
Title:

Field of Application for:
Fibrecore 44 and Fibrecore 54
Doorsets
for:
30 Minutes Fire Resistance

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The version/revision stated on the front of this Field of Application supersedes all previous versions/revisions and must be used to manufacture doorsets from the stated validity date on this front cover. Previous revisions of the Field of Application cannot be used once an updated Field of Application has been issued under a new revision.

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1 Foreword

This field of application report has been commissioned by Falcon Panel Products Ltd and relates to the fire resistance of Fibrecore 44 and Fibrecore 54, 30 minute doorset designs.

The report is for National Application and has been written in accordance with the general principles outlined in BS EN 15725: 2010; *Extended application reports on the fire performance of construction products and building elements*.

This field of application (scope) uses established empirical methods of extrapolation and experience of fire testing similar door assemblies, in order to extend the scope of application by determining the limits for the designs based on the tested constructions and performances obtained. The scope is an evaluation of the potential fire resistance performance, if the variations specified herein were to be tested in accordance BS476: Part 22: 1987 and therefore can neither be considered for a CE marking application nor can the conclusion be used to establish a formal classification against EN13501-2.

This field of application has been written using appropriate test evidence generated at UKAS accredited laboratories, to the relevant test standard. The supporting test evidence has been deemed appropriate to support the manufacturers stated door designs and is summarised in section 3 and appendix A.

The scope presented in this report relates to the behaviour of the proposed door design variations under the particular conditions of the test; they are not intended to be the sole criterion for considering the potential fire hazard of the door assembly in use.

This field of application has been prepared and checked by product assessors with the necessary competence, who subscribe to the principles outlined in the Passive Fire Protection Forum (PFPF) guidelines to undertaking assessments. The aim of the PFPF guidelines is to give confidence to end-users that assessments that exist in the UK are of a satisfactory standard to be used for building control and other purposes.

The PFPF guidelines are produced by the UK Fire Test Study Group (FTSG) an association of the major fire testing laboratories in the UK and are published by the PFPF, the representative body for the passive fire protection industry in the UK.

2 Proposal

It is proposed to consider the fire resistance performance of the doorset designs described in the technical specification in section 4 of this assessment report, for 30 minutes fire resistance, if the designs were to be tested to the requirements of BS 476 Part 22:1987, *Fire tests on building materials and structures – Part 22: Method for determination of the fire resistance of non-load bearing elements of construction*.

The field of application defined in this report is based on the fire resistance test evidence for the doorset designs, which is summarised in section 3. Analysis of specific construction details that require assessment are given within this report against the relevant element of construction, as appropriate.

3 Test Data

The test evidence summarised below has been generated to support the fire resistance performance of the door designs that are the subject of this Field of Application.

Notes:

1. Dimensions are in mm unless otherwise stated.
2. Abbreviations: (h) = height; (w) = width; (t) = thickness; depth = (d).

3.1 Test RF11115

The referenced test report, the essential details of which are summarised below, is primary data for the door design being considered for assessment in this report. This test supports the flush design, in latched and unlatched single acting, single leaf doorsets.

Date of test	19 th August 2011	
Identification of test body	Chiltern International Fire (now trading as Warringtonfire Testing) UKAS ref: 1762	
Sponsor	MBM Forest Products Ltd, MBM House, 34 Berth, Tilbury Dock, Tilbury Freeport, Tilbury, Essex, RM18 7DP	
Tested Product	Specimen A: unlatched, single acting, single leaf, timber based doorset; Specimen B: unlatched, single acting, single leaf, timber based doorset with glazing.	
Summary of test specimen	<p>Leaf dimensions: Specimen A: 2440 (h) x 1220 (w) x 44 (t). Specimen B: 2135 (h) x 915 (w) x 44 (t). Both leaves comprised a core formed by 1No layer of 44 (t) MDF of nominal density 600kg/m³. All edges of the leaves were lipped with 10 (t) sapele of nominal density 640kg/m³. Specimen A: 1No. 20 x 4 Lorient Polyproducts Ltd LP2004 Type617 PVC encased intumescent strip was fitted centrally into the frame head and jambs. Specimen B: 1No. 15 x 4 Lorient Polyproducts Ltd LP1504 Type617 PVC encased intumescent strip was fitted centrally into the frame head and jambs. Hardware on specimen B was protected with 1mm thick intumescent gaskets, no protection was installed on specimen A. 7mm thick Pyroshield glass was installed in specimen B, retained with sapele beads and a Lorient 36/6 gasket. Both specimens were hung in a softwood frame with specimen A on 3No. and specimen B on 4No., steel bearing lift off type hinges per leaf, together with a lever operated mortice latch, disengaged for the test. A surface mounted overhead door closer, was fitted to the exposed face of the leaves. The doorsets were oriented to open in towards the furnace.</p>	
Test Standard	BS 476 Part 22:1987	
Performance (mins)	Specimen A	Specimen B
	Integrity: 31* Insulation: 31	Integrity: 43 Insulation: 0**

Notes:

* Failure recorded above the latch position, no further failures were recorded prior to termination of the test at 46 minutes

** In accordance with the note to clause 8.6.1 of BS 476 Part 22:1987, the specimen was not evaluated for insulation.

3.2 Test Report RF12012

The referenced test report, the essential details of which are summarised below, is primary data for the door design being considered for assessment in this report. Specimen A in this test supports assessment of flush doorset constructions, in latched and unlatched single acting, single and double leaf doorsets. Specimen B in this test supports assessment of panelled doorset constructions, in latched and unlatched single acting, single leaves only.

Date of test	19 th March 2012	
Identification of test body	Chiltern International Fire (now trading as Warringtonfire Testing) UKAS ref: 1762	
Sponsor	MBM Forest Products Ltd, MBM House, 34 Berth, Tilbury Dock, Tilbury Freeport, Tilbury, Essex, RM18 7DP	
Tested Product	Specimen A: unlatched, single acting, double leaf, timber based doorset; Specimen B: unlatched, single acting, single leaf, timber based doorset with panelled areas.	
Summary of test specimen	<p>Leaf dimensions: Specimen A: 2135 (h) x 926/480 (w) x 44 (t). Specimen B: 2135 (h) x 926 (w) x 44 (t).</p> <p>Specimen A: both leaves comprised a core formed by 1No layer of 44 (t) MDF of nominal density 600kg/m³, vertical edges of the leaves were lipped with 8 (t) beech of nominal density 720kg/m³.</p> <p>Specimen B: comprised a core formed by 1No layer of 44 (t) MDF of nominal density 600kg/m³, vertical edges of the leaf were lipped with 8 (t) beech of nominal density 720kg/m³. The core was reduced to 26mm thick to form panelled areas.</p> <p>Specimen A: 1No. 15 x 4 Pyroplex Rigid Box seal ref FO8700 PVC encased intumescent strip was fitted centrally into the frame head and jambs, with 2No Pyroplex Rigid Box Seals ref: FO8500 fitted 8mm apart, 4mm either side of the centreline in one meeting edge.</p> <p>Specimen B: 1No. 15 x 4 Pyroplex Rigid Box seal ref FO8700 PVC encased intumescent strip was fitted centrally into the frame head and jambs.</p> <p>No intumescent protection was installed to hardware.</p> <p>Both specimens were hung in a softwood frame on 3No. steel bearing lift off type hinges per leaf, together with a lever operated mortice latch, disengaged for the test. A surface mounted overhead door closer, was fitted to the exposed face of the leaves.</p> <p>The doorsets were oriented to open in towards the furnace.</p>	
Test Standard	BS 476 Part 22:1987	
Performance	Specimen A	Specimen B
	Integrity: 43 Insulation: 43	Integrity: 35 Insulation: 35

3.3 Test Report RF08125

The referenced test report, the essential details of which are summarised below, this test supports assessment of MDF door frames, in latched and unlatched single acting, single leaves only.

Date of test	16 th October 2008
Identification of test body	Chiltern International Fire (now trading as Warringtonfire Testing) UKAS ref: 1762
Sponsor	Falcon Panel Products Ltd.
Tested Product	Unlatched, single acting, double leaf, timber based doorset.
Summary of test specimen	<p>Leaf dimensions: 2442 (h) x 915/915 (w) x 44 (t). Both leaves comprised a Falcon Strebord 44 core, vertical edges of the leaves were lipped with 8 (t) Sapele of nominal density 640kg/m³. 2No. 15 x 4 Pyroplex PVC encased intumescent seals ref: CF355 were fitted centrally 10mm apart into the frame head and jambs and in one meeting edge. 1mm thick Interdens protection was installed to protect hardware.</p> <p>The specimen was hung in an MDF frame on 4No. steel bearing lift off type hinges per leaf, together with a lever operated mortice latch, disengaged for the test. A surface mounted overhead door closer, was fitted to the exposed face of the leaves.</p> <p>The doorset was oriented to open in towards the furnace.</p>
Test Standard	BS 476 Part 22:1987
Performance	Integrity: 49 Insulation: 49

3.4 Test Report RF15034

The referenced test report, the essential details of which are summarised below, this test supports assessment of the Sealed Tight Solutions glazing system detailed in section 8.4.

Date of test	9 th February 2015
Identification of test body	BMTRADA (now trading as Warringtonfire Testing) UKAS ref: 1762
Sponsor	Sealed Tight Solutions Ltd (STS), Dorwent House, Low Prudhoe, Northumberland, NE42 6NP
Tested Product	Unlatched, single acting, double leaf, timber based doorset with glazing.
Summary of test specimen	<p>Leaf dimensions: 2900 (h) x 1000/1000(w) x 44 (t). Both leaves comprised a Falcon Strebord 44 core, all edges of the leaves were lipped with 6 (t) Sapele of nominal density 640kg/m³.</p> <p>2No. 10 x 4 STS PVC encased intumescent seals ref: ST1004 were fitted centrally 10mm in one meeting edge with 1No. 15 x 4 seal ref ST1504 fitted centrally in the frame reveals of the head and hanging jambs</p> <p>1mm thick Interdens protection was installed to protect hardware.</p> <p>STS glazing seals ref ST105GT measuring 10(h) x 5(t) were fitted on both faces of 7mm thick Pyrobelite 7 glass. Aperture size was 600(w) x 1150(h), glass was retained with hardwood beads 15(h) with integral 3(w) x 3(h) quirk in one leaf and 20(h) with 5(w) x 5(h) bolection return in the other leaf</p> <p>The specimen was hung in European Redwood frame on 4No. steel bearing butt type hinges per leaf, together with a lever operated mortice latch with a 235mm high forend, disengaged for the test. A surface mounted overhead door closer, was fitted to the exposed face of the leaves with disengaged flush bolts in the edge of one leaf.</p> <p>The doorset was oriented to open in towards the furnace.</p>
Test Standard	BS 476 Part 22:1987
Performance	<p>Integrity: 33</p> <p>Insulation: 0*</p> <p>* In accordance with the note to clause 8.6.1 of BS 476 Part 22:1987, the specimen was not evaluated for insulation.</p>

3.5 Test Report WF 414781

The referenced test report, the essential details of which are summarised below, is the primary data for inclusion of Strelip as a lipping material.

Date of Test	7 th June 2019
Identification of Test Body	Warringtonfire Testing and Certification Ltd. UKAS No. 1762
Sponsor	Falcon Panel Products Ltd
Tested Product	An unlatched, single acting double doorset with glazing - ULSADD
Summary of Test Specimen:	<p><u>LEAF:</u> Overall Size: 2040 (h) x 935/935(w) x 44 (t) Core: Falcon Panel Products Stredor 44 Lipping: Strelip 30 (686 - 698kg/m³), 8mm thick to all four edges.</p> <p><u>FRAME:</u> Head & Jambs: European Redwood (423kg/m³), 90 (d) x 32 (w), with 32 (w) x 12 (d) planted (pinned) European redwood stop. Threshold: Non-combustible</p> <p><u>INTUMESCENT:</u> Frame Reveal: 1no 15x4 Lorient Polyproducts Ltd LP1504 Type 617 fitted 15m from the exposed face. Meeting stile (right leaf only):</p> <ul style="list-style-type: none"> • 1no 10x4Lorient Polyproducts Ltd LP1004 Type 617 fitted 6 from the exposed face. • 1no 10x4 Lorient Polyproducts Ltd LP1004DS Type 617 fitted 26 from the exposed face. <p><u>GLAZING:</u> Glass: Fireglass Pyrobelite 7, 7mm thick; top 1194 x 244, bottom 434 x 244. Overall Size:</p> <ul style="list-style-type: none"> • Top: 1194x244 • Bottom: 434x244 <p>Beading: Sapele (654kg/m³), 19 (w) x 21 (h) with</p> <p><u>GLAZING SYSTEM:</u> Glazing Perimeter: 15x3.5 Lorient Polyproducts Ltd Flexible Figure 1 (FF1) fitted between the glass and bead on both faces.</p> <p><u>SMOKE/ACOUSTIC SEALS:</u> Meeting stile: 1no 10x4Lorient Polyproducts Ltd LP1004DS Type 617 fitted 26 from the exposed face.</p>

	<p>Leaf bottom edge: 35 (h) x 14 (w) Lorient Polyproducts Ltd LAS8001si drop seal rebated centrally within the bottom of each leaf.</p> <p><u>HARDWARE:</u></p> <p>Hinges: 3no Carlisle Brass (Eurospec) HIN1433/113SSS/R butt hinge</p> <p>Closer: Rutland Door Controls ITS11204 concealed overhead closer fitted as per manufacturer's instructions to the head of each leaf. Body size: 243 (l) x 52 (d) x 32 (w)</p> <p>Latch: Assa Abloy Union steel latch (Ref. JHD72ESL-RSS60) fitted with Assa Abloy cylinder (Ref. J-228AA-SC)</p> <p>Lock/Latch Size:</p> <ul style="list-style-type: none"> • Forend: 235 x 24 • Case: 165 x 89 x 14 <p>Lock/Latch Status: Disengaged for test</p> <p>Handle: Altro stainless steel lever type handle (Ref. 908356 TH 105)</p> <p>Flush Bolts: Zoo Hardware stainless steel (Ref. ZAS03RSS)</p> <p><u>HARDWARE PROTECTION:</u></p> <p>Under Hinge: 1mm thick Lorient Polyproducts Ltd MAP</p> <p>Lining closer rebate: Manufacturer supplied 2mm thick graphite kit</p> <p>Encasing latch body: 1 thick Lorient Polyproducts Ltd MAP</p> <p>Under latch forend: 1 thick Lorient Polyproducts Ltd MAP</p> <p>Under latch keep: 1 thick Lorient Polyproducts Ltd MAP</p> <p>Lining drop seal rebate: 1 thick Lorient Polyproducts Ltd MAP</p> <p>Lining flush bolt rebate: 1 thick Lorient Polyproducts Ltd MAP.</p> <p>The doorset was oriented to open in towards the furnace.</p>
Test Standard:	BS EN 1634-1:2014
Performance:	<p>Integrity: 33 minutes</p> <p>Insulation (I₁): 10 minutes</p> <p>Insulation (I₂): 10 minutes</p>

4 Technical Specification

4.1 General

The technical specification for the proposed door types is given in the following sections and is based on the test evidence for the door designs, summarised in section 3.

4.2 Intended Use

The intended use of the proposed door assembly is summarised below:

A pedestrian doorset including any frame, door leaf or leaves which is provided to give a fire resisting capability when used for the closing of permanent openings in fire resisting separating elements, which together with the building hardware and any seals (whether provided for the purpose of fire resistance or smoke control or for other purposes such as draught or acoustics) form the assembly.

4.3 Doorset Configurations & Maximum Leaf Sizes.

4.3.1 General

The evaluation of the leaf size for each door leaf option and frame option is based on the test listed in Section 3 and takes into account:

1. The margin of over performance above 30 minutes integrity for the designs
2. The characteristics exhibited during test and
3. The doorset configuration tested.

The evaluation of the permitted configuration included in this field of application is based on the configuration tested. The principle is that the more components i.e. door leaves and overpanel – the harder it becomes to pass a test. This is because the junction between door leaves or door leaf and overpanel introduces a discontinuity into the doorset which can cause failures.

The leaf size for each door leaf option and configuration is linked to the intumescent specification and frame option. The following section details the maximum leaf size for each door leaf option and configuration based on the intumescent and frame details tested.

Doorsets with reduced dimensions are deemed to be less onerous. Therefore, doors with dimensions that are less than given in the leaf size envelopes (for the relevant intumescent specification) in the following sections are covered and may be manufactured.

4.3.2 Permitted Configurations

Based on the test evidence listed in section 3, this report covers the following doorset configurations.

Flush Doorsets

Constructions as defined in sections 5.1.1 & 5.1.2.

Doorset Configurations	
Abbreviation	Description
LSASD & ULSASD	Latched & unlatched, single acting, single doorsets
LSADD & ULSADD	Latched & unlatched, single acting, double doorsets

Unequal leaf double doorsets are covered by this assessment, the smaller leaf must be no narrower than 300mm wide.

Panelled Doorsets

Constructions as defined in sections 5.1.3 & 5.1.4.

Doorset Configurations	
Abbreviation	Description
LSASD & ULSASD	Latched & unlatched, single acting, single doorsets

The panelled option is not assessed for double leaf doorset configurations.

4.3.3 Orientation

The primary fire resistance tests for these designs were all conducted with the doorset hung such that the door leaf opened towards the fire, which is considered the most onerous orientation in terms of fire resistance performance, for timber based door leaves hung in timber door frames (see Annex C of BS EN 1634-1:2014 + A1:2018 for justification). Based on this testing, assessment is made that doorsets to these designs may be hung to open either away from or towards the fire risk side of the doorset.

4.3.4 Envelopes for each Configurations

Data sheets including door leaf envelopes which indicate the permitted leaf sizes for the listed configurations based on the intumescent, door leaf option and door frame are given in appendix E.

5 General Description of Leaf Construction

The tested constructions in the tests cited in section 3 incorporated 44mm thick leaves, it is proposed to assess the use of 54mm thick leaves which will comprise 54mm thick leaves of the same MDF construction, minimum density of 600kg/m³. The thicker material would generally be expected to reduce deflection of the leaves caused by erosion of the material and dehydration on the exposed face and will also provide increased resistance to burn through. It is therefore the opinion of Warringtonfire that the thicker leaf material may be utilised. No additional scope is permitted by use of the thicker material, which may be specified for performance characteristics other than fire resistance performance.

All references to 'Fibrecore' relate equally to the 44 or 54mm cores unless stated otherwise.

5.1.1 Fibrecore 44 Primary Construction

The primary construction for door leaves of this design comprises:

- A homogenous solid sheet of 44mm thick MDF of nominal density 600 kg/m³. Where required, the leaves are lipped with hardwood.

5.1.2 Fibrecore 54 Primary Construction

The primary construction for door leaves of this design comprises:

- A homogenous solid sheet of 54mm thick MDF of nominal density 600 kg/m³. Where required, the leaves are lipped with hardwood.

5.1.3 Fibrecore 44 Panelled Option

A panelled option has been tested for door leaves of this design which comprises:

- A homogenous solid sheet of 44mm thick MDF, of nominal density 600 kg/m³, reducing to 26mm thick at the panelled areas. Where required, the leaves are lipped with hardwood.

5.1.4 Fibrecore 54 Panelled Option

Based on the above rationale, door leaves of this design may comprise:

1. A homogenous solid sheet of 54mm thick MDF, of nominal density 600 kg/m³, reducing to 26mm thick at the panelled areas. Where required, the leaves are lipped with hardwood.

6 Panelled Option

The testing conducted in RF12012 on the Falcon Panel Products Ltd. Fibrecore 44 design has demonstrated that the design is capable of tolerating the routing required to provide for 'panelled' areas whilst providing a margin of over-performance. Panels are therefore acceptable within the following parameters.

The door was tested with 2 panels, additional numbers of panels are permitted on the basis that the leaf will have less fielded material (i.e. an increase in the amount of full thickness solid core, which will provide increased stability and resistance to thermally induced deflection and bow in fire test conditions).

6.1 Panel Configurations

1. A minimum of 2 and a maximum of 10 panels may be included, subject to sections 6.2 and 6.3
2. Panels must be constructed in accordance with the details in section 6.3
3. Panels may be flat or raised and profiled, subject to the minimum thickness detailed in section 6.3
4. Glazed and panelled areas may be used in the same leaf, subject to the framing limits herein. Glazed apertures to be limited to maximum 900mm x 700mm when used in conjunction with panelled areas (equivalent size of the tested panelled area).
5. Total maximum glazed area within the leaf not to exceed 0.9m²

6.2 Simulated Leaf Framing

The minimum face width of simulated leaf framing for the Fibrecore, panelled option doorsets, must be as follows.

Element	Dimensions (mm)
Head rails and stiles	110
Mid rails ^{1,2}	150
Bottom rails	180
Intermediate framing	80

Notes:

- 1 Leaves with glazed apertures must have a mid-rail below the glazing
- 2 Leaves with more than 4 panels do not require a mid-rail.

6.3 Panel Construction

Based on the test evidence generated in RF12012 and char rate calculations based on BS EN 1995: Design of Timber Structures (Eurocode 5) comparing the material characteristics, the following panel construction variations are permitted for Fibrecore panelled option doorsets.

Core		Facings			Application
Material	Minimum thickness (mm)	Material	Minimum density (kg/m ³)	Minimum thickness (mm)	Configurations and Size Range (mm)
MDF ^{1,2}	22	No facings	-	-	LSASD, ULSASD Maximum leaf size, as tested: 2135 (h) x 926 (w)
	26	No facings	-	-	LSASD, ULSASD at all sizes permitted in appendix E
	22	MDF ³ Chipboard ³	600 600	3 ⁴	LSASD, ULSASD at all sizes permitted in appendix E
	26	Hardboard ³ Timber ³	700 510		

Notes:

1. Panels must be constructed by routing the core material from each face of the leaf to a depth of up to 11mm from Fibrecore 44 constructions and up to 16mm from Fibrecore 54 constructions
2. The panel 'core' must remain contiguous with the resulting simulated leaf framing
3. Facing materials must be bonded to the core with a PVA or Urea formaldehyde adhesive
4. Raised and fielded effect facings may be created providing a 3mm minimum thickness of applied facing remains at the fielded section

5. Additional planted beads or mouldings may be fitted as required to the edges of panels
6. Additional decorative/protective facing options are detailed in section 12.

7 Leaf Size Adjustment – Prior To Hardware Machining

The Falcon Panel Products Ltd. Fibrecore door leaf designs may be altered as follows.

Element		Reduction
Leaf	Flush	The manufactured size of the leaf may be reduced in height or width without restriction.
	Panelled	The minimum dimensions of the simulated stiles and rails must be maintained as specified in section 6.2 above.
Lipping		The dimensions stated in section 14 may be reduced by 20% for fitting purposes.

8 Glazing

The testing conducted on the Falcon Panel Products Ltd. Fibrecore has demonstrated that the designs are capable of tolerating glazed apertures whilst providing a margin of over-performance. Glazing is therefore acceptable within the following parameters.

- The maximum assessed glazed area for all configurations is 0.9m²
- The glazing system must be one of the proprietary systems listed in section 8.1 and detailed in appendix D
- The glass type must be one of the proprietary glasses detailed in section 8.2
- Glazing beads and fixings must be as specified in section 8.3
- False glazing beads may be utilised as specified in section 8.3.

8.1 Assessed Glazing Systems

The glazing system must be one of the following proprietary systems. The following glazing systems have all been tested for a minimum of 30 minutes fire resistance in timber based door cores and have been deemed as suitable alternatives to the Lorient System 36 Plus glazing gasket tested by Falcon Panel Products Ltd in the Fibrecore design.

Glazing System	Manufacturer
1. Fireglaze 30	Sealmaster Ltd.
2. Therm-A-Strip 30	Intumescent Seals Ltd.
3. Firestrip 30	Hodgsons Sealants Ltd.
4. Pyroglaze 30	Mann McGowan Ltd.
5. Norsound Vision 30 (see section 8.6)	Norsound Ltd.
6. System 36 Plus	Lorient Polyproducts Ltd.
7. Flexible Figure 1	Lorient Polyproducts Ltd.
8. R8193	Pyroplex Ltd.
9. 30049	Pyroplex Ltd.
10. 30054	Pyroplex Ltd.
11. Therm-A-Bead ¹	Intumescent Seals Ltd.
12. ST105GT (see section 8.4)	Sealed Tight Solutions Ltd.

Note:

¹ Intumescent Seals Ltd. Therm-A-Bead glazing system must only be used with glass types 5 – 15 from the table in section 8.2 below.

8.2 Assessed Glass Products

Assessed glass types are as follows. The following glass types have all been tested for a minimum of 30 minutes fire resistance in timber based door cores and have been deemed suitable alternatives to the 7mm Pyroshield glass tested by Falcon Panel Products Ltd.

Glass Type	Manufacturer	Thickness (mm)	Max. Area (m²)
1 Pyroshield 2	Pilkington Group Ltd.	6 & 7	0.9
2 Pyran S	Schott UK Ltd.	6	0.9
3 Pyrostem	Pyroguard UK Ltd	6	0.9
4 ESG Pyrotech 630 ¹	Essex Safety Glass Ltd.	6	0.8
5 Pyroguard EW 30	Pyroguard UK Ltd	7	0.9
6 Pyrobelite 7	AGC Flat Glass UK	7	0.9
7 Pyrodur 30-104/30-105	Pilkington Group Ltd.	7	0.9
8 Pyrodur 60-10	Pilkington Group Ltd.	10	0.9
9 Pyroguard EW MAXI	Pyroguard UK Ltd	11	0.87
10 Pyranova 15-S2.0	Schott UK Ltd.	11	0.9
11 Pyrobelite 12	AGC Flat Glass UK	12	0.9
12 Pyrodur 60-20	Pilkington Group Ltd.	13	0.9
13 Pyroguard EI 30	Pyroguard UK Ltd	15	0.9
14 Pyrostop 30-10	Pilkington Group Ltd.	15	0.9
15 Pyrobel 16	AGC Flat Glass UK	16	0.9

Notes:

1. ESG Pyrotech 630 glass is limited to an area of 0.8m² and may only be used with the tested glazing system depicted in Appendix D
2. Glass types 13 - 15 are fully insulating for 30 minutes in terms of the criteria set out in BS 476: Part 20: 1987
3. All glass types must be fitted fully in accordance with the manufacturers' tested details/installation requirements, particularly with respect to edge cover and expansion clearance.

8.3 Multiple Glazed Apertures

Multiple glazed apertures may be included, subject to the points herein.

1. Glazing must be installed in accordance with the details in section 8
2. A minimum of 2 and a maximum of 10 apertures may be used
3. Glazed apertures to be limited to maximum 900mm x 700mm when used in conjunction with panelled areas (equivalent size of the tested panelled area)
4. Glazed and panelled areas may be used in the same leaf, subject to the framing limits herein
5. Total maximum glazed area within the leaf not to exceed 0.9m²

8.3.1 Simulated Leaf Framing

The minimum face width of core material remaining between glazed apertures, must be as follows.

Element	Dimensions (mm)
Head rails and stiles	110
Mid rails ^{1,2}	150
Bottom rails	180
Intermediate framing	80

Notes:

- 1 Leaves with 2, 3 or 4 glazed apertures must include a mid-rail.

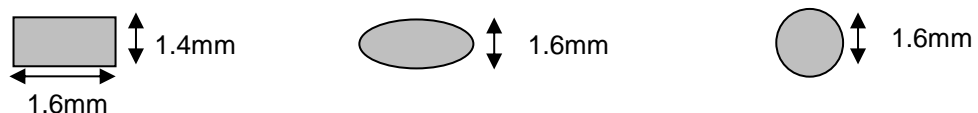
8.4 Glazing Beads & Installations

Glazing beads must be as specified in the following table.

Material	Profile	Min. Density (kg/m ³)	Application
Hardwood	Splayed	640	All proprietary systems detailed in 9.1 and Appendix D
Hardwood	Square	640	Proprietary systems 1, 2 & 3 as specified in 9.1 and glass types 5 - 156 as specified in 9.2

Notes:

1. Glazing beads must be retained in position with 40mm long steel pins or 40mm long No. 6-8 screws, inserted at 35 - 40° to the vertical, at 150mm maximum centres and no more than 50mm from each corner, or see below for bead fixings using gun (pneumatically) fired applications
2. Alternatively, the following pin specification has been tested and assessed for steel round, oval and rectangular shaped gun fired pins



3. Pins with dimensions less than those stated above are not covered by this assessment
4. See Appendix D for square bead profile options, square beads must incorporate bolection returns. A 6 - 10mm thick square aperture liner is permitted for use with square beads providing it is constructed from hardwood of minimum density 640kg/m³ and glued in position using a UF, PVA or PU type adhesive
5. Glazed opening must not be less than 110mm from any leaf edge. Multiple apertures are acceptable within the permitted glazed area (0.9m²).
6. Aperture shape is not restricted, providing the glazing system and beads can effectively accommodate the required profile and the minimum framing dimensions stated in section 8.2 are maintained

7. False timber beads may be applied to glass types 6 - 16 using one of the following intumescent glazing products.

Glazing System	Manufacturer
1. Therm-A-Strip 30	Intumescent Seals Ltd
2. Fireglaze 30	Sealmaster Ltd
3. Firestrip 30	Hodgson Sealants Ltd
4. Envirograf Product 77 - G10/10	Intumescent Systems Ltd

All seals must be a minimum of 10mm wide x 0.5 - 3mm thick. Preformed strip systems 1 - 4 may be self-adhesive and grooved into the rear of the glazing bars.

8. Timber for glazing beads must be straight grained, joinery quality, hardwood free from knots, splits and checks of minimum density 640kg/m³
9. See section 8.7 for Streframe glazing beads.

8.5 STS Glazing System

The following specification must be followed when using the STS glazing system tested in PF15034.

- It is permitted to use square or chamfered glazing beads providing the beads are constructed in accordance with point 2 or 3 below
- Square glazing beads must be constructed from hardwood (minimum density 640kg/m³) and must be a minimum of 15mm high by a depth to suit the glass thickness, and incorporate a minimum of a 5mm x 5mm bolection return
- Chamfered glazing beads must be constructed from hardwood (minimum density 640kg/m³) and must be a minimum of 20mm high by a depth to suit the glass thickness, including a 5mm x 5mm bolection return and a 19° chamfer
- Glazing beads must be retained in position with 38mm long steel pins or 40mm long No.6 - 8 steel screws, inserted at 35° to the vertical, at no more than 50mm from each corner and at 150mm maximum centres. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 8.3 above.
- ST105GT may be supplied as 10mm x 5mm or 9mm x 3mm strips which must be installed between the bead and the glass on both faces, the two seal sizes may be freely interchanged, subject to restrictions in the table below

ST105GT seal dimensions (mm)	Permitted Glass types (see section 8.2)	Maximum Permitted Area (m ²)
9 x 3	1 - 15	0.9
10 x 5	1 - 8	0.9

- All glass types must be fitted fully in accordance with the manufacturers' tested details/installation requirements, particularly with respect to edge cover and expansion clearance
- Aperture shape is not restricted, providing the glazing system and beads are compatible with that shape
- Timber for glazing beads must be straight grained, joinery quality hardwood, free from knots, splits and checks
- Requirements in section 8.3.1 for multiple apertures must also be applied when using the STS glazing systems
- Multiple apertures are permitted, subject to point 9 below.

8.6 Improved Security Bead

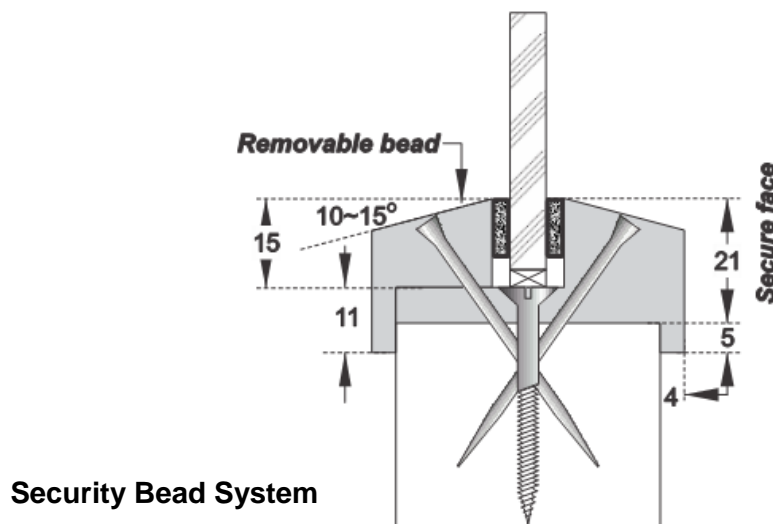
A combined bead and aperture lining can be used to deny access to fixings from one side of the door leaf to improve security.

All glazing details are to meet the specification given in sections 8.1, 8.2 and 8.3 unless otherwise stated below.

The aperture in the door must be lined using minimum 26mm thickness combined bead and lining in hardwood of minimum 640kg/m³ density.

The combined bead and lining is bonded to the aperture in the door using the adhesive types approved for lippings (see section 15) and reinforced using No. 6 – 8, 50mm long screw fixings located centre thickness of the door at 200mm centres.

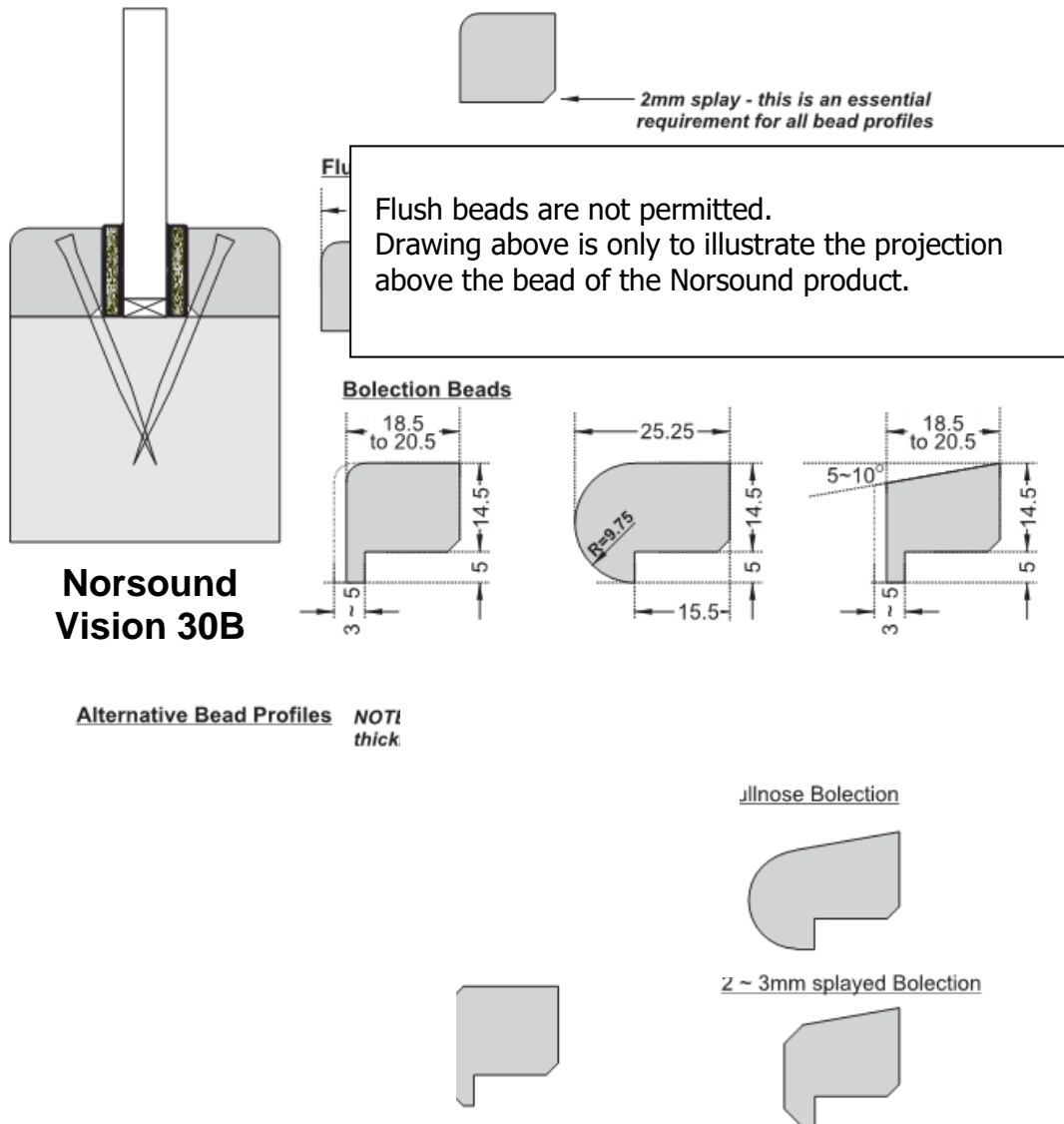
The beads must be retained in position with 50mm long steel pins or 50mm long No. 6 - 8 screws, inserted at 35 - 40° to the vertical. Fixings must be at 150mm maximum centres and no more than 50mm from each corner. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 8.3 above. The bead profile must be appropriate for the glazing system selected.



8.7 Norsound Ltd. – Norsound Vision 30B

The Norsound Ltd. glazing system tested in IF12011 has the following scope of application in addition to that described in sections 8.1 - 8.3.

The Norsound Vision 30B is illustrated below.



1. Bead height must be nominally 14.5mm
2. The intumescent seal component of Norsound Vision 30B is 15mm high and is required to project 0.5mm above the sightline of the bead
3. Beads must incorporate a bolection return. Bolection returns should be a minimum of 5mm high, and a minimum of 3mm thick (projecting from the leaf face)
4. Glazing beads must be retained in position with, minimum, 40mm long steel pins or, minimum, 40mm long No. 6-8 screws, inserted at 35-40° to the vertical at no more than 40mm from each corner and at 150mm maximum centres
5. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 8.3.

The bead material must meet the following specification and may be used with all glass types listed in section 8.2.

Material	Min. Density (kg/m³)
Straight grained joinery quality softwood or hardwood, free from knots, splits & checks	510
MDF	700

8.8 Streframe Glazing Beads

The Falcon Panel Products Ltd. Streframe glazing beads have the following scope of application based on the testing conducted in PF14029 which achieved in excess of 30 minutes integrity performance.

Streframe glazing bead system as detailed below may only be used in the 54mm thick leaf options described in sections 5.1.2 and 5.1.4.

1. Streframe glazing beads must be a minimum of 37mm high by a depth to suit the glass thickness, including a 7mm x 13mm bolection return and a 25° chamfer
2. Streframe glazing beads must be retained in position with 60mm long steel pins, inserted at 45° to the vertical, at no more than 50mm from each corner and at 120mm maximum centres. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 8.3 above
3. 25mm x 4mm Intumescent Seals Ltd. Therm-A-Bead is to be fitted between the bead and the glass on both faces
4. 54mm x 2mm Intumescent Seals Ltd. Therm-A-Line must be fitted lining the glazing aperture
5. Permitted glass types for use with the Streframe glazing beads are restricted to glass types 5 – 15 given in the table in section 8.2 above
6. The maximum glazed aperture area when using Streframe glazing beads will be dictated by the maximum area permitted for the glass type in use
7. All glass types must be fitted fully in accordance with the manufacturers' tested details/installation requirements, particularly with respect to edge cover and expansion clearance
8. Aperture shape is not restricted, providing the glazing system and beads are compatible with that shape
9. Glazed openings must not be less than 110mm from any edge, with a minimum dimension of 80mm between apertures. See notes in section 8.2
10. Multiple apertures are permitted, subject to point 9 above.

9 Overpanels

9.1 Solid

Given the integrity performance and stability of the door core tested and summarised in section 3, overpanels of the same construction as the door leaves may be used with this doorset design, only when a transom is fitted and the panel is fixed on all edges to the frame.

The transom must of the same section and material assessed for the door frames (see note under the table in section 11) must separate the leaf head(s) from the overpanel and the overpanel must be fully contained by the door frame (see following diagram).

Joints between the transom and frame jambs must utilise one of the following methods; mortice and tenon or butt joints (see section 11.2).

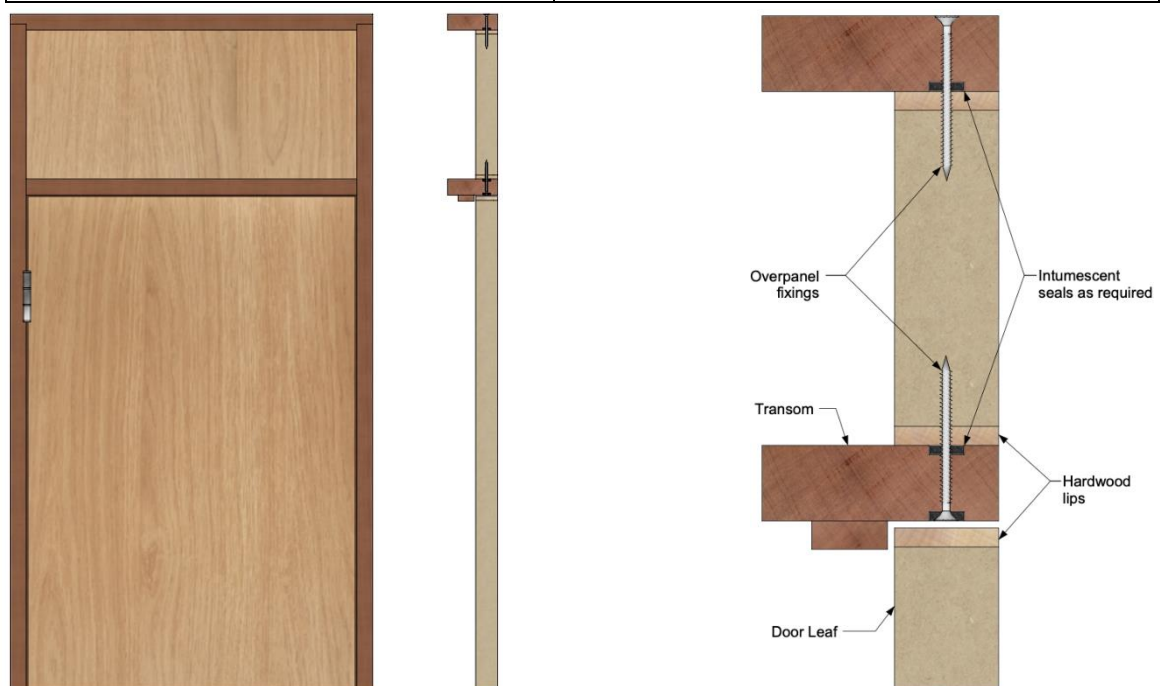
Either method requires joints to be tight, with no gaps, and require mechanical fixing with the appropriate size ring shank nails or screws. Butt joints must be additionally bonded with PVA/PU/UF or equivalent adhesive.

The overpanels must be fixed by screwing through the rear of the frame with steel screws passing at least 30mm into the centre line of the overpanel. Fixings must be no more than 100mm from each corner and a maximum of 250mm centres in between.

The intumescent seals specified for the jambs in Appendix E, must also be fitted to all concealed edges of the overpanel. The seals may be fitted in the overpanel edges or alternatively in the frame reveal. A maximum 2mm gap is permitted between the edge of the overpanel and the frame reveal.

Maximum overpanel heights are as follows.

Configuration	Maximum Overpanel Height (mm)
Single doorsets	2000
Double doorsets	1500



Note: Drawing is representative of doorset construction only, actual construction must be as the text within this document specifies.

10 Fanlights & Side Screens - Norsound Vision Glazing Systems

10.1 General

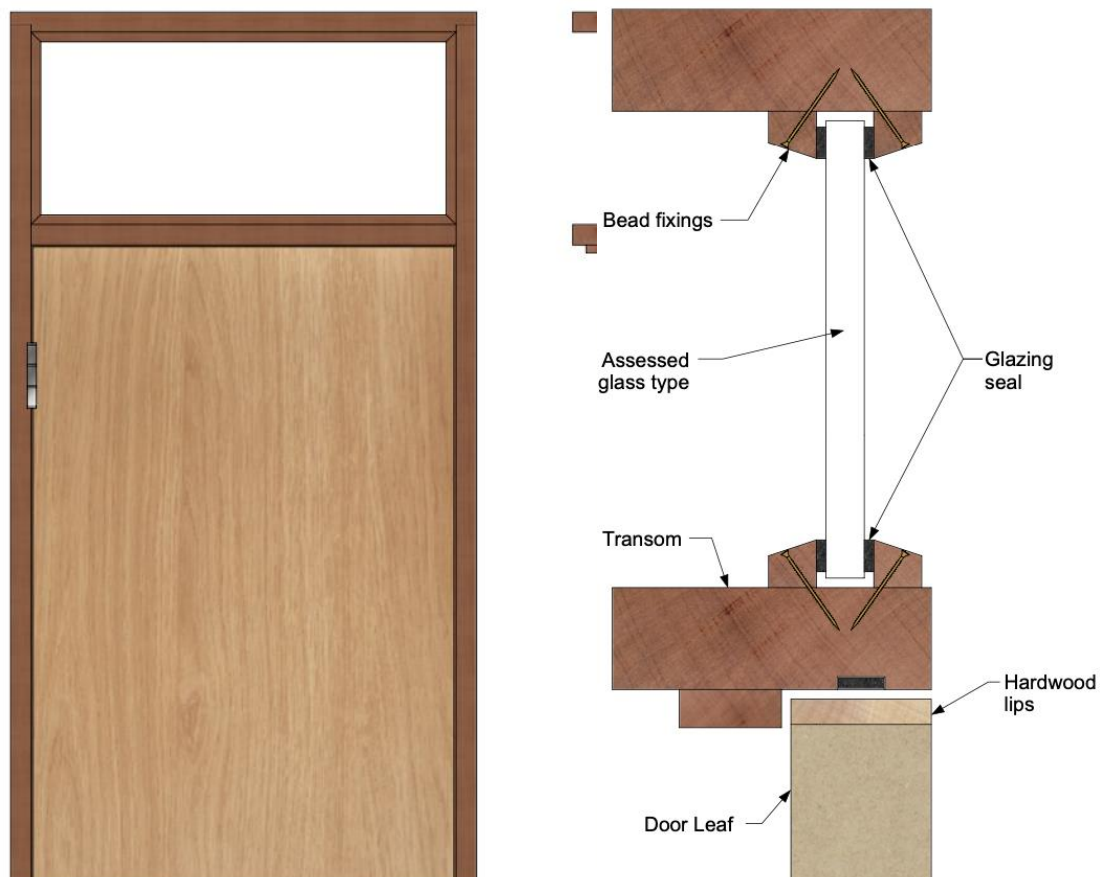
Falcon Panel Products Ltd. Fibrecore 44 and Fibrecore 54 doorsets may be installed within screen assemblies incorporating glazed fanlights and/or side screens only when glazed apertures within the screen utilise the Norsound Ltd Vision glazing system described in the following sections based upon test evidence in IF12052 and IF13012.

10.2 Screen Element Dimensions and Glass Type

The maximum assessed fanlight and side screen dimensions are detailed in the table below, subject to the following restriction.

- The glass must be able to demonstrate adequate performance when tested as a window or screen in accordance with BS 476 Part 22:1987 or BS EN 1634-1, at the pane dimensions to be installed. The tests IF12052 and IF13012 utilised Pyroshield, a non-insulating glass type. Since semi-insulating or fully insulating glass types would be expected to protect the un-exposed face of screen assemblies from radiant heat more effectively than Pyroshield, any of the glass types in section 8.2 may be used, subject to the proviso above.

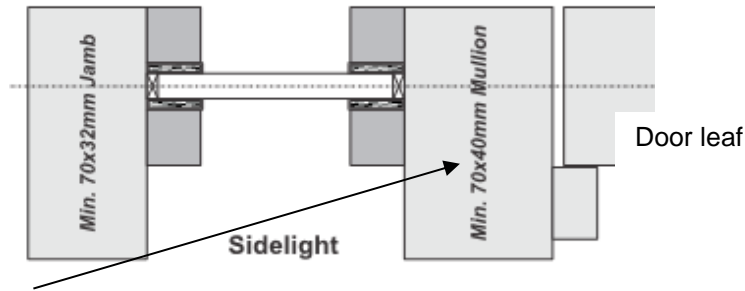
Screen Element	Configuration	Height (mm)	Width (mm)
Fanlight	Single & double doorsets	≤600	Overall door width
Side screen	Single & double doorsets	Overall door height	≤600



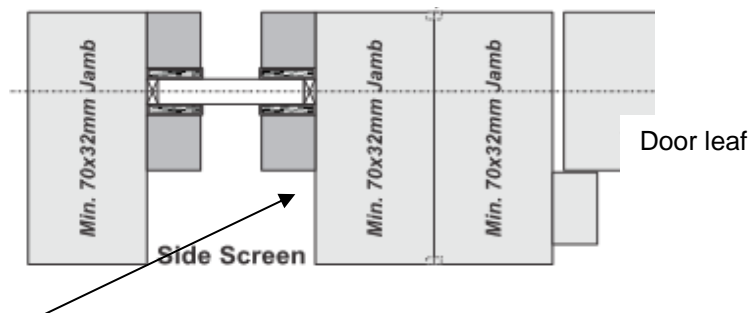
10.3 Common Frame Sections - Norsound Vision Glazing Systems

The following drawings depict possible constructions of common frame sections between door frame jambs and sidescreens when using the Norsound Vision Glazing Systems. See section 11.4 for material specification.

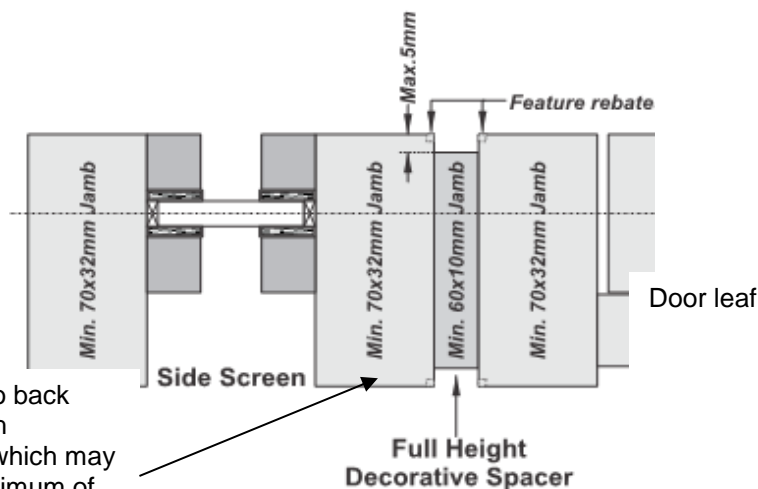
Drawings are representative of each type of common frame section makeup; actual construction in terms of intumescent seal location and material, etc. must be as the text within this document specifies.



Option 1 - One frame section.



Option 2 - Back to back frame section.



Option 3 - Back to back frame section with separating post, which may be rebated a maximum of 5mm as shown.

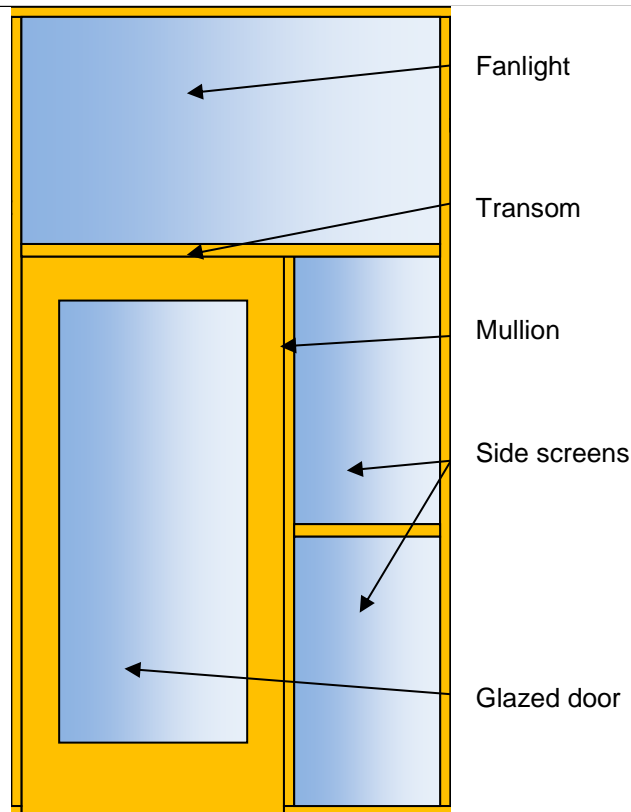
tions of timber, as shown above (options 2 & 3), each section is joined to one another using appropriate steel screw fixings and using

Urea Formaldehyde or polyurethane adhesives. Screws must be fixed at 600mm centres and locate to approx 2/3 depth of the adjacent timber section. The overall frame section and material must match that given in this assessment for each glass type and glazing specification. Joints must be tight with no gaps.

It is permitted to include maximum 3mm (w) x 3mm (d) quirks/pencil rounds at the junction of each timber section for options 2 & 3.

10.4 Indicative Screen Elevation and Materials

The following drawing depicts a possible door and glazed screen configuration. The diagram is for information only. All construction details to remain as specified herein.



Timber used for constructing framing elements comprising screen assemblies as illustrated above must meet the specification below.

Material	Minimum Section Size (mm)	Min. Density (kg/m ³)
Softwood	70 x 32 ²	510
Hardwood		

1. These timber sections may be used for the perimeter framing of the screen and the transoms separating individual panes of glass within the fanlights and side screens
2. Mullions must be minimum 40mm thick
3. The fanlights and side screens may comprise multiple apertures providing the total doorset and screen assembly does not exceed 2950mm high and the transom/mullion restrictions above are complied with
4. Gaps between glass and framing to permit expansion should be set according to the glass manufacturer's information, using non-combustible or hardwood setting blocks at the bottom edge.

10.5 Glazing Beads & Installation

Glazing beads and intumescent materials must be installed meeting the following sections.

System Name		Norsound Vision 30B
Typical Installation		
Sizes	Bead Height	Nominally 14.5
	Intumescent Seal(s)	15 high x 3 thick
Aperture Liner		Not required

The following bead designs are assessed as acceptable.

Typical Flush Bead Types:

NOTE 1: * = 2mm Splay applies to all bead profile types.



1. Bead height must be nominally 14.5mm
2. The intumescent seal component of Norsound Vision 30B is 15mm high and is required to project 0.5mm above the sightline of the bead
3. Glazing beads must be retained in position with, minimum, 40mm long steel pins or, minimum, 40mm long No. 6 - 8 screws, inserted at 35 - 40° to the vertical at no more than 40mm from each corner and at 150mm maximum centres
4. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 8.3 above
5. All timber for glazing beads must be straight grained, joinery quality (MDF, softwood or hardwood as specified in the table below), free from knots, splits and checks.

Bead Profile	Material	Min. Density (kg/m ³)
All shown above	Softwood	510
	Hardwood	
	MDF	700

11 Door Frames

11.1 Timber Based Door Frame Construction

Timber based door frames for the door leaf designs referred to herein must be constructed to meet the following specification.

Material	Section Size* (mm)	Min. Density (kg/m ³)
Softwood or hardwood	70 x 32 (excluding the stop)	510
Streframe E	70 x 32 (excluding the stop)	510
MDF	70 x 30 (excluding the stop)	700

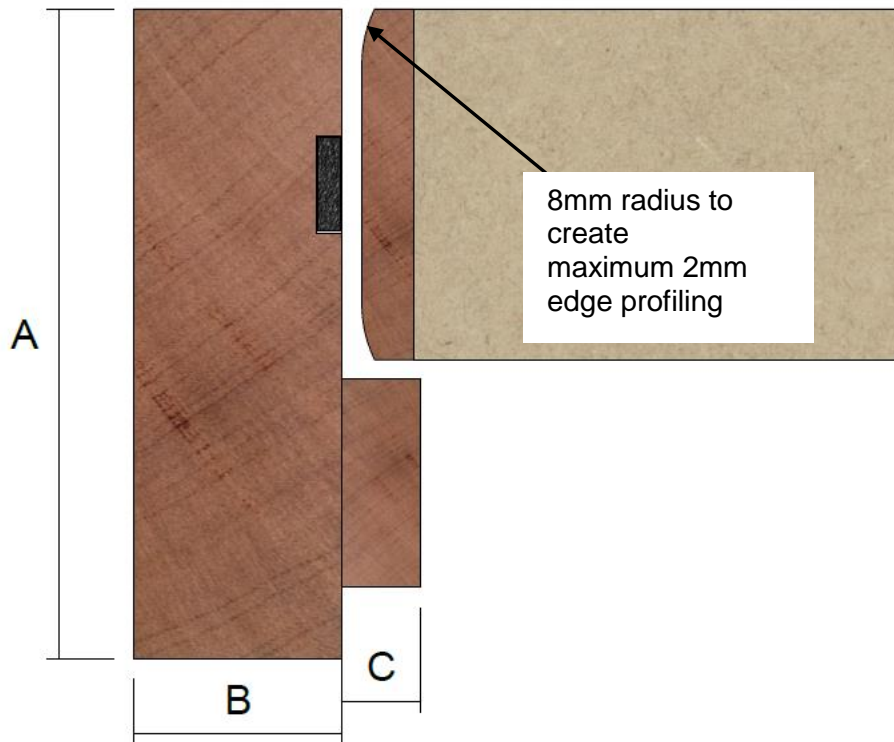
*If the doorset features a transomed overpanel, the door frame must be softwood or hardwood with a minimum section of 70mm x 30mm.

All door frame timber must meet or exceed class J30 as specified in BS EN 942: 2007 (subject to adequate repair of any defects).

A 12mm deep planted stop is adequate for single acting leaf configurations.

Frame joints may be mortice and tenoned, mitred, half lapped or butted and with no gaps (see section 11.2). All jointing methods require mechanical fixing with the appropriate size ring shank nails or screws.

The following diagram depicts the assessed frame profiles and dimensions.



A = Min. 70mm

B = Min. 30mm (see table above)

C = Min. 12mm

Door Frame Joints



Half Lapped Joint



Mitre Joint



Mortice & Tenon Joint



Butt Joint

12 Facings

12.1 General

The facings for Falcon Panel Products Ltd. Fibrecore design are integral with the core construction and therefore alternative materials are not required.

The following sections give options for additional protective, decorative and alternative outer facing materials.

12.2 Decorative & Protective Facings

The following additional facing materials are permitted for this door design since they would degrade rapidly under test conditions without significant effect.

Facing Materials	Maximum Permitted Thickness (mm)
Paint	0.5
Timber veneers	2
PVC/Plastic laminates	2
Cellulosic/non-metallic foil	0.5

Notes:

1. Metallic facings are not permitted except for push plates and kick plates
2. The door leaf thickness may be reduced by a total maximum of 0.5mm to each face (a maximum of 1mm in total) for calibration purposes, only in order to accommodate one of the additional facings shown in the table above
3. Materials must not conceal intumescent strips
4. PVC/Plastic laminates must not return around leaf edges.

12.3 Timber Substrate Facings

The materials below may be applied as an additional facing material to the core using PVA/PU/UF adhesive. The additional material will act as a sacrificial facing in the event of fire and will protect the core for the time it remains in position, the material will therefore provide additional stability to the core in fire test conditions and has been deemed acceptable. Total thickness of the door core after the applied facing will be 56mm or 76mm (t), as appropriate.

Facing Materials	Maximum Permitted Thickness (mm)
MDF	6

Notes:

1. Facings may be fixed to the core before or after hardwood edges/lippings are applied
2. Facings must be balanced (i.e. the same thickness and material applied to both faces)
3. Decorative facings in section 12.2 may be applied in addition to timber substrate facings
4. Hardware incorporated into doorset must be capable of accommodating the adjusted weight after additional facings are applied
5. Timber substrate facings may be routed, recessed or machined in any location provided the requirements of section 6 and 8 are adhered to.

12.4 Grooved and Recessed Decorative Patterns

The testing conducted on Falcon Panel Products Ltd. Fibrecore 44 under test RF12012 demonstrated that material could be removed from both faces of the door leaf without negating the integrity performance.

Therefore, flush door leaves may be grooved or recessed with any decorative pattern, subject to the following provisos.

1. The total surface area of grooves and/or recesses on any one face must not exceed 20% of the leaf face area
2. It is permitted, but not necessary, to apply an infill or facing material to the bottom of the grooves or recesses, the depth of the grooves or recesses must not exceed 9mm
3. It is permitted to go to a maximum depth of 11mm providing a minimum thickness of 3mm of infill material is applied to the bottom of the groove or recess
4. The permitted infill materials for grooves and recesses are MDF (min. density 700kg/m³), or hardwood (min. density 600 kg/m³)
5. The infill materials must be glued in position using UF, PVA or PU adhesives
6. It is permitted to groove/recess the infill providing a minimum of 3mm of infill material remains in the bottom of the groove or recess
7. Grooves and recesses must not be less than 110mm from any leaf edge
8. Grooves and recesses must stop 10mm from the perimeter of any aperture cut outs (e.g. glazing, air transfer grilles, letter plates, etc).

12.5 Full Width and Height Vertical and Horizontal Grooves

Based on the performance obtained in RF12012 it is also permitted to groove both faces of flush door leaves to the leaf edges, subject to the following provisos.

1. A maximum of 4 vertical grooves and/or 4 horizontal grooves, may run the full height or width of the leaf
2. Grooves must be no more than 10mm wide or 4mm deep
3. Grooves may be no less than 50mm apart
4. Vertical and horizontal grooves may be applied separately or concurrently and may intersect one another
5. If required, it is permitted to infill the grooves with MDF (min. density 700kg/m³), or softwood or hardwood (min. density 600 kg/m³)
6. The infill materials must be glued in position using UF, PVA or PU adhesives
7. Grooves must stop 10mm from the perimeter of any aperture cut outs (e.g. glazing, air transfer grilles, letter plates, etc).

13 Intumescent Materials

The leaf edge seal specification for each configuration is contained in appendix E.

13.1 Hardware Protection

The intumescent materials tested and assessed are as follows.

Application	Location	Product/Manufacturer
Hinges	Under all hinge blades for doorsets greater than 2600mm high	1. 1mm Interdens – Dufaylite Developments Ltd. 2. 1mm MAP paper – Lorient Polyproducts Ltd.
Lock/latches	Under forends in excess of 155mm high or 22mm wide, and under keeps in excess of 125mm high. Under forend and keep for all leaves taller than 2135mm	3. 1mm Pyrostrip 300 – Mann McGowan Fabrications Ltd. 4. 1mm Therm-A-Strip – Intumescent Seals Ltd. 5. 1mm STS Graphite – Sealed Tight Solutions Ltd
Flush bolts	Lining all sides of the mortices	1. 2mm Interdens – Dufaylite Developments Ltd. 2. 2mm MAP paper – Lorient Polyproducts Ltd. 3. 2mm Therm-A-Strip – Intumescent Seals Ltd. 4. 2mm Therm-A-Flex – Intumescent Seals Ltd. 6. 2mm STS Graphite – Sealed Tight Solutions Ltd

14 Lippings

Falcon Panel Products Ltd. Fibrecore 44 and Fibrecore 54 doors must be lipped in accordance with the following specification.

Material	Size (mm)	Min. Density (kg/m ³)
Timber must be straight grained, joinery quality, hardwood free from knots, splits and checks	1. Flat = 8 – 15 thick with a maximum of 2mm profiling permitted at corners of lipping (see section 11.1). 2. Rounded = Not permitted.	640
Strelip 30	3. Rebated = Not permitted.	686 - 698

1. Single and double doorsets only require lipping on the vertical edges but may be additionally lipped on the top and bottom edges if required
2. A 2.5⁰ chamfer is permitted to the lipping at the leading edge of leaves providing the door gaps meet the requirements of section 18.7
3. On-site adjustment of the lippings by a maximum of 3mm for fitting purposes is permitted, providing the minimum dimensions stated above are maintained.

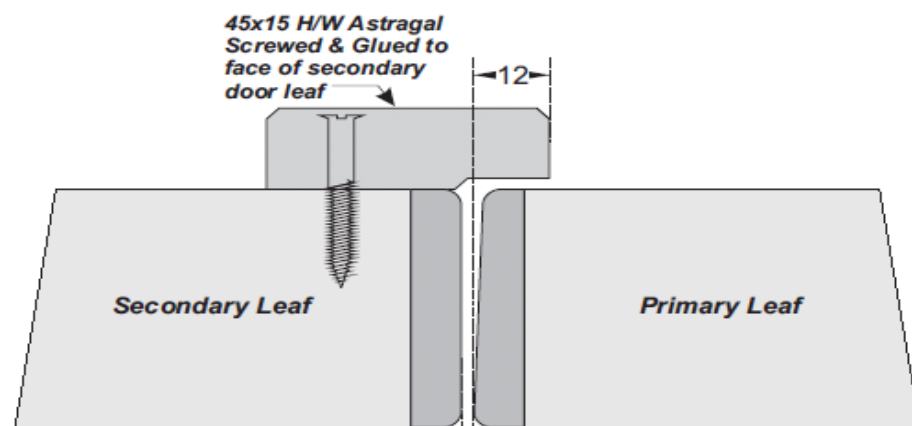
14.1 Meeting Stile Astragals

Generally fire doors should be able to open simultaneously. However, where additional performances are required (e.g. acoustic performances) it may be necessary to provide for sequential opening.

An astragal detail may be used where these conditions apply, without adverse influence on existing fire test/assessment data. An astragal as detailed below will provide protection to the gap at the meeting edges from direct impingement by fire and restrict the passage of hot gases.

Astragals can be applied to both door leaves provided a suitable door selector is fitted and may be profiled for aesthetic effect providing they meet the minimum specification given below.

The hardwood for the astragal must be hardwood of the same minimum density being used for the lipping material. See following diagram.



15 Adhesives

The adhesives used in construction are as follows.

Element	Product
Core	Manufacturers specification
Lipping	Urea formaldehyde, polyurethane or PVA

16 Hardware

The following section details the permitted scope and constraints for fitting hardware to this door design. The following items of hardware must also bear the CE Mark.

- Latches & locks: Test Standard EN 12209
- Single axis hinges: Test Standard EN 1935
- Controlled door closing devices: Test Standard EN 1154
- Electrically powered hold-open devices: Test Standard EN 1155
- Emergency exit hardware: Test Standard EN 179
- Panic exit hardware: Test Standard EN 1125.

The following sections also consider what alternative items of essential hardware can be used on these doorsets.

Each item of hardware is considered in each section, which detail the items of hardware which:

- Have been tested
- Can be used as a result of an assessment of the appropriateness of the item of hardware, based on test evidence not commissioned by Falcon Panel Products Ltd
- Can be used as a result of the CERTIFIRE approval of the item of hardware
- Can be used based on the generic guidance or CE marking but final approval will be with another approving body.

Each section will consider the named item of hardware and detail if there are any limitations associated with:

- Leaf size
- Configuration
- Intumescent seals
- Intumescent protection
- Frame
- No item of hardware should be within 200mm of another item of hardware unless there is test evidence to demonstrate they can be closer.

17 Additional & Alternative Hardware

17.1 General

The following sections detail a generic specification for hardware assessed for use with this doorset design.

17.2 Certifire

The Certifire third party certification scheme approves various items of hardware for different door types and different fire ratings and has its own set of requirements relating to that item of hardware.

Where the alternative hardware sections in this report allow alternatives to the tested hardware, Certifire approved hardware may be used as an alternative, subject to the following provisos:

- In all cases, the requirements of this report must take precedence.
- The hardware must comply with the requirements of the relevant section e.g. hinges.
- The hardware must comply with the limitations specified in terms of design, materials and dimensions.

17.3 CE Marking

The following items of hardware must also bear the CE Mark.

- Latches & Locks: Test Standard EN 12209
- Single Axis Hinges: Test Standard EN 1935
- Controlled Door Closing Devices: Test Standard EN 1154
- Door Co-ordinators: Test Standard EN 1158
- Electro-Mechanically Operated Locks: Test Standard EN 14846.

17.4 Automatic Closing

Automatic face fixed overhead closing devices must either be as tested or components of equal specification that have demonstrated contribution to the required performance of these types of 30 minute doorset designs, when tested to BS 476 Part 22:1987 or BS EN 1634-1 or BS EN 1634-2.

Top pivots and floorspring assemblies are not assessed for use with the Fibrecore 44 or 54 designs.

Concealed overhead closers are not assessed for use with the Fibrecore 44 or 54 designs.

17.5 Latches & Locks

Latches and locks must either be as tested, or alternatively Certifire approved latches and locks with the following specification are acceptable.

Element	Specification
Maximum forend & strike plate dimensions	235mm high by 25mm wide by 4mm thick
Maximum body dimensions	165mm high by 100mm wide by 18mm thick
Intumescent protection	See section 13
Materials	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel, stainless steel or brass (melting point $\geq 800^{\circ}\text{C}$)
Location	Bottom of lock body from 750mm above the threshold to top of lock body 1200mm above the threshold

The increase in forend/strike plate and body dimensions for the latch/locks beyond that tested is based on the integrity performance of the door core and the minimum requirement for fitting intumescent gaskets under forend and keep above the tested dimensions (see section 13)

17.6 Hinges

Falcon Panel Products Ltd. Fibrecore 44 and Fibrecore 54 doors must be hung on a minimum of 3 hinges. Leaves over 2400mm high must fit 4 hinges.

Hinges must either be as tested, or alternatively Certifire approved hinges with the following specification are acceptable

Element		Specification	
Blade height		90 - 120mm	
Blade width (excluding knuckle)		30 - 35mm	
Blade thickness		2.5 - 4mm	
Fixings		Minimum of 4No. 30mm long fully threaded 'twinfast' or chipboard screws per blade	
Materials		Steel, stainless steel or brass (melting point $\geq 800^{\circ}\text{C}$)	
Hinge positions	Leaf dimensions <2400mm	Top	120 -180mm from the head of the leaf to the top of the hinge
		2nd	Minimum 200mm from top hinge to central between top and bottom hinge
		Bottom	150 - 250mm from the foot of the leaf to the bottom of the hinge
	Leaf dimensions >2400mm	Top	120 - 180mm from the head of the leaf to the top of the hinge
		2 nd	Minimum 200mm from top hinge to central between top and 3 rd hinge
		3 rd	Equispaced between 2 nd and bottom hinge
		Bottom	150 - 250mm from the foot of the leaf to the bottom of the hinge
	Intumescent protection		See section 13

It is also permitted to use screw fixings as tested and supplied with the hinges approved for the Falcon Panel Products Ltd. Fibrecore design at 30 minutes fire resistance.

Note:

The increase in dimensions for the hinges beyond that tested is based on the perimeter performance of the door design.

17.7 Pull Handles

Handles may be fixed or bolted through the door leaf, providing they are steel or brass and the length is limited to 1200mm between the fixing points. No additional intumescent protection is required provided that the hole for the bolt through the leaf is tight.

Providing the handles are limited in height and are fitted as described, the handle will have negligible influence on the deflection of the leaf and integrity performance of the door core.

17.8 Push Plates/Kick Plates

Steel, stainless steel or brass plates (melting point $\geq 800^{\circ}\text{C}$) are permitted up to a maximum of 20% of the door leaf area if mechanically fixed and a maximum of 30% if bonded with a contact or other thermally softening adhesive. Plates must not return around the door edges.

For the panelled options, push and kick plates are permitted to a maximum of 10% of the door leaf area and must only be fitted to full thickness areas of the leaf.

For the 54mm thick Fibrecore design, kick plates (to a maximum size of 250mm high x 2mm thick) and finger plates (to a maximum size of 300mm high x 160mm wide x 2mm thick) may be recessed flush with the face and fitted on one or both sides of the leaf.

It is necessary to limit the area of the metal push/kick plate to limit the influence of the plate on the distortion of the leaf as the plate begins to heat in fire test conditions.

17.9 Door Selectors

These may be freely applied, provided that they are not invasive in the leaf edges or door frames and they do not interfere with the self-closing action of the door leaf. Products that are invasive will require fire resistance test/assessment evidence to support their use.

17.10 Door Security Viewers

Given the integrity performance of the door core designs, door security viewers with brass or steel bodies of a diameter less than or equal to 15mm may be used provided that the through-hole is bored tight to the case of the viewer (maximum tolerance +1mm). Lenses must be glass and the item must be bedded into a tested intumescent material/mastic. On panelled designs, viewers may only be fitted through solid framing members.

17.11 Panic Hardware

Panic hardware may be fitted, provided that its installation does not require the removal of any timber from the leaf, stop or frame reveal and it in no way interferes with the self-closing action of the door leaf.

17.12 Flush Bolts

Flush bolts may be incorporated centrally into the top and bottom of one meeting edge, providing the following maximum dimensions are not exceeded and the components are fitted opposite the edge fitted with intumescent strips.

- Up to 210mm long x 20mm deep x 20mm wide*

Flush bolts must be steel or brass and the mortice must be as tight to the mechanism as is compatible with its operation. All edges of the mortice must be protected with intumescent gaskets as specified in section 13.

Alternatively, the hardware manufacturers tested gaskets may be used. See diagram below for example of intumescent protection to flush bolt.



17.13 Pyroplex Air Transfer Grilles

Based on the test evidence generated in WF146520 the following Pyroplex air transfer grilles have been assessed as acceptable for use with the door leaf designs referred to in section 5 of this assessment.

The grilles must be fitted 110mm from the edge of the door leaf and 80mm apart if more than one grille is to be fitted. The area occupied by the air transfer grille(s) must be deducted from the area of glazing and/or panelling, if both elements are fitted. The grilles may be fitted up to a maximum height of 2200mm from the threshold.

Grilles cannot be fitted within a recessed panel (i.e. must only be fitted into full thickness core area or through a rail).

Part No.	Dimensions (mm)	Air Flow (sq. cm)	Compatible Faceplates
ATG 1500	150 x 150	153	FP1500
ATG 1503	150 x 300	307	FP1503
ATG 1300	300 x 300	614	FP1300
ATG 2251	112 x 225	161	FP2251
ATG 2250	225 x 225	323	FP2250

The Pyroplex air transfer grilles must be installed in accordance with the manufacturer's installation details, which include a 6mm thick hardwood aperture liner and Pyroplex intumescent mastic applied around the perimeter of the grille. Full details can be obtained from Pyroplex Ltd.

17.14 Environmental Seals

Silicon based flame retardant acoustic, weather and dust seals e.g:

- Fire and Acoustic Seals Ltd: FAS35, FAS39, FAS-Trident, FAS-Twin
- Lorient Polyproducts Ltd: IS1212, IS1511, IS7025, IS7060
- Norsound Ltd: NOR710, NOR710FR, NOR710SR, NOR710STOP, NOR720
- Raven Products Pty. Ltd: RP120, RP124, RP134, RP150, RP500, RP520, RP670
- Reddiplex Ltd: 9927, 9945, 9946, 10623, 11300, 11301, 11302
- Sealed Tight Solutions Ltd: ST1009, ST1009K
- Sealmaster: Delta, Double Fin Seal, Duxback

may be fitted to this doorset design without compromising the performance, providing their fitting does not interfere with the activation of the intumescent seals or hinder the self-closing function of the leaves.

17.15 Threshold Seals

The following types of automatic threshold drop seals have all been tested within timber based doorsets of 44mm thickness without compromising the integrity performance of the doorset and may therefore be recessed in to the bottom rail of leaves to this design.

Manufacturer	Product Reference
Assa Abloy	Pemko 411_NBL / PKL / RL / SL
Athmer	Schall-Ex Duo L-15
Fire & Acoustic Seals Ltd.	FAS45
Lorient Polyproducts Ltd.	LAS8001Si
Norsound Ltd.	NOR810, NOR810S, NOR810dB+
Raven	RP8Si
Reddiplex Ltd.	HID, HEID
Sealed Tight Solutions Ltd.	STS 422, STS 422GT
Sealmaster (Dixon International Group Ltd)	DRP2712

17.16 Cable-Ways

Taking into account the observed burn-through characteristics and stability of the Fibrecore design under fully developed fire conditions, we consider it acceptable for the Falcon Panel Products Ltd Fibrecore door leaves to be machined for accepting cables to facilitate electrically powered locks/strikes. Methods 1 & 2 (as defined in the below diagram) are suitable subject to the details below.

17.16.1 Cable-Way Method 1

1. Cable routing must not be higher than 1500mm from bottom of the door leaf
2. Once the door is edged, a 10mm diameter hole is drilled across the entire width of the door and then lined with STS Cable-Pro*
3. A PVC encased cable can then be fed through the channel
4. Interface between door leaf and frame (concealed loop) must be a tested product (e.g. Abloy EA280 or STS 633311) with intumescent protection as tested
5. Method 1 is only suitable in panelled designs when installed through a horizontal intermediate rail, minimum 80mm wide, the cable routing must be positioned centrally within the rail.

WIREWAY METHOD 1



*STS Cable Pro lining is not required for latched, single acting, single leaf doorsets not exceeding 900mm wide x 2100mm high.

17.16.2 Cable-Way Method 2

1. A channel not exceeding 10mm x 42mm machined to the core perimeter prior to the application of hardwood edges/lippings
2. A cable can then be fed within the channel, secured in place and any remaining void filled with intumescent mastic capped a hardwood insert (minimum density 640 kg/m³), glued in place using UF/PU adhesive
3. Cable routing must not be higher than 1500mm from bottom of the door leaf
4. Interface between door leaf and frame (concealed loop) must be via a tested product (e.g. Abloy EA280 or STS 633311) with intumescent protection as tested.

WIREWAY METHOD 2



17.17 Identification Plates

Plastic or metal fire safety signs may be glued or screwed to the face of the door leaves. The signage must comply with BS 5499-5: 2002 according to whether the door is.

1. To be kept closed when not in use (Fire Door Keep Shut)
2. To be kept locked shut when not in use (Fire Door Keep Locked Shut)
3. Held open by an automatic release mechanism or free swing device (Automatic Fire Door Keep Clear).

It is also permitted to fit aluminium (max. thickness 2mm) or PVC (max. thickness 3mm) identification plates, complying with HTM 58 – Internal Doorsets, HTM Building Component Series, NHS Estates. The signage must not exceed 45mm diameter and can be fitted flush with the leaf face a minimum of 50mm from any edge. For panelled designs, signage must be positioned in full thickness leaf framing as detailed in section 6.2.

18 Installation




18.1 General

This section considers the installation of direct 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 requirements including packers
- the requirements for door edge gaps
- the trimming of door edges.

18.2 Door Frame Installation

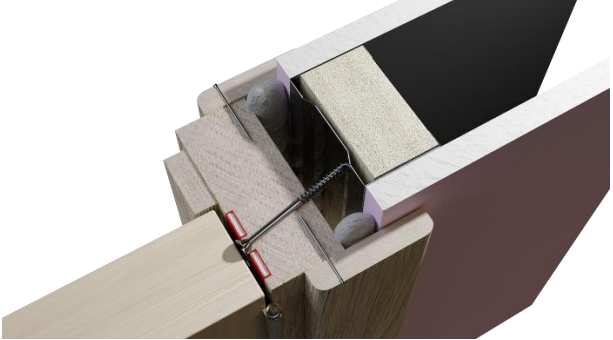
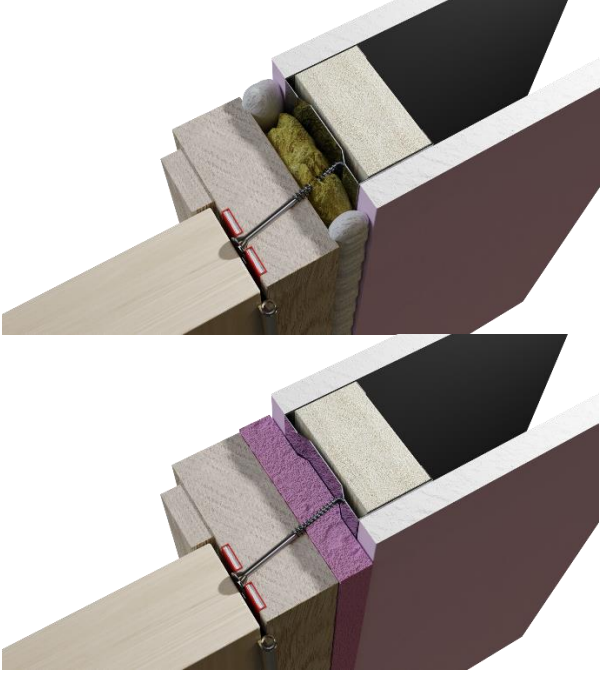
The following figures indicate the acceptable door frame installations. Please note that the fire-stopping element is provided in the below 3D models as a generic red coloured seal. For further clarification of the approved fire-stopping systems see section 18.3.

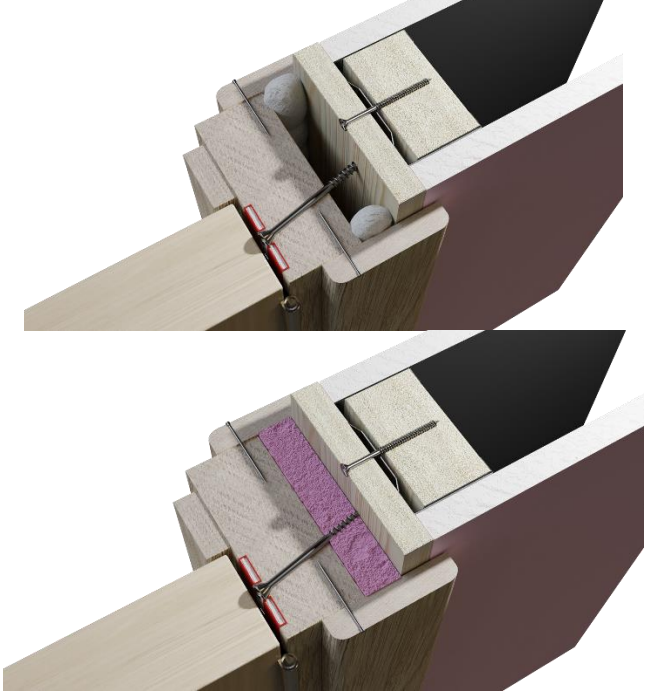
Permitted Installations	
	<p>Instances where the door frame and the wall are of the same depth such that architraves are fitted flush to both faces. Note that the minimum door frame section size (width and depth) must be as per the requirements noted in this report – see door frame section. Architraves requirements are documented in the fire-stopping section of this report.</p>
	<p>Instances where the wall thickness is greater than the door frame depth. 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 18.5. 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.

18.3 Firestopping

The fire-stopping 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 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	This should not occur because in practice it is not possible to apply a fire-stopping material into a gap of this size.	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. Sealed Tight Solutions STS90 and Fire and Acoustic Seals Ltd expanding foam have been successfully tested for this application. 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 and the gap between subframe and wall 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>	

Note:

Guidance for methods of sealing the frame to structural opening gap is also given in BS 8214: 2016, "Timber-based fire door assemblies. Code of practice" which may be referred to and implemented where appropriate.

18.4 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.

18.5 Wall types, Structural Opening and Fixity

For walls that remain rigid during fire exposure (brickwork or blockwork, for example) the opening should 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.

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

It must therefore be capable of staying in place and intact for a minimum of 30 minutes. For single leaf doorset without sidepanels, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corner. 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 for single leaf doorsets without overpanels, although packers must be inserted.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm.

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.

18.6 Post Production (Onsite) Leaf Size Adjustment

The Falcon Panel Products Ltd. Fibrecore 44 and Fibrecore 54 range of doorsets may be altered as follows.

On-site adjustment of the lippings by a maximum of 3mm for fitting purposes is permitted, providing the minimum dimensions stated in section 14 are maintained.

18.7 Door Gaps

For fire resistance applications, door gaps and alignment tolerances must fall within the following range.

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	10mm between bottom of leaf and top of floor covering. This is the maximum tolerance for fire resistance only. Where smoke control is required refer to section 20.

19 Insulation

Insulation performance may be claimed for Falcon Panel Products Ltd. Fibrecore 44 and Fibrecore 54 doorset designs meeting the following criteria.

Type	Details
Partially insulating	Doorsets incorporating up to 20% of non-insulating glazing
Fully insulating	Unglazed doorsets or doorsets including 30 minute insulating glazing (see section 8.2)

20 Smoke Control

20.1 General

If the doorset design is required to provide a smoke control function to comply with Building Regulations, in the absence of a suitable pressurisation system, the doorset must meet one of the following criteria:

- (a) have a leakage rate not exceeding $3\text{m}^3/\text{m}/\text{hour}$ (head and jambs only) when tested at 25Pa under BS 476 *Fire tests on building materials and structures*, Section 31.1 - *Methods for measuring smoke penetration through doorsets and shutter assemblies, Method of measurement under ambient temperature conditions*; or
- (b) meet the additional classification requirement of Sa when tested to BS EN 1634-3: 2004 - *Fire resistance tests for door and shutter assemblies*, Part 3 – *Smoke control doors*.

Smoke seals (i.e. NOR710 or Sealed Tight Solutions ST1009 among others) or combined intumescent/smoke seals that are fitted to the door to achieve the performance requirements specified above, must have been tested in accordance with the associated test method. Providing the smoke seals, any interruptions, door gaps, and the type/configuration of the doorset are consistent with the detail tested, the doorset will comply with current smoke control legislation under Approved Document B; and a suffix 'S' or 'Sa', as appropriate, may be added to the designation. Any other components installed where smoke leakage may occur must also be taken into account.

Note: The incorrect specification and fitting of smoke seals may impair the operation of a doorset and therefore compromise the fire resistance performance. Advice should be sought from the seal manufacturers regarding the correct specification and installation of smoke seals or combined smoke and intumescent seals.

20.2 Further Considerations

Note that there is other guidance available, including BS EN 9999-2017 - *Code of practice for fire safety in the design, management and use of buildings*, which may impose different or additional requirements, such as consideration of the gap between door leaf and threshold.

Responsibility for the appropriate smoke sealing specification and performance of the doors should be agreed between the relevant parties (i.e. specifier, manufacturer, contractor) prior to commencing manufacture and/or installation.

21 Conclusion

If the Falcon Panel Products Ltd. Fibrecore 44 and Fibrecore 54 door leaf designs, constructed in accordance with the specifications documented in this global assessment, were to be tested in the appropriate configuration in accordance with BS 476 Part 22:1987, it is our opinion that they would provide a minimum of 30 minutes integrity and insulation, subject to section 19.

22 Declaration by the Applicant

- 1) We the undersigned confirm that we have read and comply with obligations placed on us by FTSG Resolution No. 82: 2001.
- 2) We confirm that the component or element of structure, which is the subject of this assessment, has not to our knowledge been subjected to a fire test to the Standard against which this assessment is being made.
- 3) We agree to withdraw this assessment from circulation should the component or element of structure be the subject of a fire test to the Standard against which this assessment is being made.
- 4) We are not aware of any information that could adversely affect the conclusions of this assessment.
- 5) If we subsequently become aware of any such information, we agree to ask the assessing authority to withdraw the assessment.

Signed:

Name:

For and on behalf of: Falcon Panel Products Ltd.



23 Limitations

The following limitations apply to this assessment:

- 1) This assessment addresses itself solely to the elements and subjects discussed and does not cover any other criteria. All other details not specifically referred to should remain as tested or assessed.
- 2) This assessment is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available, Warringtonfire reserves the right to withdraw the assessment unconditionally, but not retrospectively.
- 3) This assessment has been carried out in accordance with Fire Test Study Group Resolution No. 82: 2001.
- 4) Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
- 5) This assessment relates only to those aspects of design, materials and construction that influence the performance of the element(s) under fire resistance test conditions. It does not purport to be a complete specification ensuring fitness for purpose and long-term serviceability. It is the responsibility of the client to ensure that the element conforms to recognised good practice in all other respects and that, with the incorporation of the guidance given in this assessment, the element is suitable for its intended purpose
- 6) This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with BS 476 Part 22:1987, on the basis of the evidence referred to in section 3. We express no opinion as to whether that evidence, and/or this assessment, would be regarded by any Building Control authority as sufficient for that or any other purpose. This assessment is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.
- 7) This report may only be reproduced in full. Extracts or abridgements of reports shall not be published without permission of Warringtonfire. All work and services carried out by Warringtonfire Testing and Certification Limited are subject to, and conducted in accordance with, the Standard Terms and Conditions of Warringtonfire Testing and Certification Limited, which are available at <https://www.element.com/terms/terms-and-conditions> or upon request.
- 8) The version/revision stated on the front of this Field of Application supersedes all previous versions/revisions and must be used to manufacture doorsets from the stated validity date on this front cover. Previous revisions of the Field of Application cannot be used once an updated Field of Application has been issued under a new revision.

24 Validity

- 1) The assessment is initially valid for 5 years from the date of issue, after which time it must be submitted to Warringtonfire for technical review and revalidation.
- 2) This assessment report is not valid unless it incorporates the declaration given in Section 22, duly signed by the applicant.

Signature:		
Name:	A M Winning	S Bailey
Title:	Senior Product Assessor	Senior Product Assessor

Appendix A

Summary of Performance Data

Supplementary Data

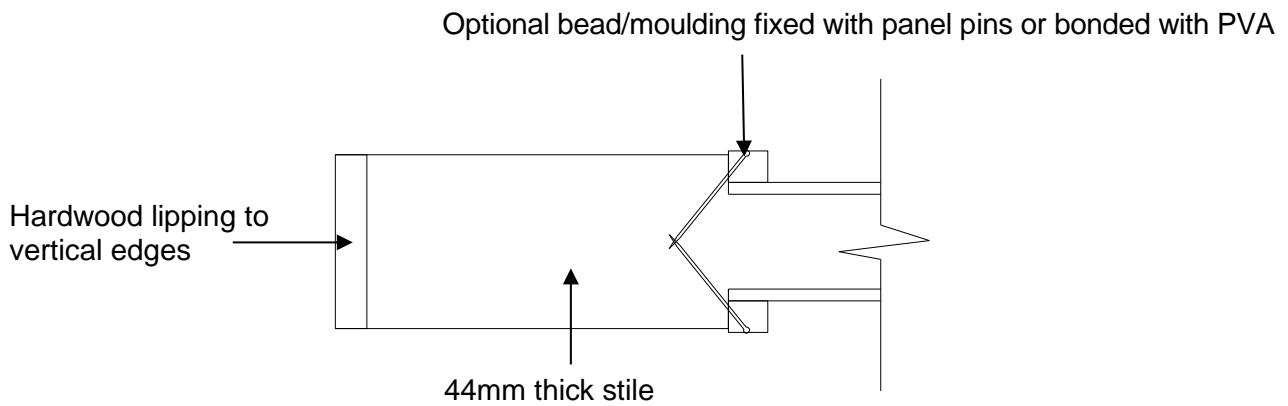
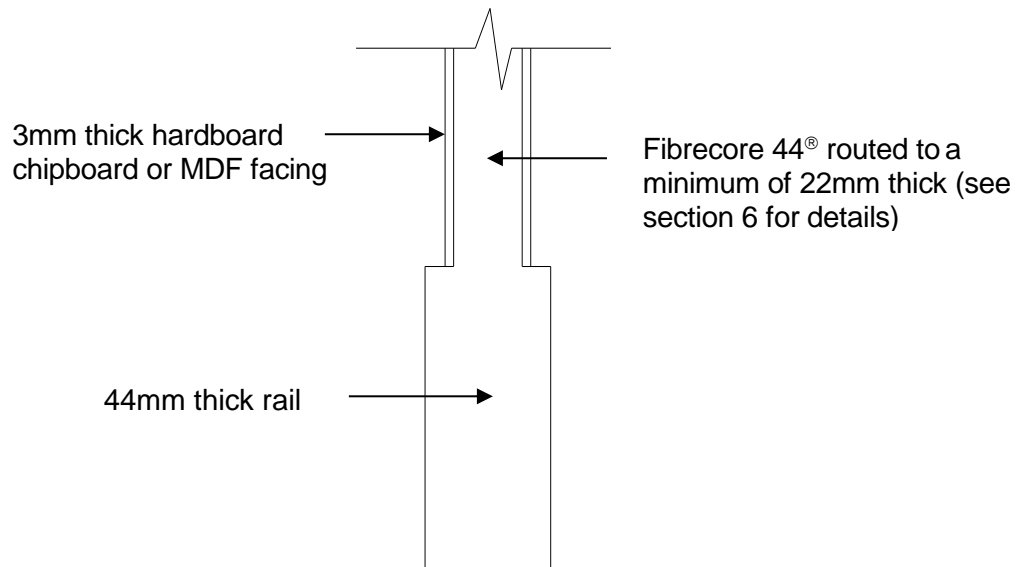
Report No.	Configuration	Leaf Size (mm)	Test Standard	Performance (mins)	
WF146520 (Pyroplex air transfer grilles)	Indicative	990 x 900 x 44	Principles of BS 476: Pt 20: 1987	41	
WF137714 (Pyroplex glazing system 30054)	Indicative	990 x 900 x 44	Principles of BS 476: Pt 20: 1987	41	
FEI08011 (ESG Pyrotech 630 toughened glass)	ULSASD	1020 x 840 x 44	Principles of BS 476: Pt 20: 1987	35	
IF12011 (Norsound Vision 30- softwood beads & square beads with non-insulating glass)	Swinging leaf sample (ULSASD)	1052 x 1020 x 44	Temperature & pressure conditions of BS 476: Pt 20: 1987 & principles of BS 476: Pt 22: 1987	Integrity: 38	
IF13061 (Norsound Universal glazing system)	ULSASD	1052 x 900 x 64	principles of BS 476: Pt 22: 1987	Integrity: 96	
IF12052 (Norsound Vision 30 -70 x 32mm softwood framing)	Multi pane glazed screen	1300 x 1300 x 70	Temperature & pressure conditions of BS 476: Pt 20: 1987 & principles of BS 476: Pt 22: 1987	28 ¹	
IF13012 (Norsound Vision 30T- & Pyroshield glass)	Multi pane glazed screen	1300 x 1300 x 70	principles of BS 476: Pt 22: 1987	45	
PF14029 ² (Streframe glazing beads)	A: ULSASD	2040 x 926 x 56	BS 476: Part 20/22: 1987	Integrity	53
				Insulation	53
CFR1603041 (Blue60 fire-stopping foam and packers)	LSADD	2400 1000/1000 44	BS EN 1634-1	Integrity: 64	

Notes:

1. Pane C failed at top of the glass, other glazed elements reached 34 minutes
2. Test PF14029 has been used to justify Streframe glazing beads. The test was conducted using a 60 minute glazing system and due to the lower density of the timber compared to that normally used for glazing applications, it has been necessary to specify the tested 60 minute glazing system for 30 minute applications. See the main assessment for details when using the Streframe beads.

Appendix B

Panel Construction Diagrams



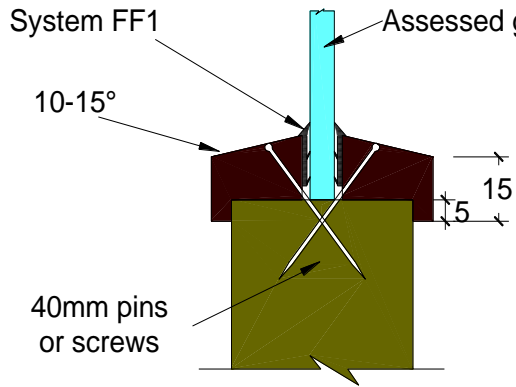
Appendix C

Revisions

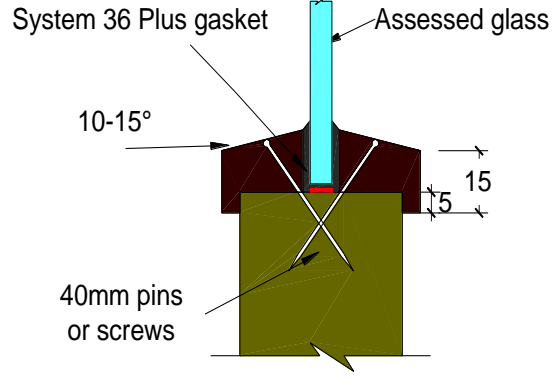
Revision	Warringtonfire Reference	Date	Description
A	WF406136	20.08.20	Assessment revalidated & updated to EN15725 and Warringtonfire formats.

Appendix D

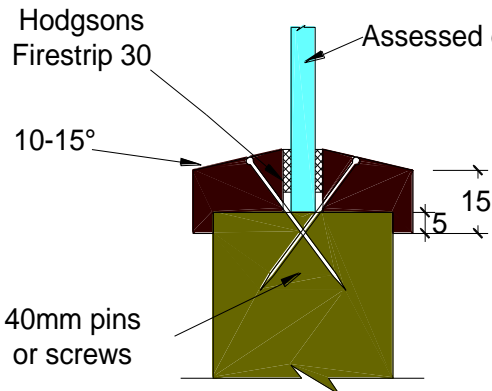
Proprietary 30 Minute Glazing Systems



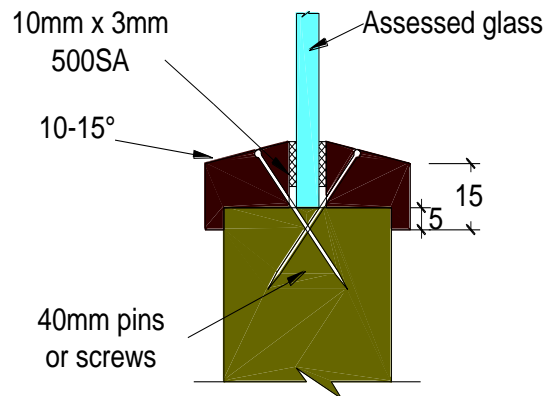
System FF1
 Lorient Polyproducts Ltd



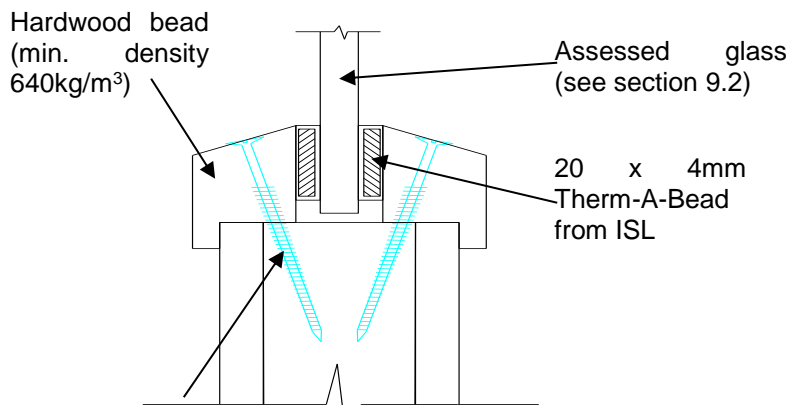
System 36 Plus
 Lorient Polyproducts Ltd



Firestrip 30
 Hodgsons Sealants Ltd

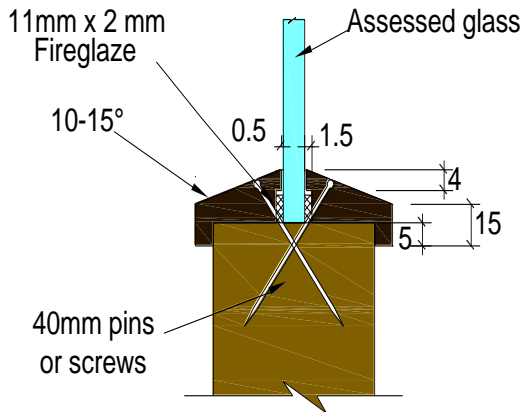


Pyroglaze 30
 Mann McGowan Ltd

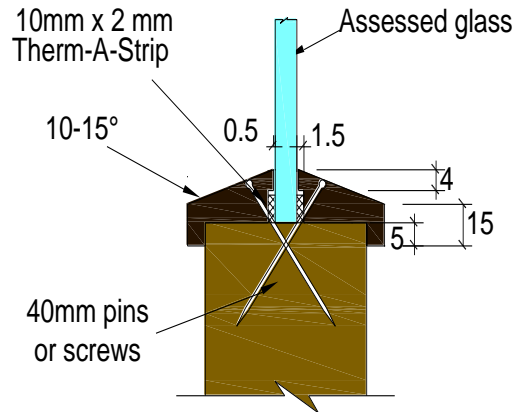


See section 9.3 for fixing details

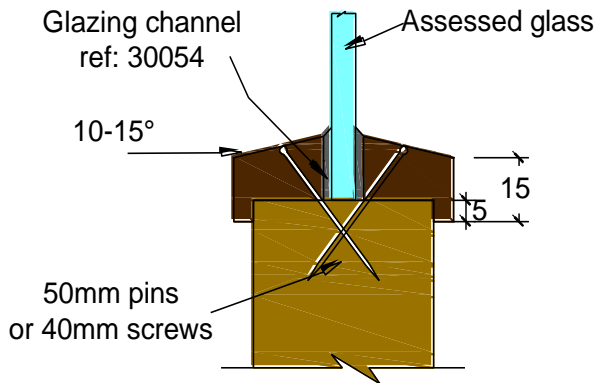
Therm-A-Bead – Intumescent Seals Ltd.



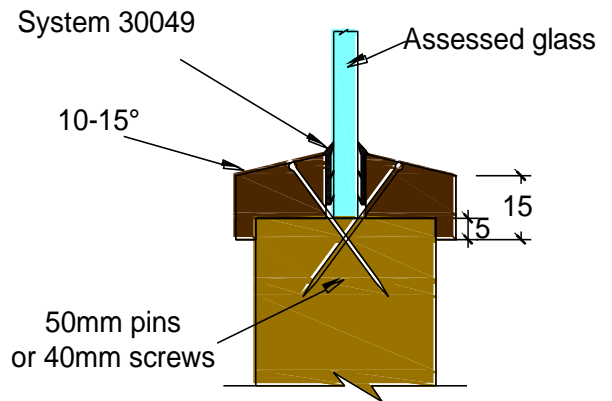
Fireglaze
Sealmaster Ltd



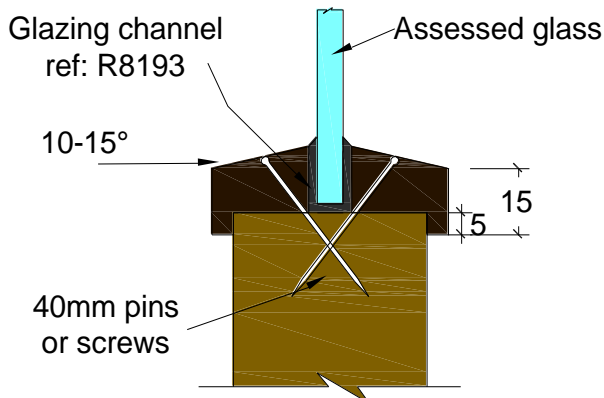
Therm-A-Strip
Intumescent Seals Ltd



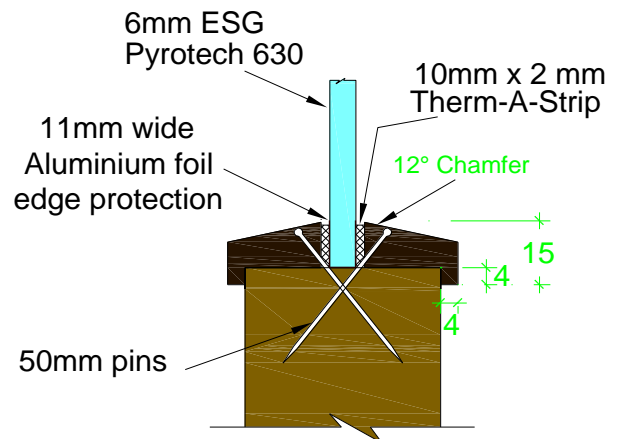
Pyroplex Ltd



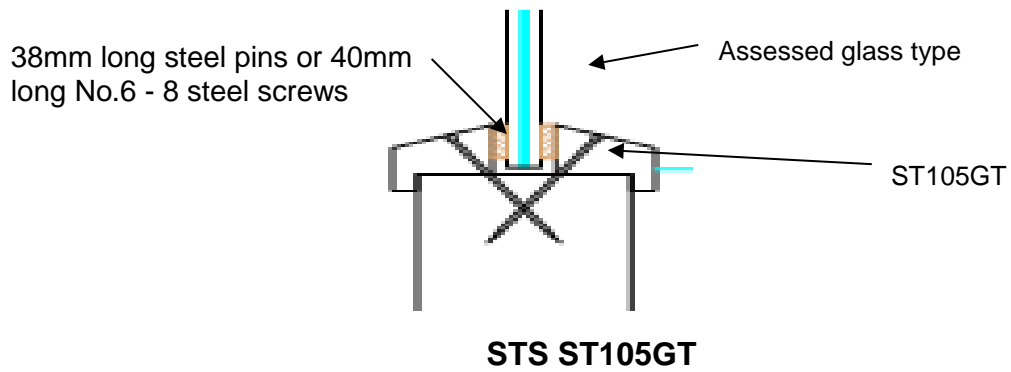
Pyroplex Ltd



Pyroplex Ltd

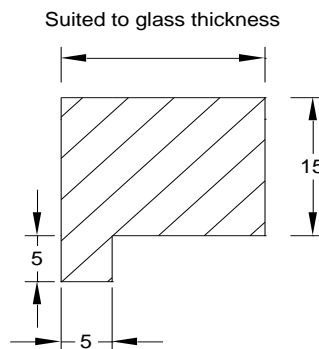


**Glazing system required for use with
ESG Pyrotech 630 Glass**



Assessed Square Glazing Bead Profiles

The following square bead profile may be used as an alternative to the splayed beads detailed in the glazing system diagrams above - refer to section 8 for glazing system and glass restrictions.



Appendix E

Data Sheets for:

Falcon Panel Products Ltd.

**Fibrecore 44 and Fibrecore 54
30 Minute Fire Resisting Doorsets**

Falcon Panel Products - Fibrecore 30 Minute Fire Resisting Doorsets Latched & Unlatched, Single Acting, Single Flush Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSASD	From:	2135	x	1202
		To:	2748	x	926
	ULSASD	From:	2135	X	1177
		To:	2698	x	926

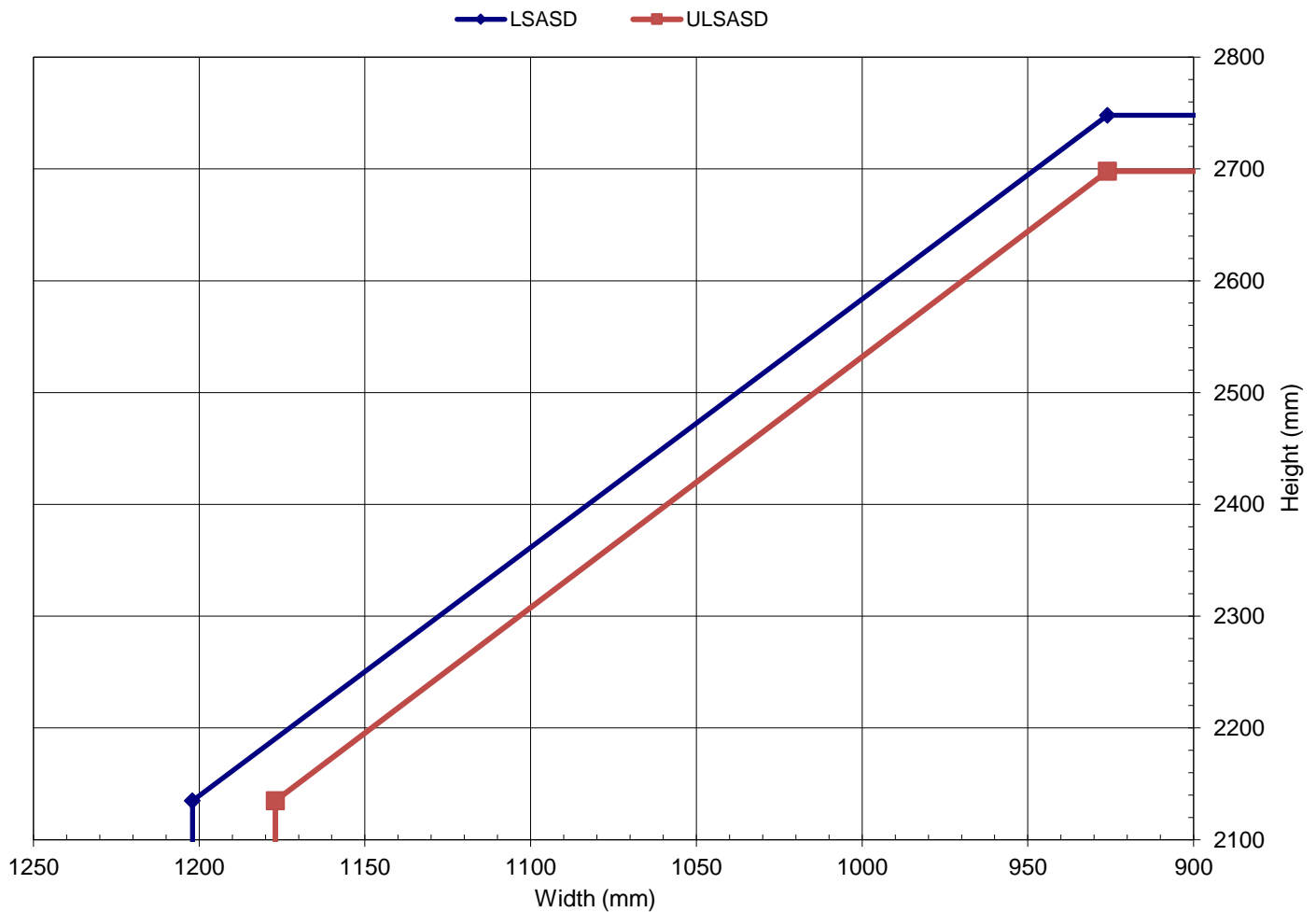
Intumescent Materials: PVC Encapsulated Lorient Type 617 or Pyroplex Rigid Box Seal FO8700

Head: 1 No. 15 x 4mm exposed strip, fitted centrally in the frame reveal or leaf edge. Leaves over 2300mm increase to 20 x 4mm.

Jambs and overpanel: 1 No. 15 x 4mm exposed strip, fitted centrally in the frame reveals or leaf edges. Leaves over 1000 increase to 20 x 4mm.

Hardware Protection: see section 13.1

Maximum Door Leaf Size



Falcon Panel Products - Fibrecore 30 Minute Fire Resisting Doorsets
Latched & Unlatched, Single Acting, Single Flush Doorsets – Extended Sizes

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSASD	From:	2440	x	1570
		To:	3140	x	1220
	ULSASD	From:	2440	X	1545
		To:	3090	x	1220

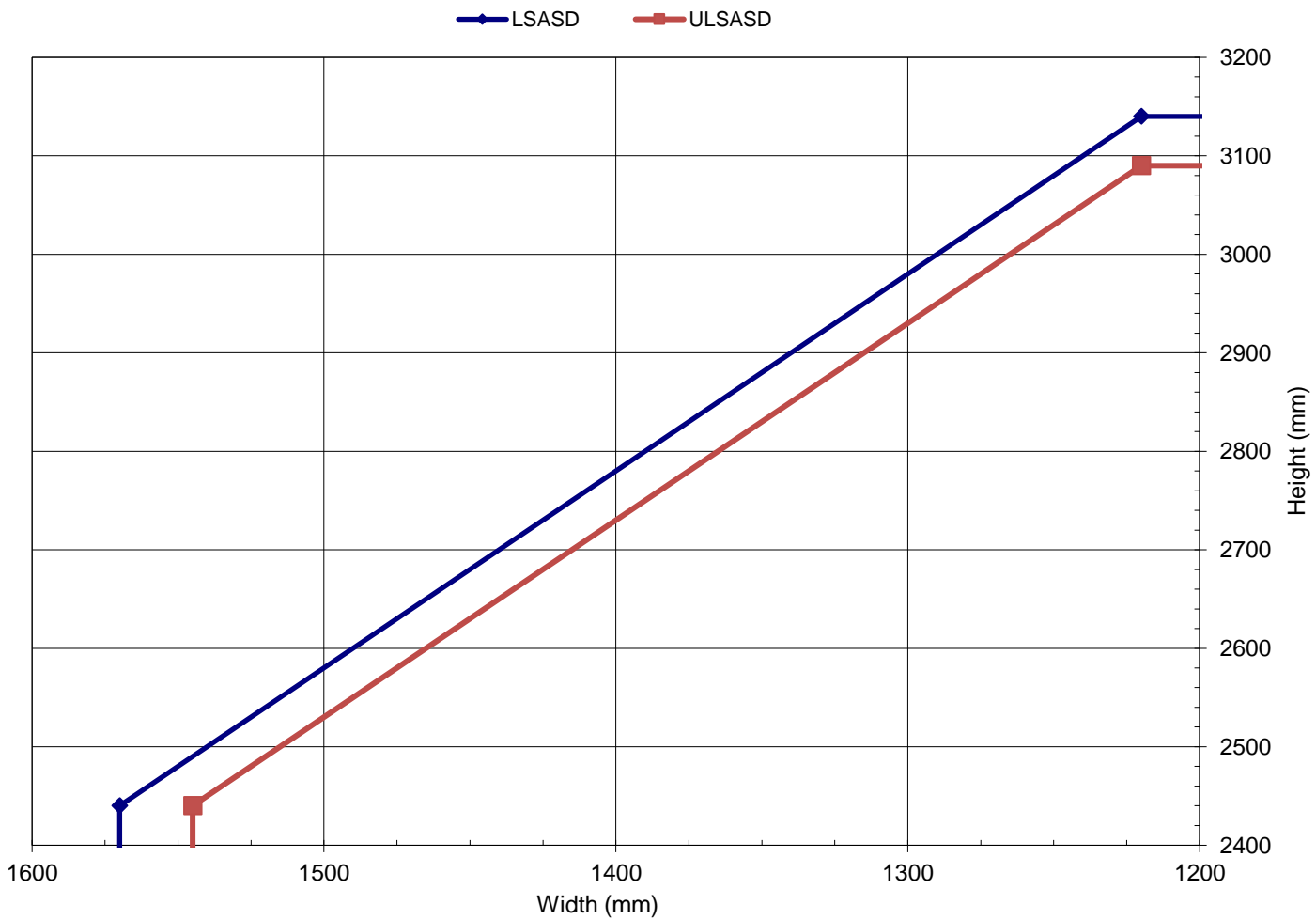
Intumescent Materials: PVC Encapsulated Lorient Type 617

Head: 1 No. 20 x 4mm exposed strip, fitted centrally in the frame reveal or leaf edge.

Jams and overpanel: 1 No. 20 x 4mm exposed strip, fitted centrally in the frame reveals or leaf edges.

Hardware Protection: see section 13.1

Maximum Door Leaf Size



Falcon Panel Products - Fibrecore 30 Minute Fire Resisting Doorsets Latched & Unlatched, Single Acting, Single Panelled Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSASD	From:	2135	x	1028
		To:	2362	x	926
	ULSASD	From:	2135	X	1003
		To:	2312	x	926

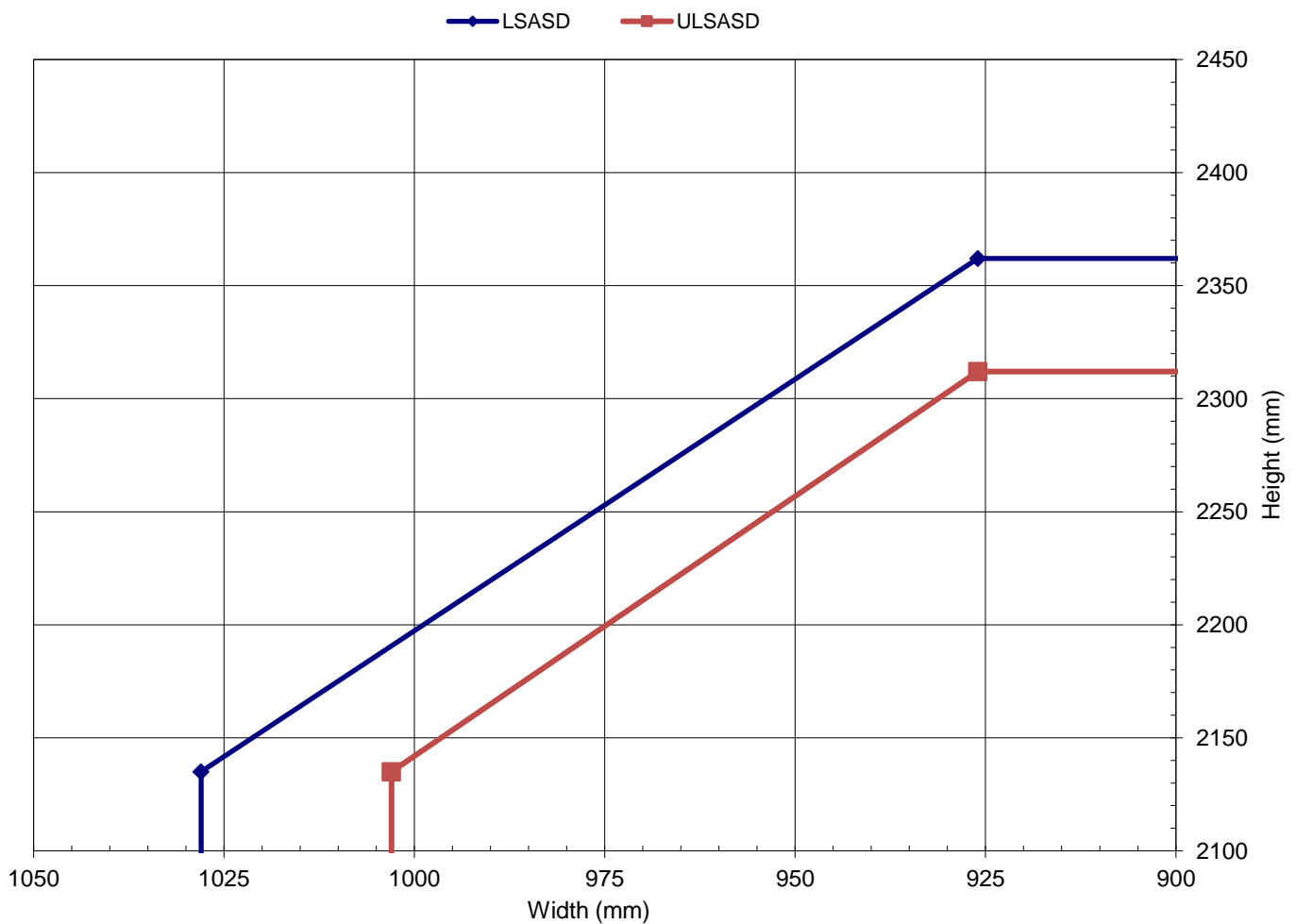
Intumescent Materials: PVC Encapsulated Lorient Type 617 or Pyroplex Rigid Box Seal FO8700

Head: 1 No. 15 x 4mm exposed strip, fitted centrally in the frame reveal or leaf edge. Leaves over 2300mm increase to 20 x 4mm.

Jams and overpanel: 1 No. 15 x 4mm exposed strip, fitted centrally in the frame reveals or leaf edges. Leaves over 1000 increase to 20 x 4mm.

Hardware Protection: see section 13.1

Maximum Door Leaf Size



Falcon Panel Products - Fibrecore 30 Minute Fire Resisting Doorsets

Latched & Unlatched, Single Acting, Double Flush Doorsets

Leaf Sizes	Configuration		Height (mm)		Width
			(mm)		
Leaf Sizes	LSADD	From:	2135	x	1152
		To:	2648	x	926
	ULSADD	From:	2135	X	1127
		To:	2598	x	926

Intumescent Materials: PVC Encapsulated Pyroplex Rigid Box Seal FO8700

Head: 1 No. 15 x 4mm exposed strip, fitted centrally in the frame reveal or leaf edge. Leaves over 2300mm increase to 20 x 4mm.

Jamb and overpanel: 1 No. 15 x 4mm exposed strip, fitted centrally in the frame reveals or leaf edges. Leaves over 1000 increase to 20 x 4mm.

Meeting Edges: 2 No. 10 x 4mm exposed strips, fitted centrally 8mm apart in the edge of one leaf only. Leaves over 1000 increase to 15 x 4mm, centrally fitted, spaced 5mm apart

Hardware Protection: see section 13.1

Maximum Door Leaf Size

