Exova Warringtonfire
Chiltern House
Stocking Lane
Hughenden Valley
High Wycombe
Buckinghamshire
HP14 4ND

T: +44 (0) 1494 569 800
F: +44 (0) 1494 564 895
E: globalfire@exova.com
W: www.exova.com

Testing, calibrating, advising.

Title:

Global Fire Resistance Assessment of Sainty-Fire ProTech Doorsets

60 Minutes Fire Resistance

Valid From: 8th March 2016

Valid Until: 8th March 2021

WF Report No:

BMT/CNA/F16019

Prepared for:

Jiangsu Sainty Bancom Wood Co. Ltd.

Hongze Industrial Zone
Hongze County
No. 6 North 2nd Road
Hongze Industry Zone
Jiangsu Province
P.O. 223100
CHINA

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

Exova Warringtonfire

T: +44 (0) 1494 569 800
E: globalfire@exova.com

Contents

1 Introduction

This document constitutes a Global Assessment relating to Sainty-Fire ProTech fire resisting doorsets, produced by Jiangsu Sainty Bancom Wood Co. Ltd. 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 EN 1634-1 and BS EN 1363-1.

2 General Description of Construction

The basic tested construction of Sainty-Fire ProTech door leaves covered by this assessment comprises the following elements:

Element		**Materials**	**Dimensions** (mm)	**Min. Density** (kg/m^3)
Stiles		None fitted	-	-
Top rail		Pine	36 thick x 25 wide	450
Core	Outer	Spruce/Pine mix of vertically orientated lamels	12 thick x 38 wide	450
	Inner	Spruce/Pine mix of horizontally orientated lamels	12 thick x 38 wide	450
Facings		Poplar core plywood	9 thick	450
Adhesive	Lipping	PU	-	-
	Core	WBP melamine	-	-
	Facing	WBP melamine	-	-
Lipping – all edges		Sapele	6 thick	640

3 Leaf Sizes

The approval for increased leaf dimensions is based on the test listed in Appendix A and takes into account the margin of over-performance above 60 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.

Doorsets with reduced dimensions are deemed to be less onerous. Therefore, doors with dimensions that are less than those tested and stated in Appendix D may be manufactured.

4 Configuration

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

Abbreviation	**Description**
LSASD	Latched, single acting, single doorset
LSADD	Latched, single acting, double doorset

5 Leaf Size Adjustment

Sainty-Fire ProTech door leaves to this design may be altered as follows:

Element	Reduction
Leaf	The manufactured dimensions of the leaf may be reduced in height or width, providing reduction is made from the vertical or bottom edges of the leaf, i.e. reduction is not permitted from the top rail position.
Lipping	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 only when separated by a transom. The overpanel must be fully contained within the door frame (see following diagram).

The transom required to separate the leaf heads from the overpanel must be to the same specification as the door frame.

Door frame joints must utilise one of the following methods: mortice and tenon joints or butt joints (see section 10.2).

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 urea formaldehyde or equivalent.

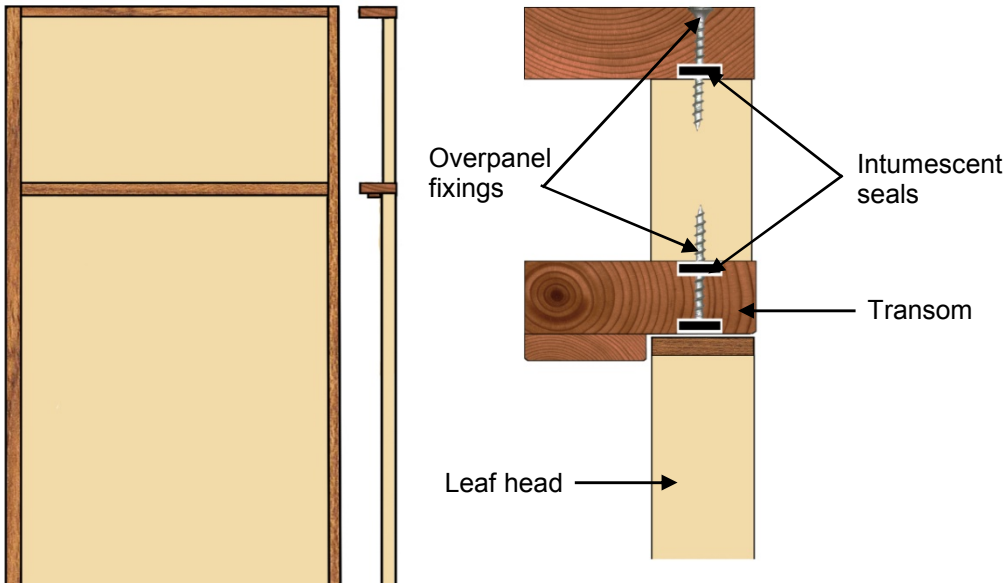
Overpanels must be fixed using the following method:

- 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 seals specified for the jambs in Appendix D may be fitted in the overpanel edges or frame reveal, if required for the manufacturing process. Providing the intumescent seals are fitted to all edges of the overpanel, the frame to overpanel junction is permitted to have a maximum 2mm gap tolerance.

Maximum overpanel height is as follows:

Configuration	**Max. 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.

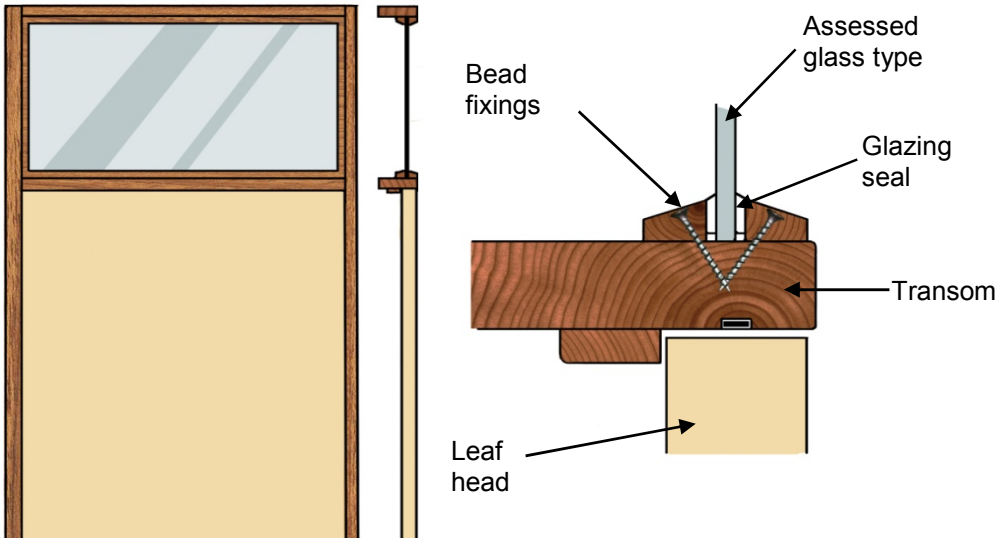
6.2 Glazed Fanlights

Timber frame doorsets including a transom may include a glazed fanlight. The timber frame and glazing beads must be hardwood with a minimum density of 640kg/m^3, whilst the frame section for the transom must be a minimum of 70mm x 44mm. All other elements of timber door frame and transom construction must comply with the specification contained in section 10.

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.

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



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

7 Glazing

7.1 General

The testing conducted on the Sainty-Fire ProTech door design has demonstrated that the design is 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 0.79m^2.

Drawings of approved proprietary glazing systems are contained in Appendix B.

7.2 Assessed Glazing Systems

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

Glazing System	Manufacturer
1. Therm-A-Glaze 60	Intumescent Seals Ltd.
2. Fireglaze 60	Sealmaster Ltd.
3. System 90+	Lorient Polyproducts Ltd.
4. System 63 (circular apertures with glass types 1 & 2 only)	Lorient Polyproducts Ltd.
5. System 36 Plus	Lorient Polyproducts Ltd.
6. Pyroglaze 60	Mann McGowan Ltd.

7.3 Assessed Glass Products

Assessed glass types are as follows:

Glass Type	**Thickness** (mm)	Manufacturer	**Max. Area** (m^2)
1. Pyran S	6	Schott Glass Ltd.	0.79
2. Pyrostem	6	Pyroguard UK Ltd.	0.79
3. Pyroshield 2[1]	7	Pilkington Group Ltd.	0.71
4. Pyrodur 60-10	10	Pilkington Group Ltd.	0.79
5. Pyroguard EW MAXI	11	Pyroguard UK Ltd.	0.79
6. Pyranova 15-S2.0	11	Schott UK Ltd.	0.79
7. Pyrobelite 12	12	AGC Flat Glass Europe	0.79
8. Pyrodur 60-20	13	Pilkington Group Ltd.	0.79
9. Pyroguard EI 30	15	Pyroguard UK Ltd.	0.79
10. Pyrostop 30-10	15	Pilkington Group Ltd.	0.79
11. Pyrobel 16	16	AGC Flat Glass Europe	0.79
12. Contraflam	16	Vetrotech St. Gobain	0.79
13. Pyroguard EI 60[2]	23	Pyroguard UK Ltd.	0.79

Notes: All glass types must be fitted fully in accordance with the manufacturers' tested details/installation requirements, particularly with respect to edge cover and expansion tolerances.

[1] Pilkington Pyroshield 2 is limited to 0.71m^2 and may only be utilised with the tested glazing system and maximum dimensions described in section 7.5 below.

[2] Pyroguard EI 60 may only be utilised with the tested glazing system as described in section 7.6 below.

7.4 Glazing Beads & Installation

Glazing beads must be as specified in the following table:

Material	Profile	Application	Min. Density (kg/m^3)
Hardwood	Splayed	All proprietary systems detailed in section 7.2 & shown in Appendix B & all glass types listed in section 7.3	≥640
Hardwood	Square	Proprietary system 1 – 3 as specified in section 7.2 & glass types 5 – 12 listed in section 7.3	≥640

Sectional drawings detailing the tested and approved proprietary glazing systems are contained in Appendix B.

See Appendix B for square and splayed bead profile options. A 6 – 10mm thick square aperture liner is permitted for use with square beads providing it is constructed from hardwood of minimum density $640kg/m^3$ and glued in position using a UF type adhesive. The appropriate intumescent aperture liner required for each glazing system must be used, which may be recessed into the aperture liner and stop a maximum distance of 3mm from each edge.

Glazing beads must be retained in position with 60mm long No. 6-8 screws, inserted at 35-40º (45º for Lorient System 90+ & System 63) to the vertical. Fixings must be at 135mm maximum centres and no more than 45mm from each corner.

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

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

7.5 Pyroshield 2

The following table details the maximum pane sizes and approved glazing systems permitted for Pyroshield 2:

Glass Type	**Glazing System** (see section 7.2)	**Max. Pane Size**[1] (height x width – mm)	**Max. Area** (m^2)
Pyroshield 2	1	1300 x 550	0.71
	3	1300 x 310	0.40

Notes:

1. The heights and widths listed are the maximum single dimension allowable for an individual pane utilising the relevant glazing system; maximum dimensions may not be increased even if the other dimension for the pane is reduced.
2. Glazed openings must not be less than 100mm from any door edge. Multiple apertures are acceptable up to the maximum approved area, with a minimum dimension of 100mm between apertures. The aperture shape is not restricted, providing the intumescent material and beads are proven to be compatible with that shape.
3. Glazing beads must be retained in position with 60mm long No. 6-8 screws, inserted at 35-40º to the vertical at no more than 45mm from each corner and at 135mm maximum centres.
4. Timber for glazing beads must be straight grained, joinery quality hardwood, free from knots, splits and checks.
5. False timber beads must not be applied across the glass face without specific test evidence to justify the system used.
6. Sectional drawings detailing the tested and approved proprietary glazing systems are contained in Appendix D.

7.6 Pyroguard EI 60

The following system must be used with the Pyroguard EI 60 glass type listed in section 7.3:

1. Hardwood (min. density 640kg/m³) glazing beads 30mm high x 16.5mm deep including a 5mm x 5mm bolection return and a 24° chamfer.
2. Beads must be retained in position with 60mm long No. 6-8 steel screws, inserted at 35º to the vertical, at no more than 45mm from each corner and at 135mm maximum centres.
3. 25mm x 4mm Intumescent Seals Ltd. Therm-A-Bead glazing seal must be fitted between the bead and the glass on both faces.
4. 54mm x 2mm Intumescent Seals Ltd. Therm-A-Line glazing liner must be fitted lining the glazing aperture.
5. The glass must be fitted with maximum 15mm edge cover and allowing for 2-3mm expansion on all edges.
6. Aperture shape is not restricted, providing the glazing system and beads are compatible with that shape.
7. Timber for glazing beads must be straight grained, joinery quality hardwood, free from knots, splits and checks.
8. Glazed openings must not be less than 100mm from any edge, with a minimum dimension of 100mm between apertures.
9. Multiple apertures are permitted, subject to point 8 above.

8 Facing Materials

8.1 General

At the thickness tested, facings are considered structural and therefore substitution with alternative materials is not permitted:

Material	**Dimensions** (mm)	**Configuration**	**Min. Density** (kg/m^3)
Poplar core plywood	9 thick	All	450

8.2 Additional Decorative & Protective Facings

The following materials are permitted for this door design, in addition to the primary tested material, 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
Decorative paper/Non-metallic foil	0.5

Notes:

1. Metallic facings are not permitted (except for push plates & 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 leaf edge.

9 Lippings

Sainty-Fire ProTech door leaves must be lipped on all edges. Lippings must meet the following specification:

Type	**Dimensions** (mm)	**Min. Density** (kg/m^3)
Flat lipping	6 – 11 thick	≥640
Rounded lipping	Not permitted	
Rebated lipping	Not permitted	

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

10 Door Frames

10.1 Door Frame Construction

Timber based door frames for the Sainty-Fire ProTech door design must be constructed to meet the following specification:

Material	**Min. Section Size** (mm)	**Min. Density** (kg/m^3)
Hardwood	70 x 32 (excluding the stop)	640

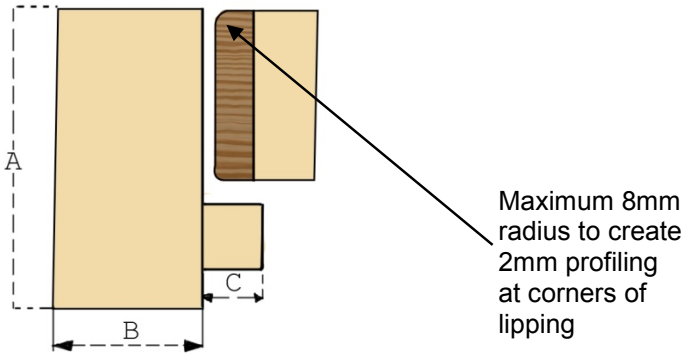
All door frame timber must be straight grained, joinery quality, free from knots, splits and checks.

A 12mm deep planted stop is adequate for single acting frames (see diagram below).

Frame joints may be mortice and tenoned, mitred, half lapped or butted and with no gaps (see section 10.2). All jointing methods require mechanical fixing with the appropriate size ring shank nails or screws.

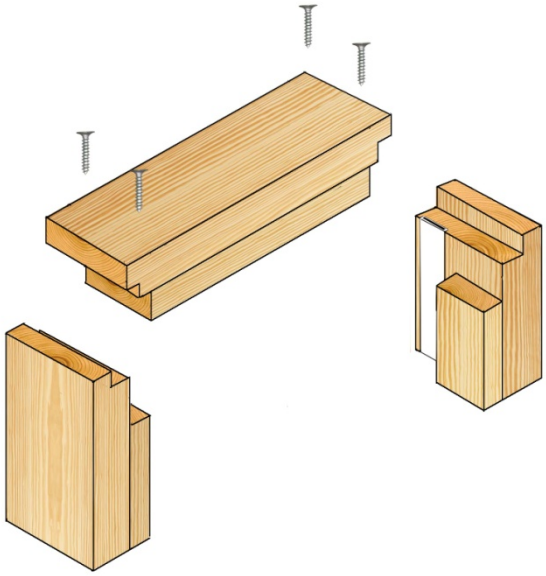
The following diagram depicts the assessed frame profiles and dimensions:

A = Min. 70mm B = Min. 32mm (see table above) C = Min. 12mm

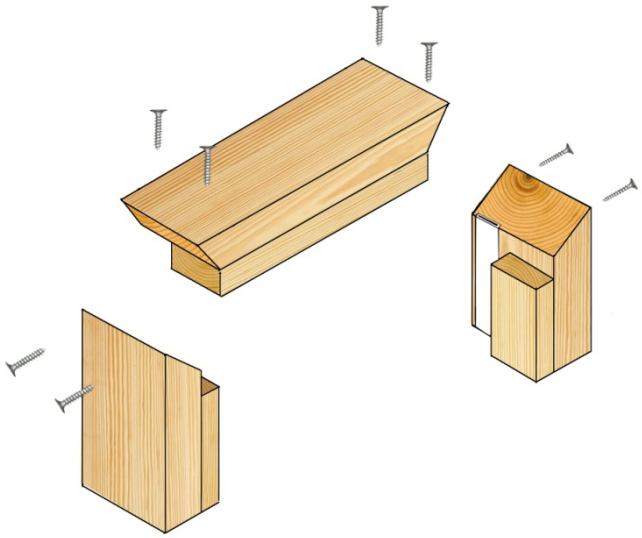


Standard

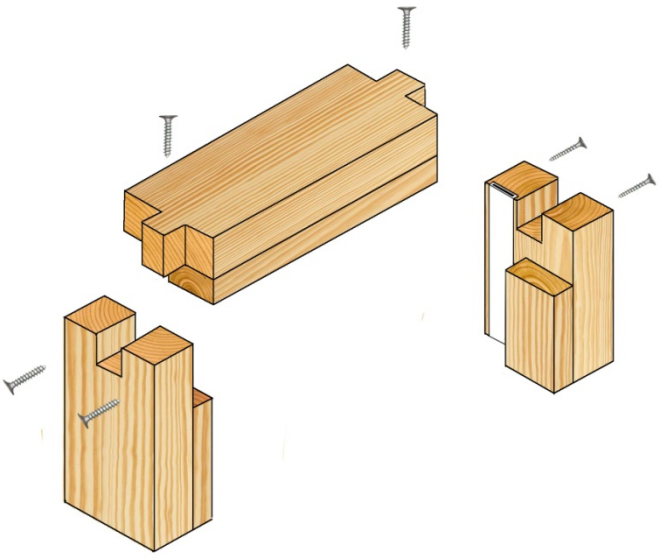
10.2 Door Frame Joints



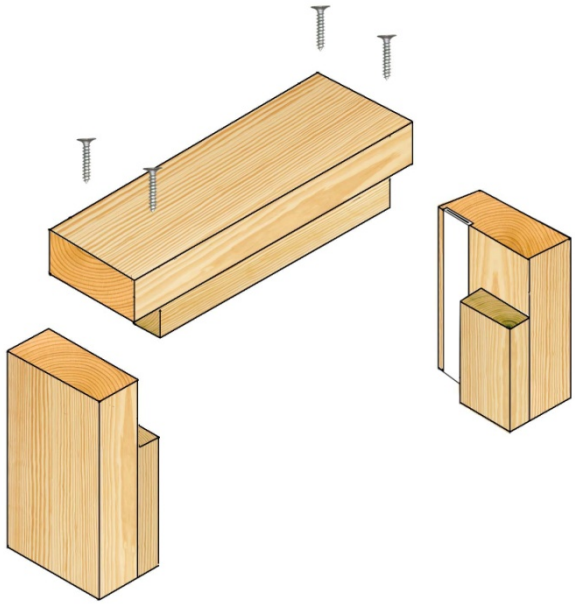
Half Lapped Joint



Mitre Joint



Mortice & Tenon Joint

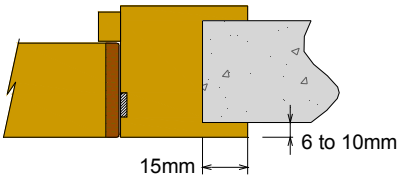


Butt Joint

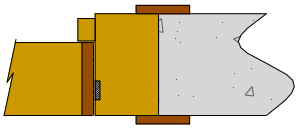
Note: Drawing is representative of each type of door frame joint; actual construction in terms of intumescent seal location and material, etc. must be as the text within this document specifies.

10.3 Door Frame Installation

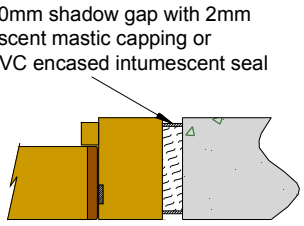
The following diagrams indicate acceptable and unacceptable door frame installations:



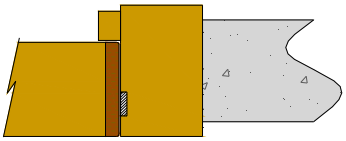
Permitted



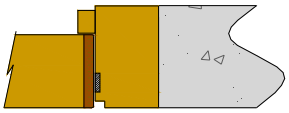
Permitted



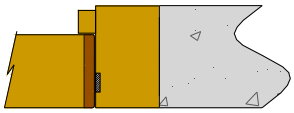
Permitted



Not Permitted



Not Permitted



Permitted

Notes:

1. Drawing is representative of door frame installation; actual installation must be as the text within this document specifies. See section 18 for specification on sealing to structural opening.
2. For the shadow detail depicted above (top right), the sub-frame material must be manufactured from one of the following materials, tightly fitted and with no gaps:
   - Timber with a density ≥450kg/m^3;
   - Plywood with a density ≥600kg/m^3;
   - MDF with a density ≥700kg/m^3;
   - Particleboard with a density ≥600kg/m^3;
   - Non-combustible board.

11 Adhesives

The following adhesives must be used in construction of the Sainty-Fire ProTech doorset design:

Element	Adhesive Type
Lipping	PU
Facings	WBP melamine
Core	WBP melamine

12 Intumescent Materials

The intumescent materials tested and assessed for the Sainty-Fire ProTech doorset design are as follows:

Element	Product	Size (mm)	Location
Edge seals – frame reveal	Pyroplex rigid box seal	15 x 4	Fitted in frame reveal
Edge seals – meeting edges only	Pyroplex rigid box seal	15 x 4	Fitted in meeting edges
Around hinges	Partially interrupted	-	Hinge blade fully interrupts 1st seal & partially interrupts 2nd seal leaving 13mm continuous
Under hinge blades	Interdens	2 thick	Fitted under hinge blades on frame & leaf
Encasing latch body	Interdens	2 thick	Fitted around body of latch
Under latch forend	Interdens	2 thick	Fitted under latch forend
Under latch keep	Interdens	2 thick	Fitted under latch keep
Around latch keep	Partially interrupted	-	Latch keep partially interrupts seal in leaf edge & frame reveal

Note: The seal specification for each configuration is contained in Appendix D.

13 Tested Hardware

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

Element	Product	Size (mm)	Location
Hinges	Royde & Tucker H101 lift-off type hinges	100 x 35 (blade size)	See section 14.1 below for details
Closer	Rutland TS3204 face-fixed overhead closer	220 x 59 (footprint size)	Fitted to exposed face as per manufacturer's instructions
Latch/Lock	Easi-T mortice latch	155 x 22 (forend size)	Fitted 1000mm from leaf threshold
		120 x 25 (keep size)	
Furniture	Zoo Hardware lever type handle	100 x 38 (footprint size)	Fitted appropriate to lock/latch

14 Additional & Alternative 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:

- Single Axis Hinges: Standard EN 1935
- Latches & Locks: Standard EN 12209
- Controlled Door Closing Devices: Standard EN 1154
- Panic Exit Hardware: Standard EN 1125
- Door Co-ordinators: Standard EN 1158.

14.1 Hinges

Door leaves must be hung on a minimum of 3No. hinges. Door leaves over 2400mm high must fit 4No. hinges. 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 No. 8 or No.10 steel wood screws per blade	
Materials		Steel or stainless steel	
Hinge positions	Leaf dimensions <2400mm	Top	150 – 200mm from leaf head to top of hinge
		2nd	Minimum 200mm from top hinge to central between top & bottom hinges
		Bottom	180 - 250mm from threshold to bottom of hinge
	Leaf dimensions >2400mm	Top	150 – 200mm from leaf head to top of hinge
		2nd & 3rd	Equispaced between top & bottom hinges
		Bottom	180 – 250mm from threshold to bottom of hinge
Intumescent protection		See section 12	

14.2 Latches & Locks

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

Element	Specification
Maximum forend & strike plate dimensions	235mm high by 25mm wide by 4mm thick
Maximum body dimensions	180mm high by 70mm wide by 18mm thick
Intumescent protection	See section 12
Materials	All parts essential to the locking/latching action (including the latch bolt, forend & strike) to be steel
Location	Between 1000 – 1200mm from the threshold

14.3 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.

Note: Concealed overhead closers are not permitted without supporting test evidence.

14.4 Pull Handles

Handles may be surface-fixed or bolted through the door leaf, providing they are steel or brass and 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.

14.5 Push Plates & Kick Plates

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 contact or other thermally softening adhesive. Plates must not return around the door leaf edges.

14.6 Panic Hardware

Panic hardware may be fitted, providing the installation does not require the removal of any timber from the leaf, stop or frame reveal and it does not interfere with the self-closing action of the door leaf.

14.7 Environmental Seals

Silicon based flame retardant acoustic, weather and dust seals (e.g. Halspan Triple Fin; Ref: SLS-TRI-100 range, Norsound 710, Lorient IS1212, IS1511, IS7025, IS7060, Sealed Tight Solutions ST1009) 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.

14.8 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:

Manufacturer	Product
Lorient Polyproducts Ltd.	LAS8001Si
Raven	RP8Si
Athmer	Schall-Ex Duo L-15
Norsound Ltd.	NOR810, NOR810S, NOR810dB+

15 Supporting Construction

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

16 Fixings

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 Door Gaps

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

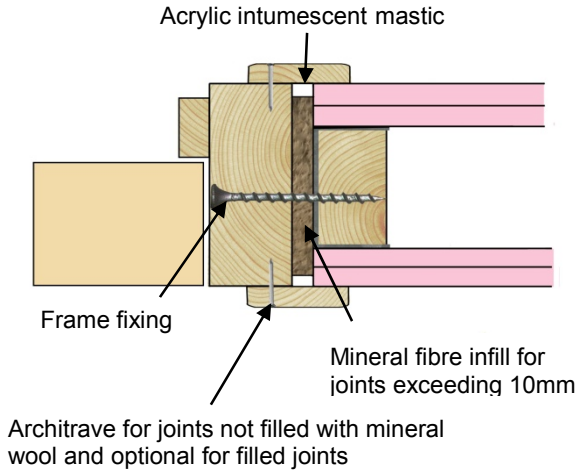
Location	Dimensions
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of the door frame by more than 1mm
Threshold	10mm between bottom of leaf and top of floor covering

18 Sealing to Structural Opening

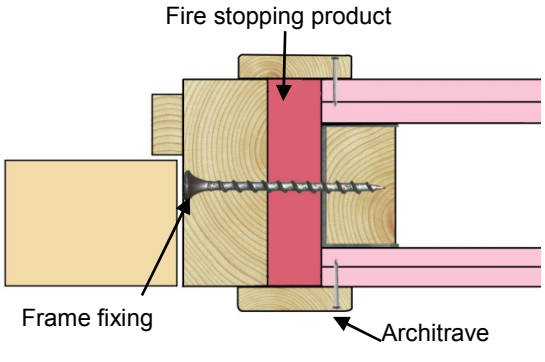
The door frame to structural opening gap must be protected using one of the following methods:

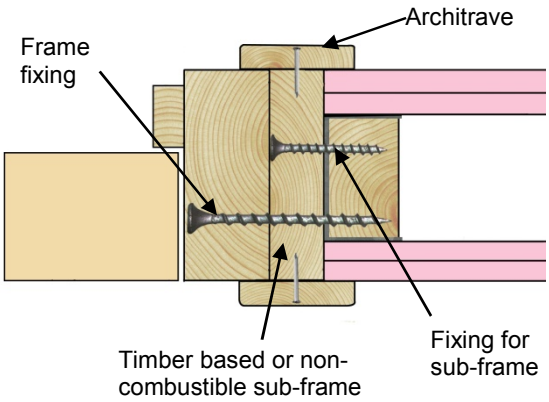
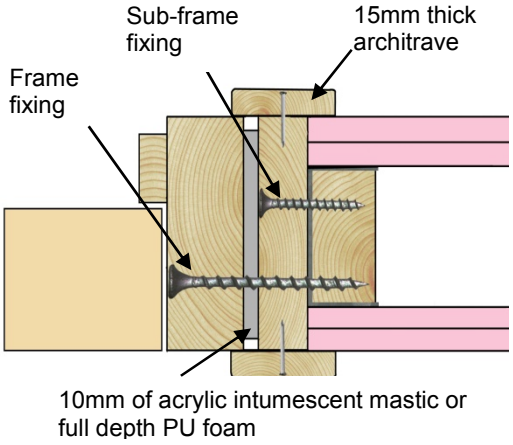
1. Gaps up to 10mm must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.

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 sub-frame up to 50mm thick, with no gaps between the components. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	
5. Timber based or non-combustible sub-frame 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: 2008, “Code of practice for fire door assemblies”, which may be referred to where appropriate.

Note: Drawings are representative of doorset installation only; actual installations must be as the text within this document specifies.

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 including 60 minute insulating glazing (e.g. Pyrostop 30-10 or Pyrobel 16)

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 $3m^3/m$/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.

20.2 Further Considerations

Note that there is other guidance available, including BS EN 9999-2008 – *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 Sainty-Fire ProTech doorset design, constructed in accordance with the specification documented in this Global Assessment, were to be tested in accordance with BS EN 1634-1 and BS EN 1363-1, it is our opinion that it would provide a minimum of 60 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: **JIANGSU SAINTY BANCOM WOOD CO. 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, 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.

24 Validity

1. The assessment is initially valid for a period of 5 years from the date of issue, after which time it is recommended to be submitted to Exova Warringtonfire for re-appraisal.
2. This assessment report is not valid unless it incorporates the declaration given in Section 22 duly signed by the applicant.

Signature:		
Name:	**J Godfrey**	**A M Winning**
Title:	Product Assessor	Senior Product Assessor

Appendix A

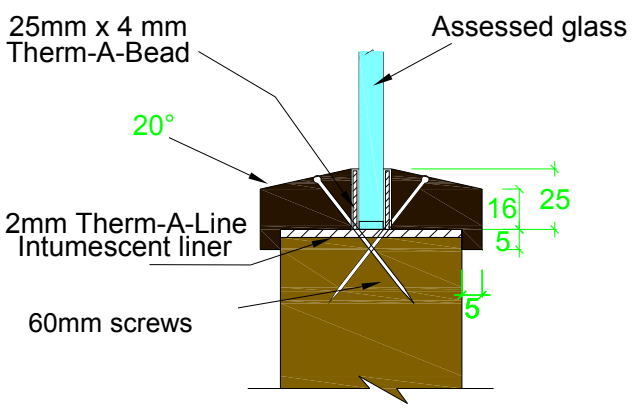
Performance Data

Report No.	**Configuration**	**Leaf Size** (mm)	**Test Standard**	**Performance** (mins)
FEP/F15167 Rev. A	A: LSADD	2135 x 915/300 x 54	BS EN 1634-1 & BS EN 1363-1	A - Integrity: 67 A – Insulation: 64
	B: LSASD	2440 x 915 x 54		B - Integrity: 63 B – Insulation: 3*

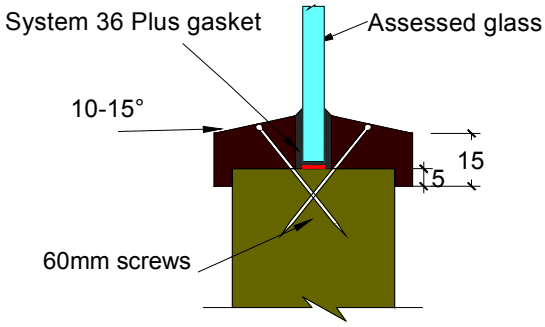
* Insulation failure was recorded on the glass in the glazed aperture.

Appendix B

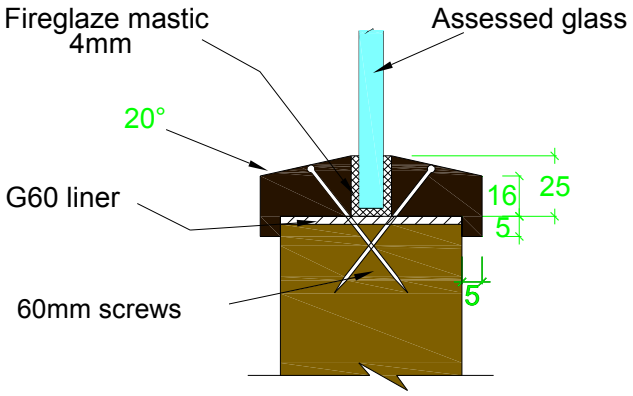
60 Minute Proprietary Glazing Systems



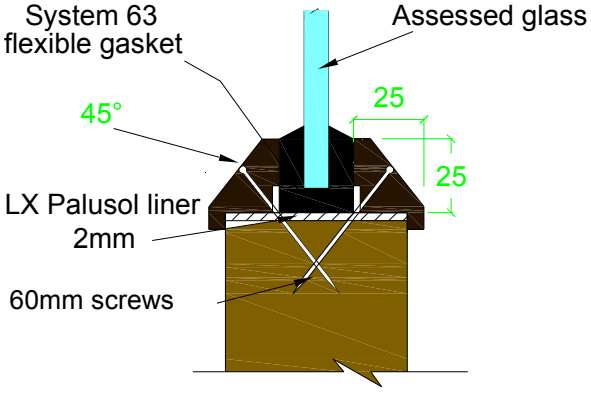
Therm-A-Glaze 60
Intumescent Seals Ltd



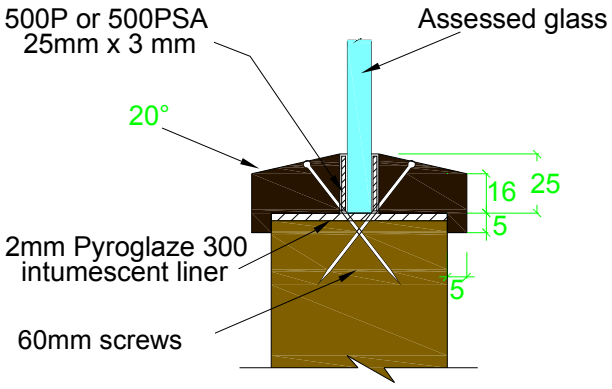
System 36 Plus
Lorient Polyproducts Ltd



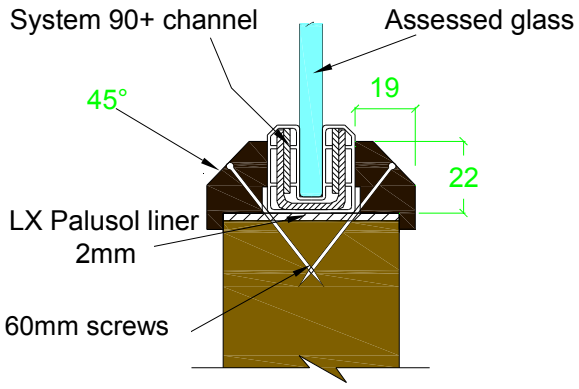
Fireglaze Mastic
Sealmaster Ltd



System 63
Lorient Polyproducts Ltd



Pyroglaze 60
Mann McGowan Ltd

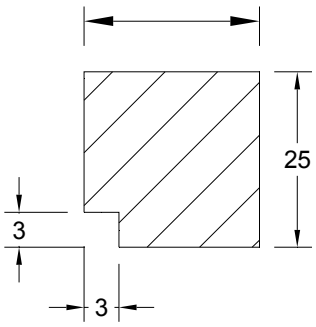


System 90+
Lorient Polyproducts Ltd

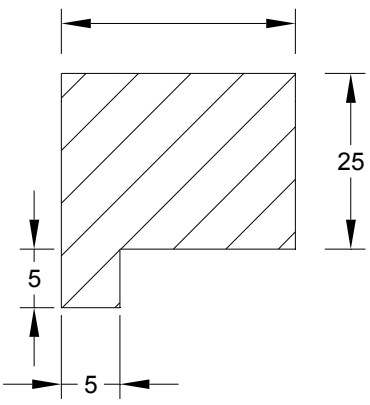
Assessed Square Glazing Bead Profiles

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

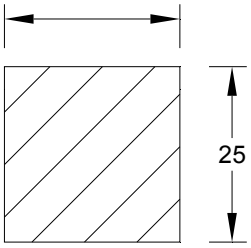
To finish flush with the leaf face



Suited to glass thickness



To finish flush with the leaf face



Appendix C

Revisions

Rev.	Ref.	Date	Description

Appendix D

Date Sheets for:

Sainty-Fire ProTech Doorsets

60 Minutes Fire Resistance

Sainty-Fire ProTech Doorsets – 60 Minutes Fire Resistance

Latched, Single Acting, Single Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSASD	From:	2440	x	938
		To:	2501	x	915
Maximum Overpanel Height (mm)		Transomed	2000		
Glazing		Max. Glazed Area	0.79m^2 (see section 7 for details)		
		Approved Systems	See section 7 & Appendix B		
Frame Specification (see section 10)		Material	Hardwood		
		Min. Section (mm)	70 x 32		
		Min. Density(kg/m^3)	640		

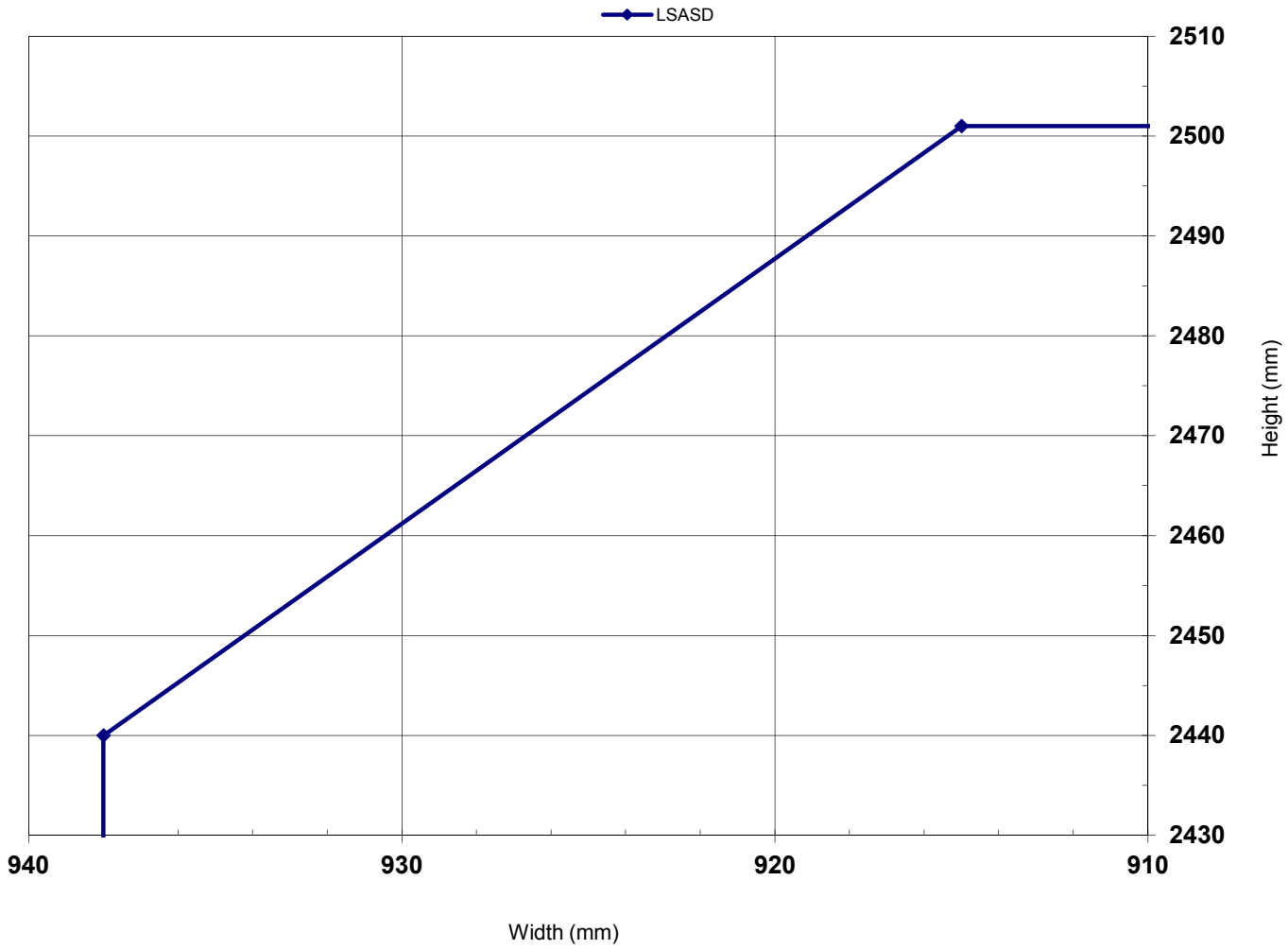
INTUMESCENT MATERIALS: Pyroplex Rigid Box Seal – Pyroplex Ltd.

HEAD: 2No. 15 x 4mm strips exposed and fitted 10mm apart, 1st seal 8mm from the opening face in the frame reveal.

JAMBS: 2No. 15 x 4mm strips exposed and fitted 10mm apart, 1st seal 8mm from the opening face in the frame reveal.

HARDWARE PROTECTION: See section 12.

Maximum Door Leaf Size



Sainty-Fire ProTech Doorsets – 60 Minutes Fire Resistance

Latched, Single Acting, Double Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSADD	From:	2135	x	942
		To:	2199	x	915
Maximum Overpanel Height (mm)		Transomed	1500		
Glazing		Max. Glazed Area	0.79m^2 (see section 7 for details)		
		Approved Systems	See section 7 & Appendix B		
Frame Specification (see section 10)		Material	Hardwood		
		Min. Section (mm)	70 x 32		
		Min. Density(kg/m^3)	640		

INTUMESCENT MATERIALS: Pyroplex Rigid Box Seal – Pyroplex Ltd.

HEAD: 2No. 15 x 4mm strips exposed and fitted 10mm apart, 1st seal 8mm from the opening face in the frame reveal.

JAMBS: 2No. 15 x 4mm strips exposed and fitted 10mm apart, 1st seal 8mm from the opening face in the frame reveal.

MEETING EDGES:
Square: 1No. 15 x 4mm strip exposed and fitted 7mm from the opening face in one leaf edge & 1No. 15 x 4mm strip exposed and fitted 7mm from the closing face in the opposite leaf edge.
Rebated: Not permitted.

HARDWARE PROTECTION: See section 12.

Maximum Door Leaf Size