This Guidance Note provides advice on standards for doors on means of escape routes.

This Note is one of a series produced by the Authority to provide advice on various aspects of fire safety. If you require any further guidance on the advice given or require advice on another topic please contact your local borough Fire and Community Safety Centre or visit the London Fire Brigade web site at http://www.london-fire.gov.uk

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1 INTRODUCTION

1.1 The common term 'Fire Door' usually means one of two door uses:

**Doors on escape routes or Final Exit doors:**

1.2 In order to allow persons to evacuate from buildings in the event of a fire, doors on the means of escape routes must satisfy certain criteria to allow persons to easily pass through them. Generally, this means that the doors must be unobstructed and easily opened without the use of a key.

**Fire Resisting Doors:**

1.3 Protected escape routes i.e. staircases and certain corridors are constructed from fire resisting material to allow persons to escape without being obstructed by fire, heat and smoke and therefore doors within these escape routes may also have to be fire rated and fitted with self-closing devices. The period required for fire resistance on escape routes is usually 30 minutes.

2 OTHER AUTHORITIES YOU MAY NEED TO CONSULT

2.1 If the premises is being constructed or altered, it will be subject to Building Regulation approval administered by the Local Authority Building Control office or an approved inspector under the Building and Approved Inspectors (Amendment) Regulations 2007.

2.2 There are also other enforcing authorities who have legislative control over certain premises and, depending on the use of the premises, they may need to be consulted before any works are undertaken. These may include:-

- Health and Safety Executive e.g. construction sites
- Crown Premises Inspection Group (CPIG) e.g. prisons
- MOD fire service e.g. army base
- Approved inspector under the Building and Approved Inspectors (Amendment) Regulations 2007
- Local Authority (contact the local borough council to find out which department may be involved)
- English Heritage (if the building is listed as being of historical interest)

3 DOORS ON ESCAPE ROUTES/FINAL EXIT DOORS - GENERAL PRINCIPLES

3.1 Automatic Sliding Doors
Where automatic sliding doors are to be installed, whether operated electrically or pneumatically, the fail safe arrangements should be either:-

(a) that the doors fail safe in the open position, or

(b) that the door may fail safe in the closed position if the doors have provision for pivoting outwards in the direction of the means of escape, or there is a door in the immediate vicinity that has that facility. The pivoting sliding doors should display a notice "In emergency push to open" in conspicuous plain letters.

3.2 Mechanical Revolving Doors
In general, revolving doors are not acceptable for means of escape purposes, thus installations using revolving doors must include suitable pass doors of a conventional pattern.

3.3 Each bypass door should be considered as a single unit of exit width for exit calculations

3.4 The door should be connected to the fire alarm system so that upon an evacuation signal in any part of the building it stops rotating. Preferably, the doors should stop with each leaf in contact with an edge of the enclosure. This will avoid the edge of a free-swinging door causing an obstruction hazard.
3.5 Each door leaf should be clearly indicated on each side "In an emergency push to open" in white plain letters of adequate size on a green background. Suitable push rails should be provided on each side of the door.

3.6 The spring loading on the articulated door leaves should not exceed the normal loading of an average self-closing device.

3.7 When fully opened against the core, each leaf should be automatically held in that position until released manually. When released, each leaf should return to its normal position at a safe, controlled speed.

3.8 Emergency stop switches should be positioned on each side of the enclosure.

3.9 The electrical supply to the doors should be arranged so that when stopped, either as a result of a deliberate action (e.g. fire alarm) or as a result of a power failure, the doors can only be restarted by the manual operation of a switch. The switch should be sited to give the operator a clear view of the doors, with instructions that the doors should not be restarted with persons in the enclosure.

**Swing Leaf Doors**

3.10 Doors and gates forming part of an escape route should be hung to open in the direction of escape, clear of any steps, landings or the public way where :-

(a) more than 50 persons may require to escape from office or shop accommodation;

(b) more than 10 persons may require to escape from factory accommodation;

(c) an exit door from a stairway is situated within 3m of the foot of a stairway and more than 10 persons may require to escape.

3.11 Where an outward opening door cannot be provided, e.g., because it would obstruct a public right of way, the inward opening door should be kept locked in the open position whilst the premises are in use.

3.12 In special circumstances where the fire hazard is considered to warrant it, exit doors may be required to open in the direction of escape irrespective of the number of occupants (e.g., spraying booths and premises licensed for entertainments purposes).

**Sliding Doors**

3.13 Sliding doors may be permitted on parts of routes of escape which would normally be used by not more than 20 persons, such as in factories, warehouses or similar premises where a particular use may necessitate the provision of such doors. They should be marked "Slide to open" and be provided with a direction arrow indicating the direction of opening.

**Rolling Steel Shutters, Iron Doors and Collapsible Gates**

3.14 Rolling steel shutters, iron doors and collapsible gates on escape routes should be kept in the open position during the time the building is occupied and an appropriate notice fixed adjacent to each such shutter.

**Wicket Doors**

3.15 Full size wicket doors should be provided in large sliding doors and in large rolling shutters on escape routes and such doors should be clearly defined and be permanently marked "FIRE EXIT". Where a wicket door is not of standard size it may not be suitable for the number of persons that may need to escape.
4 FIRE RESISTING DOORS – GENERAL PRINCIPLES

Fire Door components

4.1 A fire resisting door has several component parts such as the door leaf, frame, hinges, glazing, self closing device, signs, intumescent fire and smoke seals. If any one or more of these parts is missing or not operating effectively the door may not operate correctly or provide the required protection.

New Doors and frames

4.2 New doors and frames which are being provided and installed as a "set" should comply with the relevant parts of BS 476 or BS EN 1634 and should be installed by a competent installer.

Signage

4.3 Except in the case of doors to hotel bedrooms and doors to and within dwellings (including flats and maisonettes), fire resisting doors should be marked with a permanent notice "Fire door keep shut" which should comply with the Health & Safety (Safety Signs & Signals) Regulations 1996.

Self closing Devices

4.4 All fire resisting doors other than those to locked cupboards or service ducts should be fitted with an appropriate closing device that will close the door without human intervention. Rising butt hinges are not suitable for use as a self closing device due to their inability to close the door from any angle.

Automatic Hold Open/Release Devices

4.5 These devices are designed to hold self closing fire resisting doors in the open position or allow them to swing free during normal operation. In the event of the fire alarm actuating or a power failure the device will release the door and allow the self closing mechanism to close the door fully. The use of these devices should be subject to the premises Fire Risk Assessment.

Improving Fire Resistance of Existing Doors and Frames

4.6 Methods for improving the fire resistance of existing doors and frames are contained in ‘Building Research Establishment Digest 220, Timber framed doors’.

4.7 In particular the standard of fire resistance of doors can be improved by the use of intumescent materials on the edges of doors and/or door frames, and the use of smoke seals around the door is an effective way to smoke stop fire resisting doors.

5 BIBLIOGRAPHY

5.1 The publications can be obtained from the following addresses:

<table>
<thead>
<tr>
<th>AVAILABLE FROM</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>Timber Research and Development Association</td>
<td>Timber Research and Development Wood Information Sheet 1-32 Fire Resisting Doorsets by Upgrading</td>
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<tr>
<td>Stocking Lane</td>
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| 389 Chiswick High Road                       |                                                   |
| London                                       |                                                   |
| BS 476-31.1 Methods for measuring smoke penetration through doorsets and shutter assemblies |
|BS 9999:2008: Code of practice for fire safety in the design, management and use of buildings |
|BS 9991: 2011: Fire safety in the design, management and use of residential buildings. Code of practice |
|BS 8214 :2008 : Fire Door Assemblies with non-metallic Leaves |
|BS EN 1634-1:2008 : Fire Resistance Tests for Door and Shutter Assemblies: Fire doors and shutters |
|BS4787-1:1980: Internal and external wood doorsets, door leaves and frames. Specification for dimensional requirements |
|BS EN 1154:1997 Building hardware. Controlled door closing devices. Requirements and test methods |
|BS 5839-3:1988 Fire detection and alarm systems for buildings. Specification for automatic release mechanisms for certain fire protection equipment |
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|BS EN 1125:2008 Building hardware. Panic exit devices operated by a horizontal bar, for use on escape routes. Requirements and test methods |
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|BS 8220 Guide for security of buildings against crime. |

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<td>Fire safety in factories and warehouses</td>
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The London Fire Brigade is run by the London Fire & Emergency Planning Authority

Ron Dobson QFSM
Commissioner for Fire and Emergency Planning

Telephone orders: 0870 600 5522
Fax orders: 0870 600 5533
Web: www.tso.uk

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Fire safety in premises providing sleeping accommodation
ISBN-13: 978 1 85112 818 1

Fire safety in residential care premises
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Fire safety in educational premises

Fire safety in small and medium places of assembly

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Communities & Local Government
www.communities.gov.uk

A short guide to making your premises safe from fire
Product code: 05 FRSD 03546

The above publications are current at the time of preparation of this Guidance Note, (see date at foot of last page).

The "Fire Safety" guides listed above may also be downloaded free of charge from the Fire Safety Law Section of the CLG website at: www.communities.gov.uk.