Fact Card 9 – FD20 or FD30 Fire Doors?

Why we believe FD30 fire doors should be specified instead of FD20 fire doors

An effective passive fire protection product, fire doors fulfil a life-saving role in controlling the passage of smoke and withstanding fire for a defined period. A fire door is more than a typical door, it is a complex system of components that must work together to perform in the event of a fire to save lives. The system includes the door leaf, frame, ironmongery and the glazing system.

Incorrectly specified or 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 fire 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.

Remember, delaying the spread of smoke and fire is key to allow occupants of a building enough time to escape and for the fire service to arrive. If a fire door fails, smoke or fire could enter an escape route rendering it unusable. Shockingly, 1 in 10 fires spread from where to fire started to other rooms in the building.

Building Regulation Requirements – Approved Document B (Fire Safety)

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

The Building Regulations that apply to England and Wales are divided into parts, which reflect the requirements of schedule 1 of the Building Regulations 2010. Each part has an associated Approved Document that provides guidance on how to achieve the requirements with Approved Document B specifically covering fire safety.

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In Scotland the guidance is given in the building standards technical handbook, either domestic or non domestic, where section 2 covers fire safety. In Northern Ireland fire safety gudiance is given in technical booklet 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 assured 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 Fire Door Alliance member's doors and doorsets 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, auditing and traceability.

A closer look at FD20 Fire 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 or E20) in some instances, and 30 minutes (FD30 or E30) in others.

In the 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. To achieve FD30/FD20 the doors would have been tested and achieved the fire performance in each configuration. 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 (E20) and FD30 (E30) 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.

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 Fire Door Alliance manufacturers are protected by intumescent seals.
- The permanent label or plug applied to each door indicates the door's rating and certification number. It confirms the validity of the design, manufacture, quality and consistency of production, auditing and traceability.

Fire Doors - they're responsibility

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 13 – Intumescent seals for fire doors

Fact Card 7 - Ironmongery

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