Introduction

Fire Doors are a critical safety feature of any building in which people work or visit, as they offer resistance to the spread of fire and smoke, limiting its effect whilst allowing enough time for occupants to evacuate to a place of safety.

Current legislation, which came into force in October 2006, puts the responsibility for the fire safety of premises on building owners and managers.

The “Responsible Person” in your building should carry out regular checks of the fire doors on your premises and monitor their condition as part of a fire precaution procedure.

Read more about the current fire safety legislation on the next page.

The role and use of fire doors:

“Fire doors are required to perform two main functions:

- to maintain any compartmentation of buildings, which has been introduced to limit the size and spread of fire in order to control the perceived risk;
- to allow access to protected escape routes, both vertically and horizontally, without any loss of fire resistance, and limit smoke movement in the structure forming these routes, i.e. protected corridors and protected shafts.” BS 8214:2008

Recommendations for position and ratings of fire doors are covered in BS 9999 2008; ‘Code of practice for fire safety in the design, management and use of buildings.’
Regulatory Reform (Fire Safety) Order 2005 (RRFSO)

In October 2006 new legislation came into force putting the responsibility for the fire safety of properties under the control of building owners and managers.

Under the RRFSO the “Responsible Person” for each premises is required to carry out an assessment of the risks from fire and then take steps to reduce or remove that risk.

In order to comply a fire risk assessment must be completed together with providing an efficient and effective recording system to ensure that regular checks are made on fire prevention assets such as fire alarms and fire resisting doors, as well as providing training to staff and visitors of the building.

Useful reading on the RRFSO:

Fire safety law and guidance documents for business:

RRFSO Legislation Document:

Health & Safety Executive
http://www.hse.gov.uk/toolbox/fire.htm

DDA Fire Ltd.
http://www.ddafire.co.uk/Regulatory_Reform_Order.htm

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Fire Door Maintenance

According to BS 8214:2008, (Code of practice for Fire Door assemblies), Fire Doors need to provide a similar level of fire resistance as the fixed elements of a building (i.e. walls and floors) and are evaluated by the same stringent procedures and criteria.

However, since Fire Doors are often opened and closed many times a day, their deterioration will be much faster, usually taking two main forms:

- damage to the leaf or the components making up the assembly
- wear in the building hardware, or a reduction in the effectiveness of fixings, causing the door to fail to self-close, thereby resulting in a breach of the fire barrier

It is therefore very important to have periodic inspections, and carry out any maintenance or repair any damage as promptly as possible.

Note:

- “As the constituent parts of a fire door often interact in quite subtle ways, any changes from the original tested specification can significantly alter the performance of the assembly installed. Therefore in order to maintain the performance of doors manufactured subsequently, the quality of materials and components used should be carefully monitored and controlled.” BS 8214:2008
- Third party accreditation markings usually tell you what you need to know about the door assembly. (see pages 9-11 for further information)
Fire Door Inspection

Regular inspection and maintenance of Fire Doors is essential to both comply with the Building Regulations and maintain a safe environment for all building occupants.

It is important to remember that all actions, defects and damage should be noted down against the relevant door identification number along with the suggested remedy and when it is/will be completed.

At the back of the guide we have included a Fire Door inspection checklist and a couple of useful tables to help you keep track of your checks, maintenance and remedies.

Note:

- Ensure individual door components are marked with their fire rating credentials, and keep that mark throughout the lifecycle of the door, as they can be an aid to the correct replacement of those components when necessary.

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Door Leaves and Door Frames

BS 8214:2008 recommends door leaves and door frames be checked at six-monthly intervals for superficial damage, structural damage and excessive bowing or deformation. But it really depends on the amount of traffic that passes through the door and the likelihood of damage occurring.

A good routine to get into for checking your fire doors is:

- **Weekly check** for busy routes with hundreds of openings per day
- **Monthly check** for traffic routes and main entrances and corridor doors
- **Annual check** for office or plant room service risers etc.

Repairing and maintaining doors isn’t easy, making sure all the component parts interact as they should is particularly difficult.

If minor on site repair is not possible, the complete door leaf or door frame should be replaced.

Regular checks should be made of gaps between door leaves and frames and between meeting edges to double leaf doors. Gaps should be maintained at the dimensions tested and in any event should not exceed 4mm.

Note:

- Any repairs needed on a Fire Door should be carried out by experienced professionals and advice should be sought from the manufacturer before the work is undertaken.
- If a leaf of a double door assembly needs replacing, the other leaf should be replaced at the same time, irrespective of its level of damage.
- According to BS 8214 (13.2.3) Door leaves designed to provide fire resistance periods greater than 60 minutes should be replaced, not repaired.
- Any changing gap sizes could be as a result of wear/damage to hinges or picots or an indication that fasteners are loosening or damaged. Adjustments and/or replacement of worn or damaged components should be made at the earliest opportunity.

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Intumescent Seals & Cold Smoke Seals

There are three types of door seal available for fire and cold smoke containment:

- intumescent seals designed to maintain the integrity of the doorset
- smoke seals to restrict the flow of cold smoke before intumescent seals become effective
- combined intumescent and smoke seals

The ability of the door to perform in a fire is hugely dependent upon the condition and performance of these seals.

All intumescent and smoke seals should therefore be inspected at least every six-months.

Note:

- To maintain the fire performance of the door any replacement seals must be of the same formulation, dimensions and configuration as shown in the door manufacturer’s fire test report.
- If seals are damaged, deteriorate or are not making adequate contact with adjacent doorset components, they should be replaced.
- Seals should be replaced as continuous lengths, as joints are a further source of potential leakage in a fire situation.

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Replacement of Building Hardware and Glazing

Any damaged glass or building hardware (hinges etc.) should be replaced like for like according to the fire door manufacturers technical information.

In the case of glass, it is important to check with the manufacturer whether the replacement can be carried out on site or not.

Note:

- Guidance on the specification and maintenance of building hardware for fire doors is given in the DHF/GAI Code of practice: hardware for fire and escape doors. [http://firecode.org.uk/](http://firecode.org.uk/)
Product Certification & Installation Schemes

Further reassurance of satisfactory performance of a fire door or doorset, (outside of the British Standard tests) may be had in the form of third party product certification schemes.

Third party certification ensures consistent production of fire doors or doorsets.

Organisations operating assessment and certification schemes include:

- BM TRADA Certification
- CERTIFIRE
- IFC Certification Ltd.
- BRE Global (incorporating LPCB)

Note:

- It is important to maintain any marking/ labelling on the door as this is one of the main identifiers for a fire doors rating and allows for product traceability.
- Third party certification bodies also have lists of certified manufacturers on their website should you wish to check credentials and certificate numbers.

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BM TRADA Certification

BM TRADA operates the Q-Mark Timber Fire Door Scheme for fire resisting doors and doorsets. Certified products are identifiable by plastic plugs fitted in the door leaf and frame. Each plug is coloured in accordance with a simple coding system describing the level of certification in line with BS 8214 recommendations (see right). An identification number facilitates traceability of the manufacturer. Full details of the scheme requirements, the plug colour coding and lists of certified manufacturers and installers can be found on BM TRADA’s website. http://www.bmtrada.com/

CERTIFIRE Scheme

Certifire operates product conformity certification schemes for wood doors (in conjunction with the British Woodworking Federation (BWF)) and steel doors. A data sheet supplied with each door specifies the scope of application and gives installation instructions for the door and its associated components (glazing, hardware, etc.) Wood doorsets certified under the scheme carry the BWF-CERTIFIRE label, which uniquely identifies the door and gives its fire performance rating. Other CERTIFIRE schemes cover intumescent and smoke seals, and builders’ hardware. Details on the certification process etc. can be found on their website: http://www.warringtoncertification.com/

C/S Acrovyn Fire Door Q-Mark Plugs

<table>
<thead>
<tr>
<th>30 min</th>
<th>60 min</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://via.placeholder.com/150" alt="30 min" /></td>
<td><img src="https://via.placeholder.com/150" alt="60 min" /></td>
</tr>
<tr>
<td>Approved door. Intumescent not yet fitted</td>
<td>Approved door. Intumescent in door factory fitted.</td>
</tr>
<tr>
<td><img src="https://via.placeholder.com/150" alt="30 min" /></td>
<td><img src="https://via.placeholder.com/150" alt="60 min" /></td>
</tr>
<tr>
<td>Approved door. Intumescent in door factory fitted.</td>
<td>Approved door. Intumescent in door factory fitted.</td>
</tr>
<tr>
<td><img src="https://via.placeholder.com/150" alt="30 min" /></td>
<td><img src="https://via.placeholder.com/150" alt="60 min" /></td>
</tr>
<tr>
<td>Approved factory fitted glazing.</td>
<td>Approved factory fitted glazing.</td>
</tr>
<tr>
<td><img src="https://via.placeholder.com/150" alt="30 min" /></td>
<td><img src="https://via.placeholder.com/150" alt="60 min" /></td>
</tr>
<tr>
<td>* When fixed to frame = Approved frame to match door. All intumescent to door and frame fitted</td>
<td></td>
</tr>
</tbody>
</table>

CERTIFIRE Note:

Label image and above text sourced from: http://www.bwfcertifire.org.uk/
IFC Certification Ltd.

IFC Certification Ltd. offers both wood and steel fire door certification against the test requirements of BS 476-22 and BS EN 1634-1. Certified products are identified by a metal label (for steel doors) or a plastic label (wood doors) colour coded to BS 8214, uniquely numbered and identifying the door manufacturer. For further details, see IFC Certification Ltd. website:
http://www.ifccertification.com/

Loss Prevention Certification Board (LPCB)

LPBC is a certification brand of BRE Global Limited offering third party approval confirming that products and services conform to required fire safety standards. LPCB Red Book Volume 2 lists approved fire break doors and shutters and gives installation requirements. The Red Book can be downloaded from:
http://www.redbooklive.com/redbookdownload.jsp

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Fire Door Observation Checklist

Below you will find some useful observations that should be made for each of the fire doors in your facility. This list is not exhaustive, and should not be used as a substitute to any recommendations from the Local Fire and Rescue Service and/or Building Control Authorities, but is a good place to start:

Door Fully Closing
- Does the fire door fully close & shut tight by use of its own self closing device?
  - No - remedial work is needed
- Does the fire door slam shut with force?
  - Yes - Self closing device requires adjustment to dampen the closing action

Door Closer Operation
- Has the door closing arm been separated from the frame?
  - Yes - Reaffix
- Is there any oil leaking from the door Self Closing device?
  - Yes - New closing device required

Door Handles
- Is the door handle functioning correctly? Are they loose or missing?
  - Take appropriate action as necessary, including reporting to maintenance as a priority repair

Door Seals
- Are the intumescent and/or cold smoke seals in good condition, not missing or damaged?
  - If damaged or missing must be replaced with like for like (contact manufacturer if not known)

Glazing in Door
- Is the glazing in the fire door loose, does it rattle or is it broken?
  - Yes - requires replacing, contact manufacturer to determine whether it can be done on site
- Are the Vision Panels in the door clear and unobstructed to provide safety to door users on both sides of the leaf?
  - No - requires immediate action

Door Hinges
- Are the hinges in good condition? (missing screws? leaking oil?)
  - No - requires immediate action

Door Hold Open Devices
- Electromagnetic hold open not working - units hanging off door or walls etc.
  - Yes - requires immediate repair
- Is something wedging the door open?
  - Yes - remove obstruction, only an approved device complying with BS 5839 may hold open a fire door.

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Useful Documents for logging maintenance

Example Door Check Record Sheet

<table>
<thead>
<tr>
<th>Date</th>
<th>Door Identification Number</th>
<th>Faults &amp; Remedial Action</th>
<th>Name &amp; Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>24/06/13</td>
<td>G/2</td>
<td>Leaking oil from overhead door closer - Maintenance Request submitted 28 June Ref: 12345</td>
<td>J Bloggs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>J BLOGGS</td>
</tr>
<tr>
<td>24/06/13</td>
<td>1/4</td>
<td>Intumescent strip missing from edge of door - Maintenance Request submitted 28 June Ref: 12346</td>
<td>J Bloggs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>J BLOGGS</td>
</tr>
</tbody>
</table>

Example Fire Door Register

<table>
<thead>
<tr>
<th>Door No:</th>
<th>Location</th>
<th>Door Resistance (mins)</th>
<th>Smoke Seal / Intumescent Strips</th>
<th>Single or Double Swing</th>
<th>Door Closure?</th>
<th>Door Hold Open Mechanism?</th>
<th>Glazing?</th>
</tr>
</thead>
<tbody>
<tr>
<td>G/1</td>
<td>Ground Floor corridor o/s Room G06</td>
<td>30</td>
<td>S/S = Yes I/S = Yes</td>
<td>Double Swing</td>
<td>Floor Closure</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>1/2</td>
<td>First Floor Corridor to Lab 123</td>
<td>30</td>
<td>S/S = No I/S = Yes</td>
<td>Single Swing</td>
<td>Over Head</td>
<td>Yes (electromagnetic)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Useful reading and references

- BS 8214:2008, Code of practice for fire door assemblies
- BS 9999:2008, Code of practice for fire safety in the design, management and use of buildings
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If you have any questions or comments we’d love to hear from you, please get in touch via:

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