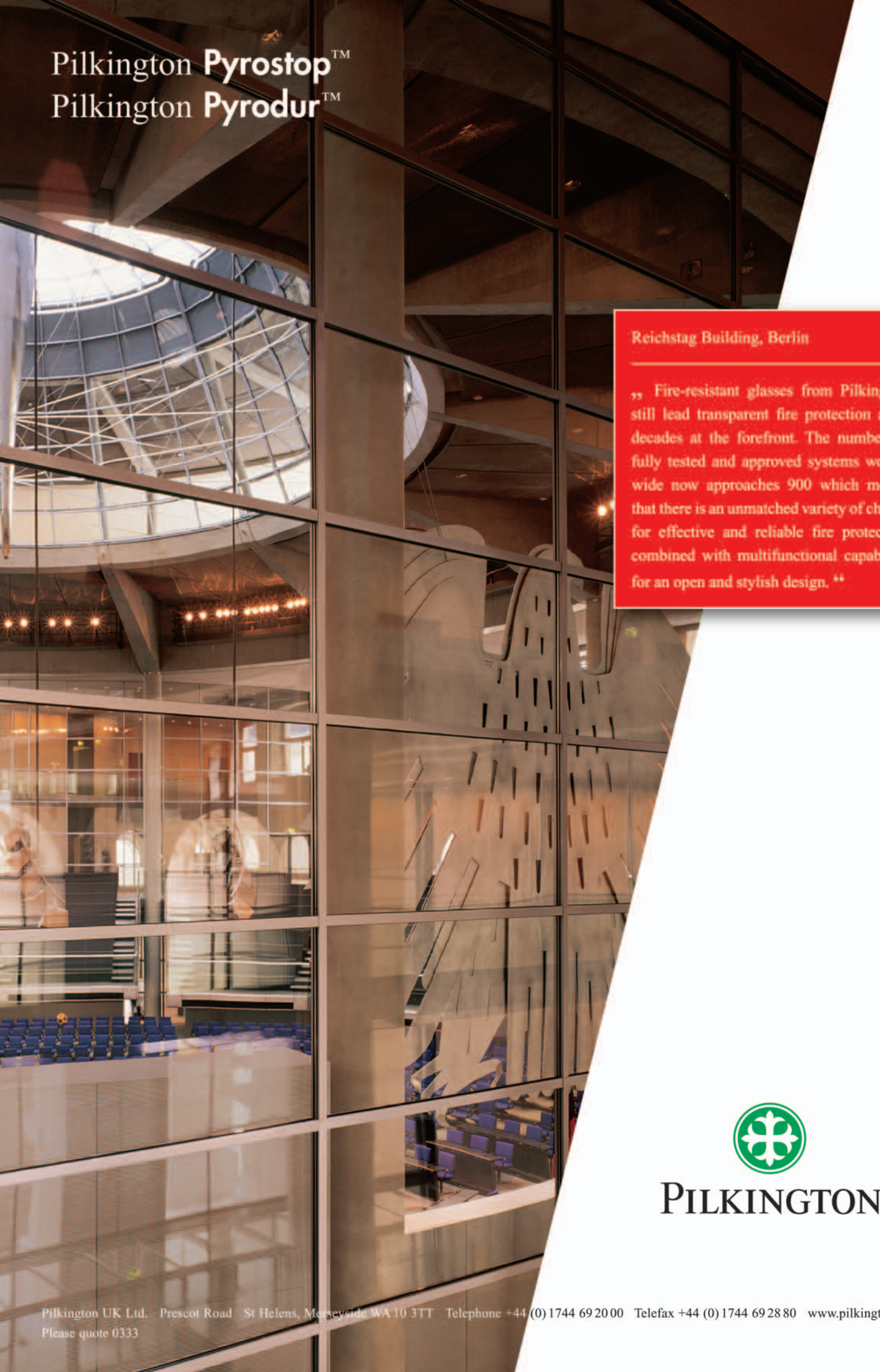
PFPF
PASSIVE FIRE PROTECTION FEDERATION

October 2004

BUILDING FIRE PROTECTION

A Passive Fire Protection Federation supplement to Fire Prevention & Fire Engineers Journal



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Fire safety starts here...

David Sugden explains the vital role of passive fire protection in ensuring the safety of building occupants, firefighters and property

THE STABILITY of a building in a fire depends upon the performance of all the component parts of the structure. Buildings are designed to keep products of combustion away from building occupants, allowing them time to escape safely. Regulations that govern the design of buildings also take into consideration the safety of firefighters who attend an incident. Thus, if a building is adequately protected, it should withstand a fire for a reasonable time, without collapse.

Passive fire protection is the term applied to the components of a building that ensure it offers adequate fire performance. This may apply to the fire performance of the elements themselves or to the improvement in fire performance gained by the addition of specialised materials, products or systems. The level of fire resistance offered, or the reaction of the materials, to fire may have been known for centuries, or may be the result of the application of modern and novel technology but, as with all complex and dynamic structures, any weak links must be spotted if disaster is to be avoided.

Stability and separation

When used within the fire safety design of a building, these materials and products generally offer either structural stability or act as fire-separating elements (or compartmentation). In both cases, the products must provide protection for a specified period of time. Passive protection provides the time necessary for the other parts of the fire strategy to operate. Within this strategy, the way in which the alarm is raised, the occupants react and the fire response systems (including firefighters) operate must therefore be taken into account. Without this time, the rest of the strategy cannot work.

Insurers also have an interest in the way in which buildings perform in a fire situation, not least of which is their desire to avoid a total property or business loss. If occupiers can resume operations with minimal business interruption, everyone's interests are served. For this to happen, the spread of any fire must be restricted, if possible to the compartment of origin. In all cases, the spread of smoke and flames can only be restricted or delayed by sound fire-separating elements, and this requires regular inspection of the structure by those who know what to look for.

The Passive Fire Protection Federation (PFPF) draws together representatives of most sectors of the construction industry who have an interest in the way these component parts are put together, be they manufacturers, installers or regulatory bodies. The PFPF attempts to look at the interfaces between elements, the way the components meet the needs of the regulations and how they are tested to prove their performance.

Providing guidance

This supplement describes the aims of the PFPF's member organisations (see p.26) and provides guidance in a series of product sector pages (see p.5-21). This guidance is designed to help all users of the products and services that the industry has to offer, including the building occupier. They provide information on what to look for, what to avoid, what to maintain and where more detailed information may be obtained.

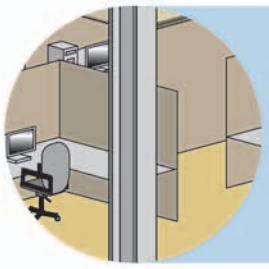
The performance in practice of all construction materials is dependent upon the way in which the product is installed. For this reason, the PFPF has always favoured third-party accreditation of both materials and installers; a principle which is also endorsed by the Chief Fire Officers' Association (CFOA) (see p.22), whose members have to deal with the situations that arise from incomplete or badly maintained fire protection. The article on page 22 explains how these schemes operate. Approved Document B of the Building Regulations in England and Wales recommends that certificated products and third-party accredited installers of all fire safety products should be used as a means of ensuring that products achieve the required level of performance. Building owners and regulators alike should follow this advice and follow the lead set by CFOA.

The PFPF's objective with this publication is to provide designers, regulators, building owners and occupiers with a simple reference document that provides basic guidance on the many forms of passive fire protection found in buildings. The trade associations that specialise in these materials and product sectors also offer their services, should you require further guidance.

Often, it is not realised how much the individual elements of construction contribute to the fire performance of the complete structure, nor how the structural performance is vital to a successful fire strategy. The PFPF hopes that the information provided will help all concerned to understand the ways in which these elements work together to ensure public safety ❑

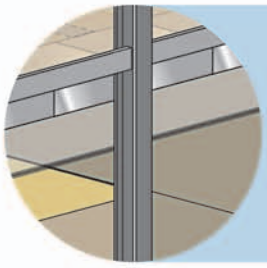
David Sugden is chairman of the Passive Fire Protection Federation

IMPORTANT ASPECTS OF PA



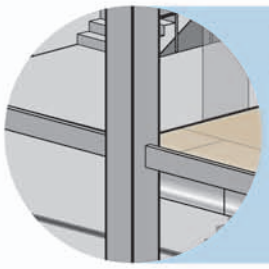
A **Fire-resistant intumescent coatings – structural steel**

See page 5



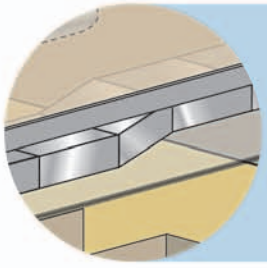
B **Fire-resistant sprayed coatings – structural steel**

See page 5



C **Fire-resistant boards – structural steel**

See page 6

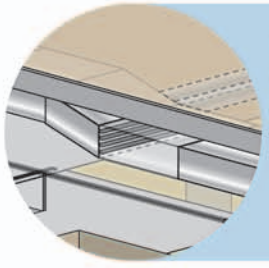


D **Fire-rated/smoke control extract ductwork**

See page 8

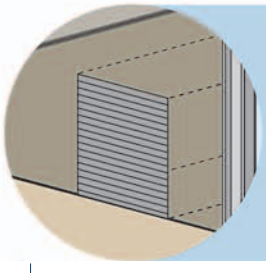
E **Fire-stopping penetration seals**

See page 10



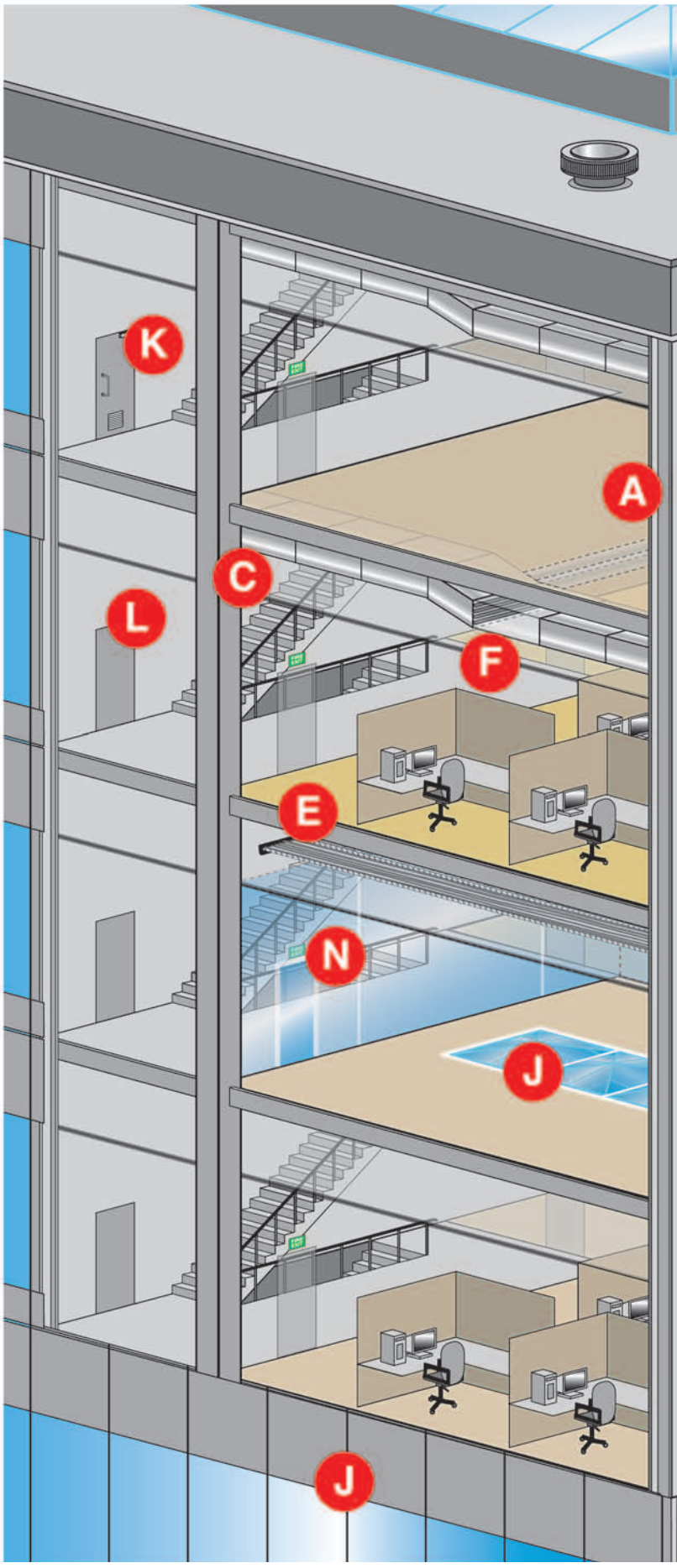
F **Fire-rated dampers/ smoke control**

See page 9

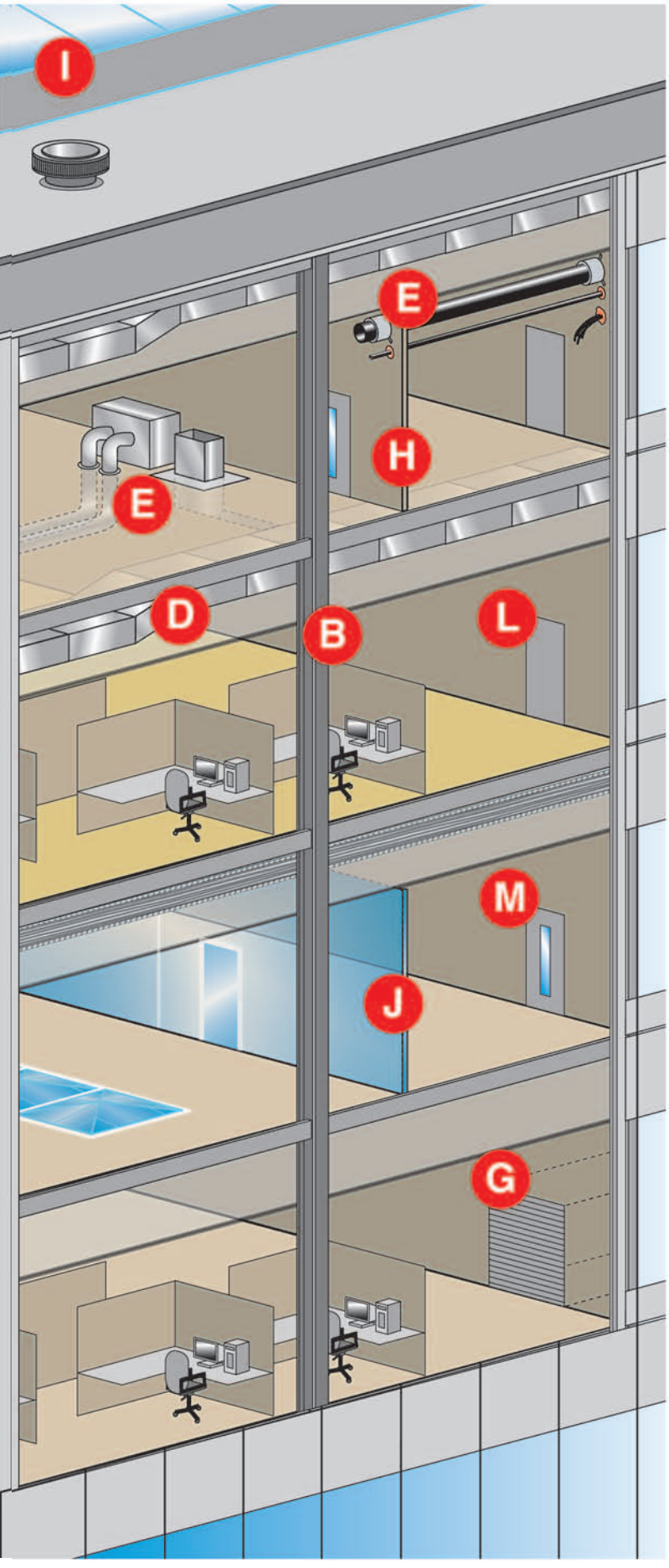


G **Fire-rated industrial doors/ shutters**

See page 15

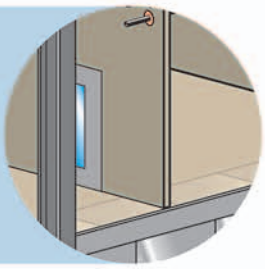


SSIVE FIRE PROTECTION



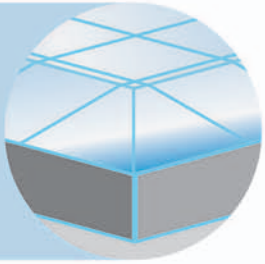
H **Fire-rated partitions**

See page 6



I **Fire-resistant roof glazing**

See page 12



J **Fire resistant glass walls/ floors/facades**

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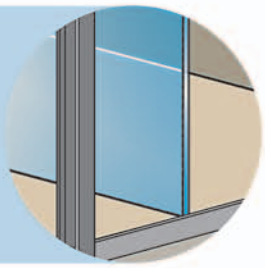

K **Fire-resistant building hardware**

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L **Fire-resistant and smoke control doors**

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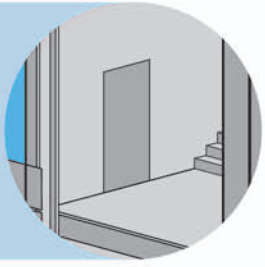

M **Fire-resistant glazed doors**

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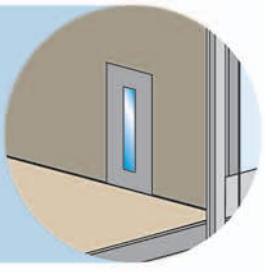
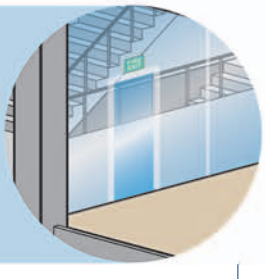


N **Fire-resistant glass doors**

See page 15



the Burning Question

How can I calculate intumescent loadings for cellular beams ?

the Answer

Leigh's Paints **Firetex Product Calculator™**

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FIRETEX® Product Calculator™

PRODUCT RANGE

Proprietary structural steel fire protection systems include boards, casings, intumescents (thin and thick film) and cementitious coatings (hand and spray applied).

Fire protection systems for structural steel can provide up to 4 hours' fire protection against a cellulosic fire. Products are also available to protect structural steel against hydrocarbon pool and jet fires.

AREAS OF APPLICATION

- universal columns, beams (plain and perforated) and joists
- structural and rolled tees
- angles
- channels
- hollow sections (square, rectangular and circular)

The above sections may or may not support concrete or metal decking.

Plate steel in the form of bulkheads or vessel supports can also be protected using structural steel fire protection systems, as can vessels containing flammable liquids and gases.

THE NO. 1 GOLDEN RULE

Structural steel fire protection systems must be specified in strict compliance with the manufacturer's data sheets and installed by competent contractors in compliance with the manufacturer's application instructions.

FACTORS THAT CAN AFFECT PERFORMANCE

- type of steel and its failure temperature under the designed load for the anticipated type of fire
- steel size, orientation and shape
- location of steel (interior, semi-exposed or fully exposed to the elements)
- competence of the installer

WHAT TO LOOK FOR ON SITE

- official evidence from a competent authority that demonstrates structural steel fire-resistance performance, for example a copy of the fire test assessment
- evidence of installer competence (for example, FIRAS third-party certification) and operating practices, such as adherence to the Association for Specialist Fire Protection (ASFP) Code of Practice
- installer records/drawings detailing the location and type of products used, their thicknesses and the date, time and weather conditions during installation

MAINTENANCE

- visual inspection is required and this may prove difficult if the structural steel fire protection system has been clad
- any damage to the structural steel fire protection should be made good using the same product as that originally installed, as indicated in the manufacturer's instructions for repair

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- competent contractors should repair structural steel fire protection systems

ALWAYS . . .

✔ install structural steel fire protection systems according to the guidance provided in the manufacturer's application instructions

✔ use a competent installer and preferably one that is a member of a third-party accreditation scheme and a trade association, such as FIRAS and the ASFP

✔ consult a competent fire engineer for advice where no fire test evidence or assessments are available due to the size or the complexity of the structural steel that requires fire protection

NEVER . . .

✘ specify or install a structural steel fire protection system that has no relevant and applicable evidence of performance

✘ 'mix and match' products from different manufacturers

✘ allow on-site modifications which are not approved

✘ use an installation contractor that cannot demonstrate the appropriate level of competence and experience

RELEVANT STANDARDS

BS 476-20: *Fire tests on building materials and structures. Methods of determination of the fire resistance of elements of construction (General principles)*

BS 476-21: *Fire tests on building materials and structures. Methods of determination of the fire resistance of loadbearing elements of construction*

BS EN 1365-3: 2000: *Fire resistance tests for loadbearing elements. Beams*

BS EN 1365-4: 1999: *Fire resistance tests for loadbearing elements. Columns*

DD ENV 13381-4: 2002: *Test methods for ddetermining the contribution to the fire-resistance of structutal members. Applied protection to steel members*

For further information contact: ASFP (see p.26)

FIRE-RESISTING DRYWALL SYSTEMS

PRODUCT RANGE

A variety of plasterboard-based systems for use in vertical, horizontal and inclined applications, either as integrity and insulation fire resistance performance, or as loadbearing capacity, integrity and insulation.

Products are available for standard test times of 30, 60, 90, 120, 180 and 240 minutes when tested to BS 476 and BS EN 1364.

AREAS OF APPLICATION

- partitions and compartment walls
- floors and ceilings
- escape and access corridors
- stairways, lobbies and enclosures to protected shafts
- structural steel protection

THE NO. 1 GOLDEN RULE

Fire-resisting drywall systems can only be relied upon to function satisfactorily when constructed fully in accordance with manufacturers' instructions and using specified components. All the essential components of such a system must be compatible under fire conditions, and evidence to show compatibility should be based on documented test evidence.

FACTORS THAT CAN AFFECT PERFORMANCE

- plasterboard type
- number of layers of board used
- fixings used and fixing centres
- correct detailing of services penetrations
- finishing and sealing of construction joints
- the quality of installation

WHAT TO LOOK FOR ON SITE

- official evidence from a competent authority that demonstrates fire-resistant drywall system performance
- evidence of installer competence (for example, FIRAS third-party certification)
- a clear indication on all products of product name and manufacturer

MAINTENANCE

- only visual inspection is required
- carry out any necessary refurbishments according to the original installed system approved specification, following the manufacturers' operating and maintenance manual


ASFP

- if the original system specification cannot be definitively established, then replace all components with a new approved complete fire-resisting plasterboard system

ALWAYS . . .

✔ install the fire-resisting plasterboard system according to configuration, design and materials as tested or assessed

✔ ensure all openings and penetrations are correctly built in accordance with manufacturers' guidelines and ensure following trades are aware that systems should not be altered structurally in case this affects fire performance

✔ ensure that any manufacturer's installation instructions and guidance are followed

NEVER . . .

✘ approve and use a drywall system that does not have relevant and applicable evidence of performance

✘ allow the mixing and matching of components between different fire-resisting drywall systems

RELEVANT STANDARDS

BS 8212: 1995: *Code of practice for dry lining and partitioning using gypsum plasterboard*

For further information contact: AIS and GPDA (see p.26)

FIRE-RESISTANT DUCTWORK

PRODUCT RANGE

Fire-resisting ventilation or extraction steel ductwork is designed using proprietary materials and fixing techniques to contain fire and the products of combustion in a manner that does not allow passage to other parts of the building from the compartment of origin for a stipulated time period. Fire-resistant ductwork can also be constructed without a steel lining duct using self-supporting board and casing systems made from calcium silicate and cement based products.

AREAS OF APPLICATION

- smoke extract systems
- dual ventilation/smoke systems
- pressurisation systems
- car park extract systems
- kitchen extract systems

THE NO. 1 GOLDEN RULE

Fire-resistant ductwork systems must be fully tested or independently assessed to the requirements of BS 476-24 (or BS EN 1366-1). This must include the method of support and the type of seal used around the ducts where it penetrates a wall or floor. Ductwork should be tested for both fire outside and fire inside both in horizontal and vertical orientations, unless the end use conditions are to be restricted.

FACTORS THAT CAN AFFECT PERFORMANCE

- **fire-resistant steel ductwork:** steel ductwork systems for air movements around buildings are generally constructed to the Heating and Ventilation Contractors' Association (HVCA) guide DW/144 (formerly 142), *Specification for Sheet Metal Ductwork,* which covers a wide range of construction standards for sheet metal ductwork for use in low, medium or high pressure applications. It also covers various methods of jointing, stiffening and support for ductwork. Supplementary insulation may be required but is often applied to the duct during its fabrication in the factory, or it may be applied on site. A satisfactorily constructed and supported steel duct is one proven by test and/or assessment to BS 476-24: 1987 (or BS EN 1366-1). It is imperative that the fire-resistant duct that is installed on site conforms to the requirements of its supporting fire test and assessment documents
- **self-supporting board and casing systems:** board systems for self-supporting fire-resisting enclosures may have different fixing systems for different ratings and the correct one must be specified. In particular, it should be ensured that all fixings/hangers/stiffeners are of the correct grade of material and that they are installed at the appropriate centres. Adhesives will also be required and the type may vary according to the pressure design of the enclosure. A satisfactorily constructed self-supporting ductwork system must be tested and/or assessed to BS 476-24: 1987 (or BS EN 1366-1)

WHAT TO LOOK FOR ON SITE

- official evidence that demonstrates fire-resistance performance, for example a copy of the fire test assessment from a competent authority
- evidence of installer competence and good operating practices, for example through FIRAS third-party certification

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- installer records/drawings detailing the location and type of products used, their thicknesses and the date, time and weather conditions during installation

MAINTENANCE

- visual inspection is required and this may prove difficult if the fire-resistant ductwork system has been hidden behind partitions or suspended ceilings
- any damage to the fire-resistant ductwork system should be made good using the same product as that originally installed, as indicated in the manufacturer's instructions for repair
- competent contractors should repair structural steel fire protection systems

ALWAYS . . .

✔ install fire-resistant ductwork systems that have been fully tested or independently assessed to the requirements of BS 476-24 (or BS EN 1366-1)

✔ use a competent installer and preferably one that is a member of a third-party accreditation scheme, such as FIRAS

✔ consult a competent fire engineer for advice where no fire test evidence or assessments are available due to the size or the complexity of the ductwork system that requires fire protection

NEVER . . .

✘ specify or install a fire-resistant ductwork system that has no relevant and applicable evidence of performance

✘ 'mix and match' products from different manufacturers

✘ allow on-site modifications which are not approved

✘ use an installation contractor that cannot demonstrate the appropriate level of competence and experience

RELEVANT STANDARDS

BS 476-24: 1987, ISO 6944: 1985: *Fire tests on building materials and structures. Method for determination of the fire resistance of ventilation ducts*

BS EN 1366-1: 1999: *Fire resistance tests for service installations. Fire resistance tests for service installations. Ducts*

Fire Rated And Smoke Outlet Ductwork – the 'Blue Book' and *Ensuring Best Practice for Passive Fire Protection in Buildings,* both published by the Association for Specialist Fire Protection

For further information contact: ASFP, IFSA (see p.26)

FIRE-RESISTING DAMPERS

PRODUCT RANGE

- curtain dampers
- multi-blade dampers
- intumescent, typically either louvred or honeycomb
- single-blade circular dampers

AREAS OF APPLICATION

To maintain the fire resistance of walls, cavity barriers and floors that are penetrated by heating, ventilation and air-conditioning (HVAC) ducting.

THE NO.1 GOLDEN RULE

The damper should be installed within the ductwork, coincident with the wall or floor that is being penetrated.

FACTORS THAT CAN AFFECT PERFORMANCE

- **fusible links:** rated at typically 70ºC, these are normally part of a spring-loaded operating mechanism that will close a standard fire damper when the temperature of the gases passing over them exceeds the activation temperature of the fusible link
- **motorised (typically multi-blade dampers):** these are connected to a smoke detector system and normally backed up by the fusible link system. They will operate quickly once fire is detected or reaches the damper, provided they have been installed correctly to the manufacturer's specification
- **intumescent dampers:** these will only begin to activate when the temperature of the gases passing through them exceeds the activation temperature of the intumscent material used in their construction but are not affected by air stream temperature stratification. Generally, intumescent dampers can be expected to provide insulation as well as integrity and, having no moving parts, are extremely reliable
- **combined intumescent and motorised dampers:** these provide the same reliability as standard intumescent dampers with regard to fire integrity but, in addition, will operate immediately smoke is detected when interfaced with a smoke sensing system

WHAT TO LOOK FOR ON SITE

- most tests are carried out with dampers installed in masonry or concrete, thus there is limited data on installing dampers in dry-lining partitions. If there is any doubt, seek expert guidance
- only tested installation methods should be specified and used, or the fire resistance of the compartment boundary may be compromised
- poor installation practices will significantly reduce the fire resistance of the compartment boundary penetrated by ducts. Even if the damper closes, a premature loss of integrity may occur between the duct and the wall or floor
- specific problems occur when space is left above the partition to allow for services to be installed later. An inappropriate system may be installed to fill the space after services are fitted. This may affect the dampers' ability to function in a fire and may reduce the overall fire resistance of the compartment

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ALWAYS . . .

- ✔ install dampers in accordance with the manufacturer's instructions
- ✔ provide access to each mechanical damper, so their ability to close can be checked
- ✔ provide sufficient access to allow for the inspection of each intumescent damper

NEVER . . .

- ✘ allow dampers installed in floors to support the weight of the ducts above, since this may prevent the damper from closing
- ✘ install dampers away from the wall through which the ductwork passes

RELEVANT STANDARDS

Test standards are BS EN 1366-1: *Fire resistance tests for service installations. Ducts* and ISO 10294-1: *Fire resistance tests. Fire dampers for air distribution systems. Test method.* Historically dampers have been tested to BS 476: Part 20: *Fire tests on building materials and structures. Methods for determination of the fire resistance of elements of construction (General principles)* using the test method for uninsulated doors. A new fire test standard for intumescent fire dampers, ISO 10294-5, is expected to be published by the end of 2004.

HVCA DW/144, *Specification for Sheet Metal Ductwork,* which provides guidance on HVAC steel ducting and references fire dampers, tends to be an industry standard.

BS 5588-9: 2000: *Fire precautions in the design, construction and use of buildings. Code of practice for ventilation and air-conditioning ductwork* provides general recommendations on the fire protection of HVAC systems. Dampers are one acceptable protection method.

Currently, no European product standards exist for dampers, so they currently cannot be CE marked.

For further information contact: ASFP, BRE, IFSA and Warrington Fire (see p.26)

FIRE STOPPING AND PENETRATION SE

PRODUCT RANGE

Proprietary penetration seal/service opening fire protection systems include boards, batts, mortars, sealants, collars, wraps, pillows, curtains and linear joints.

Penetration seal systems are available for up to 4 hours integrity and, in some cases, insulation against a cellulosic fire, in accordance with the requirements of BS 476 -20. Products are also available to protect against hydrocarbon fires.

AREAS OF APPLICATION

- multi-service openings through walls and floors
- blank service openings through walls and floors
- combustible pipes (plastics)
- cavity barriers
- construction joints
- any imperfection of fit to a fire-rated building element

THE NO. 1 GOLDEN RULE

Penetration seal systems must be specified in strict compliance with the manufacturer's data sheets and tested/assessed for that purpose. Seals should be used as a tested system and installed by competent contractors, in compliance with the manufacturer's application instructions.

FACTORS THAT CAN AFFECT PERFORMANCE

- size of the opening required to be fire stopped
- quantity, size and type of services passing through the opening
- correct system being used
- location of the opening and orientation
- competence of the installer
- requirements of the client

WHAT TO LOOK FOR ON SITE

- official evidence from a competent authority that demonstrates a product has been designed for the proposed use, for example a copy of the fire test assessment
- evidence of installer competence through membership of a third-party certification scheme, such as FIRAS, and the use of good operating practices – for example, through adherence to the Association for Specialist Fire Protection (ASFP) Code of Practice
- installer records/drawings detailing the location and type of products used, fire performance and the date of installation
- position of the penetration seal and surrounding usage areas, for example, a seal in a loadbearing area must be adequately supported

EALS

MAINTENANCE

- inspection of the penetration seal should be made periodically to ensure services have not been removed/installed, leaving holes in the system
- any damage to the penetration seal system should be made good using the same product as that originally installed
- competent contractors should repair penetration seal systems

ALWAYS . . .

- ✔ install penetration seal systems according to the guidance provided in the manufacturer's application instructions
- ✔ use penetration seal systems that are tested/assessed for the purpose of use, from manufacturers that are accredited to the ASFP
- ✔ use a competent installer and preferably one that is a member of a third-party accreditation scheme and a relevant trade association
- ✔ consult a competent fire engineer for advice, where no fire test evidence or assessments are available due to the size or the complexity of the opening to be sealed

NEVER . . .

- ✘ specify or install a penetration seal system that has no relevant and applicable evidence of performance
- ✘ 'mix and match' products from different manufacturers
- ✘ use an installation contractor that cannot demonstrate the appropriate level of competence and experience
- ✘ apply a coating to the penetration seal without manufacturers' approval

RELEVANT STANDARDS

BS 476-20: *Fire tests on building materials and structures. Methods of determination of the fire resistance of elements of construction (General principles)*

BS EN 1366-3: *Fire resistance tests for service installations. Penetration seals*

BS EN 1366-4: *Fire resistance tests for service installations. Linear joint seals*

For further information, contact: ASFP, IFSA (see p.26)

FIRE-RESISTING GLASS

PRODUCT RANGE

A variety of glazed systems for use in vertical, horizontal and inclined applications, either as (i) integrity only, or (ii) integrity and insulation fire resistance performance.

Products are available for standard test times of 30, 60, 90, 120 and even 180 minutes when tested to the ISO 834 curve, as well as special formulations to resist the higher intensity petrochemical fire test curve.

AREAS OF APPLICATION

- internal and external fire doors as vision panels or all-glass doors
- partitions and compartment walls
- roofs, floors and ceilings
- façade glazing
- escape and access corridors
- stairways, lobbies and enclosures to protected shafts

THE NO. 1 GOLDEN RULE

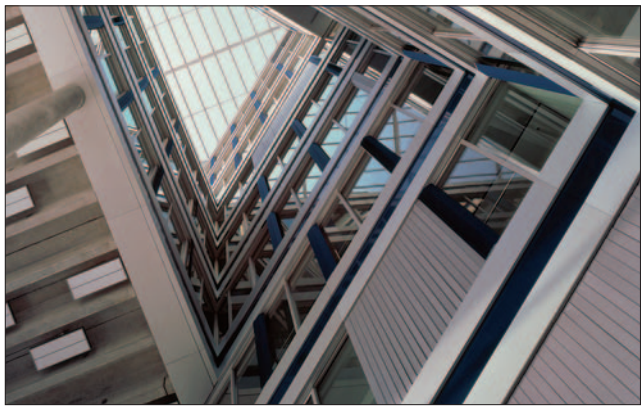
Fire-resisting glass must only be used as part of a fire-resisting glazed system. This means the glass together with the seals, beads, fixings and frame. A fire-resistant glazed sysem must reference documented test evidence.

FACTORS THAT CAN AFFECT PERFORMANCE

- glass type
- maximum glass pane size (by height and width, not just area)
- glass pane aspect ratio (ie height to width)
- overall screen size and fenestration layout within a screen
- glazed system materials (ie frame material, glazing sealant, and fixings)
- framing system design for screens and façades
- type of door, materials and construction
- fabrication of the glazing aperture in doors (ie strictly according to the manufacturer's instructions)
- type and profile of glazing beads
- type and mode of fixing for the beads
- for timber beads, the retaining fixings should be angled to ensure that the glass is held in place should the beads burn away
- the amount of edge cover when glazed, especially for modified soda lime toughened fire-resisting glass types typically 10mm maximum for this type of glass)
- the quality of installation

WHAT TO LOOK FOR ON SITE

- official evidence that demonstrates glazed system fire-resistance performance (from a competent authority)
- evidence of installer competence (for example FIRAS third-party certification)
- a permanent stamp on the glass which indicates, at least, the product name and manufacturer, should be entirely visible and legible after glazing



- where applicable according to BS 6206, marking of the applicable impact performance class (ie either class A, B, or C)

MAINTENANCE

- only visual inspection is required
- carry out any necessary refurbishments according to the original installed glazed system approved specification
- where components cannot be identified then replace with a complete new approved glazed system

ALWAYS . . .

✔ install the fire-resisting glazed system according to configuration, design and materials as tested or assessed

✔ ensure that any manufacturer's installation instructions and guidance are followed

NEVER . . .

✘ use a glazed system that does not have relevant and applicable evidence of performance

✘ substitute one glass for another

✘ assume that standard impact safety toughened or safety/security laminated glass is fire rated

✘ use standard, non-fire rated glazing seals

✘ allow the mixing and matching of components between different fire-resisting glazed systems

✘ allow on-site modifications

✘ allow modifications to the glass after installation

✘ ignore glazing instructions on modified toughened soda lime concerning edge cover

RELEVANT STANDARDS

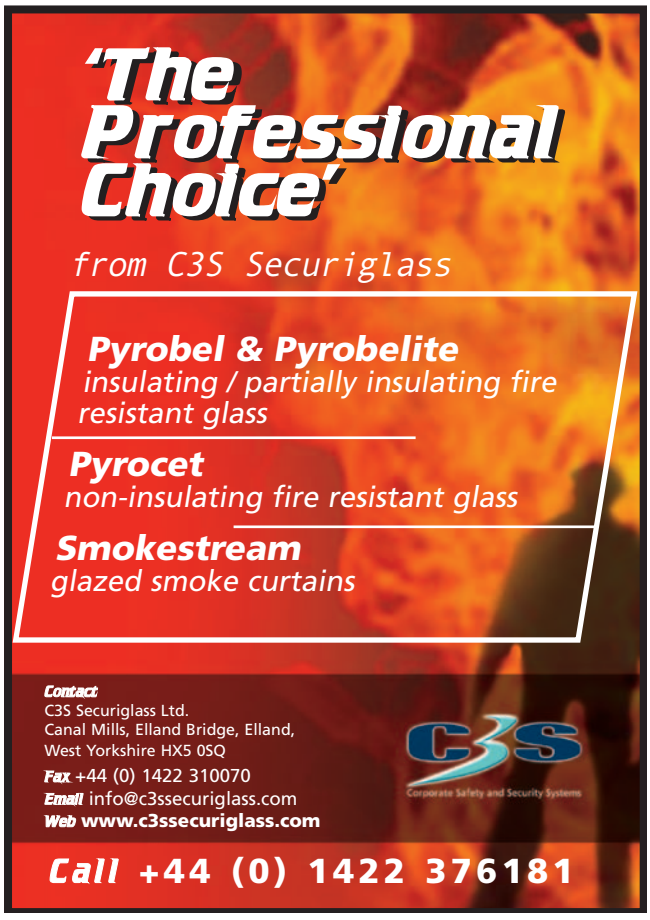
BS 476-22:1987: *Methods for the determination of the fire resistance of non-loadbearing elements of construction*

BS EN 1364-1:1999: *Fire resistance tests for non-loadbearing elements. Walls*

BS EN 13501-2:2003 *Fire classification of construction products and building elements*

BS 6262-4:1994: *Code of practice for glazing for buildings. Safety related to human impact*

For further information, contact: GGF, IFSA (see p.26)



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DOORS AND DOORSETS

PRODUCT RANGE

A variety of fire doors are available from UK manufacturers in timber, metal and composite materials. These range from simple, single-swing, single-leaf pedestrian doors, which are used extensively in houses and flats, through to large power-operated doors, used to protect industrial buildings.

These products are designed to meet standard times for fire resistance, as proved during a fire test. The most common time periods are 30, 60, 90 and 120 minutes, although some products are available that can provide 180 and 240 minute periods of fire resistance.

Fire doors come in an extensive choice of sizes, finishes and configurations, and are available either with or without glazed apertures.

AREAS OF APPLICATION

In the UK, the use of fire doors is generally controlled by the Building Regulations. These Regulations mainly cover life safety issues. It is not unusual for fire doors to be required by insurance providers or building users, either in additional locations or with fire resistance periods in excess of those recommended by Building Regulations for specific property-related purposes.

General areas of application are:

- internal doors within dwellings over three storeys
- internal doors within flats
- entrance doors to flats
- doors to protected shafts
- doors providing compartmentation in buildings used by the public, such as offices, hospitals, schools and hotels
- bedroom doors to residential accommodation
- protection of escape routes in public, commercial and industrial buildings, including: shutters for compartmentation in retail, commercial and industrial premises; shutters for atrium protection; escalator protection; and lift landing doors

THE NO. 1 GOLDEN RULE

The installation of fire doors is critical to their ultimate performance. Fire doors should either be supplied as a finished doorset or as individual components that are clearly identified as relating to a finished assembly. The resulting assembly should be installed by a competent installer; preferably certificated under a recognised third-party installer scheme.

FACTORS THAT CAN AFFECT PERFORMANCE

It is only practical for a manufacturer to fire test a limited number of door assembly variations. Ideally, the scope of the resulting approval will be detailed in the manufacturer's third-party certification, or will be incorporated in an assessment issued by an organisation accredited by the United Kingdom Accreditation Service. This will show the limitations within which individual fire doors may be used. These limitations will encompass:

- overall dimensions
- configurations (pairs, singles, single-swing, double-swing, etc)
- style of door (raised and fielded panel, flush face, etc)
- acceptable finishes and appearance
- fitting and type of acceptable hardware, including closers
- acceptability of glazed openings
- dimensions of glazed openings
- types of acceptable glass
- type of supporting structure
- methods of fixing frames into openings

WHAT TO LOOK FOR ON SITE

- evidence of correct use of components
- correct fitting of components
- correct fitting of fire and smoke seals
- correct gaps between door leaf and frame
- correct sealing between frame and wall structure
- correct brand of glass, size of glass and glazing method to achieve the designated fire performance for the assembly
- CE-marked hinges
- evidence that other items of hardware fitted will not compromise the performance of the doorset in the event of fire

If possible, compare what is provided with the details of the certification and assessment or, for complete assurance, the fire door labels of a recognised third-party product certification scheme and a third-party installation certification scheme.

MAINTENANCE

The best way to ensure the performance of a fire door during its lifetime is to carry out regular checks and have a regular maintenance schedule, or to take out a maintenance contract with the original supplier and/or installer.

Fire doors are subject to numerous outside influences that can result in problems. For instance:

- damage to the face and edges of the door leaf. This will allow fire to penetrate through the door at an earlier stage
- wear on hinges, sliding or pivot points. Worn hinges can result in gaps wider than the permitted range of the seals, and failure to close due to binding
- damage to fire seals and/or smoke seals. This causes the door to malfunction. This must be pre-empted by a routine maintenance programme
- wear and weakening of closers. Closers must be checked regularly to ensure that the leaf closes fully into its frame and engages with any latch that is fitted
- damage to any glass fitted. Damaged glass must not be replaced with a non-approved type

In general, fire-resisting metal doorsets do not need to be fitted with intumescent seals to achieve the fire performance.

ALWAYS . . .

- ✔ select third-party certificated fire doors, whenever possible
- ✔ use third-party certificated fire door installers, whenever possible
- ✔ specify complete doorsets, where possible. Where it is not possible to use doorsets, ensure that the components, their suitability and installation details are traceable and that relevant test or assessment data from an approved authority is provided and the installation matches these details

NEVER . . .

- ✘ accept any on-site alteration that has not been approved by the door manufacturer
- ✘ use essential components or hardware that cannot be supported by test or assessment data provided by the door manufacturer
- ✘ allow a door to be modified before installation without confirmation from the door manufacturer

RELEVANT STANDARDS

BS 476-22 1987: *Fire tests on building materials and structures. Methods for determination of fire resistance of non-loadbearing elements of construction*

BS EN 1634-1: 2000 *Fire resistance tests for door and shutter assemblies. Fire doors and shutters*

For further information contact ASDMA, BWF, DHF and GAI (see p.26)

BUILDING HARDWARE – IRONMONGERY

PRODUCT RANGE

A wide range of building hardware is available to suit all fire protection applications. Although building hardware, in itself, cannot provide fire protection, it is the critical link between the fire-resisting door and the surrounding frame. Without the link neither the door, nor the frame, can perform the intended function of closing the hole in the wall. Products are classified as essential or non-essential fittings, according to their function within the door assembly.

All products which have been included in successful fire resistance tests to either BS 476-22 or BS EN 1634-1 are classified as having no detrimental effect on the fire-resistance performance of the door assembly and will be credited for the time period for which that door assembly has been tested.

Although CE marking is not a regulatory requirement of the Building Regulations in England and Wales at the present time, when permitted within the product standards it should be requested wherever possible, to ensure that products meet the requirements of the European Construction Product Directive. In addition to CE marking, selected products may be included in third-party certification schemes, such as CERTIFIRE and BM TRADA Q-MARK.

AREAS OF APPLICATION

Building hardware may be fitted to timber and metal door assemblies. Care should be taken to ensure that the chosen product carries the appropriate successful test report. The requirements for unlatched timber doors vary from those for metal doors.

Fittings should be carefully selected in accordance with the following classification:

- **light duty:** doors in housing or living areas in other buildings where there is low frequency of use by those who exercise care and where there is a small chance of misuse – for example, domestic, offices and areas where there is no access by the public
- **medium duty:** doors in housing or other living areas, offices and other commercial buildings where there is a medium frequency of use by those with some incentive to exercise care but where there is some chance of misuse – for example, domestic, offices and areas where there may be limited access by the public
- **heavy duty:** doors in buildings where there is a high frequency of use by public and others with little incentive to exercise care and where there is a chance of misuse – for example, public buildings, hospitals, schools. etc
- **severe duty:** doors which are subject to frequent violent use – for example, barracks, sports halls, hospitals, schools, etc

THE NO. 1 GOLDEN RULE

The selection of building hardware should not be ruled by cost alone. For most of its life, building hardware is required to perform the simple function of allowing a comfortable passage through an aperture in a wall or partition. But it should also perform a key role in ensuring the reliable closure of the hole in the event of a fire. Low cost items invariably have a shorter life than higher quality products, which usually require less maintenance and retain their appearance for longer periods, in addition to providing a more reliable performance.

FACTORS THAT CAN AFFECT PERFORMANCE

Building hardware can currently only be tested in full-scale door assemblies, hence a limited number of combinations are submitted for test. These tests cover the key items required on fire-resisting door assemblies and are related primarily to essential fittings, as described in BS 8214: 1990. The test report may then be used to provide an assessment or extended application for specific purposes.

The selection of building hardware is vital to the performance of fire-resisting doors and should be selected and fitted with care, in accordance with the manufacturer's instructions. Guidance on the selection of suitable components can be found in *Code of Practice – Hardware for Timber Fire and Escape Doors,* published by the Builders Hardware Industry Federation.

WHAT TO LOOK FOR ON SITE

- evidence of correct choice and use of components
- correct fitting of components
- correct alignment of door and frame to ensure free movement
- evidence of suitability in respect of fire test evidence
- where appropriate, all components are in accordance with the recommendations of the respective Approved Documents supporting the current Building Regulations in England and Wales
- all components are certificated to the appropriate product standard, with supporting documentation, including CE marking or third-party certification
- any mortises are prepared to the minimum dimensions
- all combinations of components are compatible

MAINTENANCE

Building hardware requires regular maintenance to ensure the correct and efficient operation of all fire-resisting doors. Regular inspections are essential to ensure that any defective components are replaced with the minimum of delay:

- worn or loose-fitting hinges will allow a door to drop, resulting in the door binding in the frame or dragging on the floor. This will also prevent the door from closing correctly
- worn latch bolts will obstruct the door from attaining the fully closed position
- faulty door-closing devices will no longer close the door correctly
- any intumescent or smoke seals should be inspected for damage and replaced, where necessary

ALWAYS . . .

✔ select products certificated to the appropriate British Standard and which are CE marked, if appropriate

✔ ensure that the components are fitted correctly

✔ insist on validation of the product claims

NEVER . . .

✘ accept low grade alternatives on account of price

RELEVANT STANDARDS

Harmonised European standards for which products should carry a CE mark include:

BS EN 179: 1998: *Building hardware. Emergency exit devices operated by a lever handle or push pad. Requirements and test methods*

BS EN 1125: 1997: *Building hardware. Panic exit devices operated by a horizontal bar. Requirements and test methods*

BS EN 1154: 1997: *Building hardware. Controlled door closing devices. Requirements and test methods*

BS EN 1155: 1997: B*uilding hardware. Electrically powered hold-open devices for swing doors. Requirements and test methods*

BS EN 1158: 1997: *Building hardware. Door coordinator devices. Requirements and test methods*

BS EN 1935: 2002: *Building hardware. Single-axis hinges. Requirements and test methods*

BS EN 12209: 2003: *Building hardware. Locks and latches. Mechanically operated locks, latches and locking plates. Requirements and test methods*

British Standards and guidance that influence the selection of door hardware include:

BS 476-22 1987: *Fire tests on building materials and structures. Methods for determination of fire resistance of non-loadbearing elements of construction*

BS EN 1634-1: 2000 *Fire resistance tests for door and shutter assemblies. Fire doors and shutters*

BS 8214: 1990: *Code of practice for fire door assemblies with non-metallic leaves*

BS 8300: 2001: *Design of buildings and their approaches to meet the needs of disabled people – Code of practice*

Building Regulations 1991 Part B – *Fire safety*

Building Regulations 1991 Part M – *Access to and use of buildings*

For further information contact GAI and DHF (see p.26)

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EMERGENCY LIGHTING

PRODUCT RANGE

- self-contained dedicated luminaires
- emergency variant of normal lighting
- central power systems

AREAS OF APPLICATION

The aim of emergency lighting is to enable people to exit quickly, from a building in the event of an emergency involving failure of the normal lighting supply. This is done by providing at least 1 lux illumination, to enable the occupants to use the most direct path and to avoid obstacles and, where necessary, by installing illuminated safety signs.

In addition, safety equipment, such as fire alarm call points and extinguishers, must be adequately illuminated so they can be located and used if needed. Specific areas of high risk and any relevant control rooms need a higher level of illumination to enable the processes in these areas to be shut down safely in an emergency.

Systems cater for an appropriate duration, normally 3 hours for premises that are not to be evacuated immediately following a supply failure, such as hotels or hospitals. Systems used in premises that will be evacuated immediately may only require 1 hour of duration, but most operators still use the standard 3-hour units

Some applications, such as theatres, where the normal lighting may be dimmed, require the lamp to be illuminated at all times that the building is occupied. This is called maintained operation.

THE NO.1 GOLDEN RULE

Ensure that adequate power is supplied to all systems. In battery operated systems, ensure battery condition is maintained correctly. In central power systems, ensure component and load compatibility.

FACTORS THAT CAN AFFECT PERFORMANCE

- battery condition
- control of charge conditions
- design of circuits and output waveform
- use of fire protected cabling
- siting of central battery system
- fittings to BS 5266-1 and ICEL 1004
- reflectance rating of décor system
- central power systems require the input of specialist engineers to ensure component and load compatibility

MAINTENANCE

When initially commissioned, the full operating regime of the system should be checked. BS 5266 provides a list of the items that should be covered at this stage:

- monthly functional checks to ensure that the luminaires operate
- annual full-rated battery discharge test
- regular physical inspection for instances of damage to the equipment

- monitor changes in layout of the building that would result in the emergency illumination becoming less effective
- cleaning the diffusers and changing any lamps that show excessive tube-end blackening

Any faults identified by routine testing must be recorded in the test log and rectified. While the system is known to be performing unsatisfactorily, the risks should be evaluated and additional precautions taken if necessary.

Battery replacement should only normally be undertaken if the luminaires fail to provide their rated discharge duration but central system batteries should be inspected in accordance with the manufacturer's instructions.

RELEVANT STANDARDS

BS 5266-1: 1999: *Emergency lighting. Code of practice for the emergency lighting of premises other than cinemas and certain other specified premises used for entertainment*

BS EN 1838/BS 5266-7: 1999: *Lighting applications. Emergency lighting*

BS EN 60598-2-22: *Luminaires. Particular requirements. Luminaires for emergency lighting*

BS EN 60924/5: *Product standard for luminaire circuits*

BS EN 50171: *Central power supply systems*

pr EN 50172: *Emergency lighting application standard*

ICEL 1004: *The modification of normal luminaires for emergency use*

For further information contact ICEL (see p.26)

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Cafco

Peace of mind

Voluntary third-party certification gives confidence to the manufacturer, customer and enforcement authorities that the goods supplied and installed are fit for purpose, argues the Passive Fire Protection Federation

WHY CHOOSE a passive fire protection product – such as a fire door – from a manufacturer whose products are certified by a third party, rather than from a manufacturer that is not third-party approved? And why specify that a passive fire protection product be installed by a certified installer?

In order to answer these questions, one must consider the requirements placed upon such products. Currently in the UK, passive fire protection products are obliged to be tested or assessed to a range of British or European fire test standards. The cost and complexity of the test depends on the product and its end-use application. If that is all that is required, why bother with certification?

The missing link

For a product to have its fire performance evaluated, the manufacturer supplies evidence of fire performance to the certification body for evaluation. For the fire test part of this evidence, the manufacturer supplies the test laboratory with a prototype specimen. The laboratory does the test and reports the results.

The problem with this approach is that there is no link between what the manufacturer produces and sells to his customers and what the laboratory tested. The laboratory has no role in the selection of the test specimen. It is not unknown for 'enhanced' test specimens to be submitted to a laboratory.

Contrast that situation with a product that is certificated by an independent third party with accreditation from the United Kingdom Accreditation Service (UKAS), and that is registered into the appropriate scheme. In these schemes, there are a number of obligations placed upon the manufacturer to ensure the quality of the product:

- the manufacturer must have his quality management system audited against a set of predefined requirements (generically termed factory production control (FPC)). Some schemes additionally mandate the use of ISO 9000
- products for test are selected by the certification body and not the manufacturer. Field of application reports, engineering assessments, directly relevant fire test evidence and other technical reports are verified for accuracy and always related back to the current production
- products in a scheme are assessed against the scheme technical requirements. Some schemes may require additions to those of the basic fire test performance requirements and may consider other properties, such as fitness for purpose and durability
- all the products within the range can be covered by the certification, which means that further evaluation by a laboratory is not needed
- in most schemes, the products have to be audit tested. That is, products are selected for retesting, either after a period of time or after production of a given number of units. Audit testing is very onerous on the manufacturer but is a powerful guarantee of quality and fitness for purpose
- all schemes require, under the requirements of EN 45011: 1998: *General Requirements for bodies operating product certification schemes*, that each product should carry an identifying mark or label to demonstrate compliance with a third-party scheme

Voluntary third-party certification hence gives confidence to the manufacturer, customer and the enforcement

CFOA
The professional voice of the UK fire & rescue service

'CFOA strongly believes that the use of third-party certification schemes assists owners/occupiers to meet their legal fire safety obligations and in doing so raises levels of public safety by eliminating sub-standard products. CFOA's mission is 'To positively promote third-party certification schemes, through partnerships, as an essential element for all passive and active fire protection systems and products'

authorities that the goods supplied and installed are fit for purpose and will perform their intended function when called upon to do so.

Installation

A manufacturer can spend a lot of time and money developing a product, putting together the evidence of performance and getting it certificated but, if a product is installed by 'cowboys', this money is wasted. Over the last few years, a number of installer schemes have been developed. These schemes issue a certificate to the installer of passive fire protection to provide assurance they are competent. Elements of the schemes, which are developed in association with the relevant trade association, include:

- certification of the installer company, not the individual
- an assessment of competence of individual supervisors and operators
- a requirement that every installation undertaken by a certified installer must be subject to supervision by a supervisor/surveyor also trained under the scheme
- the provision of a Certificate of Conformity (Completion) for each job
- random inspection of installations by the certificating body
- routine auditing of the company's office-based activities
- a requirement to keep a register of installers and qualified personnel
- a requirement for installers to keep detailed records of all installations, including materials used, for traceability and to provide the ability to select installations for inspection

CE marking

It is often suggested that CE marking, required under the European Union Construction Product Directive (CPD), will make such schemes redundant. However, the fact is that CE marking is not aimed at the end-user; the philosophy of the CPD is to allow products to be placed on the European market without prejudice and that those products will be safe to use. The CPD thus sets the lowest common performance denominator for safe use:

- a product only has to achieve the lowest fire performance in order to be CE-marked and placed on the market

- in many cases, the evaluation of how well the product meets the relevant European standard is the same as existing provisions, that is, there is no link between what the manufacturer produces and what was used as the basis of preparing the evidence of performance via assessments or tests
- no passive fire protection product is subject to audit testing for fire
- CE marking does not cover installation

However, in all cases the performance of the product is indicated in the CE mark certificate and, as such, will allow the user to recognise the abilities (or inabilities) of the product to perform. Consequently, CE marking, while an improvement on the status quo, is no substitute for voluntary third-party certification schemes for product and installers.

Support for schemes

Approved Document B to the Building Regulations in England and Wales encourages the use of third-party certification, and the enforcement authorities (fire authorities, trading standards and building control) are also supportive of schemes to increase the quality of installed passive fire protection products.

Recently, a Memorandum of Understanding was signed by the Chief Fire Officers' Association (CFOA), the Institution of Fire Engineers, the Fire Protection Association and British Approvals for Fire Equipment, to promote third-party certification schemes as being an essential element for all passive and active fire protection systems and products.

In the proposed Regulatory Reform (Fire Safety) Order, due to become law next year in England and Wales, it is the duty of the 'responsible person' to ensure that any person employed to install fire safety equipment or systems, for example, is competent. One of the suggested ways of verifying competence is to use a contractor who is 'certificated under a suitably accredited third-party certification scheme'.

In conclusion, third-party certification schemes for products and installers give confidence to manufacturers, specifiers and end-users that installed passive fire protection is of high quality and will perform when called upon to do so. The schemes use a variety of tools to ensure the quality of the products and their installation. The enforcement authorities will increasingly look to such schemes to demonstrate the adequacy of installed passive fire protection ❑

PFPF member organisations

Passive Fire Protection Federation

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Architectural and Specialist Door Manufacturers' Association

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The Architectural and Specialist Door Manufacturers' Association represents the interests of manufacturers of custom-made specialist and performance timber doors, as well as allied industries whose products are used with or in doorset assemblies.

The Association aims to promote the safety benefits of independently tested and quality-assured doors that meet all fire resistance and other performance criteria. It also encourages the development of workable standards, incorporating the best of British Standards, technology and usage in European and international standards and regulations ❑

Association of Interior Specialists

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The Association of Interior Specialists (AIS) represents companies involved in the manufacture, supply and installation of all aspects of interior fit-outs and refurbishment.

AIS members operate in all sectors of business and industry, including retail premises, banks and building societies, hotel and leisure facilities, hospitals, schools, warehouses and airports. *Interiors Focus* magazine, which includes a categorised membership directory, is available free to specifiers and the Association's website, *www.ais-interiors.org.uk,* features an interactive directory search.

AIS provides technical and product advice and operates an independent specialist advisory service for problem installations ❑

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Formed in 1975, the Association for Specialist Fire Protection (ASFP) represents over 50 of the UK's major manufacturers and contractors, as well as regulatory and certification bodies, and overseas associates involved in structural steel fire protection and penetration sealing/fire stopping.

The ASFP is dedicated to the protection of life, property, the environment and our heritage from the ravages of fire. In order to achieve this aim, the Association promotes the continuous improvement of all aspects of the passive fire protection industry ❑

BM TRADA Certification

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BM TRADA Certification is a certification body accredited by the UK Accreditation Service. With a history dating back to 1934, the organisation has been actively involved in independent assessment and certification since the 1970s.

BM TRADA provides a wide range of third-party audit services, including product certification (against BS or EN standards, CE marking, technical approvals); personnel certification (competence of timber grading operatives and fire door installers); health and safety management (OHSAS 18001); and consumer protection schemes (DTI quality mark, HVCA, NFB, kitchen installers) ❑

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The British Woodworking Federation (BWF) is the trade association and public voice for the UK woodworking and joinery manufacturing industry. It currently has over 470 members drawn from the leading manufacturers, distributors and installers of timber doors, windows, conservatories, staircases and architectural joinery.

The Federation has developed the BWF-CERTIFIRE Fire Door and Doorset Scheme, in partnership with CERTIFIRE, the certification arm of Warrington Fire Group. The scheme is designed to ensure that all fire door assemblies are properly installed and maintained. It provides the most rigorous and comprehensive third-party certification of fire door assemblies and ensures that fire door identification is simple to understand and that individual products are fully traceable ❑

Door and Hardware Federation

42 Heath Street
Tamworth
Staffs B79 7JH

Tel: +44 (0)1827 52337
Fax: +44 (0)1827 310827

E-mail: info@dsma.org.uk

The Door and Hardware Federation was created in 2004 by the amalgamation of the Door and Shutter Manufacturers' Association (DSMA) and the Association of Building Hardware Manufacturers (ABHM). The Federation's main aim is to provide a broader representative base for the door manufacturing industry.

DSMA members supply and/or install metal pedestrian doorsets and all types of industrial, commercial, garage doors, gates and barriers. Many members specialise in fire-resisting and smoke control products.

ABHM members are suppliers to the door trade, providing all forms of building hardware, including products suitable for fire-resisting doors ❑

Glass and Glazing Federation

Fire Resistant Glazing Group
44-48 Borough High Street
London SE1 1XB

Tel: 0870 042 4255 (UK only)
Fax: 0870 042 4266 (UK only)

E-mail: gwillson@ggf.org.uk
Website: www.ggf.org.uk

The Fire Resistant Glazing Group, one of the specialist glass groups within the Glass and Glazing Federation, aims to stimulate the correct specification and purchase of fire-resistant glazed systems and components, either installed or supplied by members.

The group's central objective is to advance and encourage all aspects of best practice concerning the specification, use and installation of fire-resistant glazed systems. It provides information on the benefits of such systems, as well as technical advice and practical guidance ❑

Guild of Architectural Ironmongers

c/o Highfield Consultancy Services
84 Windsor Road
Maidenhead
Berkshire SL6 2DJ

Tel: +44 (0)1628 630179
Fax: +44 (0)1628 777783

E-mail:
NormanREngland@carinya84.freeserve.co.uk

The Guild of Architectural Ironmongers was founded in 1961 to promote standards in integrity and excellence in the business of architectural ironmongery. It aims to encourage, promote and assist persons and companies engaged in the industry, and to increase co-operation.

Acting as a national point of reference for the architectural ironmongery in the UK, the Guild plays a leading role in establishing standards, principles and practices of trading for the industry ❑

Gypsum Products Development Association

British Gypsum Limited
Head Office
East Leake
Loughborough
Leics LE12 6HX

Tel: +44 (0)20 7935 8532
Fax: +44 (0)20 7935 8532

E-mail: jonathan.cherry@bpb.com

The Gypsum Products Development Association (GPDA) first started in 1893, as a UK association for gypsum manufacturers. In 1956, it was reformed under the name of the GPDA and expanded to cover the UK and Ireland.

The primary function of the GPDA is to develop and encourage the understanding of gypsum-based building products and systems and to pioneer new applications for these products. It also has an ongoing commitment to advise on matters of environmental impact, energy conservation and health and safety, wherever gypsum-based products are used.

It has a permanent secretariat, with a management committee and sub-committees dealing with promotional and technical issues and belongs to its corresponding European Federation, Eurogypsum. The current membership is comprised of British Gypsum, Gypsum Industries, Knauf Drywall and Lafarge Plasterboard ❑

IFC Certification

IFC Certification Limited
20 Park Street
Princess Risborough
Bucks HP27 9AH

Tel: +44 (0)1844 275 500
Fax: +44 (0)1844 274 002

E-mail: info@ifccertification.com

IFC Certification is an internationally recognised provider of high quality, customer focused third-party certification for fire safety related products.

The company assesses a client's products for compliance with its scheme documents and any relevant standards, and checks compliance with the Factory Production Control systems. These checks ensure the quality and traceability of the client's manufactured goods.

Certification not only applies to manufacturers but also those companies that install fire products, such as doors and vision panels ❑

Industry Committee for Emergency Lighting

Swan House
207 Balham High Road
London SW17

Tel: +44 (0)20 8675 5432
Fax: +44 (0)20 8673 5880

E-mail: bernard@lif.co.uk

Since its formation in 1978, the Industry Committee for Emergency Lighting (ICEL) has been providing expert advice on the requirements for emergency lighting. It also publishes guidance documents and standards on emergency lighting products and installations. These well known and respected documents formed the basis of many national standards prior to the harmonisation of European standards.

ICEL's aim in operating schemes of product registration is to direct users to products that are of assured reliability, quality and photometric performance to assist in preserving life in an emergency situation.

Representatives of ICEL serve on British Standards Institution committees and represent UK interests on European committees dealing with emergency lighting ❑

Intumescent Fire Seals Association

20 Park Street
Princes Risborough
Bucks HP27 9AH

Tel: +44 (0)1844 275500
Fax: +44 (0)1844 274002

E-mail: ifsa@intfire.com

Established in 1982, the Intumescent Fire Seals Association (IFSA) is the leading trade association for companies engaged in the science and application of intumescent-based passive fire protection systems. It is the source of expert advice on fire door seals, smoke seals, glazing seals and penetration/gap sealing.

IFSA provides a technical advisory service to architects, services engineers, building control officers, fire officers and those concerned with safe building design and construction. The Association also publishes *The IFSA Code*, the definitive guide to the effective sealing of all types of gaps and penetrations in buildings to restore integrity and maintain fire compartmentation, as well as a series of technical information sheets ❑

Loss Prevention Certification Board

Bucknalls Lane
Garston
Watford WD25 9XX

Tel: +44(0)1923 664 100
Fax: +44(0)1923 664 603

E-mail: enquiries@brecertification.co.uk
Web: www.brecertification.co.uk

For over 120 years, the Loss Prevention Certification Board (LPCB) and its predecessor, the Fire Officers' Committee, have been working with specifiers to set the standards for fire and security products and services. LPCB offers approvals of a whole range of fire protection products, including detection, suppression, extinguishing agents and passive protection systems.

Through its Fire Research and Science division, LPCB also offers fire modelling and fire investigation; fire safety engineering and design; fire testing; expert advice; and consultancy services ❑

Warrington Fire Group

Holmesfield Road
Warrington
Cheshire WA1 2DS

Tel: +44 (0)1925 655116
Fax: +44 (0)1925 655419

E-mail: geoff.deakin@wfrc.co.uk

A leading independent provider of fire safety services, Warrington Fire Group has a worldwide reputation and operates globally to provide fire safety technical help and support to clients at all stages of projects, from inception to completion.

Its CERTIFIRE and FIRAS certification schemes for products and installers provide contractors, developers, regulators and end-users with confidence that active and passive systems have been designed and installed correctly. Help is provided to European manufacturers to allow CE marking of products under the Construction Products Directive and wheelmarking under the Marine Equipment Directive.

Warrington's extensive fire testing laboratory is used to carry out a wide variety of tests for different applications, including construction and transport ❑

Liaison members of the PFPF:

Association of Building Engineers
Chief Fire Officers' Association
Construction Products Association
Fire Protection Association
Office of the Deputy Prime Minister (Building Regulations Division and HM Fire Service Inspectorate)
Royal Institute of Chartered Surveyors

Passive guidance

THE PASSIVE Fire Protection Federation (PFPF) has produced a series of guidance documents to aid designers, regulators, building owners and occupiers in specifying and installing passive protection products.

There are four documents: a pocket guide which explains product fire test reports and assessments; and a series of three documents, designed to be published as part of a set, available for download from website: *www.pfpf.org.uk.*

Guide to Regulating Passive Fire Protection and the Enforcement Authorities

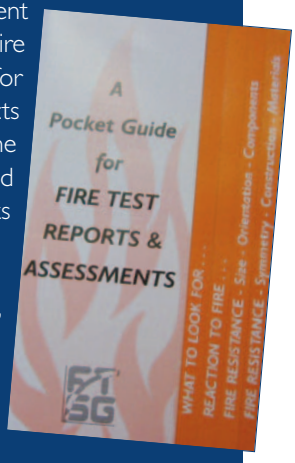
This document aims to educate and inform contractors and manufacturers of their duties and responsibilities under the appropriate regulations when supplying and installing passive fire protection products.

It details the roles, powers and responsibilities of the three main enforcement authorities – building control, fire authorities and Trading Standards – and covers all the main pieces of legislation relating to passive fire protection products.

It includes guidance on who to contact in the event of a possible deficiency in the proving of performance (testing/assessment), specification and installation of passive fire protection products, explaining whether to contact one of the three enforcement authorities, the PFPF, or one of the individual trade association members.

A Pocket Guide for Fire Test Reports and Assessments

This 12cm x 21cm 12-page document was produced with the help of the Fire Test Study Group. It is intended for building control surveyors, architects and others who have to approve the use of products and may be confused by the many reports and assessments presented by manufacturers.



The guide includes a quick checklist, briefly describing such documents as test reports and assessments, and goes on to detail the evidence that they should contain for reaction-to-fire and fire-resistant products ❑

Guide to Undertaking Assessments in Lieu of Fire Tests

This guide is intended to help those who are presented with product performance assessments to understand the content and appropriateness of the document being offered as proof of performance.

It aims to give confidence to end-users that assessments that exist in the UK market, and are produced by organisations that subscribe to the document, are of a satisfactory standard and may be used in lieu of a specific fire test for the purpose for which a product is being put forward.

The guide defines the levels of complexity of different kinds of assessment and the levels of expertise for assessors and reviewers.

Guide to Proving the Performance of Passive Fire Protection Products

This new publication has been launched to coincide with the publication of this supplement. Recent amendments to the Building Regulations in England and Wales allow the use of European fire tests and classifications for products claiming fire performance. The guide describes the three routes available to demonstrate product performance:

(i) using existing British Standard tests and assessments to satisfy the existing performance requirements in terms of test results to British Standards

(ii) using European Standard tests and classes to satisfy equivalent performance requirements, expressed in terms of classes based on European standard tests

(iii) using CE marking supported by a European classification, which gives the fire performance based on European standard tests and/or an extended application ❑

For copies of these documents, contact PFPF at Association House, 99 West Street, Farnham, Surrey GU9 7EN, tel: +44 (0)1252 739152 or e-mail: pfpf@associationhouse.org.uk

IFC Certification Ltd is a ***UKAS*** approved and internationally recognised provider of high quality and customer focused third party Certification for fire safety related products. IFC Certification Ltd has now established ***Notified Body*** credentials for the CE Marking of products under the Construction Products Directive. The company is a member of the long established IFC Group of companies including International Fire Consultants Ltd. who have established an enviable independent position offering clients impartial advice across the world.

Product Certification Schemes

IFC Certification Ltd staff will assess your products for compliance to both, our scheme documents and any relevant Standards (International, European, British or Industry etc.) followed by an evaluation of your company's compliance with your documented quality control systems. This is carried out against the requirements of a Factory Production Control (FPC) system, including specific requirements contained in each scheme. The purpose of our evaluation, is to assure ourselves, our clients and the end user of the applicant company's ability to maintain quality and traceability of their outputs.

Product Certification not only includes prime manufacturers of fire safety products but also those companies who install fire safety products, such as fire doors and vision panels. The already established Fire Resistant Timber Door Scheme, for example, covers approvals for door leaves or doorsets which satisfy the criteria of integrity, integrity and insulation or integrity and radiation, as outlined in more detail in the technical guidance documents.

If you would like to know how IFC Certification Ltd can help your company we will be pleased to help you and will welcome any enquiries to;

IFC Certification Ltd
20 Park Street, Princes Risborough, Buckinghamshire, HP27 9AH, UK
Tel: +44(0)1844 275500, Fax: +44(0)1844 274002, E-mail: info@ifccertification.com

International Fire Consultants Ltd

International Fire Consultants Ltd (IFC) are an independent professional fire safety engineering practice, now of 30 full time staff offering advice to designers, contractors, developers, manufacturers and Regulators allowing **cost effective** solutions. Our knowledge and experience allow you to eliminate any unnecessary expenditure, time and effort on proposals that will never work in practice. We offer you our technical support and expertise, allowing you to make full use of engineering principles in the form of designs, engineering reports, evaluations and assessments.

Fire Safety Design, Strategies & Interpretation of Regulations & Standards

IFC offer you a wide experience and understanding of the various Codes, Regulations and Standards, (both UK and Internationally) allowing us to advise you of robust fire safety strategies adopting efficient specifications, using proven products in the correct environments.

Design support & advice, rationalisation of fire testing requirements

In advising manufacturers our role is one of trying to **maximise** the technical marketing and sales claims that can be made for a product for the **minimum** Research and Development costs. This is achieved by giving you detailed technical and design support to your in house team and offering project management of any fire tests that may be deemed necessary.

Engineering Assessments and Field of Application Reports

IFC also produce engineering assessments and "Field of Application" reports based upon your test evidence. Such documents contain full technical justifications to substantiate the fire performance claims for the products being offered for sale. IFC are main contributors and authors leading the new European extrapolation and interpolation rules and protocols.

International Fire Consultants Ltd (IFC)
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