

# Spot the difference!



Fire doors are installed in a building to save lives and property in the event of a fire. They are a specified part of a building's passive fire protection system. It is essential a fire door performs its vital task, so specifying the right fire door and installing it correctly can be a life or death responsibility.

- In 2006 there were 491 deaths in the UK resulting from fire
- 1 in 12 fires spreads from where the fire started to other rooms in the building

## Building Regulation Requirements – Approved Document B (Fire safety)

The performance requirements of fire doors or doorsets and their locations within a building are stated in national Building Regulations. Fire doors help sub-divide a building, even domestic buildings, into compartments, slowing down the spread of fire and allowing occupants to escape.

The Building Regulations that apply to England and Wales are divided into parts, with Part B specifically covering fire safety. Each part has an associated Approved Document that provides guidance on how to achieve the requirements.

The latest revision of Approved Document B came into effect in April 2007 and is divided into two sections, differentiating between domestic and non-domestic buildings. Flats and apartments are now considered as non-domestic buildings. The Building Standards (Scotland) Technical Handbook takes a similar approach. In Northern Ireland, these issues are covered by Building Regulations Part E.

## Fire door ratings – proof of performance

All fire doors must have the appropriate proof of performance for the ratings they carry. This proof is obtained by subjecting the door to testing to BS 476 Part 22 or to the European equivalent BS EN 1634 Part 1. The door is tested as a complete assembly, and can only be guaranteed to replicate the performance if the tested design uses the correct compatible components, including door frames, seals and essential ironmongery. The certification issued to BWF-CERTIFIRE doors confirms that the door has been properly tested, and goes beyond this to cover the validity of the design, manufacture, quality and consistency of production, audit and traceability.

## Fire doors must work – and at any time

A fire door is an engineered safety device, and must be installed correctly, using the correct compatible components recommended by the fire door manufacturer, based on the door's test evidence. Since it is impossible to predict if or when a fire will occur, the door **MUST** continue to work effectively at all times.

Incorrectly installed fire resisting doors can fail to protect lives and property. This clearly raises serious ethical issues, as well as significant liabilities for manufacturers, installers and developers alike. If a door is specified where site conditions and practice mean that the specification cannot be reliably met, the responsibility is likely to fall on the designer or specifier.

BWF-CERTIFIRE fire door manufacturers produce and sell fire resisting doors suitable for both FD20 and FD30 applications.

Although the FD30 door may only have to achieve a 20 minute rating, the specification must not be amended or reduced.

It is not possible to identify which aspects of the specification can be reduced and still expect the door to meet a 20 minute fire resistance period.

In particular, the omission of the intumescent seals will lead to premature failure in the event of a fire and invalidates the certification of the door.

The removal of the requirement for door closers in some domestic situations is unrelated to the question of the use of intumescent protection on fire rated doors.

Combined smoke and fire intumescent seals are required in certain applications, as are combined acoustic and fire seals.

## FD20 doors

The Building Regulations Approved Document B identifies minimum fire resistance periods for various elements of construction, including fire doors. The guidance recommends doors with a fire resistance period of 20 minutes (FD20) in some instances, and 30 minutes (FD30) in others.

In the distant past, it was possible to obtain a fire door that had a dual classification. Following a test, this door design could be accepted as an FD30 if installed with intumescent seals, and as an FD20 if installed without seals.

In developing the BWF-CERTIFIRE Fire Door and Doorset Scheme in 1995, the BWF and the fire door manufacturers noted when testing dual rated doors that, in order to meet an FD20 rating without intumescent seals, the door had to be fitted very accurately into its frame, with little margin for error. This would be difficult to achieve consistently on site. Furthermore, this accurate fit would have to be maintained during the service life of the door assembly.

This reliability could only be achieved with doors fitted with intumescent seals; the safe practice is to have side and top edge seals in place for both FD20 and FD30 requirements.

It was decided from the Scheme's inception that its door manufacturing members would no longer test and sell an FD20 fire door except with intumescent seals fitted. Typically this determines that an FD30 product is in fact used for both levels of performance.

## Why seals are required

For a door to work effectively, the door leaf must be free to move within the frame. In order to do this there must be a gap around the perimeter which may compromise the door's ability to restrict the spread of fire. Intumescent seals expand to fill the gap when subjected to heat.

## As with all engineered safety products, a "factor of safety" is required

In site conditions it is very difficult to guarantee precise, accurate work and hence doors will often not be able to meet the strictly controlled conditions of a laboratory test. Gaps may be larger around doors – they may be slightly out of square or uneven. Intumescent seals are used to provide this factor of safety.

To ensure the safety and reliability of every fire door, always fit intumescent seals. You cannot rely solely on active fire protection, such as smoke detectors. Passive protection provided by a correctly installed and properly maintained fire door is always there when needed. Fire and hot gases can easily pass through gaps around the door within seconds. By then, it's too late.

Remember – 1 in 12 fires spreads from where the fire started to other rooms in the building.

## SUMMARY

- When specifying, purchasing or installing fire doors, always use correctly installed, intumescent protected, FD30 fire resisting doors as the minimum, even if the Building Regulations specify the minimum fire resistance required as FD20.
- Follow the installation instructions completely. Check they are current by visiting the manufacturer's website for the very latest information.
- Do not omit the intumescent seals.
- All fire resisting doors and doorsets made by BWF-CERTIFIRE Fire Door and Doorset Scheme manufacturers are protected by intumescent seals.
- The permanent BWF-CERTIFIRE label placed on each door indicates the door's rating and certification number (CFxxx), as well as a unique production serial number. It confirms the validity of the design, manufacture, quality and consistency of production, audit and traceability.

## Fire doors – they're YOUR responsibility

To see what happens when doors are fitted incorrectly or for further help and advice on fire doors and doorsets visit the BWF website.

You may also wish to refer to other relevant Fact Cards in this series

Fact Card – Intumescent seals for fire doors

Fact Card – Fire Door Ironmongery



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