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Title

Field of Application for:

The Halspan® Prima 60 Range of Doorsets.

Part 2: Steel Based Door Frames

For 60 minutes Fire Resistance

Report No.:

FEA/F96103 Part 2 Revision P

Issue Date:

23rd May 2024

Valid Until:

23rd May 2029

Job Reference:

WF530851

Prepared for:

Halspan Limited
Regent House,
Regent Centre,
West Lothian,
EH49 7HU
United Kingdom

Written permission must be obtained from Halspan Limited in order to manufacture doorsets within the scope of this assessment.

This field of application report FEA/F96103 Part 2 Revision P is one part of the suite of (Prima 60) assessments, other parts of the suite address other doorset designs.

Registered Office:
Warringtonfire Testing and Certification Limited, 3rd Floor, Davidson Building, 5 Southampton Street, London, WC2E 7HA, United Kingdom Co. Reg. No. 11371436

10.25 Rain Deflector

The table below details tested face fixed rain deflector that is approved to be face mounted at the bottom of one face of the door leaf.

Manufacturer & Product Reference (Test evidence)
• Exitex Ltd – Deflector 20 reference 1.01.0110 (CFR2105131, CFR2006181)

Tested and alternative aluminium rain deflectors may be fitted subject to the following requirements:

- Rain deflectors of maximum 30mm high x 20mm cross-sectional dimensions.
- Installation must not require the removal of any timber from the leaf or steel from the stop or frame reveal (except for screw fixing) and it does not interfere with the self-closing action of the door leaf.
- Screws to affix the rain deflector shall be no greater penetration into the leaf than 24mm long.
- 2No. 15mm wide x 4mm thick seals fitted centrally to the bottom edge of the leaf.

10.26 Hold Open Armatures

Armatures for magnetic hold open devices have been tested in WF404075/A and achieved in excess of 60 minutes fire resistance performance. On this basis the following tested armature is permitted for use within the Prima 60 doorset design:

Manufacturer & Product Reference (Test evidence)
• Specialized Security, DR-01, Aluminium with Slim line magnet (WF404075/A)

Alternative hold open armatures may be fitted subject to the following requirements:

- Hold open armatures are to be constructed of metallic or polymeric construction.
- The maximum dimensions of 65mm high x 65mm wide shall not be exceeded.
- Installation must not require the removal of any timber from the leaf or steel from the stop or frame reveal (except for screw fixing) and it does not interfere with the self-closing action of the door leaf.
- Screws to affix the hold open armature shall be no greater penetration into the leaf than 24mm long.
- The hold open armature shall be positioned no further than 200mm from the top or bottom edge of the leaf and be positioned no closer than 60mm from the leaf edge or rebated hardware.

11 Installation

11.1 General

This section considers the installation of doorsets. This section considers:

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

11.2 Door Frame Installation

Each door frame type considered herein must be installed as depicted within section 7.

Frame type M1 may be installed within the thickness of the wall or alternatively in a wraparound arrangement.

Frame type M3 may be installed with one face of the frame (opening or closing) wrapped around the wall but not both.

Frame type M4 must be installed in a wraparound arrangement.

11.3 Firestopping / Sealing to Structural Opening.

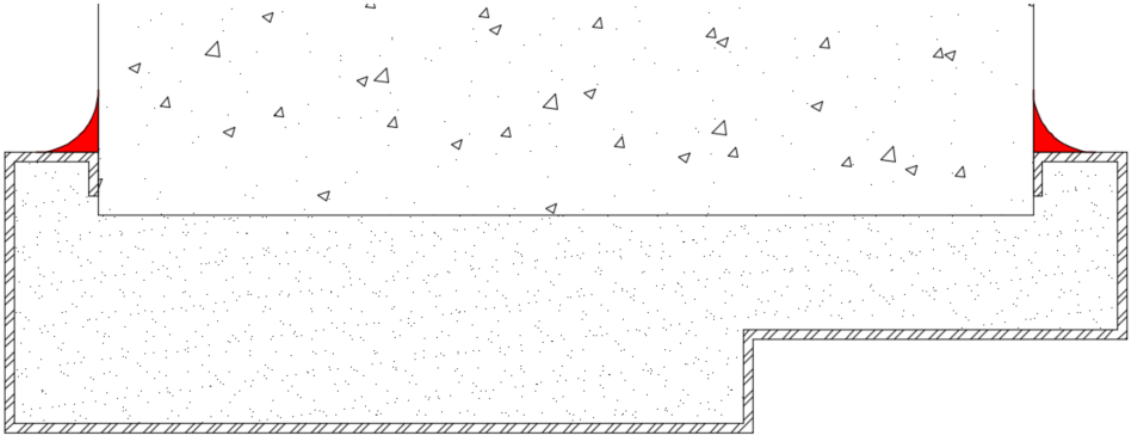
The following sub-sections provide tested and assessed acceptable door frame firestopping / sealing to structural opening requirements which are dependent on the Frame type chosen.

11.3.1 Frame M1

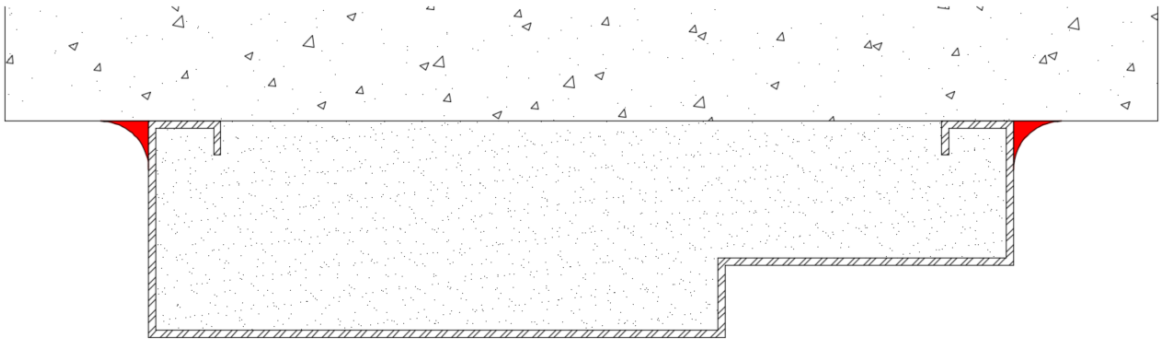
Frame M1 requires the rear of the frame to be fully back filled with cement mortar. Once completed no further fire stopping materials are required to be applied.

Optionally the junction between the frame and supporting construction may be additionally sealed with an intumescent acrylic mastic which has been tested in accordance with BS 476-22: 1987. The location is included as a red coloured seal in the following images.

Wrap Around Detail:



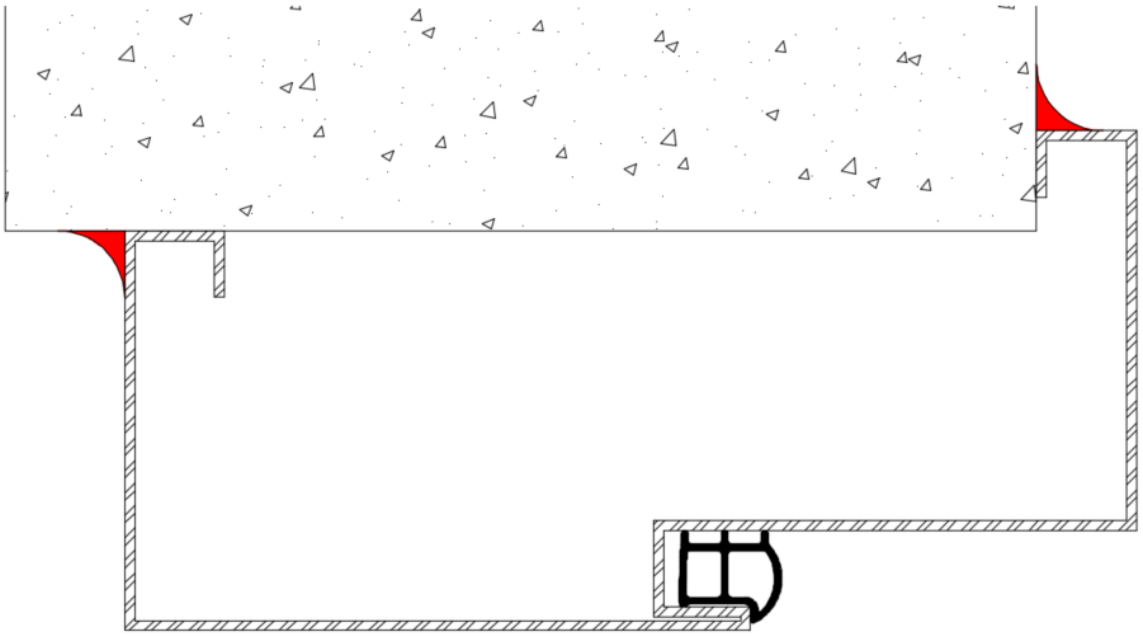
Within the Wall Thickness Detail:



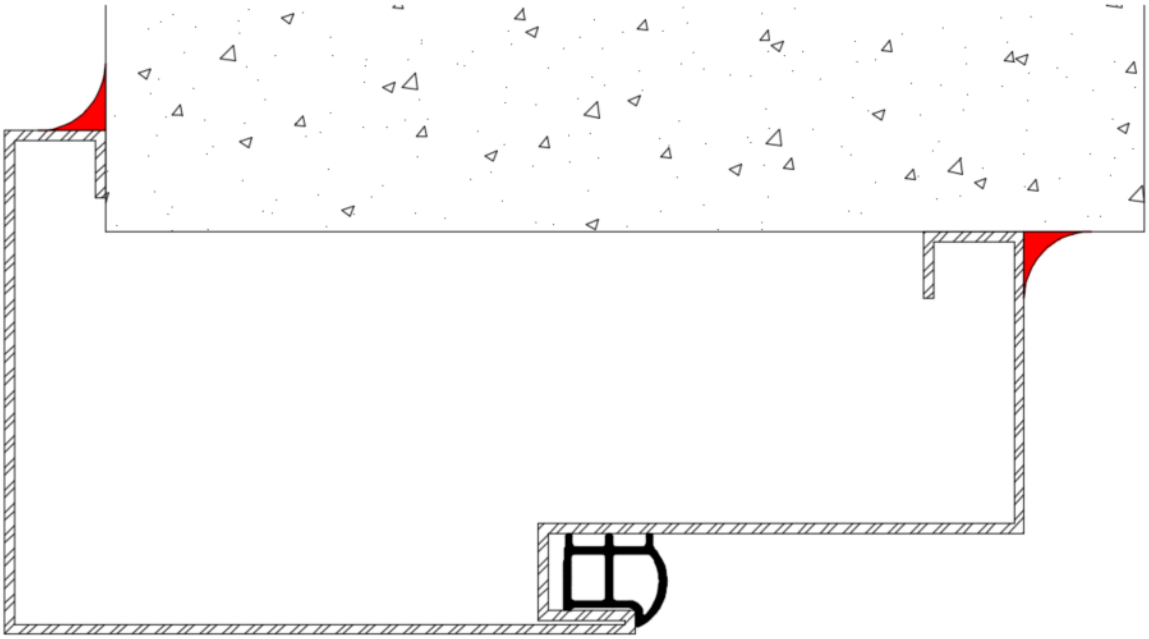
11.3.2 Frame M3

Frame M3 consists of a hollow frame profile. Once the doorset has been installed the junction between the frame and supporting construction must be sealed with a nominal bead of 6mm of intumescent acrylic mastic which has been tested in accordance with BS 476-22: 1987 with an non-insulating steel frame. The location is included as a red coloured seal in the following images.

Wrap Around Opening Face Detail:



Wrap Around Closing Face Detail:



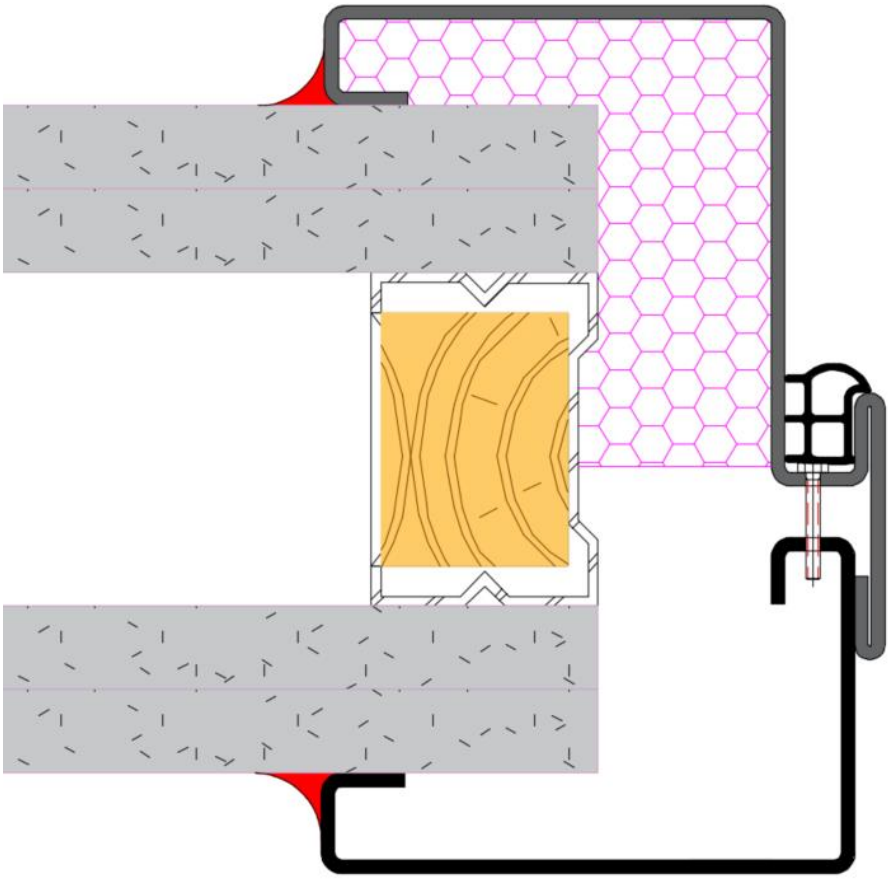
11.3.3 Frame M4

Frame M4 requires the rear of the frame element which the door leaf is hung from to be fully back filled with Sealed Tight Solutions Ltd, ST99 FR Foam. The gap between the rear of the frame profile and the supporting structure must be between 11mm and 26mm.

Once completed no further fire stopping materials are required to be applied.

Optionally the junction between the frame and supporting construction may be additionally sealed with an intumescent acrylic mastic which has been tested in accordance with BS 476-22: 1987. The location is included as a red coloured seal in the following images.

Wrap Around Detail:



11.4 Wall Types, Structural Opening & Fixity

The supporting construction must provide the required level of fire resistance designated for the doorset design and be a suitable medium to permit adequate fixity.

The following table shows which frame types are permitted with steel stud, timber stud and masonry supporting constructions.

Frame		Supporting Construction		
Reference	Material	Timber Stud	Flexible (steel stud)	Masonry
M1	Steel	×	×	✓
M3	Steel	×	×	✓
M4	Steel	✓	✓	✓

M1 and M3 are approved in the supporting constructions they were tested in. M4 was tested in a steel stud partition, it is the opinion of Warringtonfire that this permits the assessment of masonry and timber stud supporting constructions as these types of supporting constructions will limit the deflection of the metal frame when used with a timber-based door leaf.

11.4.1 Wall Types

The following wall types are approved for this doorset design as detailed above:

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 supporting a doorset design.

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

11.4.2 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.

11.4.3 Fixity & Fixing Frequency

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. Each of the frames considered within this assessment have test evidence which define the required fixity for the frame to the supporting structure that shall be followed:

Frame M1

The frame must be fixed into the supporting construction using a minimum of Ø4.5mm wide x 50mm long steel masonry screws, the use of polymeric wall plugs are optionally permitted. The fixings shall be applied at no greater than 150mm from corners and at maximum of 500 centres to the head and jambs.

Fixings are to be positioned such that they interact with the required steel 'U' bracket to the rear of the frame.

Frame M3

The frame must be fixed into the supporting construction using a minimum of Ø4.5mm wide x 80mm long steel masonry screws, the use of polymeric wall plugs are optionally permitted. The fixings shall be applied at no greater than 150mm from corners and at maximum of 500 centres to the head and jambs.

Fixings are to be positioned such that they interact with the required steel 'U' bracket to the rear of the frame.

Frame M4

The frame section to which the door is hung, must be fixed to the supporting construction using a minimum of Ø6mm x 100mm long steel screws appropriate to the supporting construction, the use of polymeric wall plugs are optionally permitted for use within masonry constructions. The fixings shall be applied at no greater than 150mm from corners and at maximum of 600 centres to the head and jambs.

Fixings are to be positioned such that they interact with the required steel bracketry to the rear of the frame.

11.5 Packers (Solid Padding)

Packers are not required for frame options M1 and M3 on the basis that the frame designs include 'U' brackets which are to be fixed tight to the supporting construction.

Packers are required within frame option M4 at all times (as tested in CFR2002051) and shall consist of magnesium oxide board with minimum dimensions of 90mm deep x 150mm high. Packers are to be positioned local to fixing locations only.

11.6 Post Production (Onsite) Leaf Size Adjustment

The Prima 60 range of doorsets in steel frames may be altered as follows:

Leaf Size Adjustment Specification	
Element	Reduction
Lipping	The post-production lipping thickness for flat timber based lippings may be reduced by 1mm for fitting purposes, providing that the door gaps and intumescent conditions (See section 4.5.4.1) remain as required by this assessment and the minimum limitation in terms of lipping thickness is still maintained. Otherwise, no modification can be made.