

**Strebord®  
Fire Door Applications**

**Section 2 - Applications - General**

**Section 2A - FD30 Strebord 35+, 38+, 44 & Superpan  
with MDF & Wood Frames**

**Section 2B - FD30 Strebord 35+, 38+, 44, Superpan &  
Strebord 54 with Steel Frames**

**Section 2C - FD30 Strebord 35+ with Softwood Stiles & Rails  
with MDF & Wood Frames**

**Section 2D - FD30 Strebord 38+ with Softwood Stiles & Rails  
with MDF & Wood Frames**

**Section 2E - FD30 Acrovyn Clad Doors with MDF &  
Wood Frames**

**Section 2F - FD60 Strebord 54 Hardwood Frames**

**Section 2G - FD60 Strebord 54 MDF Frames**

**Section 2H - FD60 Strebord 54 Steel Frames**

**Section 2J - FD60 Acrovyn Clad Doors**



## Fire Door Applications:

Safety provisions in the event of fire are generally described by reference to National Regulations. In addition, requirements may be influenced by:

Local Bye Laws.  
Client specifications.

**NOTE: Client specifications may take into account the particular purpose of the building e.g. HTM58 for Hospitals or Building Bulletin 100 for Schools in the United Kingdom.**

The applicable Regulation for England & Wales is: Building Regulations (*England & Wales*) - Approved Document 'B' - 2006 Edition incorporating 2010 & 2013 amendments.

**NOTE: Similar regulations apply in Scotland, Northern Ireland and the Republic of Ireland.**

Approved Document 'B' is in two parts:  
**Approved Document 'B1' applies to Dwellings.**  
**Approved Document 'B2' applies to Public Buildings.**

For dwellings, the doorset designs are generally determined by the door / doorset manufacturer and are normally available in 'standard' sizes (*See BS4787 Pt.1*) from Builders Merchant sources. The doors / doorsets are generally manufactured for 'stock' with no particular final location in mind.

For public buildings, the design of the doorsets may be determined by an Architect or Designer with each doorset designed to suit a particular opening in a particular building. This may result in a wide variety of dimensional and feature requirements often with performance attributes in addition to the fire performance.

A standard (*prescribed*) product can be tested to the required performance standard and supplied on the basis of the base test evidence. For non standard or bespoke products it would be an impossible task to test every possible variant in size, configuration, glazing requirements and hardware variations. The method adopted in the United Kingdom is for bespoke doorset suppliers to test constructions to provide for applications 'envelopes'.

**NOTE: Similar methods apply in the United States of America, Commonwealth and ex Commonwealth countries and many other Middle Eastern and Far Eastern states.**

An 'applications envelope' is determined by way of 'expert opinion' based upon test evidence. The base test evidence sources include testing carried out by the door core manufacturer and other doorset component suppliers / manufacturers. e.g. intumescent seal, glass, hardware suppliers / manufacturers. etc.

The 'owners' of the base test data make their test evidence available to a 3rd. party certification body (*expert organisation*). The independent 3rd. party certification bodies create what is generally described as a 'Global Assessment' which sets out the parameters for fire door applications related to a particular construction.

As with any expert opinion, opinions may differ according to the experiences of the particular 3rd. party certification provider. This manual sets out the parameters for the application of Strebord based fire performance doorsets under the 'Q' Mark scheme that is administered by BM TRADA. To maintain the 'Q' Mark certification the doorset manufacturer using Strebord must also be a member of the 'Q' Mark certification scheme.

For various reasons, users of Strebord may wish to be members of alternative 3rd. party certification schemes. A list of leading providers of 3rd party certification is provided by reference to *Section 15 - Appendix* of this manual together with brief details of facilities offered and contact details. Falcon Panel Products Ltd. provide support for all of the listed 3rd. party certification providers by making base test evidence available for the purpose of assessment.

**NOTE: The term 'assessment' related to the assessment provided by 3rd. party certification bodies should not be confused with the term 'assessment' used in Approved Document 'B' for the purpose of regulation. The assessment required by reference to regulations is determined by the 'authorities' responsible for the particular building, generally recognised as being the Designer, in consultation with Local Building Control, and (where applicable) the Local Fire Services. The authorities may accept the expert opinions provided by 3rd. party certification bodies as guidance but they are under no obligation to accept such expert advice.**

## Fire Door Applications

### Fire Door Applications contd.

The particular project authorities may require:

- a/ 3rd, party certification originating from a particular 3rd. party certification provider.
- b/ A 'project assessment' related to the particular design requirements for a particular building.
- c/ Further testing of particular designs or design detail.
- d/ Additional 3rd. party certification to cover particular requirements that are outside of the scope of the Global Assessment.

There is generally an additional cost where there is a demand for certification in addition to that provided by the 'Global Assessment'. The cost will be influenced by the work required and the extent of the which any resultant data is limited to the particular project or can be applied generally for future applications.

Falcon Panel Products Ltd. will support users of Strebord® by providing base test data owned by them for reference by 3rd. party certification bodies. Further, Falcon Panel Products Ltd. may provide support for users of Strebord® cores who wish to carry out further testing by way technical support and the provision of core materials for testing purposes.

Project specifications will generally define the regulations to be applied to the particular building with a further definition of design requirements. It is generally the responsibility of the doorset manufacturer to provide for the necessary documentation to the reasonable satisfaction of the project authorities. It is strongly recommended that considerations of this nature are dealt with in advance of manufacture of the doorsets.

This section provides for general guidance for the application of Strebord core doors for BS476 Pt.22 related FD30 and FD60 performances. It is important to note that size envelopes may vary according to the size and type of intumescent seal used. Reference should be made to other sections in this manual to determine recommended intumescent seal locations and requirements for additional intumescent gaskets for use with hardware.

**NOTE 1: The dimensional envelopes for the fire door application of Strebord® core doors will vary according to the size and type of intumescent seal selected for the particular project. To assist users, this Section identifies application dimensions related to intumescent seal type and size.**

**NOTE 2: More limited application dimensions apply to some intumescent seal types. This does not imply that the particular seal type is in anyway inferior but rather, this reflects the extent of testing carried out with the particular seal types at the time of publication of this manual. A continuing fire test programme is likely to result in variations to these published application dimensions and users should contact Falcon Panel Products Ltd. for further advice for applications not covered by this manual.**

**NOTE 3: This Section should not be read in isolation, refer to other sections for detail information.**

**WARNING: Various formulae are used in the manufacture of intumescent seals which may provide for different performance characteristics under fire conditions. The mixing of intumescent seal types for use in the same doorset is not approved.**

#### Door Gaps / Alignment:

The following describes the maximum / minimum approved operating gaps and door leaf positioning for fire door applications. This advice is related specifically to the achievement of design fire performances and should not be referred to as an authority to vary the requirements of BS 4787 Pt.1 for general applications or BS9999 in respect of smoke sealed doorsets.

Location	Dimension
Head & Stile edge gaps.	Approved minimum = 2mm Approved maximum = 4mm
Threshold	Approved maximum = 10mm above finished floor level.
Alignment	Door leaves must not project beyond the face of the adjacent door / panel or the frame by more than 1mm

**For further details please contact:**

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## CE Marking:

The majority of fire testing carried out by Falcon Panel Products Ltd. relates to BS476 Pt.22 to the satisfaction of Building Regulations - (*England & Wales*) - Approved Document 'B'.

Current European Standards require testing to BS EN 1634-1 for the purpose of CE marking doorsets for fire performance applications.

The scope for determining applications envelopes by way of 'expert opinion' as currently practised in the United Kingdom (*and in other world markets*) has yet to be finalised and at the time of preparation of this manual it is unclear how CE marking might be applied to bespoke products where designs (*and possibly some doorset components*) are determined 'by others' (*generally an Architect or Designer*) who is not employed by (*or under the control of*) the manufacturer - where the doorsets are not offered to the '*world at large*' - and where doorsets are purpose made, (*usually in contract related batches*) to suit a particular opening in a particular building according to a contract related time programme.

Notwithstanding this, it can be anticipated that CE marking may be required in due course for 'standard' (*prescribed*) products that are offered for sale to the '*world at large*' - are manufactured without a particular user location in mind - and where the designs are determined wholly by the doorset manufacturer.

Whereas the (*ISO related*) time / temperature curve is identical for both the BS476 Pt.22 and EN BS 1634-1 test, there are differences between the tests as follows:

**Pressure normal** - The pressure normal in the furnace (*point at which the pressure is equal on both faces of the door*) is 1000mm above floor level for the 476 Pt.22 test with this lowered to 500mm above floor level for the 1634-1 test.

**Thermocouples** - Twisted wire thermocouples are used for the 476 Pt.22 test with plate thermocouples used for the 1634-1 test. Twisted wire thermocouples react more quickly to changes in temperature thus, the front end charge required to heat the thermocouples is more aggressive for the 1634-1 test.

European Standards for the extended application of base test data have now be agreed but have yet to be applied to the increasing library of BS EN 1634-1 base test data now accumulated by Falcon Panel Products Ltd.

Strebord<sup>®</sup> provides for a competitive and reliable door core product that is suitable for a wide range of doorset performance applications, including fire performances. Falcon Panel Products Ltd. have now carried out a number of tests to the BS EN 1634-1 test standard and will continue with this programme in pursuance of a commitment to support manufacturers who wish to carry out further testing of their designs (*where the designs are based upon the use of the Strebord<sup>®</sup> core*) for CE marking purposes.

