Guidance Note for Fire Doors

(Ref: QM_HS_057)
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1.0 The Role and Use of Fire Doors

Fire doors provide two main functions:

a) To maintain compartmentation of buildings, which has been designed to limit the size and spread of fire in order to control the perceived level of risk;

b) To allow access, both vertically and horizontally, to protected escape routes, without any loss of fire resistance, and limit smoke movement in the structure forming these routes e.g. protected corridors, lobbies, stairways and shafts.

In order to ensure that fire doors perform these required functions, installation of fire doors should be carried out by Third Party Accredited installers. Third party accreditation of installers of systems, materials, products or structures provides a means of ensuring that installations have been conducted by knowledgeable contractors to appropriate standards, thereby increasing the reliability of the anticipated performance in fire.

1.1 Fire Door Rating

The results of fire resistance tests carried out under BS 476-22 or BS EN 1634-1 are recognised both nationally and internationally. Performance is tested in accordance with either BS 476-232 or BS EN 1634-1 determined by the time in minutes when the standard failure criteria is reached for either integrity or insulation.

When tested to BS476-22, doors are identified by the prefix FD (Fire Door) followed by the integrity rating in minutes, i.e. FD 30, FD 60, etc.

Similarly, when tested to BS EN1634-1, the doors are identified by the prefix E followed by the rating in minutes e.g. E30, A fire-resisting door able to resist integrity failure for 30 minutes.

In addition to the need to provide fire resistance, certain doors are required to resist the spread of ambient temperature smoke, otherwise known as cold smoke. When tested in accordance with BS476-31, doors are identified by the suffix S e.g. FD30S, when tested in accordance with BS EN 1634-3 and classified in accordance with BS EN 13501-2 these doors are identified by the suffix S e.g. E30S.

The scope of this document applies only to timber-based hinged or pivoted door sets, door assemblies or door leaves.

2.0 Terms and Definitions

2.1 Essential Building Hardware

Items vital to achieve the fire-resisting performance of a fire door assembly when incorporated into a building.
2.2 Building Hardware
Small components, usually metal, used mainly for the operation or support of doors

2.3 Non-essential Building Hardware
Items that are not required to achieve the fire resistance performance of a fire door assembly, but which, if fitted, might affect the performance

2.4 Door
Building component for closing an opening in a wall that allows access and which may or may not admit light when closed

2.5 Door Assembly
Complete door assembly as installed, including doorframe and one or more leaves, together with its essential building hardware supplied from separate sources

2.6 Door Frame
Fixed surround into which are fitted one or more door leaves

2.7 Door Kit
Set of fully machined and fitted frame components together with a door leaf or leaves fully prepared for site assembly and fixing.

2.8 Door Leaf
Hinged or pivoted construction intended to allow or prevent access

2.9 Door Set
Doorframe with its door leaf or leaves pre-hung on hinges or pivots, supplied as an assembled unit from a single source

2.10 Fire Door
Door provided for the passage of persons, air or objects which, together with its frame and furniture as installed in a building, is intended (when closed) to restrict the passage of fire and/or gaseous products of combustion, and is capable of meeting specified performance criteria to those ends

2.11 Fire Door Assembly
Door assembly intended, when closed, to restrict the passage of fire and/or gaseous products of combustion and to be capable of meeting specified performance criteria to those ends

2.12 Fire Resistance
Ability of a component or construction of a building to meet for a stated period some or all of the appropriate criteria specified in BS 476-22 or BS EN 1634-1
2.13 **Intumescent Seal**
Seal used to impede the flow of heat, flame or gases, which only becomes active when subjected to elevated temperature

2.14 **Latch**
Self-engaging fastener which secures a moveable component (e.g. door) in a closed position and which can be released by hand

2.15 **Lock**
Fastener which secures a moveable component (e.g. door leaf) in a closed position within an opening and which is operated by a key or other device

2.16 **Seal**
Fitting provided to close a gap for the purpose of controlling the passage of air, smoke, water, fire, sound, etc.

2.17 **Smoke Seal**
Seal fitted to the leaf edge or frame reveal for the purpose of restricting the flow of smoke or hot gases

3.0 **Determination of Fire Resistance**
For the purpose of classification, doors are classified according to the fire resistance period that has passed before failure has occurred. Other criteria for the doors such as insulation may have failed at an earlier stage and this will be recorded in the certification for the doors.

It is therefore very important that building designers ensure that fire doors are used within the confines of the tests that have been carried out, and that documentary evidence exists to that effect.

4.0 **Marking**
All fire doors should be clearly marked with their declared fire resistance period either immediately after manufacture or inspection, or before dispatch.

*Range of colour codes giving a method of performance identification for non-metallic doors and frames*

<table>
<thead>
<tr>
<th>Core Colour</th>
<th>Label colour or background colour</th>
<th>Integrity (min)</th>
<th>Colour code interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>White</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yellow</td>
<td>30</td>
<td>Intumescent fire</td>
</tr>
<tr>
<td></td>
<td>Pink</td>
<td>45</td>
<td>seals need to be</td>
</tr>
<tr>
<td></td>
<td>Blue</td>
<td>60</td>
<td>added at time of</td>
</tr>
<tr>
<td></td>
<td>Brown</td>
<td>90</td>
<td>original installation</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>White</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yellow</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>
Every fire door should also be signed using one of the following standard signs where appropriate.

<table>
<thead>
<tr>
<th>Sign, Colour and Pictogram</th>
<th>Description, Uses and Conventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire door keep shut</td>
<td>‘Fire door keep shut / closed’ - positioned at eye level on both faces of each leaf of the fire doors fitted with self-closing devices</td>
</tr>
<tr>
<td>Fire door keep locked</td>
<td>‘Fire door keep locked’ - positioned at eye level on the outer face of all fire doors not fitted with self-closing devices e.g. storage cupboards, riser shafts, etc.</td>
</tr>
<tr>
<td>Automatic fire door keep clear</td>
<td>‘Automatic fire door keep clear’ – positioned at eye level on the visible side of the open fire door that is to be held open by an automatic hold open device linked to the fire alarm system.</td>
</tr>
<tr>
<td>Push bar to open</td>
<td>‘Push bar to open’ – positioned above the push bar when fitted to fire escape doors. These devices are usually fitted to locked doors on escape routes where there are likely to be 60 or more persons. These devices should conform to BS EN 1125.</td>
</tr>
</tbody>
</table>

### 5.0 Specifying Fire Doors

Only persons with appropriate expertise should undertake the specification of fire doors.

When specifying a fire door assembly, a full description of the element should be provided in addition to the level of fire resistance required. The description should include the following, as any of these can affect the potential fire resistance of the assembly:

a) overall size;

b) size and numbers of leaves;

c) mode of operation; (single or double swing);

d) size, location and number of any glazed openings;

e) details of the door hardware including any additional intumescent protection required;
f) details of frames;
g) presence of any over panels, fanlights, side panels, etc.;
h) presence of any performance seals.

Fire resistance is a property that depends on the complete construction, and not on the fire resistance of the individual components or materials from which the construction is formed. In the case of a fire door, it is only the complete assembly as described in the relevant fire test report that can be deemed to provide the required performance when competently installed into the building. Therefore, a door leaf, doorframe, door hardware or any other component part cannot be fire resisting in isolation from other parts.

5.1 Door Construction

Too often, a fire door set will start to fail before its assumed life expectancy and although poor installation and maintenance may be an issue, the inappropriate specification and selection for its location is a factor that is not always fully appreciated. Not all fire doors protect the same level of hazard. Fire doors protecting escape routes may therefore require a higher specification than those protecting storage cupboards etc. Not all fire doors are subject to the same frequency of use or impact and will therefore reflect the type of door that should be specified. Therefore, the following criteria should be adopted for new installations of fire doors in QMUL premises.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Room Type</td>
<td>Ducts</td>
<td>Rooms including seminar rooms and offices &lt; 20 Persons</td>
<td>Rooms including Lecture Theatres, seminar rooms, offices &gt; 20 Persons</td>
</tr>
<tr>
<td>Plant Rooms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cupboards</td>
<td>Doors to escape stairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Doors connected to hold open devices</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cross Corridor doors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.0 Doors and Frames

6.1 General

Ideally, fire doors should be purchased as coordinated assemblies. Where this is not possible, the recommendations given in 6.2 to 6.5 should be followed.
6.2 **Door Leaves**
There are various constructions used for the manufacture of fire doors. These can be used in a variety of different configurations varying from single-leaf single swing through to double-leaf double swing with other options. It should be assumed that a door tested in one configuration would be suitable for another configuration.

6.3 **Door Frames**
There are no generic recommendations for the dimensions of doorframes. The frame must support the door leaves, not just under normal conditions but also under fire conditions. The frame should be able to accept door hardware fixings to support the door leaf and fixings retaining the frame in the wall opening.

6.4 **Solid timber door frames**
The dimensions and density of solid timber doorframes should not be less than that tested or approved.

6.4.1 **Engineered timber door frames**
The dimensions and density of engineered timber doorframes (e.g. MDF) should be not less than those tested or approved.

6.5 **Metal Door Frames**
Timber based door leaves should not be hung in metal doorframes unless substantiated by specific test evidence. If a metal frame has formed part of a door assembly with a timber-based door leaf and achieved a satisfactory fire test result, it should not be assumed that the metal frame is suitable for use with any other timber-based door leaf.

6.6 **Composite Door Frames**
The design composite doorframes should be identical to those tested or approved.

6.7 **Intumescent fire and smoke seals**
There are many types of intumescent fire seals available each of which can react differently. Such seals should meet the period of fire resistance and configuration relevant to the specific door design when tested in accordance with BS476-22 or BS EN 1634-1. The seal should be the same as those originally specified for the door design.

There are several different types of smoke seal available and the most appropriate for each specific door type and configuration should be identified from the manufacturers test report. Smoke seals should meet the required performance relevant to the specific door design when tested in accordance with BS 476-31.1 or BS EN 1643-3 and should not compromise the fire performance of the door when fitted.

If the door edges have to be planned to improve fit within the doorframe the seals should be first removed and then refitted when the work is completed.
6.8 Apertures

Apertures should not be cut on site unless this is carried out by a competent person in accordance with the test evidence and the manufacturers’ recommendations.

Apertures should only be cut into doors that are designed to receive apertures and should therefore only be fitted into a fire door under the control of the fire door manufacturer. The position of the cut-out within the door should be the same as, and the aperture size should not exceed, the area and aspect ratio of that previously tested and/or assessed.

Glazed apertures should be in accordance with clause 7

Apertures for hardware should be in accordance with clause 8

Any other apertures should be discussed with the fire door manufacturer.

7.0 Installation of Fire Doors

All fire doors should be installed by a third party accredited passive fire protection company who has been certified to install fire doors by an independent UKAS accredited certification body. It is also a recommendation of Approved Building Regulations Document B that the installation of all fire-resisting products be covered by product conformity certification or by independent registered installer schemes where available.

Acceptable accreditation schemes that demonstrate the installers’ competence to install fire doors can be found in Appendix D of the following document;

QM_HSD_FS014_June 2012_Fire Safety Guidance for Project Managers

Door sets must be installed squarely into any opening and in accordance with the manufacturer’s recommendations.

In addition to this, consideration must be given to the materials of the surrounding structure into which the door is to be set. Manufacturer’s installations guidance should be followed to ensure that the structure is suitable and that the location and type of fixing used is appropriate to the manufacturer’s instruction.

Sealing between door assembly and surrounding structure.

Adequate fire resisting sealant must be used between the elements of structure and the door assembly. This method of sealing must be carried out in accordance with the guidance in tables two & three or the current edition of Association for Specialist Fire Protection (ASFP) Red Book.

7.1 Where Fire Doors are (Typically) Required

a) All doors to staircases from corridors, rooms and service ducts.
b) All doors to lobbies designed to protect the staircase.
c) All doors extending the escape route from staircases to the final exit.
d) All doors to corridors that are protected by fire resisting construction; primarily dead end conditions where there is only escape in a single direction.

e) Where corridors exceeding 12 m in length are sub-divided and offer two directions of escape.

7.2 Criteria for Fire Doors

a) All fire doors on escape routes should open in the direction of escape where possible

b) It is recommended that all doors on escape routes or leading onto escape routes are fitted with vision panels and are fire rated where necessary. Exceptions are where there is a need for privacy, i.e. WC’s, sleeping accommodation, dark rooms or rooms containing light sensitive equipment or materials, etc.

c) Vision panels should also be fitted to doors through which chemicals, glass or hot products are transported; to avoid accidents.

d) Doors affording disability access and egress are required to have vision panels that comply with Approved Document M or the building regulations.

<table>
<thead>
<tr>
<th>Architrave condition</th>
<th>Additional protection</th>
<th>Maximum frame to supporting construction gap widths</th>
<th>Suitable for smoke control assemblies</th>
<th>Specific recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>No architraves fitted</td>
<td>Mineral rock fibre tightly packed to a depth of the frame making allowance for a 10mm capping, to both faces, of mastic</td>
<td>Up to 15mm</td>
<td>Yes</td>
<td>See 7.2.1</td>
</tr>
<tr>
<td>Architraves to be minimum 15mm thick constructed from softwood, hardwood or MDF with 15mm overlap on frame and wall</td>
<td>Mastic applied to fill the gap between the wall and the frame to a minimum depth of 10 mm</td>
<td>Up to 10mm</td>
<td>Yes</td>
<td>See 7.2.1</td>
</tr>
<tr>
<td>Architraves to be minimum 15mm thick constructed from softwood, hardwood or MDF with 15mm overlap on frame and wall</td>
<td>Minimum 10mm x 2mm pressure-forming intumescent fire seal centrally fitted the rear of the door frame</td>
<td>Up to 5mm</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Architraves to be minimum 15mm thick constructed from softwood, hardwood or MDF with 15mm overlap on frame and wall</td>
<td>Mineral rock fibre tightly packed for the full depth of the frame</td>
<td>Up to 20mm</td>
<td>Yes</td>
<td>Rock fibre to be capped with mastic (see 7.2.1) on both sides of the frame with no gaps None</td>
</tr>
<tr>
<td>Architraves to be minimum 15mm thick constructed from softwood, hardwood or MDF with 15mm overlap on frame and wall</td>
<td>Expanding foam for the full depth of the frame</td>
<td>Up to 20mm</td>
<td>No</td>
<td>See 7.2.1</td>
</tr>
</tbody>
</table>
Architraves to be minimum 15mm thick constructed from softwood hardwood or MDF with 15mm overlap on frame and wall

<table>
<thead>
<tr>
<th>Architrave condition</th>
<th>Additional protection</th>
<th>Maximum frame to supporting construction gap widths</th>
<th>Suitable for smoke control assemblies</th>
<th>Specific recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>No architraves fitted</td>
<td>Mineral rock fibre tightly packed to a depth of the frame making allowance for a 10mm capping, to both faces, of mastic</td>
<td>Up to 15mm</td>
<td>Yes</td>
<td>See 7.2.1</td>
</tr>
<tr>
<td>Architraves to be minimum 15mm thick constructed from softwood hardwood or MDF with 15mm overlap on frame and wall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architraves to be minimum 15mm thick constructed from softwood hardwood or MDF with 15mm overlap on frame and wall</td>
<td>Expanding fire rated polyurethane foam for the full depth making allowance for a 10mm capping, to both faces, of mastic</td>
<td>Up to 10mm</td>
<td>Yes</td>
<td>See 7.2.1</td>
</tr>
<tr>
<td>Minimum 10mm hardwood quadrant beads tightly fitted between wall and frame</td>
<td>Mineral rock fibre tightly packed to a depth of the frame making allowance for a 10mm capping, to both faces, of mastic</td>
<td>Up to 20mm</td>
<td>Yes</td>
<td>Quadrant bead should be sized appropriate for the wall to frame gap see 7.2.1</td>
</tr>
</tbody>
</table>

Table 3 Supporting construction likely to exhibit significant distortion during fire exposure, with 30 min FR

Table 4 Supporting construction unlikely to exhibit significant distortion during fire exposure, with 60 min FR

Architraves to be minimum 15mm

<table>
<thead>
<tr>
<th>Architrave condition</th>
<th>Additional protection</th>
<th>Maximum frame to supporting construction gap widths</th>
<th>Suitable for smoke control assemblies</th>
<th>Specific recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>No architraves fitted</td>
<td>Mineral rock fibre tightly packed to a depth of the frame making allowance for a 10mm capping, to both faces, of mastic</td>
<td>Up to 15mm</td>
<td>Yes</td>
<td>See 7.2.1</td>
</tr>
<tr>
<td>Architraves to be minimum 15mm</td>
<td>Mastic applied to fill the gap</td>
<td>Up to 10mm</td>
<td>Yes</td>
<td>See 7.2.1</td>
</tr>
</tbody>
</table>
thick constructed from softwood hardwood or MDF with 15mm overlap on frame and wall between the wall and the frame to a minimum depth of 10 mm

<table>
<thead>
<tr>
<th>Architraves to be minimum 15mm thick constructed from softwood hardwood or MDF with 15mm overlap on frame and wall</th>
<th>Mineral rock fibre tightly packed for the full depth of the frame</th>
<th>Up to 20mm</th>
<th>Yes</th>
<th>Rock fibre to be capped with mastic (see 7.2.1) on both sides of the frame with no gaps None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum 10mm hardwood quadrant beads tightly fitted between wall and frame</td>
<td>Mineral rock fibre tightly packed for the full depth of the frame capped with mastic</td>
<td>Up to 15mm</td>
<td>Yes</td>
<td>Quadrant bead should be sized appropriate for the wall to frame gap see 7.2.1</td>
</tr>
</tbody>
</table>

**Table 5** Supporting construction likely to exhibit significant distortion during fire exposure, with 60 min FR

<table>
<thead>
<tr>
<th>Architrave condition</th>
<th>Additional protection</th>
<th>Maximum frame to supporting construction gap widths</th>
<th>Suitable for smoke control assemblies</th>
<th>Specific recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>No architraves fitted</td>
<td>Mineral rock fibre tightly packed to a depth of the frame making allowance for a 10mm capping, to both faces, of mastic</td>
<td>Up to 10mm</td>
<td>Yes</td>
<td>See 7.2.1</td>
</tr>
<tr>
<td>Architraves to be minimum 15mm thick constructed from softwood hardwood or MDF with 15mm overlap on frame and wall</td>
<td>Mineral rock fibre tightly packed for the full depth of the frame capped with mastic</td>
<td>Up to 20mm</td>
<td>Yes</td>
<td>See 7.2.1</td>
</tr>
<tr>
<td>Minimum 10mm hardwood quadrant beads tightly fitted between wall and frame</td>
<td>Mineral rock fibre tightly packed for the full depth of the frame capped with mastic</td>
<td>Up to 15mm</td>
<td>Yes</td>
<td>Quadrant bead should be sized appropriate for the wall to frame gap see 7.2.1</td>
</tr>
</tbody>
</table>

**7.2.1 Sealant**

Mastic should be an approved linear gap joint seal, successfully tested in accordance with BS476-20 or BS EN 1366-4 for the required period of fire resistance. Expanding foam should be an approved linear gap joint seal, successfully tested in accordance with BS476-20 or BS EN 1366-4 for a minimum of 30 min fire resistance. The manufacturer's instruction should be followed.

**7.2.2 Architraves**

Architraves should be mechanically fixed, e.g. pneumatically fired pins, screws.
7.3 **Hanging of a Door Leaf**

Any adjustments to the door size necessary on site to achieve an equal gap around the sides and top of the door leaf should only be performed in accordance with any limitations given in the manufacturer’s installation instructions. If any damage is done to the intumescent fire strips or smoke seals they must be replaced by identical products. Intumescent fire seals must not be damaged in the adjustment process.

7.4 **Operating Gaps**

Doors should be hung to give an equal gap across the head, down both jambs and at meeting edges. All fire doors, including those of 20mm fire integrity, should be fitted with intumescent seals, or intumescent fire and smoke seals. Certain smoke seals such as those fitted in the frame reveal or edge of the door, might require a larger gap in order to operate without causing significant frictional increases, but the gap should remain within tolerances approved for the fire resistance performance. The correct doorstop to frame gap should be allowed for where doorstop-mounted smoke seals are fitted.

7.5 **Under-door (threshold) gaps for fire resistance**

Under-door (threshold) gaps should be in accordance with the fire door manufacturer’s installation instructions for the particular design. The door should be able to open freely over its entire opening angle without damaging the seal or catching on the floor.

7.6 **Frame Door Stops.**

The size of the frame doorstop is irrelevant provided that it serves the function for which it is intended.

7.7 **Glazing**

Fire resisting glass used by the door manufacturer should be permanently marked with the glass name and glass performance classification. Glass should not be marked on site at the installation or later. Fire resistant glass used in fire doors in critical locations where accidental impact is a risk should be rated for safety and marked accordingly. Glazing systems should be installed as specified in each individual case. Only complete specified glazed systems with appropriate test evidence and installation guidance should be used. In all cases the glazing system specification should be include the glass by name, its thickness, the glazing sealant and any liner that is required in the glazing pocket. The manufactures guidelines should be used to determine the glazing beads, bead fixings, use of set blocks, edge cover requirements for the glass and expansion allowances within the aperture.
Door Hardware

8.1 General
All door hardware, including that which is electrically operated, should be specified according to its intended function and should be fitted in accordance with the hardware manufacturer's instructions, supported by the test evidence for the door assembly.

8.2 Fitting of door Hardware
All door hardware must be fitted in such a way as to not compromise the fire resisting properties of the door assembly, including any tested or approved intumescent protection. Interruption of intumescent fire seals at the positions of door hardware should be avoided unless supported by test evidence.
Where mortices are cut to take hardware, they should be cut as accurately as possible to avoid gaps around the fitted hardware.

8.2.1 Door closing devices
All fire doors except those normally kept locked shut and fitted with appropriate signage should be fitted with self-closing devices.
Door closing devices fitted on fire-resisting doors should be able to:
  a) Close the door leaf from any angle to which it has been opened;
  b) Overcome the resistance of a latch or any seals when fitted.

Door closing devices should be able to perform one or two functions dependent on whether a latch is fitted.
1) Latched door: close the door in a controlled manner so that the latch engages
2) Unlatched: close the door in a controlled manner into its frame or if double swing doors to its dead centre closed position and maintain this position for the period of fire exposure until such time as the heat activated sealing system takes over.

8.3 Air Transfer Grilles
Air transfer grilles should be fitted in a fire door only if the grille manufacturer's information confirms the fire integrity of its intended application.
The required application of the door should be determined in terms of the fire resistance required:
  a) Fire containment air transfer grilles that are designed to only allow the passage of air during normal operation. Fire containment air transfer grilles operate at a pre-determined temperature or by activating a tested intumescent matrix within the grille. They do not control smoke and are only suitable for fitting to doors intended to provide fire resistance e.g. FD30
b) Fire and cold smoke containment air transfer grilles, which allow the normal transfer of air in normal conditions but include an electro mechanical system, which interacts with smoke detection sealing the grill. They also work with a rise in temperature and are suitable for fitting to fire doors intended to provide fire and smoke resistance e.g. FD 30S

The fitting of electrically interactive air transfer grilles should be installed in accordance with the manufacturers’ instruction and liaising with the person responsible for the fire alarm system.

8.4 Over Panels and Side Panels
An air transfer grille fitted into over panels or side panels can be fitted only if the grille manufacturers’ information confirms the fire integrity of its intended application.

9.0 Maintenance

9.1 General
Fire doors are required to provide a similar level of fire resistance as the structure into which they are fitted. Due to the constant operation of the doors, these doors can quickly become a weak point in the fire compartmentation.

The deterioration in these door assemblies happens in two different ways:

a) damage to the door leaf or components or
b) wear in the building hardware that can affect the ability of the door to close

Both of these will result in reduced fire resistance at this point. It is therefore of upmost importance that periodic maintenance of the door including examination at regular intervals for superficial damage, structural damage and excessive bowing or deformation of assemblies takes place, so that any deterioration can be identified and remedial action taken.

9.2 Door Leaves and Door Frames
Doors and frames should be inspected six monthly for damage or bowing. Unless the damage is minor and can be repaired in accordance with the manufacturer’s guidance, fire doors or frames should be replaced. If replaced then the door must be of the same resistance as that being replaced. If the intumescent strips and cold smoke seals are fitted in the frame then the replacement door must be compatible with that type of seal. A competent Third Party Accredited Fire Door Installer must carry out all repairs.

9.3 Double Leaf Doors
Single doors of a double leaf doors set should not be replaced on their own. It is unlikely that an identical door could be purchased. Therefore replacing a single door of a set could result in each door reacting differently in a fire. This is likely to severely reduce the fire resistance of the door set.
9.4 **Replacement of Intumescent Strips and Cold Smoke Seals**

There are three types of seals available

a) Intumescent fire seals  
b) Cold smoke seals  
c) A combination of both

Any missing or damaged sections of the seals must result in a replacement of the whole section. The replacement seals must be the same as those specified by the manufacturer.

9.5 **Replacement of door hardware**

Replacement of door hardware should be in accordance with the manufacturer’s technical information.

9.6 **Replacement of glass**

The replacement of damaged glass or its retaining component must be done by a competent fire door installer.

9.7 **On-site decoration**

As there is no requirement on the surface spread of fire on a fire door assembly, there is no restriction on decoration of a fire door. Over painting of the door assembly should not exceed five coats of conventional paint or lacquer. Over painting of cold smoke seals must be avoided so that they maintain their flexibility.

If preparing for redecoration the use of heat or chemical strippers should be avoided when intumescent strips are incorporated.

Where glazing beads have been painted with intumescent paint, specialist advice should be obtained before repainting.
Document Control

Initial Data

Author: Keith Vagg
Position: Senior Fire Safety Adviser

Checked by: Dennis Browne
Position: Fire Safety Manager

Approved by: Marion Richards
Position: Director of Occupational Health and Safety

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