
Title

Field of Application for:

Flamebreak 660 Ply Faced and
FF660 MDF Faced Doorset
Ranges in Timber Based Door
Frames

For 60 minutes Fire Resistance

Report No.:

FEA/F02141 Revision M

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WF534966

Prepared for:

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11 Installation

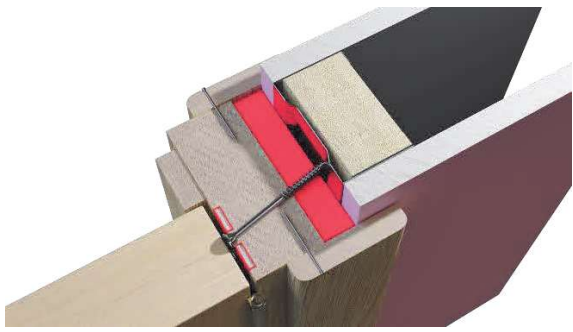
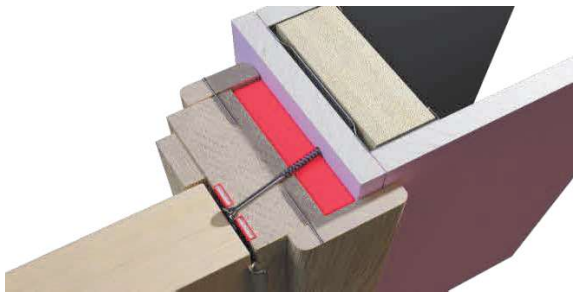
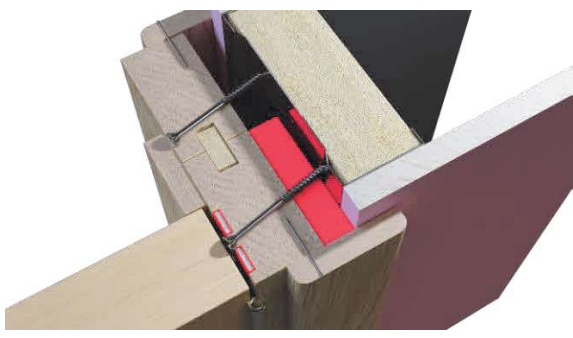
11.1 General

This section considers the installation of door frames and doorsets. This section considers:

- the door frame and architrave installation position relative to the wall
- the fire stopping between the frame and the wall and the use of shadow gaps.
- the fixing requirement including packers.
- the requirements for door edge gaps
- the trimming of door edges.

11.2 Door Frame Installation

The following figures indicate the acceptable door frame installations. Please note that the firestopping element is provided in the below 3D models as a generic red coloured seal. For further clarification of the approved firestopping systems see section 11.3.

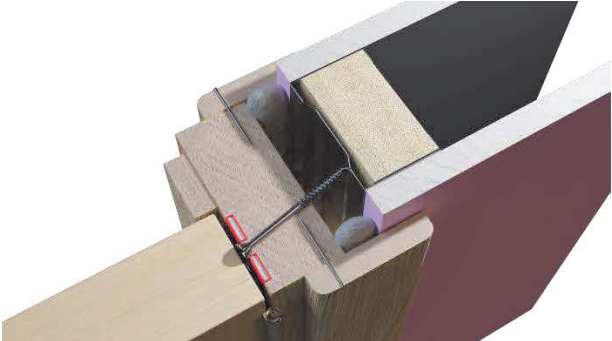
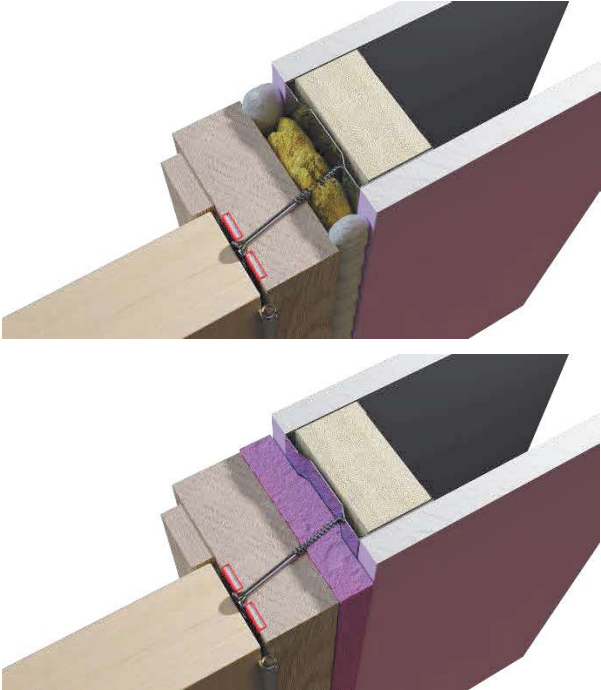
Permitted Installations	
	<p>Instances where the door frame and the wall of the same depth such that architraves are fitted flush to both faces. Note that the minimum door frame section size (width and depth) must be as per the requirements noted in this report – see door frame section.</p> <p>Architraves requirements are documented in the firestopping section of this report.</p>
	<p>Instances where the wall thickness is greater than the door frame depth.</p> <p>In this scenario timber architraves of minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap, other than when the architrave abuts the wall.</p>
	<p>Split frames are permitted providing that both frame sections are secured to the wall in accordance with section 11.5. Furthermore, the main frame section (from which the door is hung) must be constructed to at least the minimum door frame section size (width and depth) as per the requirements noted in this report – see door frame section. The extension piece must be constructed using the same timber species as the main frame section.</p>

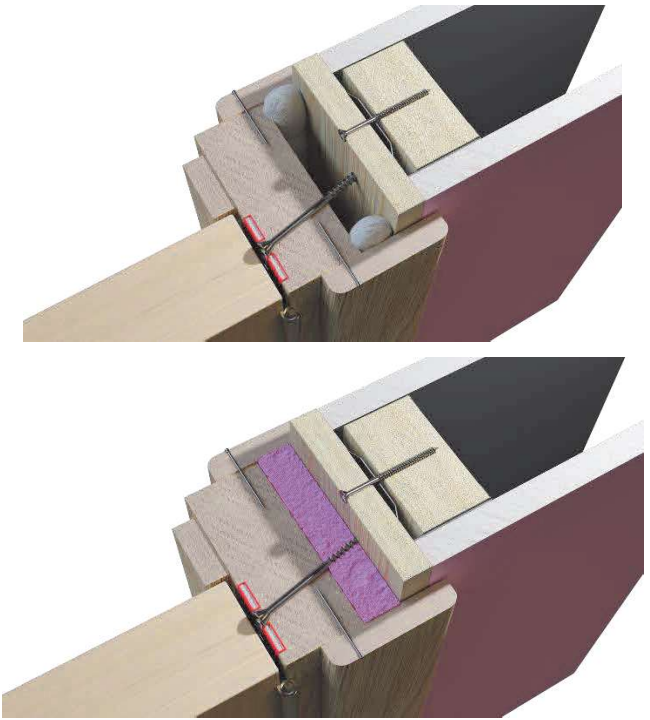
Note:

The drawings are provided as a generalised illustration of the door frame installation only; actual installation must be as per the text within this document specifies.

11.3 Firestopping

The firestopping requirements between the back of frame and wall are dependent on the gap size between the substrates. The table below provides the requirements based upon the gaps size. Please note that in the 3D depictions noted below show the application where a door frame is of the same depth as the overall wall thickness.

Gap (mm)	Requirement	3D model depiction
0 – 2	In practice, unlikely to occur, but if present, must be sealed with architraves, as below, fitted over a bead of acrylic intumescent sealant, tested as below.	N/A
3 – 10	Gap must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	
10 – 20	Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	

Gap (mm)	Requirement	3D model depiction
Over 20	<p>This would be considered a poor preparation of the structural opening. A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall bedded on intumescent mastic, the gap between door frame and subframe filled as follows:</p> <p>Gaps 5 to 10mm filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.</p> <p>Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.</p>	

11.4 Packers

Packers can be timber of equal density to the frame, or plywood or plastic packers if fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1.

11.5 Wall Types, Structural Opening & Fixity

11.5.1 Wall Types

The following wall types are approved for this doorset design:

- a) Plasterboard clad timber stud partitions
- b) Plasterboard clad steel stud partitions including timber lining.
- c) Masonry constructions

Wall types a & b above must have supporting fire resistance test evidence which demonstrates that it is capable of staying in place and intact for a minimum of 60 minutes whilst supporting a doorset design.

Wall type c above must be determined to be able to provide at least the same level of fire resistance as the doorset design.

All wall types detailed above shall provide a suitable medium to permit adequate fixity, it is anticipated that for:

- Plasterboard clad timber stud partitions, the timber stud will be of sufficient dimensions such that the fixing for the door frame penetrates into solid timber.
- Plasterboard clad steel stud partitions will include a timber lining of sufficient dimensions such that the fixing for the door frame penetrates into solid timber.
- Masonry constructions are anticipated to be constructed of a solid block or brickwork to receive the fixings.

Note: Other tested solutions to achieve adequate fixity may be detailed within the above noted supporting fire resistance test evidence.

11.5.2 Structural Opening

For all wall types the structural opening shall be square, plumb and provide a flat surface for installation of the doorset.

For flexible wall types such as steel and timber stud partitions the structural opening must be prepared in line with the test evidence provided by the wall manufacturer.

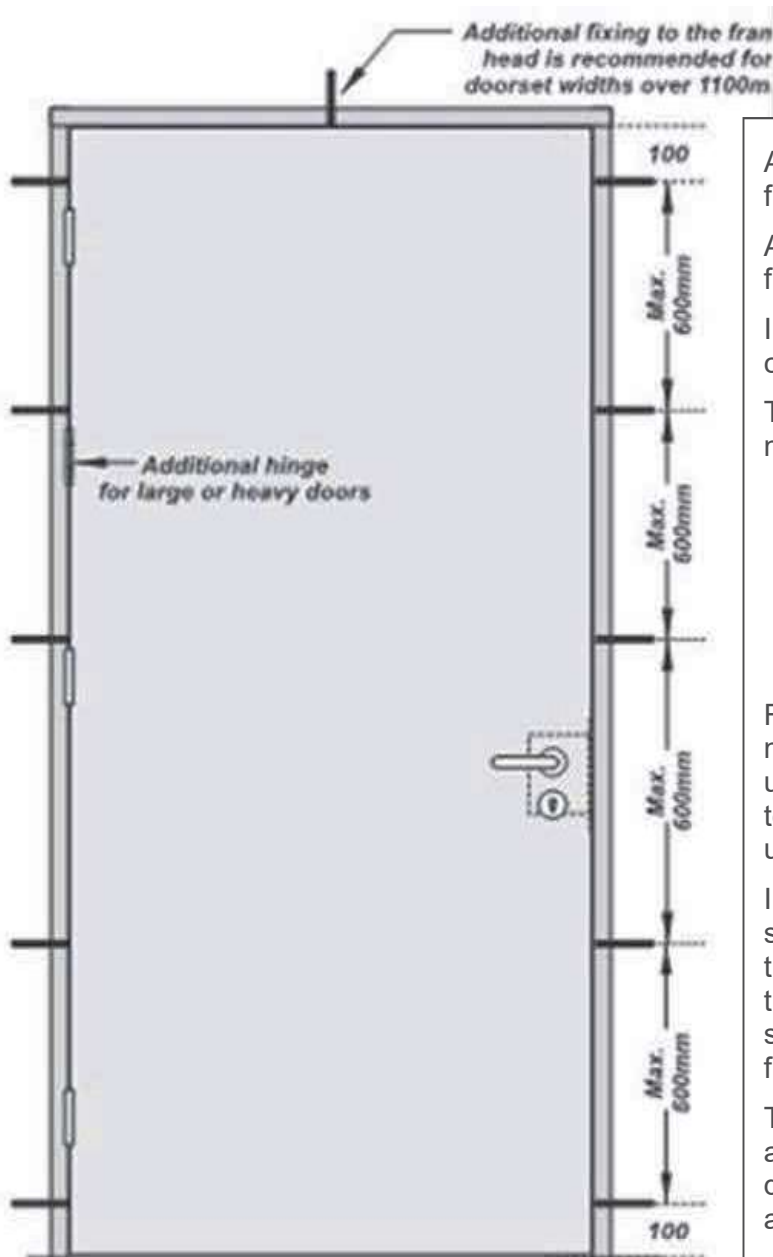
11.5.3 Fixings

The positioning of installation fixings in height should be planned to avoid conflicts with hardware, sealing systems and other building elements.

The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm.

It is not necessary to fix the frame head, although packers must be inserted. However, for doorset widths in excess of 1100mm the use of an additional fixing centre width of the doorset at the head position is recommended.

See following diagram for illustration on fixings for a typical timber door frame doorset installation:



Timber frame fixing locations illustrated.

A top fixing must be located within 100mm from the underside of the leaf head.

A bottom fixing must be located 100mm from the bottom of the frame jamb.

Intermediate fixings must be located at centres of not more than 600mm.

The minimum number of fixings in height must be:

1. Doorset height up to 2000mm = 4No.
2. Doorset height 2000 – 2500mm = 5No.
3. Add 1No. fixing for each further 500mm increase in door height.

For storey height doorsets a top fixing must be provided within 100mm from the underside of the frame head with a further top fixing positioned 100mm from the underside of the transom rail.

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

The same fixing specification and arrangement is to be replicated for doorsets that are fitted within screen assemblies.

11.6 Postproduction (Onsite) Leaf Size Adjustment

Doorsets constructed using the Flamebreak 660 Ply faced and FF660 MDF faced door blanks may be altered as follows.

Leaf Size Adjustment Specification	
Element	Reduction
Lipping	The post-production lipping thickness may be reduced by 1mm for fitting purposes, providing that the door gaps and intumescent conditions remain as required by this assessment and the minimum limitation in terms of lipping thickness is still maintained

11.7 Door Gaps

Door gaps and alignment tolerances must fall within the following range:

Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold	8mm between bottom of leaf and top of floor covering. This is the maximum tolerance for fire resistance only.

12 Insulation Performance

Insulation performance may be claimed for a doorset to this design meeting the following:

Insulation Performance Criteria	
Type	Details
Partially insulating	Doorsets incorporating up to 20% of non-insulating glazing or letter plates
Fully insulating	Unglazed doorsets or doorsets including 60-minute insulating glazing

13 Conclusion

If doorsets were to be constructed in accordance with the specification documented in this field of application and were to be tested in accordance with BS 476: Part 22: 1987, it is our opinion that they would provide a minimum of 60 minutes integrity and insulation (subject to section 12).