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(ICS 13.220.50; 91.060.50)

SINGAPORE STANDARD
Specification for fire doors

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Specification for fire doors

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*As amended,
Sep 2022*

Foreword

This Singapore Standard was prepared by the Working Group appointed by the Technical Committee on Architectural Works which is under the purview of the Building and Construction Standards Committee.

It is a revision of SS 332:2007, "Specification for fire doors".

This standard covers the installation and construction of the fire door assemblies. The requirements specified in this standard generally refer to materials and assemblies, which, through field experience, have been found acceptable for such application.

The major revisions made in the standard are as follows:

- a) The test standards for various hardware are extended to include mechatronic cylinder and electromechanical lockset. All hardware tests are in accordance to European Standard (EN).
- b) The fire resistance test is in accordance to BS EN 1634-1.
- c) The inclusion of a clause for double acting glazed doorset to incorporate fire seals around perimeter of door panels, except the bottom edge.
- d) The inclusion of maximum force requirement for door closer to facilitate door opening.

In preparing this standard, reference was made to the following publications:

| | |
|---------------|---|
| AS 1530.4 | Methods for fire tests on building materials, components and structure – Part 4: Fire-resistance tests of elements of construction |
| BS 476-4 | Fire tests on building materials and structures – Part 4: Non-combustibility test for materials |
| BS 476-11 | Fire tests on building materials and structures – Part 11: Method for assessing the heat emission from building materials |
| BS 476-22 | Fire tests on building materials and structures – Part 22: Method for determination of the fire resistance of non-loadbearing elements of construction |
| BS EN 1363-1 | Fire resistance tests – Part 1: General requirements |
| BS EN 1363-2 | Fire resistance tests – Part 2: Alternative and additional procedures |
| BS EN 1634-1 | Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Part 1: Fire resistance test for door and shutter assemblies and openable windows |
| BS EN 13637 | Building hardware – Electrically controlled exit systems for use on escape routes – Requirements and test methods |
| ISO 3008:2007 | Fire-resistance tests – Door and shutter assemblies |

Permission has been sought for the reproduction of materials from the following organisations:

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1. AS 1905 Components for the protection of openings in fire-resistant walls – Fire-resistant doorsets

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CEN – European Committee for Standardization

2. EN 179 Building hardware – Emergency exit devices operated by a lever handle or push pad, for use on escape routes – Requirements and test methods
3. EN 1125 Building hardware – Panic exit devices operated by a horizontal bar, for use on escape routes – Requirements and test methods
4. EN 1634-1 Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Part 1: Fire resistance test for door and shutter assemblies and openable windows

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1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions. Where SSs are deemed to be stable, i.e. no foreseeable changes in them, they will be classified as "mature standards". Mature standards will not be subject to further review unless there are requests to review such standards.*
2. *An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore and the Singapore Standards Council shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR. Although care has been taken to draft this standard, users are also advised to ensure that they apply the information after due diligence.*
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Specification for fire doors

1 Scope

This standard specifies requirements for the construction and installation of fire-resistant doorsets used to protect openings in walls and partitions, which are required to resist the passage of fire. Manufacturers of fire-resistant doorsets are strongly encouraged to implement a quality control system in accordance with ISO 9001 / ISO 9002.

This standard also applies to transom panels over 0.5 h fire-rated doors, where the panels are contained within the door frame and form part of the doorset. A panel above a doorset, which is not contained within the door frame, is considered as being part of the wall and is therefore subject to the stability, integrity and insulation requirements set out in accordance with applicable statutory and regulatory requirements. A transom within a door frame may be permanently fixed to the side members of the frame or may be removable by means of mechanical fixing.

This standard does not apply to lift-landing doors.

Materials for floor coverings that extend through a fire-resistant doorset opening are not within the scope of this standard.

2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

| | |
|--------------|---|
| BS 476-4 | Fire tests on building materials and structures – Part 4: Non-combustibility test for materials |
| BS 476-11 | Fire tests on building materials and structures – Part 11: Method for assessing the heat emission from building materials |
| BS EN 179 | Building hardware – Emergency exit devices operated by a lever handle or push pad, for use on escape routes – Requirements and test methods |
| BS EN 1125 | Building hardware – Panic exit devices operated by a horizontal bar, for use on escape routes – Requirements and test methods |
| BS EN 1154 | Building hardware – Controlled door closing devices – Requirements and test methods |
| BS EN 1155 | Building hardware – Electrically powered hold-open devices for swing doors – Requirements and test methods |
| BS EN 1158 | Building hardware – Door coordinator devices – Requirements and test methods |
| BS EN 1303 | Building hardware – Cylinders for locks – Requirements and test methods |
| BS EN 1634-1 | Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware – Fire resistance test for door and shutter assemblies and openable windows |

| | |
|-------------|---|
| BS EN 1906 | Building hardware – Lever handles and knob furniture – Requirements and test methods |
| BS EN 1935 | Building hardware – Single-axis hinges – Requirements and test methods |
| BS EN 12051 | Building hardware – Door and window bolts – Requirements and test methods |
| BS EN 12209 | Building hardware – Locks and latches – Mechanically operated locks, latches and locking plates – Requirements and test methods |
| BS EN 14846 | Building hardware – Locks and latches – Electromechanically operated locks and striking plates – Requirements and test methods |
| BS EN 15684 | Building hardware – Mechatronic cylinders – Requirements and test methods |