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Testing, calibrating, advising.

Title:
Sentry Prolite Timber Based Doorset
for:
30 Minutes Fire Resistance

Report Number:
WF403351

Report Reference:
Chilt/A04030 Revision B

Valid From:
30 August 2018

Valid Until:
30 August 2023

Prepared for:
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The Lodge
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Exova Warringtonfire – the new name for BM TRADA

On December 1st 2015, Chiltern International Fire Limited (trading as BM TRADA) commenced trading under the name Exova Warringtonfire.

To coincide with this change, our Technical Reports, Test Reports, Product Assessments, company stationery and marketing collateral have been updated to reflect the Exova Warringtonfire branding.

The validity of all documents previously issued by Chiltern International Fire Limited including certificates, test reports and product assessments is unaffected by this change. A letter to this effect is available upon request by e-mailing globalfire@exova.com

About Exova Warringtonfire

Exova Warringtonfire is part of the Exova Group one of the world's leading laboratory-based testing groups, trusted by organisations to test and advise on the safety, quality and performance of their products and operations. Headquartered in Edinburgh, UK, Exova operates 143 laboratories and offices in 32 countries and employs around 4,500 people throughout Europe, the Americas, the Middle East and Asia/Asia Pacific. With over 90 years' experience, Exova specialises in testing across a number of key sectors from health sciences to aerospace, transportation, oil and gas, fire and construction.
Be assured that whilst the name will change, your service provision and primary contacts have not. What will be available to you is a wider team of testing experts and an extended range of testing capabilities including structural steelwork testing, ventilation duct and damper testing, ASTM testing, water mist system testing and smoke toxicity testing and covering additionally both the rail and marine sectors.
If you have any questions, please do not hesitate to contact a member of the team and we will do our best to answer them. We appreciate your business to date and we look forward to working with you in the future.

Kind regards

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Contents

1 Introduction

This document constitutes a global assessment relating to Sentry Prolite fire resisting doorsets, for Alan Romaine T/A Sentry International. The assessment uses established extrapolation and interpretation techniques in order to extend the scope of application by determining the limits for the design based on the tested constructions and performances obtained. The assessment is an evaluation of the potential fire resistance performance, if the elements were to be tested in accordance with BS 476: Part 22: 1987.

2 General Description of Construction

The basic tested construction of the Sentry Prolite door design comprises the following:

Element		Material	Dimensions (mm)	Density (kg/m³)
Stiles (hanging edge only)		Hardwood	23 wide x 36 thick	549**
Rails (top only)		2No hardwood	1No 22 wide x 36 thick 1No 38 wide x 36 thick	565**
Core	Inner	Horizontal Falcateria lamels	12 thick x nominally 50 wide	345**
	Outer	Vertical Falcateria lamels	12 thick x nominally 50 wide	345**
Facings		WBP hardwood plywood	3.5 thick	600*
Lipping		Sapele	8 thick	640*

***** Nominal density ****** Stated density, checked by laboratory

3 Leaf Sizes

The approval for increased leaf dimensions is based on the tests listed in appendix A and takes into account the margin of over performance above 30 minutes integrity for the design and the characteristics exhibited during test. Data sheets specifying the maximum approved leaf sizes and graphs showing the permitted gradient between maximum height and width, are contained in appendix D.

Unequal leaf double doorsets are covered by this assessment with no restriction on the smaller leaf dimension. Doorsets containing leaves with smaller dimensions than those stated are deemed to be less onerous and are therefore automatically covered.

4 Configurations

Based on the test evidence listed in appendix A, this assessment covers the following doorset configurations:

Abbreviation	Description
LSASD & ULSASD	Latched & unlatched single acting single doorset
DASD	Double acting single doorset
LSADD & ULSADD	Latched & unlatched single acting double doorset
DADD	Double acting double doorset

5 Leaf Size Adjustment

Door leaves constructed to this design may be altered as follows:

Element	Reduction	
Leaf	Height	The manufactured size of the leaf may be reduced in height without restriction from the bottom edge only with the top rail remaining intact
	Width	The manufactured size of the leaf may be reduced from the closing lock edge providing the hanging edge stile remains intact and providing the edges are re-lipped in accordance with section 9
Timber lippings	The lipping dimensions stated in section 9 may be reduced by 20% for fitting purposes	

6 Overpanels

6.1 Solid

Overpanels of the same construction as the door leaves may be used with this doorset design only when a transom is fitted. The transom must be softwood or hardwood and a minimum section of 70mm x 32mm. Joints must be mortise and tenon, mortise housed or butt jointed and glued (urea formaldehyde) and screwed. Overpanels must be fixed using the following method:

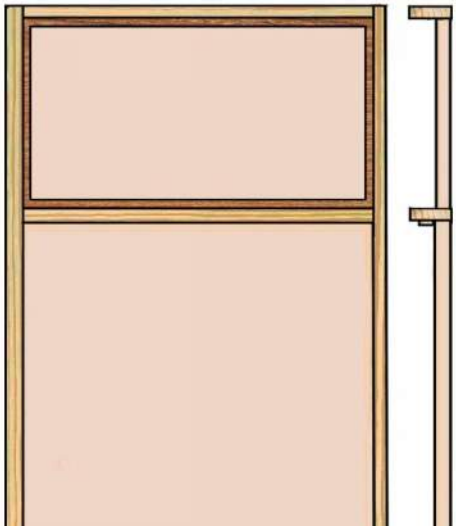
- screwing through the rear of the frame with steel screws passing at least 30mm into the centre line of the overpanel. Fixings must be no more than 100mm from each corner and a maximum of 250mm centres in between.

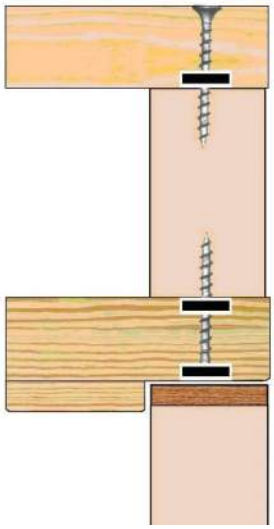
The intumescent seal specification for overpanel assemblies is to be as the jamb for vertical edges and the head for horizontal edges and must be on all 4 edges of the overpanel as defined in appendix D for the different designs and configurations.

Overpanels must be lipped on all edges, meeting the specification in section 9.

Maximum assessed overpanel heights are as follows:

Configuration	**Max Overpanel Height** (mm)
Single doorsets	2000
Double Doorsets	1000





Note: Drawing is representative of doorset construction. Exact construction must comply with the specification contained in this document.

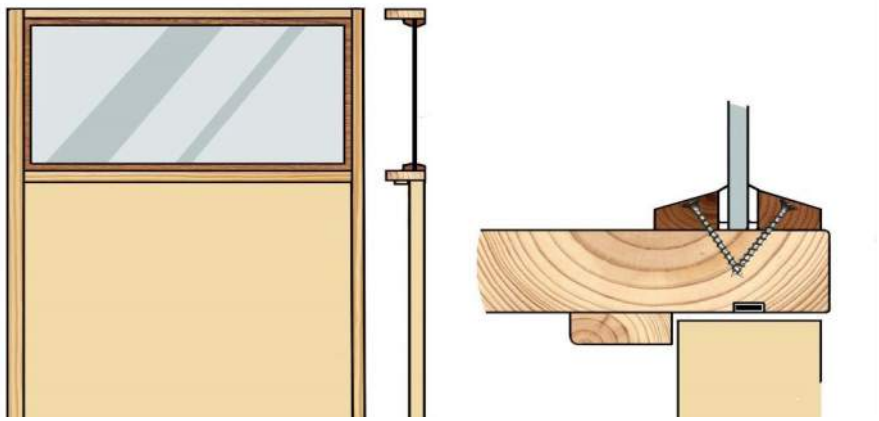
6.2 Glazed Fanlights

Doorsets including a transom may have the overpanel section glazed in lieu of a section of door. The timber frame and glazing beads must be hardwood with a minimum density of 640 kg/m^{3}and the transom section must be a minimum of 70mm x 44mm.

The maximum assessed fanlight dimensions are detailed in the table below, subject to the following restriction:

- The glazing system and 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.

Configuration	**Height** (mm)	**Width** (mm)
Single & double doorsets	≤600	Overall door width



Note: Drawing is representative of doorset construction. Exact construction must comply with the specification contained in this document.

7 Glazing

7.1 General

The testing on the Sentry Prolite design has successfully demonstrated that it is capable of tolerating the inclusion of glazing.

The permitted glazed area for all configurations is 0.91m² and the glazing must meet the following criteria:

7.2 Assessed Glazing Systems

The glazing system must be one of the following tested proprietary systems:

Glazing System	**Manufacturer**
1. Therm-A-Strip 30	Intumescent Seals Ltd
2. Fireglaze 30	Sealmaster Ltd
3. Firestrip 30	Hodgson Sealants Ltd
4. System 36 Plus	Lorient Polyproducts Ltd
5. Pyroglaze 30	Mann McGowan Ltd
6. R8913	Pyroplex Plc
7. Flexible Figure 1	Lorient Polyproducts Ltd

7.3 Assessed Glass Products

Assessed glass types are as follows:

Glass Type	Manufacturer
1. 6 & 7mm Pyroshield 2	Pilkington UK Ltd
2. 6mm Pyran S	Schott Glass Ltd
3. 7mm Pyroguard EW30	Pyroguard UK Ltd
4. 7mm Pyrobelite 7	AGC Flat Glass UK
5. 7mm Pyrodur 30-104 or 30-105	Pilkington UK Ltd
6. 10mm Pyrodur 30-201/60-10	Pilkington UK Ltd
7. 12mm Pyrobelite 12	Pyroguard UK Ltd
8. 15mm Pyrostop 30-10	Pilkington UK Ltd
9. 16mm Pyrobel 16	AGC Flat Glass UK

Notes:

1. All glass must be fitted fully in accordance with the manufacturers' tested installation requirements, particularly with respect to edge cover and expansion clearance.
2. Glass types 8 and 9 are fully insulating for 30 minutes in terms of the criteria set out in BS 476: 20: 1987.

7.4 Glazing Beads & Installation

Glazing beads must be from hardwood as specified in the following table:

Material	Profile	Min Density (kg/m^3)	Application
Hardwood	Splayed	640	All proprietary systems detailed in 7.2 and shown in appendix B and all glass types specified in 7.3
Hardwood	Square	640	Proprietary systems 1,2 & 3 as specified in 7.2 and glass types 4-9 specified in 7.3

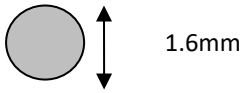
Timber for glazing beads must be joinery quality straight grained hardwood, free from knots, splits and checks.

A square bead profile may be used as an alternative to the splayed beads required for the proprietary systems, subject to the restricted glass types and glazing systems specified in the table above (see appendix B for square bead profile options).

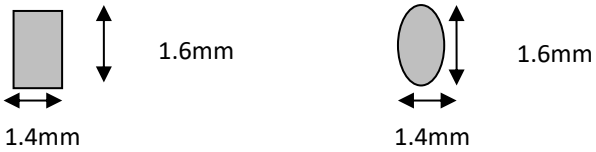
Glazing beads must be retained in position with 50mm long x 2mm diameter steel pins or 40mm long No 8 screws, inserted at 35-40º to the vertical at no more than 50mm from each corner and at 150mm maximum centres.

Pneumatically (gun) fired steel pins are acceptable providing the pins meet the specifications shown below, are a minimum of 60mm long, and wherever possible are orientated perpendicularly to the glass.

Round pin diameter (mm) = minimum 1.6mm:



Oval/rectangular pin minimum linear dimensions = 1.6mm x 1.4mm:



Glazed openings must not be less than 100mm from any door edge. Multiple apertures are acceptable within the permitted glazed area, with a minimum of 80mm of door core separating the apertures.

Aperture shape is not restricted, providing the glazing system and beads are compatible with that shape.

False timber beads may be bonded to the glass face. Suitable glass for this application is restricted to types 4 - 9. One of the following intumescent glazing products must be used.

Glazing System	Manufacturer
1. Therm-A-Strip 30	Intumescent Seals Ltd.
2. Fireglaze 30	Sealmaster Ltd.
3. Firestrip 30	Hodgsons Sealants Ltd.
4. Envirograf Product 77 – G10/10	Intumescent Seals Ltd.
5. Intumescent mastic or silicone tested for glazing applications to BS 476-22:1987 or BS EN 1634-1	Various

Seals for false glazing beads 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 Door Frames

8.1 Door Frame Construction

Door frames for Sentry Prolite must be constructed as follows:

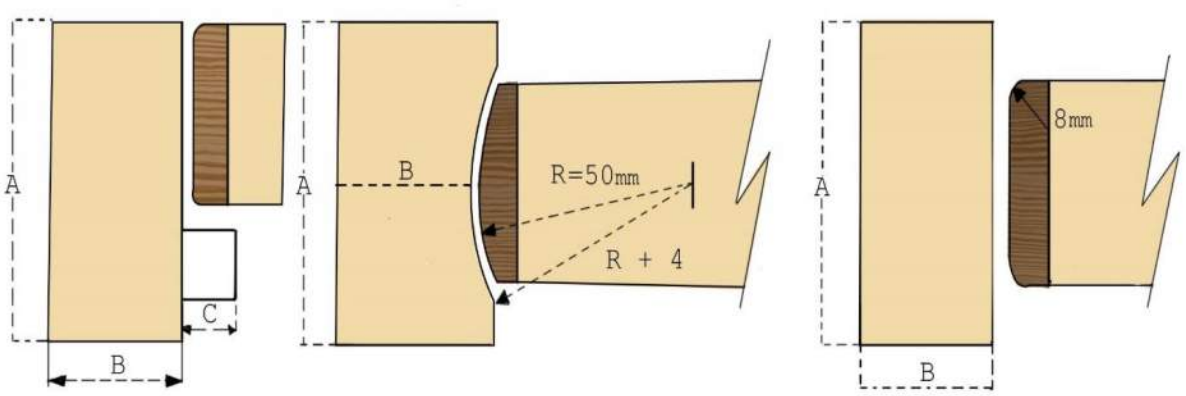
Application	**Material**	**Section Size** (mm)	**Min Density** (kg/m³)
Door frames with or without transomed solid overpanels	Softwood or hardwood	70 x 32	510
	Hardwood (extended leaf size range for single doorsets-see note 1)	70 x 32	640
	MDF (single doorsets only-see note 2)	95 x 25	700
Door frames with glazed fanlights	Hardwood	70 x 44	640

Notes:

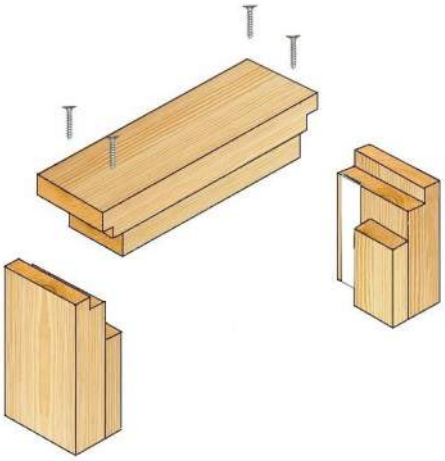
1. The single leaf doorset B tested in RF04016, evaluated the performance of the Sentry Prolite design utilising a hardwood door frame (see graph contained in appendix D for extended single leaf size range).
2. The doorset tested in RF01059B (AR2), evaluated the performance of the Sentry Superlite design, utilising an MDF door frame (see graph contained in appendix D for the permitted single leaf size range).
3. Timber door frames must be joinery quality straight grained hardwood, free from knots, splits and checks.
4. A 12mm deep planted stop is adequate for single acting frames whilst double acting frames must may be scalloped or square. If frames are square, the maximum radius to the corners of the leaf is 8mm. Frame joints must be mortice and tenoned, mitred, butt, half lapped nailed or screwed and with no gaps.

   The following diagram depicts the assessed frame profiles and dimensions:

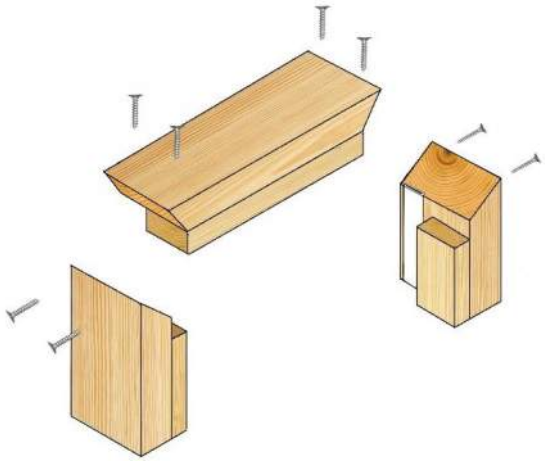
A = min 70mm MDF = min 95mm	B = min 32mm MDF = min 25mm	C = min 12mm
R = radius from floor spring	R8 = 8mm radius to create maximum 2mm edge profiling	



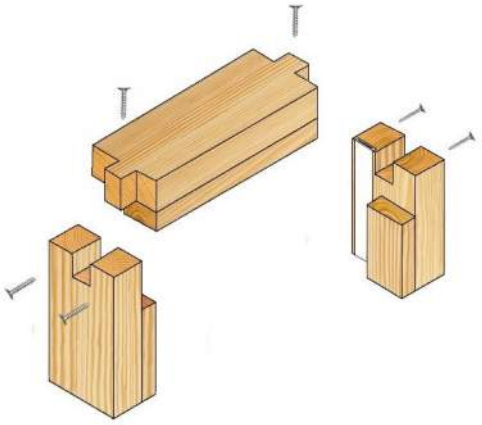
8.2 Door Frame Joints



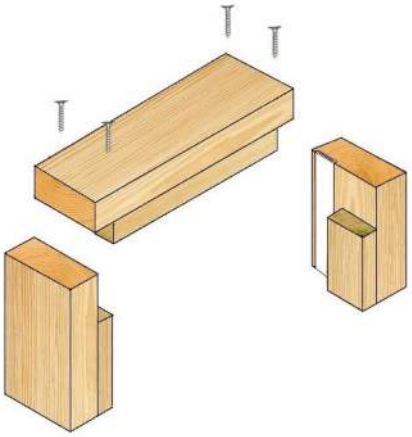
Half Lapped Joint



Mitre Joint



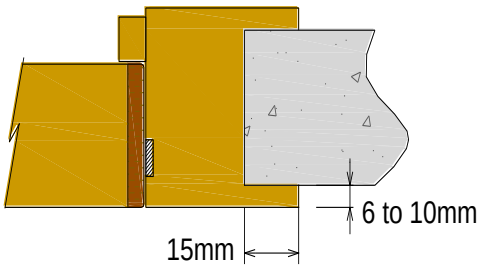
Mortice and Tenon Joint

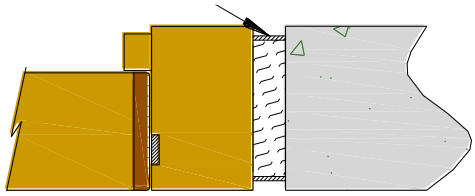
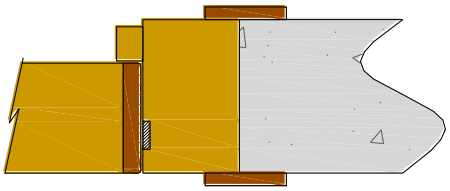
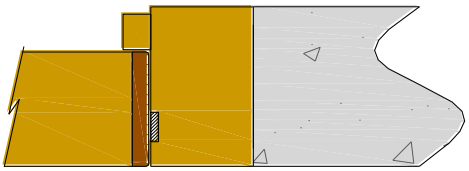
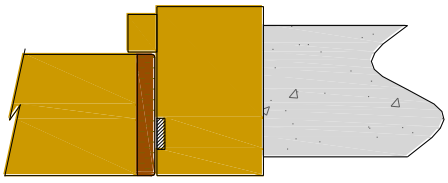
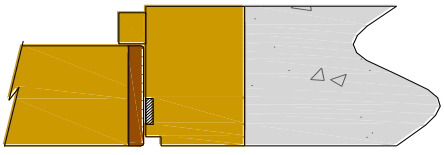


Butt Joint

8.3 Door Frame Installation

The following diagrams indicate acceptable door frame installations.

<table>
<tr><th colspan="2">Permitted Installations</th></tr>
<tr><td> 

6-10mm is the maximum a frame is permitted to be proud of the structural surround when combined with a 15mm bolection return. Projecting frames outside these dimensions will require specific test evidence or assessment.</td><td>Max 10 x 10mm shadow gap with 2mm intumescent mastic capping or
10 x 4mm PVC encased intumescent seal
 
Shadow gaps are permitted as shown in the above diagram providing the frame to structural surround is infilled with timber of the same density as the frame or a non-combustible material such as plasterboard. Other shadow gap dimensions will require specific test evidence or assessment.</td></tr>
<tr><td> 
Architraves overlapping the frame to structural surround junction are always permitted where required but may be mandatory depending on the size of frame to surround junction gap and the fire stopping used. See section on Sealing to the Structural Surround.</td><td> 
Depending on the size of the frame to surround junction gap and the fire stopping methods used, it may be permitted to install doorsets without architraves. See section on Sealing to the Structural Surround.</td></tr>
<tr><th colspan="2">Installations Not Permitted</th></tr>
<tr><td> 
Projecting frames without bolection returns are not permitted without specific test evidence or assessment due to the potential for increased charring to the back of the frame.</td><td> 
Quirks between the leaf and frame are not permitted without specific test evidence or assessment due to the potential for increased charring of the leaf to frame gap.</td></tr>
</table>

9 Lippings

Sentry Prolite doors only require lipping on the vertical edges but may be lipped on all edges if required. Lippings must meet the following specification:

Type	**Dimensions** (mm - thick)	**Min Density** (kg/m³)
Flat	8 - 11	640
Rounded	8 - 11 with a max of 2 rounding (see section 8.1)	
Rebated	Not permitted	

Timber for lippings must be joinery quality straight grained hardwood, free from knots, splits and checks.

10 Leaf Facing Materials

The primary tested facing material for this doorset design is 3.5mm thick hardwood plywood. Test RF01059B (AR2) evaluated thicker plywood faces.

The following table defines the acceptable facing options:

Material	**Dimension** (mm)	**Minimum Density** (kg/m³)
Plywood	3.5	640
Plywood	5.5	600
Chipboard	3.5	650
MDF	3.5	700

10.1 Decorative and Protective facings

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

Facing Material	**Maximum Permitted Thickness** (mm)
Paint	0.5
Timber veneers	2
Plastic laminates	2
Cellulosic paper/non-metallic foils	0.4

Notes:

1. Metallic facings are not permitted (except for push plates and kick plates)
2. The door leaf thickness must not be reduced to accommodate the finish
3. Materials must not conceal intumescent strips
4. Plastic laminates must not be applied to the edges of leaves

11 Intumescent Materials

The intumescent materials tested and assessed for this doorset design are as follows:

Application	Location	Product/Manufacturer
Edge seals	Fitted in the frame jambs or leaf edges	Therm-A-Seal – Intumescent Seals Ltd
Hinges	Not required	-
Lock/latch	Under forend & keep	1. 1mm MAP paper - Lorient Polyproducts Ltd 2. 1mm Interdens - Dufaylite Developments Ltd 3. 1mm G30 – Sealmaster Ltd 4. 1mm Therm-A-Strip - Intumescent Seals Ltd
Top pivots & flush bolts	Lining all sides of the mortices	1. 2mm MAP paper - Lorient Polyproducts Ltd 2. 2mm Interdens - Dufaylite Developments Ltd 3. 2mm G30 – Sealmaster Ltd 4. 2mm Therm-A-Strip - Intumescent Seals Ltd

The seal specification for each configuration is shown in appendix D.

12 Adhesives

The adhesives used in construction must be as detailed in the following table:

Element	Adhesive Type
Timber Lippings	Urea formaldehyde (e.g. Cascamite) or PU
Facing	WBP
Core lamels	PVA

13 Tested Hardware

The following hardware has been successfully incorporated in the tests on this design:

Element	Product	Dimensions (mm)
Hinges	Royde & Tucker H105 hinges	100 x 35 (blade size)
Closer	Dorma Door Controls Ltd TS73V overhead closer	233 x 60 (footprint size)
Latch	Standard tubular mortise latch - disengaged	57 x 26 (forend size)
Furniture	Aluminium lever type handle	100 x 38 (footprint size)

14 Additional & Alternative Hardware

14.1 Certifire

Providing the parameters of this assessment, including specified protection such as hardware gaskets**,** always take precedence, where alternative hardware to that tested is permitted in the following sections, Certifire approved hardware may be incorporated subject to the design, material and dimensional limitations both specified within this assessment report and identified on the relevant Certifire certificate. This route cannot be used where only specific hardware options stated by the doorset manufacturer are permitted (i.e. where alternative hardware is not permitted).

14.1.1 CE Marking

The following items of hardware must also bear the CE mark:

- Locks and latches: test standard EN 12209
- Electro mechanically operated locks: test standard EN 14846
- Single axis hinges: test standard EN 1935
- Controlled door closing devices: test standard EN 1154
- Electrically powered hold open devices: test standard EN 1155
- Door co-ordinators: test standard EN 1158
- Emergency exit hardware: test standard EN 179
- Panic exit hardware: test standard EN 1125.

14.2 Latches & Locks

Latches and locks must either be as tested, or alternatively components with the following specification are acceptable:

Maximum forend and strike plate dimensions:	57mm high by 26mm wide by 4mm thick
Maximum body dimensions:	45mm high by 22mm diameter.
Intumescent protection:	See section 11
Materials:	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel or stainless steel.
Position:	800mm – 1200mm up from threshold.

14.3 Hinges

Door leaves must be hung on a minimum of 3 hinges. Leaves over 2300mm high must fit 4 hinges. Hinges with the following specification are acceptable:

Blade height:	90 - 120mm
Blade width (excluding knuckle):	30 - 35mm
Blade thickness	2.5-4mm
Fixings:	Min of 4 No 30mm long No 8 or No10 steel wood screws per blade
Materials:	Steel or stainless steel
Hinge positions:	Top - 150-200mm from the head to top of hinge Bottom - 180-250mm from the foot to bottom of hinge Remainder – Equispaced between top and bottom
Intumescent protection:	Not required

* Royde and Tucker H105 lift off hinges have been tested with 3 screw fixings, as manufactured, and may be utilized for this application with 3 fixings per blade.

14.4 Automatic Closing

Automatic closing devices, must either be as tested or components of equal specification that have demonstrated contribution to the required integrity performance of this type of doorset design, when tested to BS 476: Part 22: 1987 or BS EN 1634-1.

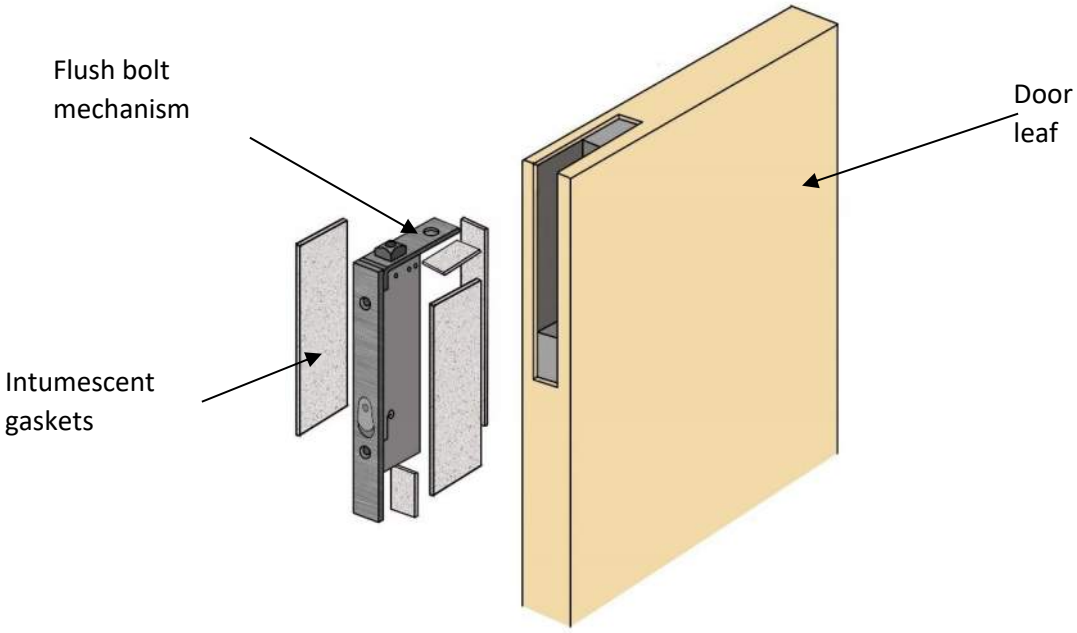
Floor spring top pivots and all mounting plates must be protected with one of the products specified for Flush Bolts and Pivots protection in section 11. Alternatively the hardware manufacturers tested gaskets may be used.

14.5 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:

- 200mm long x 20mm deep x 20mm wide.

Flush bolts must be steel and the mortice must be as tight to the mechanism as is compatible with its operation. All edges of the mortices, including keep plates, must be protected with intumescent gaskets as specified in section 11. Alternatively the hardware manufacturers tested gaskets may be used.



14.6 Pull Handles

Steel, stainless steel, brass or bronze pull handles (melting point ≥ 800°C) may be surface-fixed or bolted through the door leaf, providing the length is limited to 1200mm between the fixing points. If through fixed, there must be no more than 1mm clearance between the hole and stud.

14.7 Push Plates/Kick Plates

Steel and stainless steel face-fixed hardware such as push plates and kick plates may be fitted to the doorsets provided that their fitting requires the removal of no part of the door leaf. These items of hardware 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 thermo-softening contact adhesive. Plates must not return around the door edges.

14.8 Door Selectors

These may be freely applied, provided that they are not invasive in the leaf edges or door frames. Those that are invasive will require fire resistance test/assessment evidence to support their use. No additional intumescent protection is required unless test evidence dictates otherwise.

14.9 Door Security Viewers

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 +1 mm). Lenses must be glass and the item must be bedded into a tested intumescent mastic.

14.10 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.

14.11 Air Transfer Grilles

Air transfer grilles may be fitted providing the product has suitable test evidence to BS 476: Part 22: 1987 or BSEN 1634-1 that demonstrates a minimum 30 minutes integrity performance when installed within a timber based doorset of comparable thickness. Margins to the leaf edges will remain as detailed for glazing and the location of the unit will be dictated by the position tested (normally below mid height). The area occupied by the air transfer grille must not exceed 0.2m^2 and must be deducted from the area of glazing, if both elements are fitted.

14.12 Environmental Seals

Silicon based flame retardant acoustic, weather and dust seals may be fitted to this doorset design without compromising the performance, providing fitting does not interfere with the activation of the intumescent seals or hinder the self-closing function of the leaves.

14.13 Threshold Seals

The following types of automatic threshold drop seals may be recessed in to the bottom rail of leaves to this design without compromising the performance:

Product	Manufacturer
IS8010si	Lorient Polyproducts
RP8Si	Raven
Schall-Ex Duo L-15	Athmer
810	Norsound

14.14 Letter Boxes/Plates

Letter boxes/plates may be fitted providing the product has demonstrated contribution to the required integrity performance of this type of doorset design, when tested to BS 476: Part 22: 1987 or BS EN 1634-1, when installed in a timber based doorset of comparable thickness. Products may be fitted up to 1200mm from floor level, and no closer than 100mm to any leaf edge.

15 Door Gaps

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

Location	Dimension
Door edge gaps	Representative of those tested but as a guideline 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. For smoke control refer to Section 18.

16 Fixings

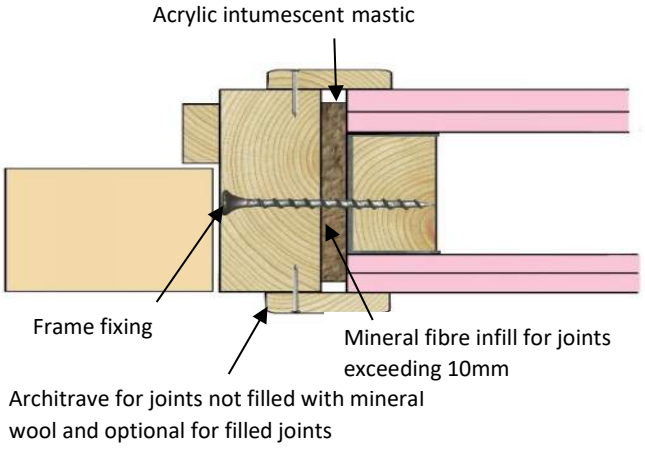
The supporting construction must be capable of staying in place and intact for the full period of fire resistance required from the doorset. The frame jambs are to be fixed to the supporting construction using steel fixings at 500mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.

17 Sealing to Structural Opening

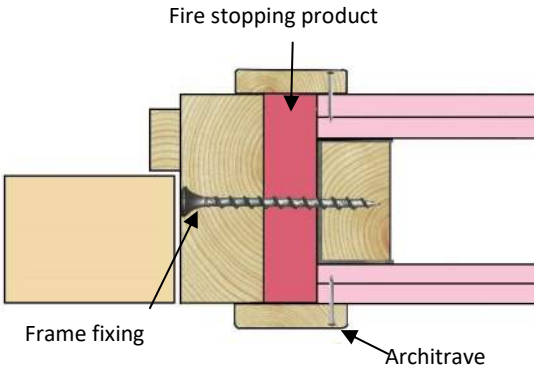
The door frame to structural opening gap must be protected using one of the following methods:

1. Gaps up to 10mm 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. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.

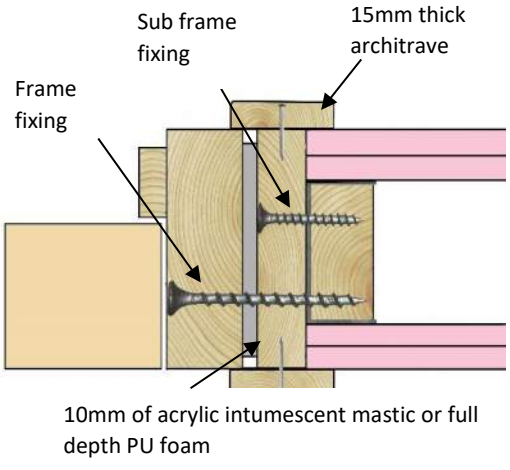
2. Gaps between 10mm and 20mm must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.



3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.



4. Timber based or non-combustible subframe up to 50mm thick, with gaps up to 10mm between the components 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. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.



Guidance for various 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 where appropriate.

18 Smoke Control

18.1 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 $3m^3/m/hour$ (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 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.

18.2 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.

19 Insulation

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

Type	Details
Partially insulating	Doorsets incorporating up to 20% of non-insulating glazing
Fully insulating	Unglazed doorsets or doorsets fitted with 30 minute fully insulating glazing (see note in section 7.3 for fully insulating glass types)

20 Conclusion

If the doorset design constructed in accordance with the specification documented in this global assessment, were to be tested in accordance with BS476: Part 22: 1987, it is our opinion that it would provide a minimum of 30 minutes integrity and insulation (subject to section 19).

21 Declaration by the Applicant for Assessment WF403351

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: Alan Romaine T/A Sentry International

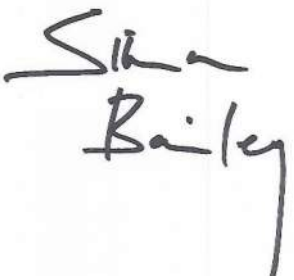
22 Limitations

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, Exova 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 BS476: Part 22: 1987, on the basis of the evidence referred to in appendix A. 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.

23 Validity

1) The assessment is initially valid for five years after which time it should be submitted to Exova Warringtonfire for technical review.
2) This assessment report is not valid unless it incorporates the declaration given in Section 21 duly signed by the applicant.

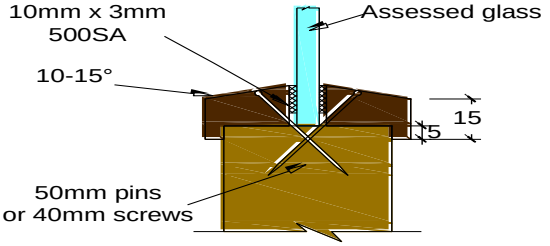
Signature:		
Name:	**A M Winning**	**S Bailey**
Title:	Senior Product Assessor	Senior Product Assessor

Appendix A
Performance Data

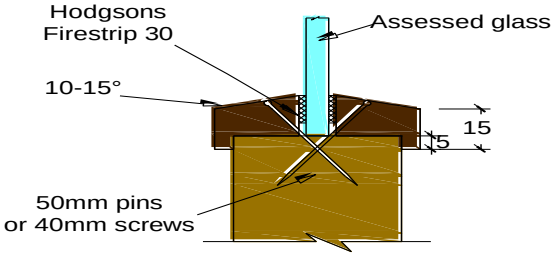
Report No	Configuration	Leaf Size (mm)	Standard	Performance (mins)	
RF04016	A: ULSADD	2110 852+300 43	BS476 Part 22	Integrity	37
				Insulation	37
	B: ULSASD	2415 1210 43		Integrity	44
				Insulation	44
RF01059B (AR2) (5.5mm ply faces + 25mm MDF door frame)	ULSASD	2135 915 45		Integrity	35
				Insulation	35

Appendix B

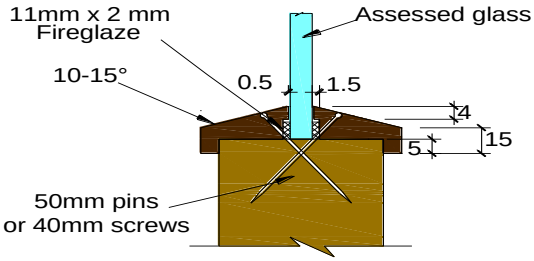
Proprietary 30 Minute Glazing Systems



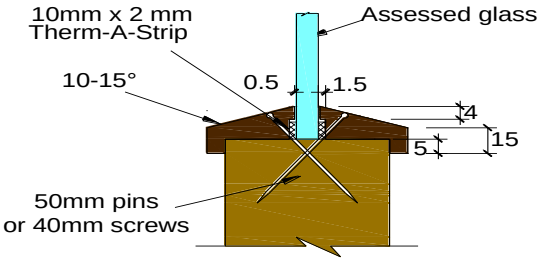
Pyroglaze 30
Mann McGowan Ltd



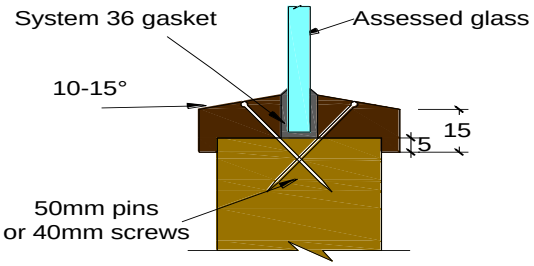
Firestrip 30
Hodgsons Sealants Ltd



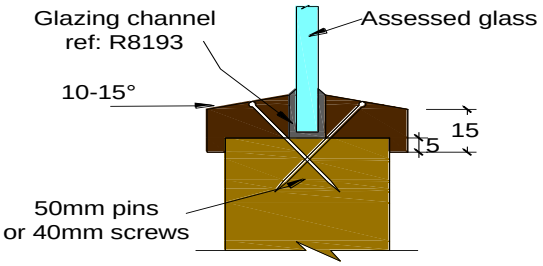
Fireglaze
Sealmaster Ltd



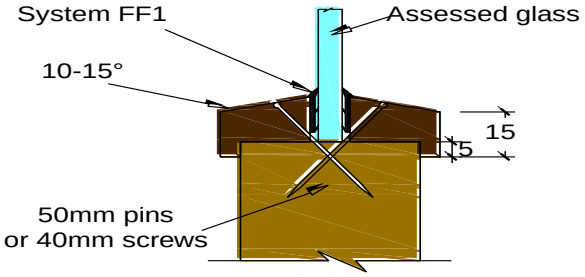
Therm-A-Strip
Intumescent Seals Ltd



System 36
Lorient Polyproducts Ltd



Pyroplex Ltd

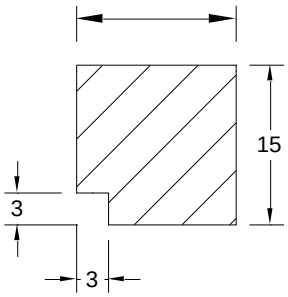


System FF1
Lorient Polyproducts Ltd

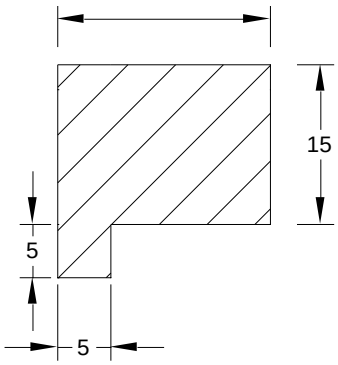
Assessed Square Glazing Bead Profiles

(the following square bead profile may be used as an alternative to the splayed beads detailed above - refer to section 7 for glazing system and glass restrictions)

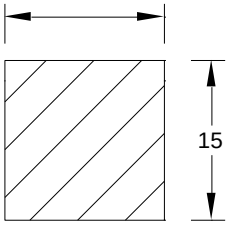
To finish flush with the leaf face



Suited to glass thickness



To finish flush with the leaf face



Appendix C
Revisions

Revision No	Exova Warringtonfire Reference	Date	Description
A	Chilt/A09027	12.6.09	Technical review update and 5 year revalidation
B	WF403351	30.8.18	Technical review update and 5 year revalidation and a reduction in lock size.

Appendix D

Data Sheets for:

Sentry Prolite Doorsets

30 Minutes Fire Resistance

Sentry Prolite Doorsets – 30 Minutes Fire Resistance
(Softwood Door Frames)

Latched and Unlatched Single Acting and Double Acting Single Doorsets

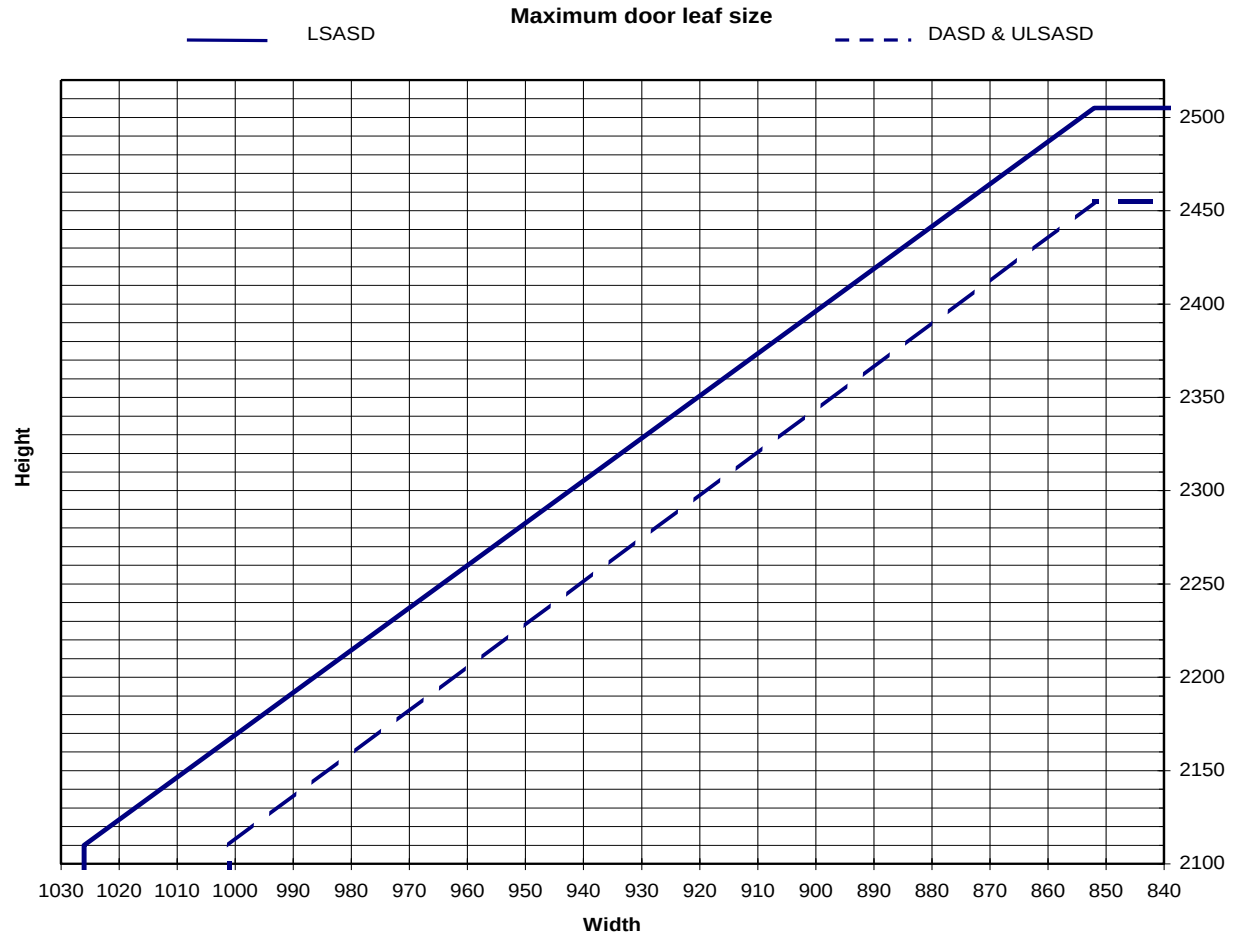
	Configuration		Height (mm)		Width (mm)
Leaf sizes	DASD and	From:	2110	x	1001
	ULSASD	To:	2455	x	852
	LSASD	From:	2110	x	1026
		To:	2505	x	852
Max. Overpanel height (mm)		Transomed	2000		
Glazing		Max. glazed area:	0.91m^2		
		Approved systems:	See section 7 & Appendix B		
Frame specification		Min. Section (mm):	70	x	32
		Material:	Softwood or Hardwood		
		Density:	Min 510kg/m^3		

Intumescent Materials -Therm-A-Seal - Intumescent Seals Ltd

Head:
1 No. 15 x 4mm strip centrally fitted in the frame reveal or leaf edge. Increase to 20 x 4mm for leaves over 2250mm high

Jambs & Transomed Overpanels:
1 No. 15 x 4mm strip centrally fitted in the frame reveal or leaf/op edge

Hardware Protection:
See section 11



Sentry Prolite Doorsets – 30 Minutes Fire Resistance
(Softwood Door Frames)

Latched and Unlatched Single Acting and Double Acting Double Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf sizes	DADD and	From:	2110	x	951
	ULSADD	To:	2355	x	852
	LSADD	From:	2110	x	976
		To:	2405	x	852
Max. Overpanel height (mm)		Transomed	1500		
Glazing		Max. glazed area:	0.91m^2		
		Approved systems:	See section 7 & Appendix B		
Frame specification		Min. Section (mm):	70	x	32
		Material:	Softwood or Hardwood		
		Density:	Min 510kg/m^3		

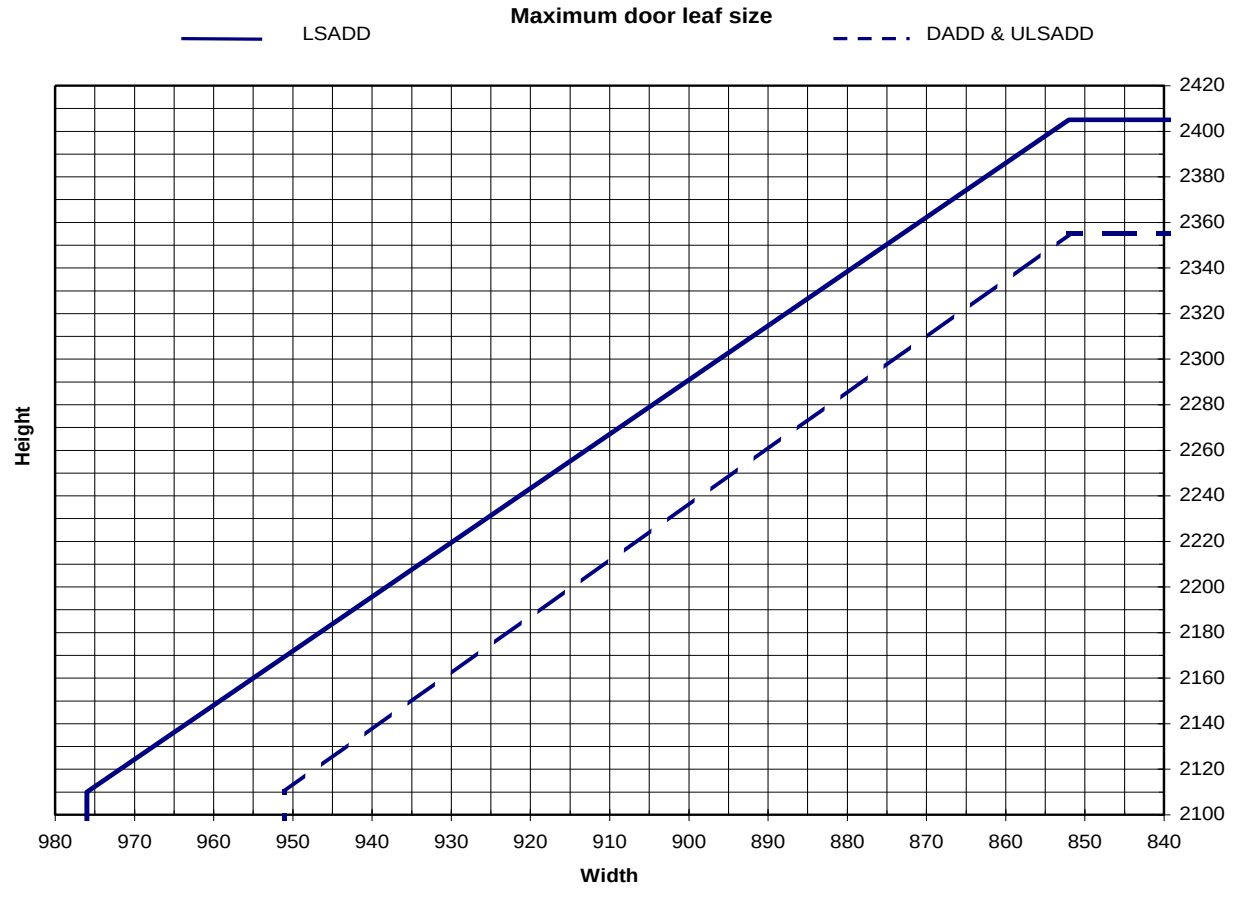
Intumescent Materials -Therm-A-Seal - Intumescent Seals Ltd

Head:
1 No. 15 x 4mm strip centrally fitted in the frame reveal or leaf edge. Increase to 20 x 4mm for leaves over 2250mm high

Meeting Edges:
1 No. 15 x 4mm strip centrally fitted in one leaf edge only

Jambs & Transomed Overpanels:
1 No. 15 x 4mm strip centrally fitted in the frame reveal or leaf/op edge

Hardware Protection:
See section 11



Sentry Prolite Doorsets – 30 Minutes Fire Resistance
(Hardwood Door Frames)

Latched and Unlatched Single and Double acting Single Leaf Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf sizes	DASD and ULSASD	From:	2415	x	1488
		To:	2970	x	1210
	LSASD	From:	2415	x	1513
		To:	3020	x	1210
Max. Overpanel height (mm)		Transomed	2000		
Glazing		Max. glazed area:	0.91m^2		
		Approved systems:	See section 7 & Appendix B		
Frame specification		Min. Section (mm):	70	x	32
		Material:	Hardwood		
		Density:	Min 640kg/m^3		

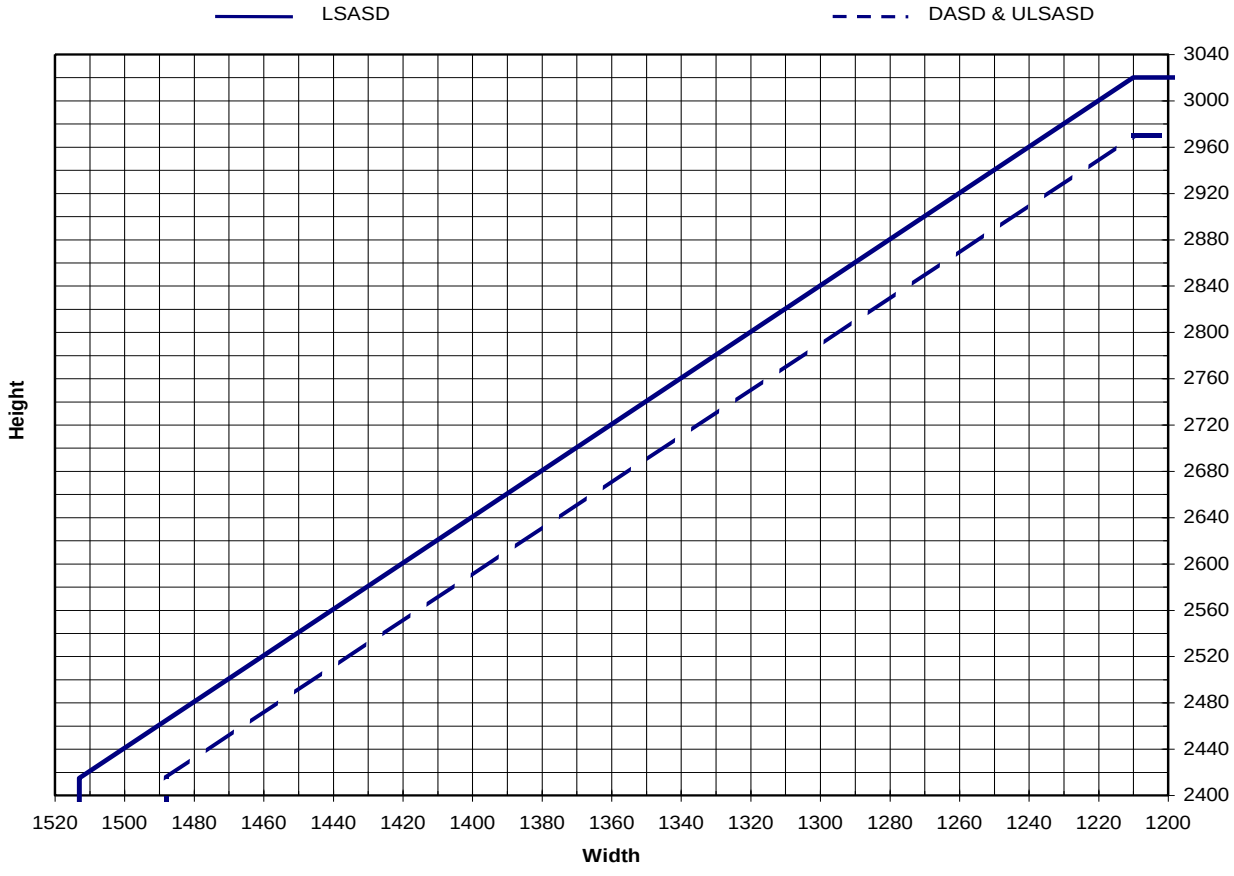
Intumescent Materials - Therm-A-Seal - Intumescent Seals Ltd

Head:
1 No. 20 x 4mm strip centrally fitted in the frame reveal or leaf edge. Increase to 25 x 4 for doors over 2650mm high

Jambs & Transomed Overpanels:
1 No. 20 x 4mm strip centrally fitted in the frame reveal or leaf/op edge. Increase to 25 x 4 for doors over 1350mm wide

Hardware Protection:
See section 11

Maximum door leaf size



Sentry Prolite Doorsets – 30 Minutes Fire Resistance
(MDF Door Frames)

Latched and Unlatched Single Acting and Double Acting Single Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf sizes	DASD and	From:	2135	x	994
	ULSASD	To:	2318	x	915
	LSASD	From:	2135	x	1019
		To:	2367	x	915
Max. Overpanel height (mm)		Transomed	1500		
Glazing		Max. glazed area:	0.91m^2		
		Approved systems:	See section 7 & Appendix B		
Frame specification		Min. Section (mm):	70	x	30
		Material:	MDF		
		Density:	Min 700kg/m^3		

Intumescent Materials -Therm-A-Seal - Intumescent Seals Ltd

Head:
1 No. 20 x 4mm strip centrally fitted in the frame reveal or leaf edge. Increase to 25 x 4mm for leaves over 2250mm high

Jambs & Transomed Overpanels:
1 No. 15 x 4mm strip centrally fitted in the frame reveal or leaf/op edge

Hardware Protection:
See section 11