High Wycombe Office:
Chiltern House, Stocking Lane,
High Wycombe,
HP14 4ND,
United Kingdom
T: +44 (0)1494 569750
W: www.warringtonfire.com

Title

Field of Application for:

The Jiangsu Sainty Corp., Ltd. Range of Doorsets Using Sainty-Sentry Pro30 Door Blanks in Timber Based Door Frames

For 30 minutes Fire Resistance

Report No.:

BMT/CNA/F16018 Revision B

Issue Date:

7th March 2025

Valid Until:

7th March 2030

Job Reference:

549426

Prepared for:

Jiangsu Sainty Corp., Ltd.
Tower B,
No. 21st Software Avenue,
Nanjing City,
China,
P. O. 210012

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

Contents

Page No.

1 Foreword

This Field of application report has been commissioned by Jiangsu Sainty Corp., Ltd. and relates to the fire resistance of 30 minute fire resisting doorset designs.

The report is for national application and has been written in accordance with the general principles outlined in BS EN 15725.

This Field of Application (scope) uses established empirical methods of extrapolation and experience of fire testing similar doorsets, 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 with BS 476-22: 1987.

This scope document cannot be used as supporting documentation for either a UKCA or 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[1], to the relevant test standard. The supporting test evidence has been deemed appropriate to support the manufacturers stated door design and is summarised in section 3.

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) 'Guide to Undertaking Technical Assessments of the Fire Performance of Construction Products Based on Fire Test Evidence'. 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.

[1] Test evidence from overseas laboratories has also been considered as supporting evidence for the designs in this assessment report. The test evidence is from a laboratory that has been accredited by a national accreditation body that is a signatory of the International Laboratories Accreditation Co-operation (ILAC).

The drawings provided in this report are for guidance and illustrative purposes only. Please note that the written scope of application takes precedence.

2 Proposal

It is proposed to consider the fire resistance performance of the specified proprietary Sainty-Sentry Pro30 doorset designs, for 30 minutes fire resistance integrity performance (and where appropriate insulation performance), if the doorset designs were to be tested to the requirements of BS 476-22: 1987, *Methods for determination of the fire resistance of non-loadbearing elements of construction.*

The field of application defined in this report is based on the fire resistance test evidence for the doorset design, 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.

Whilst specific items are included within this Field of Application report that may be used to provide additional performance characteristics (such as acoustic or smoke control for example), it is beyond the remit of this Field of Application report to provide scope for performance characteristics other than fire resistance integrity and (where applicable) insulation performance. Any other performance requirement for the door designs contained herein is to be subject to a separate analysis.

2.1 Assumptions

- All densities referred to in this document are based upon an assumed moisture content of 12%.
- It is assumed that unless otherwise documented in the field of application sections of this report, the doorset subject to this report will be constructed in accordance with the test evidence referred to herein.
- For components created using solid timber sections referred to in this assessment, it is assumed that, for all timbers, they will be of a quality deemed to meet or exceed class J30 as specified in BS EN 942: 2007, subject to adequate repairs, other than glazing beads which must meet a minimum class J10. Note that areas under intumescent seals/gaskets are not considered to be concealed faces and defects must be repaired.
- Where timber is referred to within this document it is assumed that the timber element is made from a continuous solid piece, unless specifically detailed otherwise.
- All dimensions detailed herein may be varied by ±2% except where minimum, maximum or a range of dimensions are given.
- Where morticed items of hardware are used (within the leaf or frame) it is assumed that the preparation for such items are tight to the item (and where applicable intumescent protection) as tested with no excessive gaps, unless stated otherwise within a particular section of this report.

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. The summary details are considered to be the key aspects of the design tested. These test summaries are not intended to be a definitive guide to constructing a doorset. The details for the construction of a doorset must be taken from other sections within this Field of Application.

Note:

1. Dimensions are in mm unless otherwise stated.
2. Abbreviations: (h) = height; (w) = width; (t) = thickness; (d) = deep: (l) = long.
3. Latches fitted but disengaged for the test, are reported as ‘unlatched’.

The test evidence has been generated across a number of different doorset configurations, including single leaf, double leaf, single acting, latched doorsets.

Some of the test evidence used in the evaluation is over 5 years old. In accordance with industry guidance, the evidence has been reviewed to consider its suitability. Warringtonfire are satisfied that there have been no significant revisions to the relevant test standards which would render the evidence irrelevant.

The evidence has been generated to EN 1634-1. This is known to be more onerous than the BS 476: Part 22: 1987 standard, primarily due to the use of plate thermocouples within the furnace to record the furnace temperature.

The same time temperature curve is used to control the temperature within the furnace for both test methods (the heating curve given within ISO 834-1). However, the plate thermocouple used to record the temperature within the furnace for the EN test method, requires a longer thermal exposure to read the same temperature as the probe thermocouple that is used for the BS 476: Part 22: 1987 test, particularly during the early stages of the test. Furthermore, the neutral pressure regime is positioned lower relative to the specimen height in a European fire door test, therefore resulting in greater relative positive pressure conditions than those expected in a BS 476-22: 1987 test, which has the potential to increase hot gases and flaming on the unexposed side. These factors result in more onerous test conditions for doorsets tested to the BS EN 1634-1 test standard compared with the BS 476: Part 22: 1987 test standard, which has been demonstrated by testing the same products to both standards.

It is therefore the opinion of Warringtonfire that the evidence citied in the following section, tested to BS EN 1634-1 can be utilised in this assessment which will conclude in terms of the fire resistance performance of the Sainty-Sentry Pro30 doorset designs if tested in accordance with BS 476: Part 22: 1987.

3.1 Primary Test Evidence

The following summaries are provided to give the key details relevant to the tested specimen. Throughout this assessment report, relevant sections will reference the tests where they have been used to provide the scope of application.

3.1.1 Test Report BMT/FEP/F15260 Revision A

Date of Test:	26th November 2015
Identification of Test Body:	Warringtonfire Testing and Certification Ltd. previously known as Exova Warringtonfire UKAS No. 1762
Sponsor:	Jiangsu Sainty Bancom Wood Co. Ltd
Tested Product:	1no. Latched, Single Acting, Double Leaf & 1no. Latched, Single Acting, Single Leaf Timber Doorset with Glazed Apertures – LSADD & LSASD
Tested Orientation:	Opening in towards heating condition
Sampling information:	N/A
Test Standard:	BS EN 1634-1:2014
Performance:	**Doorset A Integrity:** 34 minutes **Doorset B Integrity:** 38 minutes **Doorset A Insulation:** 34 minutes - (Discrete area – 4 minutes) **Doorset B Insulation:** 38 minutes - (Discrete area – 16 minutes)
Reason for Use	Primary evidence for the Sainty-Sentry Pro30 doorset design

3.1.2 Test Report WF523412/R Issue 2

Date of Test:	20th October 2022
Identification of Test Body:	Warringtonfire Testing and Certification Ltd. UKAS No. 0249
Sponsor:	Rutland Ltd.
Tested Product:	2no. Latched, Single Acting, Single Leaf Timber Doorset – LSASD
Tested Orientation:	Doorset A was installed opening in towards heating condition and doorset B was installed opening away from the heating conditions.
Sampling information:	A representative of BM Trada sampled the specimens in report number SC22164
Test Standard:	BS EN 1634-1:2014 + A1:2018
Performance:	**Doorset A Integrity:** 37 minutes **Doorset B Integrity:** 38 minutes **Doorset A Insulation:** 37 minutes **Doorset B Insulation:** 38 minutes
Reason for Use	Primary evidence for the Sainty-Sentry Pro30 doorset design

3.1.3 Test Report 141031001SHJ-BP-1

Date of Test:	11th November 2014
Identification of Test Body:	Intertek Testing Services Ltd. IAS No. TL-394.
Sponsor:	Jiangsu Sainty Bancom Wood Co., Ltd
Tested Product:	Latched, Single Acting, Single Leaf Timber Doorset – LSASD
Tested Orientation:	Installed opening in towards heating condition
Sampling information:	N/A
Test Standard:	BS EN 1634-1:2014
Performance:	**Integrity:** 36 minutes **Insulation:** 36 minutes
Reason for Use	Primary evidence for the Sainty-Sentry Pro30 doorset design

4 Technical Specification

4.1 General

The technical specification for the proposed door assembly 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 Door Leaf

The Sainty-Sentry Pro30 door design can include various design features:

1. Glazing
2. Various hardware options
3. Decorative facings
4. Transomed Overpanels

Specific sections within this assessment must be referred to for design limitations and construction requirements.

Section 5 gives the description of leaf type in terms of composition and density etc.

4.4 Door Frames

The construction of the door frames is softwood or hardwood with minimum frame dimensions. For further information on the specification and construction of the door frames see section 7.

Specific sections within this assessment must be referred to for design limitations and construction requirements, where applicable.

4.5 Doorset Configurations & Maximum Leaf Sizes

4.5.1 General

The evaluation of the leaf size and doorset configuration is based on the tests listed in Section 3 and takes into account:

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

The evaluation of the permitted configurations included in this field of application is based on the configuration(s) tested. The principle is that the more components included in testing, for example, double door leaves – the harder it becomes to pass a test. In this specific example it is because the junction between two door leaves introduces a discontinuity into the doorset which can be a means of failure. This approach leads to the following statements:

1. A test on a double doorset is more onerous than a test on a single doorset
2. A doorset with transomed overpanel is considered to perform comparably to a similar doorset without an overpanel. This is because the transom structurally separates the overpanel from the doorset.

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

Doorsets with reduced height and width dimensions from those tested are deemed to be less onerous. Therefore, doors with dimensions less than those given in the leaf size envelopes (for the relevant intumescent specification) in the following sections are covered and may be manufactured. It should be noted the top rail, as described in section 5.1, must remain fully intact and therefore trimming must be performed from the vertical or bottom leaf edges only.

4.5.2 Configuration

The table below shows the permitted configurations for the Sainty-Sentry Pro30 doorset design, with the abbreviation and full description of each configuration.

The following sections details the assessed maximum leaf size envelopes for each permitted configuration based on the intumescent specification and door frame tested.

Doorset Configurations		
Depiction	Abbreviation	Description
	LSASD	Latched Single Acting Single Doorset
	LSADD	Latched Single Acting Double Doorset

4.5.3 Orientation

The majority of primary fire resistance tests for these designs were conducted with the doorset hung such that the door leaf opened towards the fire. Test report WF523412/R Issue 2 incorporated the same doorset design, one installed opening in and one opening away from the heating conditions, with the opening in doorset achieving 37 minutes integrity and insulation performance and the opening out doorset achieving 38 minutes integrity and insulation performance. These results demonstrate the doorset design being installed opening in and away from the heating conditions whilst maintaining its fire resistance performance and achieving an overrun. Based on this testing, assessment is made that the doorsets to this design may be hung either away from or towards the fire risk side of the doorset.

4.5.4 Envelopes for each Configurations

The following sections detail the door leaf envelopes which indicate the permitted leaf sizes for the listed configurations based on the perimeter intumescent, door leaf option and door frame.

Unequal leaf double doorsets are covered by this assessment provided that all the following criteria are met:

- The relevant door leaf envelopes are not exceeded.
- Door leaf widths are no smaller than 300mm.

For equal double doorsets both leaves must comply with the door leaf envelope size limitations.

Single acting double doorsets are only considered acceptable when the leaves are hung to open in the same direction.

A table of essential hardware is given in section 10.3 for each doorset configuration, as a minimum requirement for the doorset described. Changes to hardware can affect the intumescent specification and frame details which are subsequently considered for each specific hardware component, where required.

4.5.4.1 General Note on Intumescent Seals

- Intumescent seals are to be fitted centrally to the thickness of the leaf unless stated otherwise.
- Intumescent seals are fully interrupted at hardware locations unless stated otherwise.
- Intumescent seals must run the full length of the leaf edge or frame reveals, with tightly formed abutting corner joints, unless stated otherwise.
- Vertical perimeter intumescent seals may include one tight butt joint in their length if needed.
    - Where two seals are fitted, the joints must be offset by a minimum of 100mm and may not be coincident.
    - Where one seal is fitted the joint must be in the lower half of the doorset.
- Intumescent seals are not to be concealed below lippings.
- While intumescent seals are not specified to be applied at the bottom edge of the leaf, their application may be a requirement for certain elements of building hardware. It is the opinion of Warringtonfire that the application of intumescent seals across the bottom edge of the leaf will not detract from the fire resistance performance under test conditions, when applied the intumescent may consist of either:
    - 1No. Intumescent seal no greater than 20mm wide centrally fitted or
    - 2No. Intumescent seals, each no greater than 10mm wide no greater than 10mm apart.

- Inclusion of specific design details like the AV2 and AV4 Multi-point lock, requires its own intumescent seal specification, frame type, configuration and is link to a specific leaf size envelope given in section 4.5.5 below, based off test report WF523412/R Issue 2.

4.5.4.2 Explanation for following sections

The performance of a doorset in terms of configuration and size is dependent on the leaf type, perimeter intumescent used and frame type. These elements are not automatically interchangeable. The following sections present the envelopes for the 1 leaf type and 3 frame types. Each envelope is linked to a specific perimeter intumescent which is given a unique reference and is based directly on test evidence.

The envelopes are presented as follows:-

- for LSASD increasing in configuration complexity up to LSADD
- for each configuration, leaf type, frame type and intumescent specification is considered separately and a unique envelope of permitted leaf sizes is presented based on the configuration, leaf type, frame type and intumescent and the envelope is directly linked to a unique test.

Summary of Permitted Configuration for (Sainty-Sentry Pro30) blank & Frame Types

Permitted Configurations with frame type 1 with (Sainty-Sentry Pro30 Doorset)			
		Configuration	
		LSASD	LSADD
Frame	1 – Softwood or Hardwood frame*	Yes	Yes

* See Section 7 for specific limitations with respect to the framing types

Permitted Configurations with frame type 2 with (Sainty-Sentry Pro30 Doorset)		
		Configuration
		LSASD
Frame	2 – Hardwood frame*	Yes

* See Section 7 for specific limitations with respect to the framing types

Permitted Configurations with frame type 3 with (Sainty-Sentry Pro30 Doorset) incorporating multi-point lock (AV2 or AV4)		
		Configuration
		LSASD
Frame	3 – Softwood or Hardwood frame*	Yes

* See Section 7 for specific limitations with respect to the framing types

4.5.5 LSASD Configuration: Leaf Sizes & Intumescent Specification

Doorset created from Leaf type 1 with frame type 1

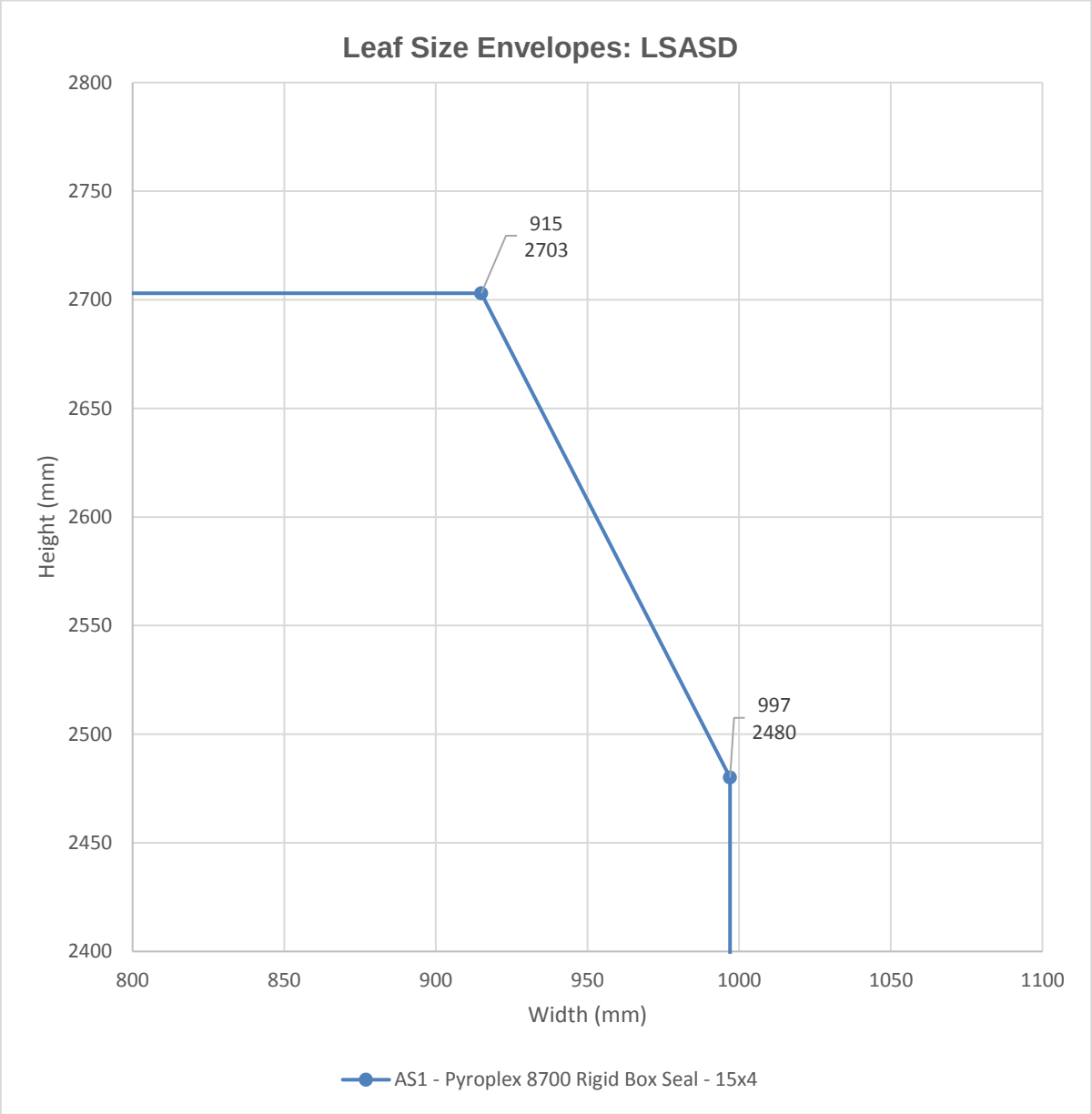


Table 1 - Intumescent Specification for LSASD Leaf 1 (Sainty-Sentry Pro30) with Frame 1 (Softwood or Hardwood)			
Intumescent Spec. Reference & (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
AS1 (**BMT/FEP/F15260 Revision A Doorset B**)	15x4mm 8700 Pyroplex Rigid Box Seal	Pyroplex Ltd.	**Frame Head & Jambs:** 1no fitted centrally in frame reveal.

Doorset created from Leaf type 1 with frame type 2

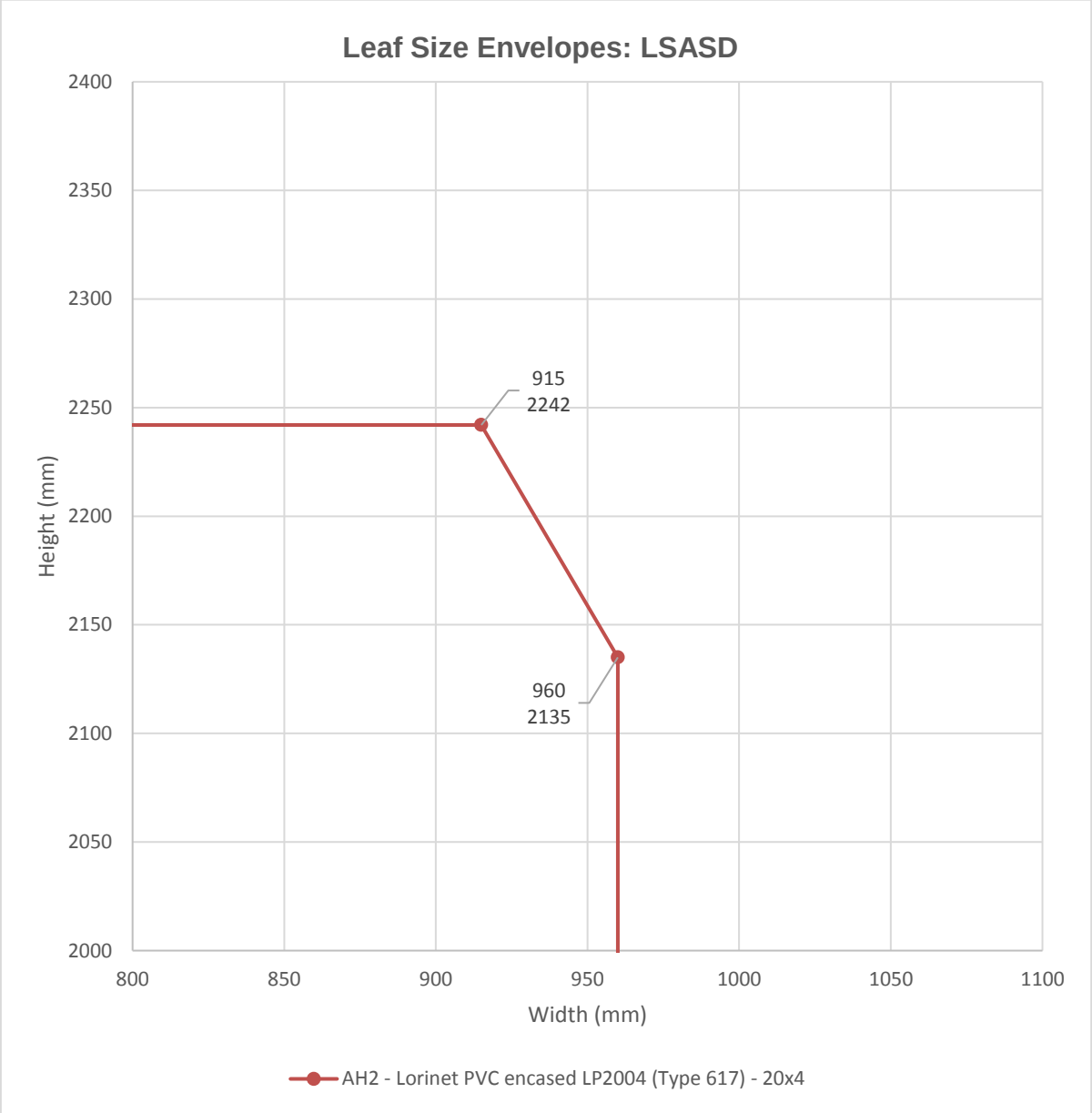


Table 2 - Intumescent Specification for LSASD Leaf 1 (Sainty-Sentry Pro30) with Frame 2 (Hardwood)			
Intumescent Spec. Reference & (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
AH2 (**141031001SHJ-BP-1**)	20x4mm PVC encased (Type 617) LP2004 Seal	Lorient Polyproducts Ltd.	**Frame Head & Jambs:** 1no fitted abutting the stop in frame reveal.

Doorset created from Leaf type 1 with frame type 3 – Incorporating a Multi-Point Latch (AV2 or AV4)

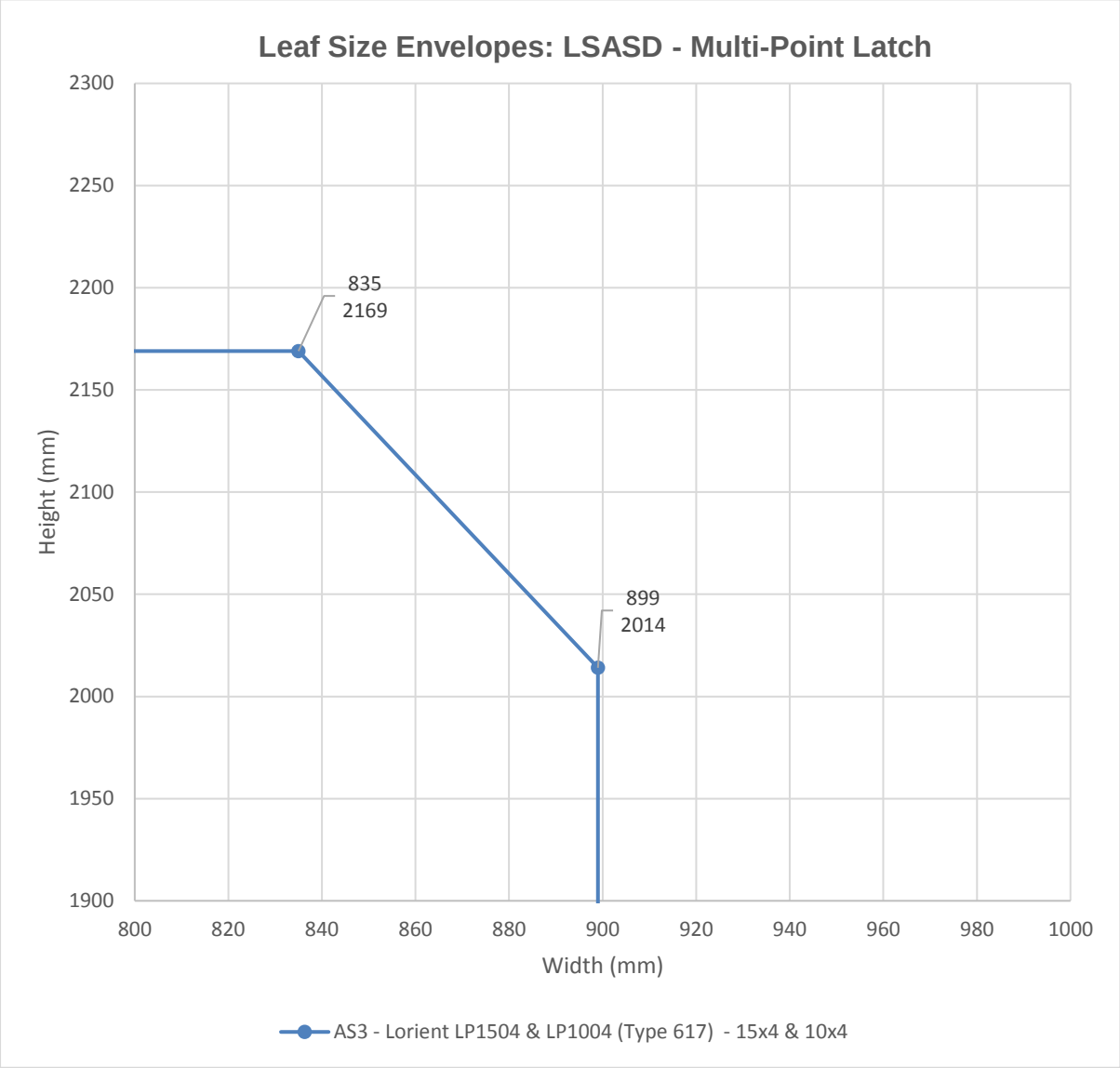


Table 3 - Intumescent Specification for LSASD Leaf 1 (Sainty-Sentry Pro30) with Frame 3 (Softwood or Hardwood)			
Intumescent Spec. Reference & (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
AS3 (**WF523412/R Issue 2**)	15x4mm PVC encased (Type 617) LP1504 Seal & 10x4mm PVC encased (Type 617) LP1004 Seal	Lorient Polyproducts Ltd.	**Frame Head & Jambs:** 1no LP1504 seal fitted 12mm from the opening face in frame reveal **Frame Closing Jamb:** 1no LP1004 seal fitted 26mm from the opening face in closing jamb reveal.

4.5.6 LSADD Configuration: Leaf Sizes & Intumescent Specification

Doorset created from Leaf type 1 with frame type 1

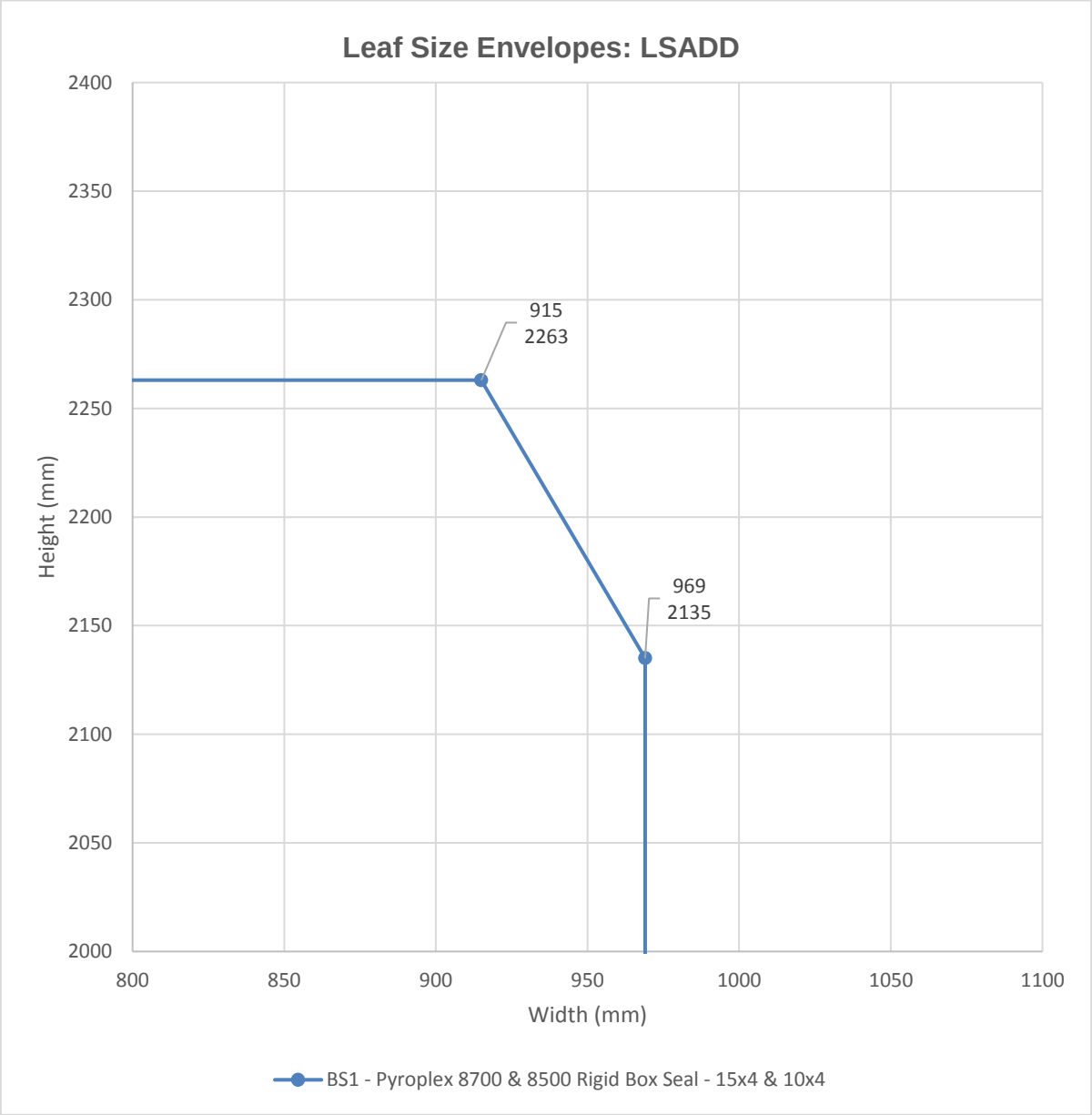


Table 4 - Intumescent Specification for LSADD Leaf 1 (Sainty-Sentry Pro30) with Frame 1 (Softwood or Hardwood)			
Intumescent Spec. Reference & (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
BS1 (**BMT/FEP/F15260 Revision A Doorset A**)	15x4mm 8700 Pyroplex Rigid Box Seal & 10x4mm 8500 Pyroplex Rigid Box Seal	Pyroplex Ltd.	**Frame Head & Jambs:** 1no 8700 seal fitted centrally in frame reveal. **Leaf Meeting Edges:** 1no 8500 seal fitted 7mm from the opening face of the leaf housing the latch body and 1no. 8500 seal fitted 7mm from the closing face of the leaf housing the latch keep.

5 General Description of Construction

5.1 Leaf Core Construction

The door leaf type is detailed below and is approved by this assessment.

5.1.1 Leaf Type 1 – (Sainty-Sentry Pro30) – 44mm thick

The basic tested construction of this door leaf design comprises the following:

Element		Material	Dimensions (mm)	Minimum Density (kg/m^3)
Core	Inner	Spruce & Pine – mix of vertically orientated lamels	12 (t) x 38-50 (w)	450
	Outer			
Stiles		Not fitted	-	-
Top Rail		Pine	36 (t) x 25-29 (w)	450
Facing[1]		Poplar core plywood	4 (t)	450
				640

[1] The facings are considered structural at the thickness tested (4mm) and there substitution with alternative materials is not permitted. Therefore, the successfully tested Poplar core Plywood and Beech Plywood facings are the only approved facing options for this doorset design.

The leaf must be lipped as specified in section 5.3.

See section 9 for adhesive requirements.

The minimum leaf thickness after calibration is 43mm (i.e. a maximum of 0.5mm from both sides).

The minimum leaf thickness after finishes applied is 44mm.

5.2 Leaf Size Adjustment During Manufacturer – all Leaf Options

Door leaves may be altered as follows prior to the machining for hardware.

Pre-Machining Leaf Size Adjustment Specification	
Element	Reduction
Leaf	The size of the leaf may be reduced in height or width without restriction for manufacturing purposes, providing the leaf is trimmed from the vertical and bottom edges (top rail remains intact) and the finished leaf is lipped in accordance with section 5.3
Timber Lipping	The timber lipping thickness can be reduced after it has been glued in place, providing it is not reduced below the minimum stated in section 5.3

5.3 Timber Lipping

The testing documented in section 3 has generally been undertaken using 6-8mm thick lippings applied to all edges using timber species at a density of 640kg/m³. A number of different adhesives have also been used to seal the lippings.

On the above basis, Sainty-Sentry Pro30 door blanks must be lipped with the following specification.

Timber Lipping Specification for Sainty-Sentry Pro30 door blanks		
Material	Size (mm)	Min Density (kg/m^3)
Hardwood	1. Flat = 6 – 11 thick 2. Rounded = not permitted 3. Rebated = not permitted	640

Notes:

1. All lippings are to be the same thickness as the door leaf.
2. Overpanels separated from the leaf head(s) with a transom do not need to be lipped.
3. Single and double doorsets with or without transomed overpanels require lipping to all edges.
4. Double doorsets must use square meeting edges.
5. Refer to Section 9 for lipping adhesives.
6. Lippings may be hand applied or may be applied using an edgebander. With either method it must be ensured that sufficient glue is applied to across the entire surface area between the 2No substrates being adhered to guarantee a robust bond. Other manufacturers guidance should be followed, for either installation application.
7. For flat lippings it is permitted to apply maximum 8mm radius to the corners of the lipping at vertical edges to create a maximum 2mm edge profiling.

5.4 Decorative & Protective Facings – all Leaf Options

Relatively thin leaf facing materials are deemed to be decorative and their application is not considered to be of detriment to the overall stability or performance of the doorset design. In fact, when applied as an additional component on top of the minimum facing material required by the door blank, they are likely to provide a small enhancement in performance as an additional barrier to fire spread, although, this is likely to be negligible.

The following additional facing materials are therefore permitted to the leaf for this door design since they would have limited influence under fire resistance test conditions.

Decorative & Protective Facing Specification	
Facing Material	Maximum Permitted Thickness (mm)
Paint[5]	0.5
Timber veneers[3]	2
Plastic laminates[3]	2
PVC[3]	2
Cellulosic and non-metallic foils[3]	0.4

Notes:

1. Metallic facings are not permitted except for push plates and kick plates
2. The door leaf thickness may be reduced on both sides by a maximum of 0.5mm for calibration purposes in order to accommodate the chosen finish. The minimum overall leaf thickness must remain at 44mm after finishing has been applied.
3. Materials may over sail lippings but must not return around leaf edges.
4. For all options, materials must not conceal intumescent strips.
5. Intumescent paints are not permitted.
6. Refer to Section 9 for adhesive options.

Decorative finishes listed above may be painted within the limits for paint finish, above.

6 Glazing within the Leaf

6.1 General

The testing conducted on doorset design has demonstrated that they are capable of tolerating glazed apertures, whilst providing a margin of over performance, this is supported by the summarised test evidence within section 3.

Glazing is therefore acceptable within the following parameters.

Apertures must not be less than 100mm from top and side edges and 400mm from the bottom edge. (Supported by BMT/FEP/F15260 Revision A).

Multiple apertures in the same door leaf are not permitted

Aperture shapes considered herein are rectilinear and as such are permitted unless alternative shapes are detailed within this document for specific glass or glazing systems.

Apertures cannot be rotated (e.g. a square to be rotated to create a diamond effect) unless explicitly stated within this document for specific glass or glazing systems.

6.1.1 Maximum Permitted Glazed Aperture Dimensions

The maximum total assessed aperture area for any individual door leaf based on the test evidence detailed within section 3 is as follows:

Maximum total permitted aperture within the Sainty-Sentry Pro30 door leaves		
Maximum Height (mm)	Maximum Width (mm)	Maximum Area (m^2)
1008	816	0.71

Maximum glass thickness permitted is 16mm for single pane glazing.

Minimum glass thickness permitted is 7mm, as tested and may not be reduced.

The subsequent sections within this report detail the permitted glass and glazing systems with their associated size ranges permitted within the Sainty-Sentry Pro30 doorset design.

The maximum glazed areas given in each subsection supersede those given above and must be adhered to. However, the dimensional restrictions given above shall not be exceeded under any circumstance.

It is possible to include glass within the door leaf at smaller dimensions than given for any particular glass type or glazing system.

6.2 Certifire Single Pane Glass and Glazing System Options

Alternative glass and glazing systems with a Certifire certificate – valid at the date of manufacture of the doorset which has been written in accordance with Warringtonfire Testing & Certification Ltd, Technical Schedule TS25 - may be used to glaze the Sainty-Sentry Pro30 door design, subject to the following.

- The minimum thickness of glass permitted for alternative glass types is 7mm.
- The maximum thickness of glass permitted for alternative glass types is 16mm.
- Where a Certifire certificate is utilised to justify glazing the doorset, the full requirements given within that certificate for the glass and glazing system specified must be complied with.
- All parameters in section 6.1 above must take precedence over those in the supporting Certifire certificate, e.g. the glazed area, maximum height and width permitted in section 6.1 above may not be increased on the basis of the area, height and width permitted within the Certifire certificate. If the area, height and width in the proposed Certifire certificate is smaller than that in section 6.1, the smaller dimension will take precedence for the proposed glass or glazing system.
- The general requirements within the proposed Certifire certificate are still applicable, the Certifire certificate must include the option for the certificated glass and / or glazing system to be fitted within a timber / cellulosic based door leaf within a timber / cellulosic frame with a leaf thickness of 44mm.
- Where the Certifire certificate requires a timber aperture liner, these must always be fitted.
- Bead fixings – The required pin or screw specification as given in the supporting Certifire certificate must be used, alternatives fixing details are not permitted.

6.3 Single Pane Glass and Glazing Systems (Timber Beading)

The tested and assessed glass and glazing system(s) combinations, detailed within the table below may be used, subject to the limitations and scope detailed in section 6.1 above.

The table below specifies the maximum assessed height, width and area of glazing for each permitted glass type and glazing system.

The numerical figures in the main body of the table are the maximum height, width (m) & area of glass (in m^2) that is considered acceptable for an individual glazed aperture, based upon the specific system. Where a '-' is applied the glass type and glazing system has not been considered compatible.

Glass & Glazing System Specification			**Maximum Assessed Area (m^2), Height & Width (m)**		
Glass Type Manufacturer		**Thickness**	**System & Manufacturer→**	1 System 36/6 Plus Lorient Polyproducts Ltd.	2 Therm-A-Strip Intumescent Seals Ltd.
			Fire Test Reference	BMT/FEP/F15260 Revision A - Doorset A	BMT/FEP/F15260 Revision A - Doorset B
1	Pyroshield 2 Pilkington UK Ltd.	7	BMT/FEP/F15260 Revision A - Doorset A	Area: 0.71 Height: 1.008 Width: 0.816	
2	Pyrodur Pilkington UK Ltd	7	BMT/FEP/F15260 Revision A - Doorset B		

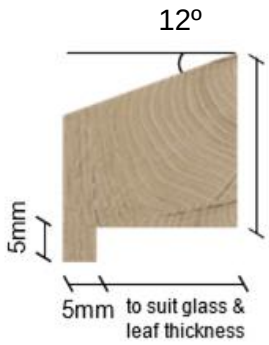
Note:

1. 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.

6.3.1 Permitted Glazing Beading and Glass Retention (Timber Beads)

The following sections detail the permitted glazing beading, aperture lining requirements and minimum fixing details for the above detailed glass and glazing systems. Each section deals with a specific type of glazing bead and indicates which glass and or glazing system it is applicable to. Glazing beads shall only be used with the permitted glass and glazing system as identified.

6.3.1.1 Chamfer Beads

<table>
<tr><th>Permitted Glazing Systems
(Defined in Section 6.3)</th><th colspan="2">Glass Types & Glazing Systems 1 & 2</th></tr>
<tr><td colspan="2"> 
</td><td rowspan="2"> 
Therm-A-Strip

 
System 36 Plus</td></tr>
<tr><td colspan="2">• The above detailed bolection may be increased in thickness and height if required, with the dimensions shown being the minimum.
• The glazing beads must be created from hardwood (not Beech fagus species) of a minimum 640kg/m^3 density.
• Glazing beads must be retained in position with minimum length of 60mm long steel pins or 60mm long No. 6-8 screws, inserted at 35-40º 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 6.3.2 below.
• A 6 – 10mm thick square aperture liner is optionally permitted for use with the above bead providing it is constructed from hardwood (not Beech fagus species) of minimum density 640kg/m^3 and glued in position using a UF, PVA or PU type adhesive.
• The fitting of the glazing seal between the bead and the glass should be in accordance with the manufacturer's instructions.
• Glass shall be aligned within the aperture using hardwood or non-combustible setting blocks placed at the bottom horizontal edge only, sized to provide edge cover and expansion allowance as the specific system requires</td></tr>
</table>

6.3.2 Pneumatically Fired Pins

The following pin specification is permitted and has been considered suitable for applications where a pin fixing is permitted for glazing beads:

Option 1 – Round, Oval & Rectangular Pins

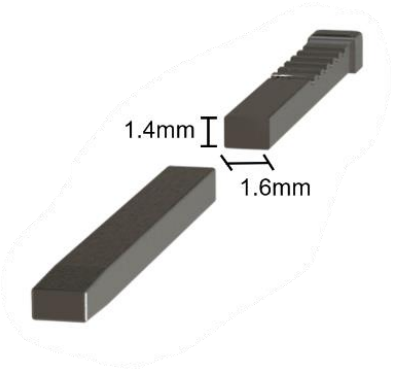
The following dimension of pin has been approved for round, oval and rectangular shaped pins which are hand applied:

- Minimum Standard Wire Gauge (SWG) 16.
- Minimum cross section area of 2.03mm^2.
- Minimum linear dimension of 1.6mm in any direction, see figure below. The maximum pin diameter or any linear dimensions may be no greater than 2.0mm.

Option 2 – Gun (Pneumatically) Fired Rectangular Pins

The following dimension of rectangular pin has been deemed suitable for gun (pneumatically) fired applications.

- Minimum Standard Wire Gauge (SWG) 16.
- Minimum cross section area of 2.24mm^2.
- Minimum linear dimensions as shown in the figure.
- The 1.6mm dimension is predominately oriented perpendicular to the glass, where possible.
- The maximum pin diameter or any linear dimensions may be no greater than 2.0mm.



Pins with dimensions less than those stated above are not covered by this assessment.

7 Door Frame Construction

7.1 Details for Frame Types

The door frames listed below are the minimum size and density which have been successfully tested and assessed by this report. The frame must be constructed to meet the following specification for single acting frames.

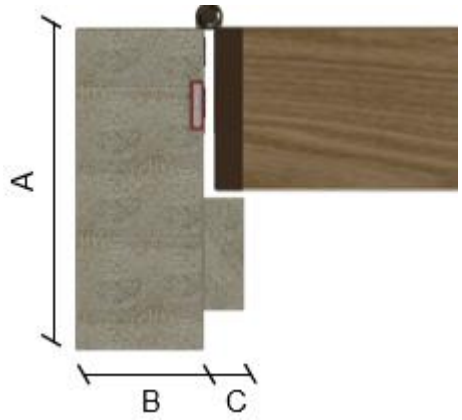
Frame Specification			
Frame Type (Application)	Material	Minimum Section Size (mm)	Minimum Density (kg/m^3)
1	Softwood / Hardwood	Frame: 70 (d) x 32 (w) (excluding stop) Stop: 12 (w) (integral or planted on)	510
2 (For use with 20x4 Lorient seal specification)[1]	Hardwood	Frame: 70 (d) x 40 (w) (excluding stop) Stop: 15 (w) (integral or planted on)	600
3 (For use with Multi-Point Latch)[2]	Softwood / Hardwood	Frame: 79 (d) x 39 (w) (excluding stop) Stop: 18 (w) (integral or planted on)	510

Note:

1. See table 2 within section 4.5.5 for the associated intumescent specification and maximum leaf size envelopes for this configuration.
2. See table 3 within section 4.5.5 for the associated intumescent specification and maximum leaf sizes envelopes for this configuration.

7.1.1 Standard frame type 1 detail

The diagram below shows detail of the standard frame construction. Any radius to the lipping must comply with section 5.3.



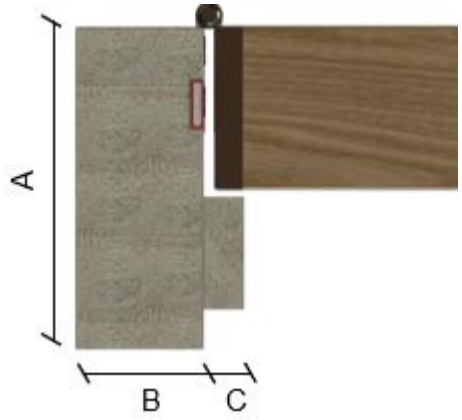
A: Frame depth = 70mm minimum

B: Frame width = 32mm minimum

C: Stop width = 12mm minimum

7.1.2 Standard frame type 2 detail

The diagram below shows detail of the standard frame construction. Any radius to the lipping must comply with section 5.3.



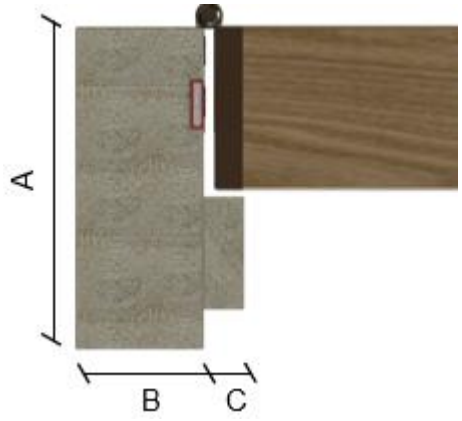
A: Frame depth = 70mm minimum

B: Frame width = 40mm minimum

C: Stop width = 15mm minimum

7.1.3 Standard frame type 3 detail

The diagram below shows detail of the standard frame construction. Any radius to the lipping must comply with section 5.3.



A: Frame depth = 79mm minimum

B: Frame width = 39mm minimum

C: Stop width = 18mm minimum

7.1.4 Aluminium threshold

Test reference WF523412/R Issue 2 has demonstrated the following type of threshold can be installed to the bottom of the doorset without effecting the fire resistance performance of the doorset design and is therefore permitted in this assessment following the below parameters.

- Exitex MXS15/2 – Fire Rated Aluminium threshold measuring 61mm deep x 15mm high.
- EPDM smoke seal gasket measuring 14.5mm wide x 14.9mm high.
- EPDM smoke seal gasket measuring 10mm wide x 13.6mm high.
- Envirograf 62SIL silicone based fireproof sealant applied between door frame legs and threshold.
- Exitex Exi-flex graphite seal measuring 20mm wide x 3mm thick installed to the top of the threshold.
- A maximum 4mm gap is permitted between the aluminium threshold and the bottom of the leaf.
- The aluminium threshold must run under the frame jambs on both sides and be installed to the frame jambs using 4no. 5.0 x 70mm wood screws.
- The aluminium threshold must be installed as described above and successfully tested in report WF523412/R Issue 2.
- See drawing below of the tested threshold design.

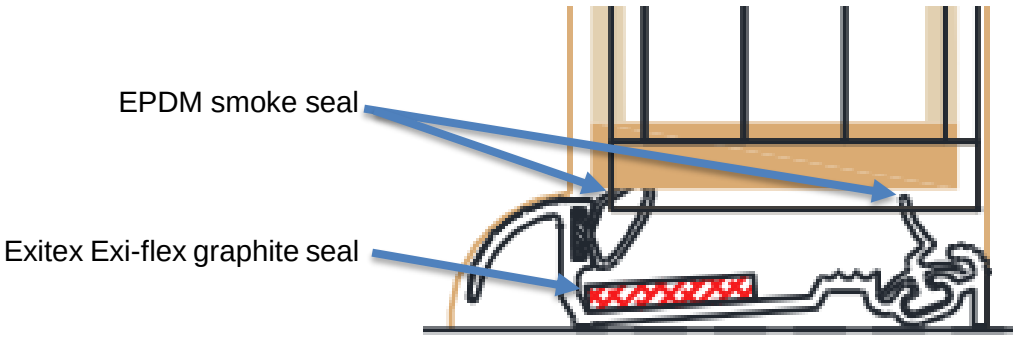


Figure 1: Drawing of the tested threshold design extracted from test report WF523412/R Issue 2

7.2 Door Frame Joints

Below are depictions of the door framing joints that are deemed acceptable. Please note that the drawings are provided as general illustrations 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. The door frame joints are required to be tight, with no gaps, and require mechanical fixing with the appropriate size ring shank nails or screws and additionally adhered using PVA glue.

Half Lapped Joint

Mitre Joint

Mortice & Tenon Joint

Butt Joint

Trenched Joint

Figure 2 – Approved door frame jointing options

7.3 Decorative Facings – All Frame Options

Relatively thin facing materials are deemed to be decorative and their application is not considered to be of detriment to the overall stability or performance of the doorset design.

The following additional facing materials are therefore permitted to the frame for this door design, including frame reveal, since they would have limited influence under fire resistance test conditions.

Decorative & Protective Facing Specification	
Facing Material	Maximum Permitted Thickness (mm)
Paint[3]	0.2
Timber veneers	0.7

Notes:

1. Facing materials not listed above are not permitted.
2. For all options, materials must not conceal intumescent strips.
3. Intumescent paints are not permitted.

Decorative finishes listed above may be painted within the limits for paint finish, above.

8 Transomed Overpanels

Shared framing (Transomed) for the purpose of this document is considered to be when an element (panel) is contained within the frame for the doorset and separated from the door leaf by a shared transom. An example of a transomed solution is given below, though the construction of doorsets shall be as the text in this document specifies.

8.1.1.1 Standard Frame Detail (Transomed)

The permitted frame detail for the doorset shall meet the minimum requirements as outlined in section 7, where applicable. The detail for the permitted transom can be found within section 8.1.1.2 below.

8.1.1.2 Detail for Transom (Transomed)

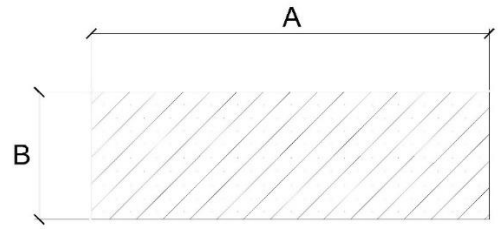
It is possible to include a transom to separate a panelled overpanel within a door frame from the door leaf. It is not permitted to include a mullion within a doorset which is constructed using the shared framing design. When applied the transom shall meet the following specification:

Modular Frame specification		
Frame Type	**Minimum section size (mm)**	**Minimum density (kg/m^3)**
Frame 1	Transom: 70 (d) x 32 (w)	510
Frame 2	Transom: 70 (d) x 40 (w)	600
Frame 3	Transom: 79 (d) x 39 (w)	510

Notes:

When applied the material for the transom shall match the timber species used for the frame surrounding the door frame.

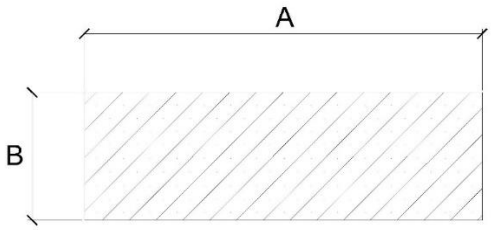
Minimum Section Size – Frame 1



A: Transom depth = 70mm minimum

B: Transom width = 32mm minimum

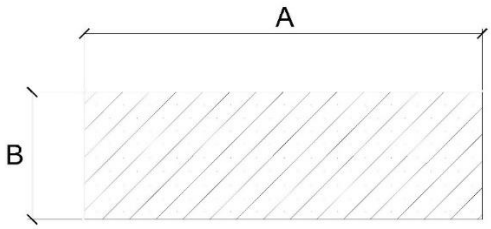
Minimum Section Size – Frame 1



A: Transom depth = 70mm minimum

B: Transom width = 40mm minimum

Minimum Section Size – Frame 1



A: Transom depth = 79mm minimum

B: Transom width = 39mm minimum

8.1.1.3 Frame Jointing (Transomed)

Below are depictions of the framing joints that are deemed acceptable for corner jointing of transomed framing. Please note that the drawings are provided as general illustrations of each type of frame joint; actual construction in terms of intumescent seal location and material, etc. must be as the text within this document specifies.

Mortice & Tenon Joint

Butt Joint

The transom when applied shall be mortice and tenon or butt jointed as depicted above. The joints are required to be tight, with no gaps, and require mechanical fixing with 2No. 5.0 x 100mm steel screws and additionally adhered using PVA glue.

8.1.2 Solid Panel Construction (Transomed Overpanel)

Based on the testing undertaken on the doorset design, it has been assessed to include the tested core construction as a solid fixed panel. This is because under test conditions the panel will be fixed within the perimeter framing limiting the deflection throughout the test duration and enhancing the expected fire resistance performance which was observed for the door leaf itself. Therefore, the following specification shall be met:

Element	Material	Dimensions (mm)	Minimum Density (kg/m^3)
Overpanel	Sainty-Sentry Pro30 Refer to Section 5.1.1	44 (t)	Refer to Section 5.1.1

Notes:

The inclusion of the top rail as detailed in the door construction in section 5.1 is optional.

The panel shall be constructed of a single board, joints are not permitted within any panels.

The minimum panel thickness after calibration is 43mm (i.e. a maximum of 0.5mm from both sides).

Decorative & protective facings may be applied to the surface of the solid panels in accordance with section 5.4.

The minimum panel thickness after finishes applied is 44mm.

8.1.3 Intumescent Sealing Arrangement (Transomed Overpanel)

Solid overpanels when included within a doorset design using shared framing (transom) shall include the same intumescent specification as utilised within the door leaf or frame reveal.

Permitted intumescent specifications are detailed in section 4.5.5 and 4.5.6, while there may be multiple options for manufacturer and seal types only one specification can be utilised with any single doorset, and the specification used shall match the specification used on the door leaf.

8.1.4 Fixing Arrangement (Transomed Overpanel)

Solid panels must be fixed into the framing solution by steel screws appropriate for the timber-based substrates.

Screws shall be applied nominally centrally to the thickness of the solid panel, through the rear of the frame to all edges and transom reveal where applicable and shall penetrate into the solid panel by at least 30mm.

Fixings must be no more than 100mm from each corner and a maximum of 250mm centres in between.

When fitted the solid panel shall have no greater than 1mm between the panel edge and the adjacent framing element.

Where fitted within shared framing (transomed) the face of the solid overpanel shall be nominally in line with the face of the door leaf.

8.1.5 Maximum Dimensions (Transomed Overpanel)

The following maximum dimensions are permitted for any single panel.

Configuration	Height (mm)	Width (mm)
Single Doorset	2000	Width of the doorset.
Double Doorset	1500	

The overall assembly shall form a rectilinear shape.

9 Adhesives

The following adhesives must be used in the construction of the doorsets. These may be hand applied or may be applied using an edgebander. With either method it must be ensured that sufficient glue is applied across the entire surface area between the 2No substrates being adhered to guarantee a robust bond. Other manufacturers guidance should be followed, for either installation application used.

Element	Product/Material Type
Door blank core	WBP melamine – included as part of the construction of the door blank.
Top Rail	
Door blank facings	
Timber lipping & decorative facings	PU & PUR
Frame joints (including transomed overpanels)	PVA

10 Hardware

10.1 General

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 UKCA or CE Mark in addition to the requirements outlined in the following sections. The UKCA or CE mark must indicate that the hardware is suitable for fire doors in the classification code and declaration of performance issued by the hardware manufacturer:

- 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 consider what tested and assessed alternative items of essential and non-essential hardware can be used on the doorset range.

Items of hardware have been considered and approved via the following means:

- The component has been successfully tested to BS 476: Part 22: 1987 or BS EN 1634-1 in a suitably similar type of doorset e.g. timber leaf in timber frame.
- As a result of an assessment of the appropriateness of the item of hardware, based on test evidence not commissioned by Jiangsu Sainty Corp., Ltd.
- As a result of the Certifire approval of the item of hardware

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 configuration requirements

No item of hardware should be within 200mm of another item of hardware unless there is test evidence to demonstrated they can be in closer proximity.

Hardware items should generally be fitted in accordance with the manufacturer's instructions. **However, the parameters and requirements of this assessment always take precedence, including specified protection such as hardware gaskets.** Referenced Certifire approved hardware may be incorporated subject to the design, material and dimensional limitations identified within this assessment report and identified on the relevant Certifire certificate.

10.2 Intumescent to Hardware

The intumescent materials used to protect hardware that have been tested and assessed for this doorset design are detailed below. Note that any one of the product/manufacturer options listed in the table may be used in the specific application noted. However, only 1No manufacturer should be considered per doorset application.

The door gap perimeter intumescent seal specifications are documented in conjunction with the leaf envelope size limitations in section 4.5.5 and 4.5.6.

Hardware Intumescent Specification		
Item	**Location**	**Product/Manufacturer**
Hinges	Installed behind both hinge blades.	1. 1mm thick Interdens 2. 1mm thick MAP
Single-Point Lock/latches	Fully encasing latch body and installed under forend & keep	1. 1mm thick Interdens
Multi-Point Latch (AV2 or AV4)	Fully encasing all latch bodies and behind all keeps and strike plates (MAP seal). In addition, Noberne seal installed under the latch forend.	1. 1mm thick MAP. (Plus, 10mm x 2mm Graphite Noberne seal)
Letter Plate	Supplied with the letter plate.	1. UAP graphite kit
Door Viewer	Fully encasing viewer body	1. 0.8mm thick Graphite.

Gaskets must be fitted where required by supporting evidence, for example, test evidence or Certifire certificates. If gaskets are not required by the supporting evidence but are within this Field of Application, the requirements of this Field of Application take precedence.

10.3 Essential Hardware

The following table details the essential hardware for the various doorset configurations that are referenced in this assessment.

Configuration	Hardware
LSASD	• Latch • Handle • Hinges • Self-closing device (closer)
LSADD	• Latch • Handle • Hinges • Self-closing device (closer) • Flush bolt (optional)

10.4 Latches & Locks

Unless explicitly detailed within the sections below only 1No. lock or latch shall be applied within any individual doorset. When fitted the lock or latch body shall be installed within the vertical edge of the door leaf in all cases, at a height as detailed within the relevant section below. Refer to specific notes contained within each section for further considerations on lock or latch type.

10.4.1 Single Point Engagement

These items are suitable in the following applications only:

Frame types: 1 & 2

Configurations:

Frame type 1 - LSASD & LSADD

Frame type 2 - LSASD

The table below details the tested latches and locks that are approved.

Element	Manufacturer & Product Reference
Locks & latches	1. Easi-T mortice latch (BMT/FEP/F15260 Revision A) 2. Jiangsu Hua Lv Steel 958-AA latch (141031001SHJ-BP-1)

Alternatively, components with the following specification are also deemed acceptable.

Frame type 1

Element	Specification
Maximum forend and strike plate dimensions	150mm high x 25mm wide x 4mm thick
Maximum body dimensions	145mm high x 70mm wide x 18mm thick
Intumescent protection	see section 10.2
Materials	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel, stainless steel or brass with a melting point ≥ 800^0 C

Frame type 2

Element	Specification
Maximum forend and strike plate dimensions	215mm high by 25mm wide by 4mm thick
Maximum body dimensions	200mm high by 100mm wide by 19mm thick
Intumescent protection	see section 10.2
Materials	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel, stainless steel or brass with a melting point ≥ 800^0 C

Notes:

1. In all instances the location of the handle must be between 800 – 1200mm from the threshold.

10.4.2 Latches & Locks – Multi Point Engagement

These items are suitable in the following applications only:

Frame type: 3

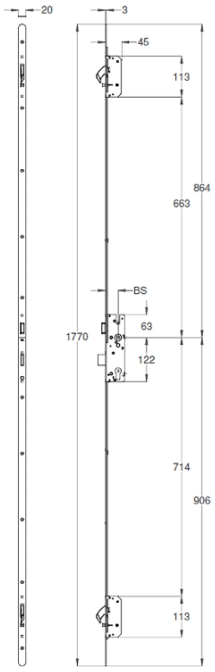
Configurations: LSASD

The table below details the tested multi point latch that is approved.

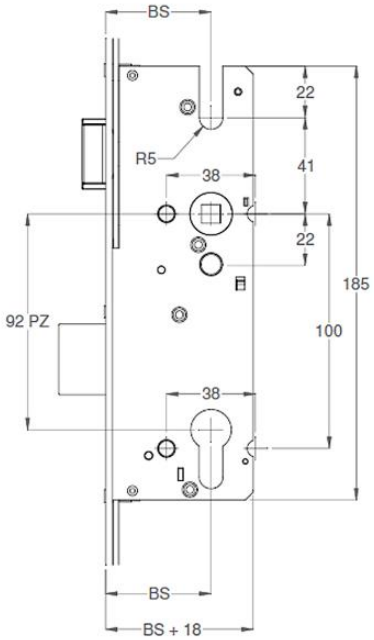
Element	Manufacturer & Product Reference
Locks & latches	1. Winkhaus 2559721 RH - AV2 auto lock 2070/45 multi-point latch (WF523412/R Issue 2)

Note:

1. When a multi-point latch is fitted, the Lorient perimeter intumescent seal specification as specified in table 3 within section 4.5.5 must be used and the maximum door leaf sizes limited to the associated leaf size table given in that section.
2. Frame type 3 must be used as specified in section 7 when installed a multi-point latch.
3. The top and bottom hook locks do not need to be engaged for fire performance.
4. Intumescent protection must be installed to the item of hardware per the requirements given in section 10.2.
5. The centre, top and bottom keep plates must be the same as those tested, as supplied by the manufacturer.
6. In all instances the location of the lock spindle must be between 1028–1200mm from the threshold. The multi-point latch must be installed a minimum 122mm from the top and bottom leaf edges as tested in report reference WF523412/R Issue 2.
7. Alternative back set dimension can be used if the case size remains as tested.
8. See drawings below for the tested AV2 multi-point latch.



Side profile of AV2 multi-point latch



Side profile of AV2 central case body

10.4.2.1 Winkhaus AV4 Multi Point Latch

A Winkhaus AV4 multi-point latch has not been specifically tested in the Sentry-Fire Pro Tech doorset design. However, the AV4 multi-point latch has been approved based on the successfully tested AV2 multi-point latch in report WF523412/R Issue 2 which is of a similar design and is acceptable following the below requirements.

The AV4 multi-point latch must not include the optional motor case and the forend and case sizes must be no larger than the successfully tested AV2 multi-point latch. This includes dimensions no larger than a latch forend of 1770mm high x 20mm wide x 3mm thick, central case of 185mm high x 60mm wide x 15mm deep, top and bottom case of 113mm high x 40mm wide x 15.5mm deep, central strike plate of 102mm high x 36mm wide x 1.5mm thick, central keep plate of 235mm high x 24mm wide x 2.5mm thick, top and bottom strike plate of 112mm high x 36mm wide x 1.5mm thick and top and bottom keep plate of 175mm high x 24mm wide x 2.5mm thick (38mm width of full plate). The AV4 multi-point latch must also be installed with the same intumescent protection as tested installed to the AV2 multi-point latch within report WF523412/R Issue 2 and detailed in section 10.2. All other requirements detailed in section 10.4.2 above must be complied with.

10.4.3 Cylinders

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

The table below details the tested cylinder that is approved.

Element	Manufacturer & Product Reference
Cylinder	• UAP Kinetica K4 + Helix 35/35 3* steel cylinder (WF523412/R Issue 2)

Alternatively, components with the following specification are also deemed acceptable.

- Where required for use with either single or multi point latches, the cylinder must be constructed of either brass or steel with a melting point in excess of 800^0C.
- The cylinder must be compatible with the lock/latch.
- Cylinder dimensions may be up to 33mm high x 17mm wide at the maximum dimension and may be of euro profile or oval.
- Single and double cylinders, along with cylinder & turn are permitted.
- Door preparation for single cylinders shall penetrate a maximum of 2/3rds of the door thickness.
- Intumescent protection and tightness of fitting:
    - If the lock body is not protected with an intumescent material, the maximum clearance between leaf and cylinder is 1mm to each edge.
    - If the lock body is protected with an intumescent material, maximum clearance between leaf and cylinder is 3mm to each edge.
    - 1mm thick MAP or non-pressure forming graphite intumescent around the cylinder is optionally permitted.

10.5 Handles & Escutcheons

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

The table below details the tested handles that are approved.

Element	Manufacturer & Product Reference
Handles	• Zoo Hardware lever type handle (BMT/FEP/F15260 Revision A) • UAP DH243-DUO-MPSS Chrome Stainless Steel lever type handle (WF523412/R Issue 2)

Alternative handles are permitted providing they meet the specification given below:

- Steel, stainless steel, brass, aluminium or bronze are permitted
- Surface fixings or through fixings are permitted. If through fixed there must be no more than 0.5mm clearance between the hole and the fixing.
- The hole through the leaf to facilitate the spindle must be no greater than 20mm diameter.

The design may be either handle on rose or handle on back plate up to the following maximum sizes:

- Handle on rose with a rose diameter up to 54mm
- Handle on back plate with a back plate size up to 243mm high x 56mm wide
- Lever handle length 250mm

The handle must be compatible with the lock/latch, such that the closing action of the doorset is not impeded.

Escutcheons are permitted providing they meet the specification given below:

- Steel, stainless steel, brass, aluminium or bronze are permitted
- Surface fixings or through fixings are permitted. If through fixed there must be no more than 0.5mm clearance between the hole and the fixing.
- The escutcheon may be up to Ø52mm overall and up to 8mm thick.

10.6 Butt Hinges

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

The table below details the tested butt hinges that are approved.

Element	Manufacturer & Product Reference
Hinges	• Royde and Tucker H101 lift off type hinges (BMT/FEP/F15260 Revision A) • Jiangsu Hua Lv Steel HL-C-5 hinges (141031001SHJ-BP-1) • UAP HINGE-SS201-FIRE Stainless Steel Ball Bering Butt Hinges (WF523412/R Issue 2)

Alternatively, components with the following specification are also deemed acceptable.

Element	Specification
Blade height:	90 – 120mm
Blade width (excluding knuckle):	30 – 35mm
Blade thickness	2.5 – 4mm
Fixings:	Minimum of 4 No. 30mm long No. 8 or No.10 steel wood screws per blade
Materials:	Steel or stainless steel

In all instances, the hinges must have the following specification.

Element		Specification	
Hinge positions:	If 3 hinges are required:	Top	150 –200mm from the head to top of hinge
		2nd	Minimum 200mm from top hinge or centrally fitted between top and bottom hinge
		Bottom	180 – 250mm from the foot of leaf to bottom of hinge
	If 4 hinges are required:	Top	150-180mm from the head to top of hinge
		2nd & 3rd	Equispaced between top and bottom or 2nd hinge 200mm from top hinge and 3rd hinge equally spaced between 2nd and bottom hinge
		Bottom	180 – 250mm from the foot of leaf to bottom of hinge
Intumescent protection:		See section 10.2	

Note:

Leaves less than 2400mm (h) must be hung on a minimum of 3 hinges. Leaves greater or equal 2400mm (h) must be hung on 4 hinges.

10.7 Doorset Self Closing

Doorset automatic self-closing can be provided by:

- Overhead face fixed closers

Automatic doorset self-closing devices such as concealed jamb mounted closers, concealed overhead closers, transom mounted, and pivots used with floor springs are not considered acceptable for use with the Sainty-Sentry Pro30 doorset range.

10.7.1 Overhead Face Fixed Closer

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

The table below details the tested overhead face-fixed closers that are approved.

Element	Manufacturer & Product Reference
Overhead face-fixed closers	• Rutland TS3204 overhead type closer (BMT/FEP/F15260 Revision A) • Rutland TS11204 overhead type closer (WF523412/R Issue 2)

Alternatively, components with the following specification are also deemed acceptable.

- Certifire approved overhead face-fixed closers for 30-minute fire resistance applications on 44mm thick timber door and timber frames

Note:

It must be ensured that the closer is of sufficient strength and power to ensure the door leaf/leaves fully engage into the frame reveal.

10.8 Bolts

The double doorset design successfully tested in report BMT/FEP/F15260 Revision A did not include any bolts installed to the secondary leaf and therefore the use of bolts in this report are optional.

10.8.1 Flush Bolts

Flush bolts have not been tested in the primary evidence summarised in section 3 and are therefore not permitted in this report.

10.8.2 Face Fixed Bolts

Face fixed bolts have not been specifically tested installed onto the Sainty-Sentry Pro30 doorset designs but are approved in this report based on the below justification and installation requirements.

- Must be constructed from Steel, Stainless Steel, Aluminium or Bronze.
- 1no. bolt to be installed to the top and bottom of the secondary leaf and on either face on at the meeting edge location or 1no. bolt installed at either the top or bottom of the secondary leaf on either face at the meeting edge location.
- Must be installed a minimum 50mm from the meeting edge.
- Must be face fixed and not require any routing out of the door leaf and frame to accept the item of hardware.
- The bolts must be no larger 300mm high x 20mm wide.
- Intumescent protection is not required.

The above scope of application is provided as in the opinion of Warringtonfire they will not significantly affect the fire resistance performance of the doorset being considered. This is on the basis of the items being surface mounted meaning no material is removed in terms of the overall thickness of the door leaf beyond the footprint of the item, therefore burn through of the leaf would not be expected. Furthermore, they are generally of lightweight construction, meaning that they are unlikely to destabilise the doorset and therefore cause adverse deflection under test conditions. Finally, they will also act as a point of resistance when engaged, and hold to leaf in place in fire conditions, which would likely reduce overall thermal distortion of the leaf at that location for a period of time in a fire resistance test.

10.9 Non-Essential Hardware

Only the following items of non-essential hardware are permitted in addition to the prescribed essential hardware as detailed within section 10.3.

10.9.1 Pull Handles

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

Steel, stainless steel or bronze handles 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.

The above scope of application is provided as in the opinion of Warringtonfire they will not significantly affect the fire resistance performance of the doorset being considered. This is on the basis of the items being surface mounted away from the edge of the door leaf, therefore unlikely to influence the junction between door leaf and frame. Furthermore, they are generally of lightweight construction, meaning that they are unlikely to destabilise the doorset and therefore cause adverse deflection under test conditions. Lastly, the surface mounted arrangement of the features means no material is removed in terms of the overall thickness of the door leaf beyond the footprint of the item, therefore burn through of the leaf would not be expected.

10.9.2 Push Plates & Kick Plates

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

Components with the following specification are deemed acceptable as in the opinion of Warringtonfire they will not significantly affect the fire resistance performance of the doorset being considered. This is on the basis of the items being surface mounted away from the edge of the door leaf, therefore unlikely to influence the junction between door leaf and frame. Furthermore, they are generally of lightweight construction, meaning that they are unlikely to destabilise the doorset and therefore cause adverse deflection under test conditions. Lastly, the surface mounted arrangement of the features means no material is removed in terms of the overall thickness of the door leaf beyond the footprint of the item, therefore burn through of the leaf would not be expected.

Approved specification:

- Polymeric or metal face-fixed hardware such as push plates and kick plates up to 2mm thick may be surface fitted to the doorset. 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 edges.
- In all cases plates meeting the above specification shall not be applied under glazing beads or door stops.

10.9.3 Security Viewers

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

Up to 2no. viewers are permitted within a single door leaf, viewers are to be positioned no closer than 100mm to door edges, glazed apertures or any other hardware component.

The table below details the tested security viewer that is approved, in all cases the tested viewers shall include the intumescent specification which has been proven within the doorset design.

Element	Manufacturer & Product Reference	Intumescent Protection
Security Viewer	UAP SWALFCH-FR Brass/PVD head/Glass viewer	See section 10.2.

Alternatively, components with the following specification are also deemed acceptable.

- 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 protected with a tested 0.8 – 1.0mm thick graphite based intumescent wrap.

10.9.4 Environmental Seals

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD

The Exitex Aquatex A10 environmental sea was successfully tested as part of the Sainty-Sentry Pro30 doorset design within report WF523412/R Issue 2. Based on this testing the table below details the approved environmental seal.

Product Reference & Manufacturer
Exitex Aquatex A10 Polyethene outer skin/Polyurethane foam core measuring 9.8mm wide x 11.5mm high.

Alternatively, on the basis of the testing undertaken, silicon or PVC based flame retardant acoustic, weather and dust seals 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.

The seals must be fitted rebated into the timber door stop in the frame head and jambs as tested.

See section 7.1.4 for information on the environmental seal requirements installed at the threshold when using an aluminum threshold.

10.9.5 Threshold drop Seals

A threshold drop down seal has not been tested installed within the Sainty-Sentry Pro30 doorset design and is therefore not permitted in this report.

10.9.6 Letter Boxes / Plates

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

Letterplates are permitted however the following requirements must be observed:

- A maximum of one letter plate per doorset.
- The area of the letter plate plus any glazing must not exceed the total permitted area for glazing in the leaf as detailed in section 6 of this report.
- The letterplate shall be installed at a location of 250mm to 800mm from the bottom of the leaf to the centre of the letter plate and shall be no closer than 100mm to the edge of the leaf, any other apertures within the leaf or items of hardware.
- The letter plate must be installed with the Graphite Seal kit and the fixings provided by the manufacturer.

The table below details the tested letter plate that is approved.

Element	Manufacturer & Product Reference
Letter plate	• UAP TS-008 letter plate (WF523412/R Issue 2)

Alternatively, components with the following specification are also deemed acceptable.

- Letter boxes/plates must be Certifire approved for 30 minutes in doorsets with solid timber door leaves. Restriction relating to size, location and intumescent protection around the letter box/plate must be complied with.

10.9.7 Knockers, Numerals & Signage

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

The table below details the tested knocker and numeral that is approved.

Element	Manufacturer & Product Reference
Knocker	• UAP V6MP22-NANOCOAST stainless steel Victorian knocker (WF523412/R Issue 2)
Numerals	• ERA Fab N Fix Number ‘0’ HX Chrome numeral (WF523412/R Issue 2)

Alternatively, components with the following specification are also deemed acceptable as in the opinion of Warringtonfire they will not significantly affect the fire resistance performance of the doorset being considered. This is on the basis of the items being surface mounted away from the edge of the door leaf, therefore unlikely to influence the junction between door leaf and frame. Furthermore, they are generally of lightweight construction, meaning that they are unlikely to destabilise the doorset and therefore cause adverse deflection under test conditions. Lastly, the surface mounted arrangement of the features means no material is removed in terms of the overall thickness of the door leaf beyond the footprint of the item, therefore burn through of the leaf would not be expected.

Approved specifications:

Knockers:

- Steel, stainless steel, aluminium or bronze knockers, may be surface fixed or bolted through the door leaf, providing they are fitted no closer than 75mm from the leaf edge, other elements of building hardware or to any glazing and are no greater than 200mm high x 120mm wide. If through fixed, there must be no more than 1mm clearance between the hole and stud. It is only permitted to fit 1No. knocker to any one doorset.

Numerals & Signage:

- Steel, stainless steel, aluminium or bronze numerals or signage may be surface fixed to the door leaf, providing they are fitted no closer than 35mm from the leaf edge, other elements of building hardware or to any glazing. The dimension of each numeral or sign must be no greater than 200mm high x 100mm wide x 4mm thick. Up to 5No. numerals or signs may be applied to a doorset, numerals and signs may be applied adjacent to each other providing the 35mm from other elements as detailed above is maintained.

10.9.8 Security Chains

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

The table below details the tested security chain that is approved.

Element	Manufacturer & Product Reference
Security Chain	• UAP DCSSN Steel security chain (WF523412/R Issue 2)

Components with the following specification are also deemed acceptable as in the opinion of Warringtonfire they will not significantly affect the fire resistance performance of the doorset being considered. This is on the basis of the items being surface mounted with fixings positioned away from the edge of the door leaf and therefore unlikely to influence the junction between door leaf and frame. Furthermore, they are generally of lightweight construction, meaning that they are unlikely to destabilise the doorset and cause adverse deflection under test conditions. Lastly, the surface mounted arrangement of the features means no material is removed in terms of the overall thickness of the door leaf beyond the footprint of the item, therefore burn through of the leaf would not be expected.

Approved specification:

- Metallic security chains may be surface fixed to the face of the door leaf and frame, providing they are fitted such that they do not interfere with the junction between the leaf edge and the frame, and no material is removed in order to facilitate the fitting of the security chain. Screws to affix the security chain shall be no greater than 25mm long.

10.9.9 Fire Door Identification Plates

Plastic or metal fire door identification plates may be glued or screwed to the face of the door leaves providing they are fitted no closer than 35mm from the leaf edge, other elements of building hardware or to any glazing. The dimension of any applied plate must be no greater than 100mm high x 100mm wide x 3mm thick.

These may be required to identify the following:

a) To be kept closed when not in use (Fire Door Keep Shut)

b) To be kept locked shut when not in use (Fire Door Keep Locked Shut)

c) Held open by an automatic release mechanism or free swing device (Automatic Fire Door Keep Clear).

When applied to a door leaf the plate shall be surface mounted to the face without removing material from the leaf.

10.9.10 Panic Hardware

These items are suitable in the following applications only:

Frame types: 1, 2 & 3

Configurations: LSASD & LSADD

Certifire approved 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.

11 Installation

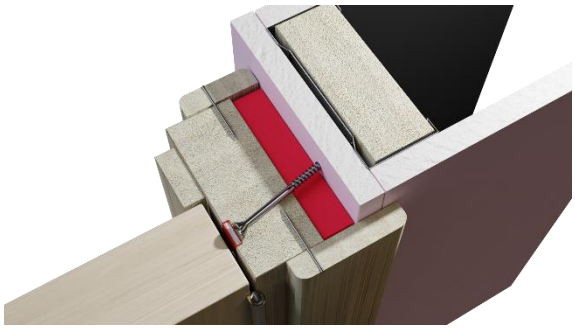
11.1 General

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

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

11.2 Door Frame Installation

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

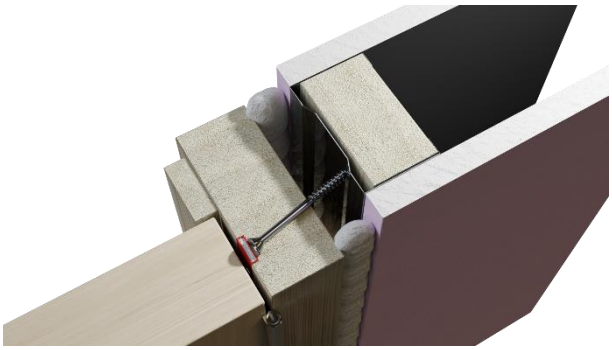
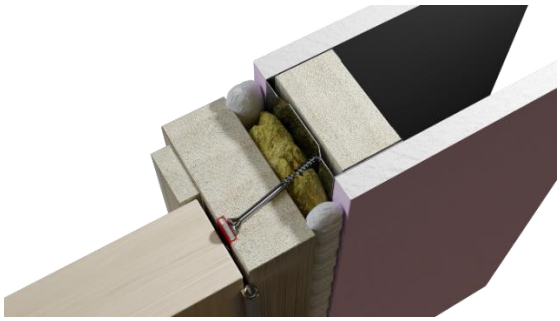
Permitted Installations	
	Instances where the door frame and the wall of the same depth such that architraves are fitted flush to both faces. Note that the minimum door frame section size (width and depth) must be as per the requirements noted in this report – see door frame section. Architraves requirements are documented in the firestopping section of this report.
	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.
	Split frames are permitted providing that both frame sections are secured to the wall in accordance with section 11.5. Furthermore, the main frame section (from which the door is hung) must be constructed to at least the minimum door frame section size (width and depth) as per the requirements noted in this report – see door frame section. The extension piece must be constructed using the same timber species as the main frame section.

Note:

1. 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.
2. When fitted within a masonry construction as detailed in section 11.5 the entire thickness of the leaf shall be within the thickness of the masonry element.

11.3 Firestopping

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

Gap (mm)	Requirement	3D model depiction
0 – 2	In practice, unlikely to occur, but if present, must be sealed with architraves, as below, fitted over a bead of acrylic intumescent sealant, tested as below.	N/A
3 – 10	Gap must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	
10 – 20	Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 (as tested in report BMT/FEP/F15260 Revision A) or full depth expanding PU foam or 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. (as tested in WF523412/R Issue 2). Architraves are optional.	 

Gap (mm)	Requirement	3D model depiction
Over 20	This would be considered a poor preparation of the structural opening. A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall bedded on intumescent mastic, the gap between door frame and subframe filled as follows: 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. Timber architraves of a minimum 18mm thick must be fitted to both faces, fitted with a minimum 15mm overlap to the door gap.	 

11.4 Packers

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

Packers must be present local to each fixing position.

11.5 Wall Types, Structural Opening & Fixity

11.5.1 Wall Types

The following wall types are approved for this doorset design:

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

Wall types a & b above must have supporting fire resistance test evidence which demonstrates that it is capable of staying in place and intact for a minimum of 30 minutes supporting a doorset design.

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

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

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

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

11.5.2 Structural Opening

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

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

11.5.3 Fixity

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.

For single leaf doorset, 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 50mm. It is not necessary to fix the frame head, although packers must be inserted.

For all other configurations of doorset, the jamb fixing requirements are as per the above, however, 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 50mm.

11.6 Post Production (Onsite) Leaf Size Adjustment

The Sentry-Fire Pro Tech range of doorsets may be altered as follows:

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

11.7 Door Gaps

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

Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm but may be fitted to sit back from the opening face by up to 2mm.
Threshold / Bottom edge of the leaf This is the maximum tolerance for fire resistance only.	8mm between bottom of leaf and top of floor covering. The following specific gap requirements, as detailed in section 7.1.4, take precedence: • Where an aluminium profiled plate is installed - 4mm between bottom of leaf and aluminium plate.

12 Insulation Performance

Insulation performance may be claimed for a doorset to this design in line with the following table:

Insulation Performance Criteria	
Type	Details
Non-insulating	Doorsets incorporating greater than 20% of non-insulating glazing
Partially insulating	Doorsets incorporating up to 20% of non-insulating glazing
Fully insulating	Unglazed doorsets or doorsets including 30-minute insulating glazing

13 Conclusion

If Sainty-Sentry Pro30 doorsets constructed in accordance with the specification documented in this field of application were to be tested 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 12).

14 Declaration by the Applicant

1) We the undersigned confirm that we have read and comply with obligations placed on us by the Passive Fire Protection Forum (PFPF) Guide to undertaking technical assessments and engineering evaluations based on fire test evidence 2021 Industry Standard Procedure
2) We confirm that any changes to a component or element of structure which are the subject of this assessment have not to our knowledge been tested to the standard against which this assessment has been made.
3) We agree to withdraw this assessment from circulation should the component or element of structure, or any of its component parts be the subject of a failed fire resistance test to the standard against which this assessment is being made.
4) We understand that this assessment is based on test evidence and will be withdrawn should evidence become available that causes the conclusion to be questioned. In that case, we accept that new test evidence may be required.
5) We are not aware of any information that could affect the conclusions of this assessment. If we subsequently become aware of any such information, we agree to ask the assessing authority to withdraw the assessment.

(In accordance with the principles of FTSG Resolution No. 82: 2001)

Signed: 签署人： Pu Fumin 857AAB360B6C459...

Name: Pu Fumin

Position: Sales Director

Date: 12-Mar-2025

For and on behalf of: **Jiangsu Sainty Corp., Ltd.**

15 Limitations

The following limitations apply to this assessment:

1) This field of application addresses itself solely to the elements and subjects discussed and do not cover any other criteria or modifications. All other details not specifically referred to should remain as tested or assessed.
2) This field of application report is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available to Warringtonfire, the assessment will be unconditionally withdrawn, and the applicant will be notified in writing. Similarly, the assessment evaluation is invalidated if the assessed construction is subsequently tested since actual test data is deemed to take precedence.
3) This field of application has been carried out in accordance with Fire Test Study Group Resolution No. 82: 2001.
4) Opinions and interpretation expressed herein are outside the scope of UKAS accreditation.
5) This field of application relates only to those aspects of design, materials and construction that influence the performance of the element(s) under fire resistance test conditions against the ISO 834 time/temperature curve that is stipulated in the standard this assessment concludes to. 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 field of application, the element is suitable for its intended purpose.
6) This field of application report 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 test evidence referred to in this report. We express no opinion as to whether that evidence, and/or this field of application would be regarded by any Building Control authorities or any other third parties as sufficient for that or any other 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.

16 Validity

1) The assessment is initially valid for five years after which time it is recommended to be submitted to Warringtonfire for re-appraisal.
2) This assessment report is not valid unless it incorporates the declaration given in Section 14 duly signed by the applicant.

Position:	Assessor	Reviewer
Signature:	Signed by: E92E9BDA6AE6488...	Signed by: 3A9C822F3E7F487...
Name:	*** Liam Dunk**	*** Chris Newton**
Title:	Senior Product Assessor	Senior Product Assessor

* For and on behalf of Warringtonfire

Appendix A: Revisions

Rev.	WF Ref.	Date	Description
A	WF426794	02/03/2020	Review and revalidation of the report for a further five years, rebranding to Warringtonfire, reformatting to the guidance in BS EN 15725:2010, and incorporation of test data from Intertek test 141031001-SHJ-BP-1 to allow the use of Lorient Polyproducts Ltd LP2004 perimeter intumescent seals.
B	WF549426	07/03/2025	Review and revalidation of the report for a further five years with the following changes: Update company name to Jiangsu Sainty Corp., Ltd. Removal of glazed fanlights. Update door leaf glazing section to only include the tested glass and glazing systems and appropriate Certifire approved glazing systems. Remove the ability to use Lorient LP2004 perimeter seals installed centrally in the frame head and jambs in a softwood frame. Update frame installation section. Change in permitted alternative latch/lock size. Removal of the ability to install drop-down seals and flush bolts. Update supporting construction section. Removal smoke section. Include test report WF543412 to permit a range of hardware and aluminium threshold including the AV2 multipoint latch and the ability to assess the AV4 latch.