
Title

Field of Application for:

The Halspan Limited Range of
Doorsets Using XT60 and IT60 Door
Blanks in Timber Based Door Frames

For 60 minutes Fire Resistance if they
were to be tested in accordance with
BS 476: Part 22: 1987

Assessment Report No.:

Chilt/A13227 (Revision F)

Issue Date:

24th September 2025

Valid Until:

24th September 2030

Job Reference:

WF553420

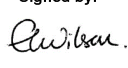
Prepared for:

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The issue/revision number stated on the front of this report supersedes all previous issues/revisions, if applicable. Previous issues/revisions of the report, if applicable, cannot be used once an updated report has been issued/revised under a new revision.

Signatories and Revision History

Rev No.	Date	FM No.	Report scope and Signatures
A	04/04/2014	Chilt/A14048	Additional glass coverage based on new test data.
B	27/01/2016	CNA/F15272	Review, update & revalidation for a further 5 years. Update to include CFR1509101 (doorset A) to evidence MDF facings & Pyroplex perimeter intumescent; CFR1510051 (doorset B) to evidence Briton 2420.T.SE concealed door closer; FEP/F14271 (doorset A) to evidence reduced thickness plywood facings, a concealed intumescent specification, a reduced door frame section size & tested glass & glazing system option; FEP/F14271 (doorset B) to evidence maximum leaf size 2440mm x 1220mm for single doors when fitted with a head rail.
C	26/01/2018	WF394380	Change of company name to Halspan Ltd
D	4/05/2020	WF427341	Technical review, revalidation and update to the Warringtonfire format and the general principles of BS EN 15725. Changes made to the assessment: - Removed test report 12077. - Update to new door design names XT60, XT60 Head Rail, IT60 and XT60R. - The new blank with the modified glue line included with reference to the purchasing specification to demonstrate the only change is an upgrade in the glue line. - The presentation of glazing will be as a large table glass versus glazing system. - Addition of test report WF379945 used to include STS perimeter seals with the XT60 Head Rail design. - WF419726 added to include Pyrobelite glazing with a STS glazing system and additional hardware. - CFR2001231_2 used as the Protech 60 to XT60 door design comparison tests and the inclusion of a rebated meeting edge design.
E	09/07/2020	WF430640	Change in description of glue line in between core and ply outer facing to details held in confidence in final draft version of this assessment.
F	24/09/2025	WF553420	Full technical review, reformat and revalidation for 5 years. Inclusion of additional test evidence as summarised in Appendix A (A.1.9 to A.1.20). Removal of door leaf types XT60 Head Rail and XT60R.
Assessor		Reviewer	
Name: E L Wilson*		Name: N Whitelock*	
Title: Senior Product Assessor		Title: Technical Manager, Doors & Smoke Leakage	
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* For and on behalf of Warringtonfire

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Executive summary

This field of application report presents an assessment of the fire resistance performance of the specified proprietary XT60 and IT60 doorset designs, as fire tested and described in the reports detailed within Appendix A when modified as detailed herein.

The proposed modifications include leaf and frame design options, doorset configurations and sizes, glazing details, various hardware and installation parameters as discussed in the relevant sections below.

This assessment report is subject to the requirements and limitations described in Sections 2 and 15.

The findings of this report are that if XT60 and IT60 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 expected that they would be capable of providing a minimum of 60 minutes integrity and insulation (subject to section 12).

This report represents our opinion as to the performance likely to be demonstrated on a test in accordance with the test standard specified above, on the basis of the test evidence referred to in this report. We express no opinion as to whether that evidence, and/or this report would be regarded by any Building Control authorities or any other third parties as sufficient for that or any other purpose.

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1. Introduction

This field of application report presents an assessment of the fire resistance performance of the specified proprietary XT60 and IT60 doorset designs, as fire tested and described in the reports detailed within Appendix A when modified as detailed herein.

Analysis of specific construction details that require assessment are given within this report against the relevant element of construction, as appropriate.

2. Assessment framework

An assessment is an opinion of the likely performance of a component or element of structure if it was subjected to a standard fire test.

This assessment report has been carried out in accordance with the Passive Fire Protection Forum (PFPF) *'Guide to Undertaking Technical Assessments of the Fire Performance of Construction Products Based on Fire Test Evidence - 2021'* and has been written in accordance with the general principles outlined in BS EN 15725: 2023; *Extended application reports on the fire performance of construction products and building elements, as applicable*.

This scope document cannot be used as supporting documentation for either a CE or UKCA marking application nor can the conclusion be used to establish a formal classification against EN13501-2.

The scope presented in this report relates to the behaviour of the element 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 report 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 - 2021'*. 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.

This report uses established empirical methods of extrapolation and experience of fire testing similar elements, 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 the test standard specified.

This report has been written using appropriate test evidence generated at UKAS accredited laboratories, to the relevant test standard. The supporting test evidence has been deemed appropriate to support the stated design and is summarised in Appendix A.

3. General requirements and assumptions

The specified proprietary XT60 and IT60 doorset designs shall be constructed in a similar manner from materials and components of the same manufacturer and equivalent quality as those tested or otherwise assessed by Warringtonfire.

The following assumptions have been made in the preparation of this report:

- 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 $\pm 2\%$ 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.

It is assumed that the end user will have an understanding of the tested specification as defined in the relevant test report(s) summarised in Appendix A.

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.

If a design variation or extension to scope is not explicitly detailed within the assessment it should not be assumed to be acceptable by omission.

4. Technical Specification

4.1 General

The technical specification for the proposed door assemblies is given in the following sections and is based on the test evidence for the door designs, summarised in Appendix A.

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

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

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

Doorsets constructed using different leaves can include various design features as summarised below.

The same leaf option must be used for door leaf, solid side panel and solid overpanel components of any individual doorset.

4.3.1 Leaf 1 – XT60 – 54mm thick

The door designs can include:

1. Glazing
2. Feature Grooves including insert materials
3. Various hardware options
4. Decorative facings
5. Decorative planted on timber mouldings

4.3.2 Leaf 2 – IT60 – 54mm thick

The door designs can include:

1. Glazing
2. Various hardware options
3. Decorative facings and full encapsulation
4. Decorative planted on timber mouldings

4.4 Door Frames

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

Section 7 gives the description of the frame including composition and density and minimum dimensions.

Doorsets constructed using different frame options can include various design features as summarised below.

The same frame option must be used for any individual doorset.

Permitted frame and leaf combinations are detailed within section 4.5.4.

4.4.1 Frame 1 – Hardwood Timber

The construction of the door frames is hardwood (excluding Beech *Fagus species*).

4.4.2 Frame 2 – MDF

The construction of the door frames is MDF.

4.5 Doorset Configurations & Maximum Leaf Sizes

4.5.1 General

The evaluation of the leaf size for each door leaf option and frame option and doorset configuration is based on the tests listed in Appendix A and takes into account:

- The margin of over performance above 60 minutes integrity for the design
- The characteristics exhibited during test and
- 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 the harder it becomes to pass a test.

This approach leads to the following statements:

- A test on a double doorset is more onerous than a test on a single doorset.
- A test on an unlatched doorset is more onerous than a test on a latched doorset as the leading edge is unrestrained and will deflect more in fire test conditions.
- A test on an unlatched single acting doorset is considered to be equivalent to a double acting doorset, due to the known deflection of an unlatched single acting doorset towards the furnace conditions i.e. away from the door stop.
- 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.

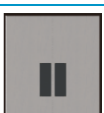
Doorsets with reduced height and width dimensions from those tested are deemed to be less onerous. Therefore, doors with dimensions less than those given in the leaf size envelopes (for the relevant intumescent specification) in the following sections are covered and may be manufactured.

Minimum door leaf width must be no smaller than 300mm. Inclusion of specific design details may require restrictions to maximum or minimum leaf sizes.

4.5.2 Configuration

The table below shows the permitted configurations for the 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.

Depiction	Abbreviation	Description
	LSASD	Latched Single Acting Single Doorset
	ULSASD	Unlatched Single Acting Single Doorset
	DASD	Double Acting Single Doorset
	LSADD	Latched Single Acting Double Doorset
	ULSADD	Unlatched Single Acting Double Doorset
	DADD	Double 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, which is considered the most onerous orientation in terms of fire resistance performance. 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. The rationale behind the direction of fire testing timber based doorsets opening towards the fire test conditions is further explained in Annex C of BS EN 1634-1:2014 +A1:2018.

4.5.4 Envelopes for each Configuration

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 25mm wide centrally fitted or
 - 2No. Intumescent seals, each no greater than 15mm wide fitted centrally no greater than 14mm apart.

Intumescent seals have been demonstrated both with and without the presence of fins, blades and brushes, on this basis the seals detailed in the following sections may be supplied with or without fins, blades or brushes providing the active intumescent material, the carrier and the dimensions of the components are no different from those tested and summarised. For example:

The Halspan SLS range of graphite seals listed in this Field of Application have the following product variants and product codes:

- SLS-PLA-154. PVC encapsulated fire only seal, 15mm x 4mm
- SLS-PLA-204. PVC encapsulated fire only seal, 20mm x 4mm
- SLS-BRU-154. PVC encapsulated fire & smoke brush seal, 15mm x 4mm
- SLS-BRU-204. PVC encapsulated fire & smoke brush seal, 20mm x 4mm
- SLS-TWF-154. PVC encapsulated fire, smoke & acoustic twin fin bladed seal, 15mm x 4mm
- SLS-TWF-204. PVC encapsulated fire, smoke & acoustic twin fin bladed seal, 20mm x 4mm
- SLS-OSF-154. PVC encapsulated fire, smoke & acoustic offset fin bladed seal, 15mm x 4mm
- SLS-OSF-204. PVC encapsulated fire, smoke & acoustic offset fin bladed seal, 20mm x 4mm

All of the seals listed above contain the same graphite intumescent and may therefore be considered interchangeable, where appropriate.

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, as well as encapsulation. These elements are not automatically interchangeable. The following sections present the envelopes for the 2 leaf options and 2 frame options. 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 DADD
- for each configuration, each leaf type is considered separately
- for each configuration and leaf type, each frame type is considered separately
- 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.

4.5.4.3 Summary of Permitted Configurations (for each Leaf and Frame option)

Permitted Configurations with frame option 1-2 with leaf option 1 (XT60)							
Frame	Configuration						
		LSASD	ULSASD	DASD	LSADD	ULSADD	DADD
	1 – Hardwood frame*	Yes	Yes	Yes	Yes	Yes	Yes
	2 – MDF frame*	No	No	No	No	No	No

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

Permitted Configurations with frame option 1-2 with leaf option 2 (IT60)							
Frame	Configuration						
		LSASD	ULSASD	DASD	LSADD	ULSADD	DADD
	1 – Hardwood frame*	Yes	Yes	Yes	Yes	Yes	Yes
	2 – MDF frame*	Yes	Yes	Yes	Yes	Yes	Yes

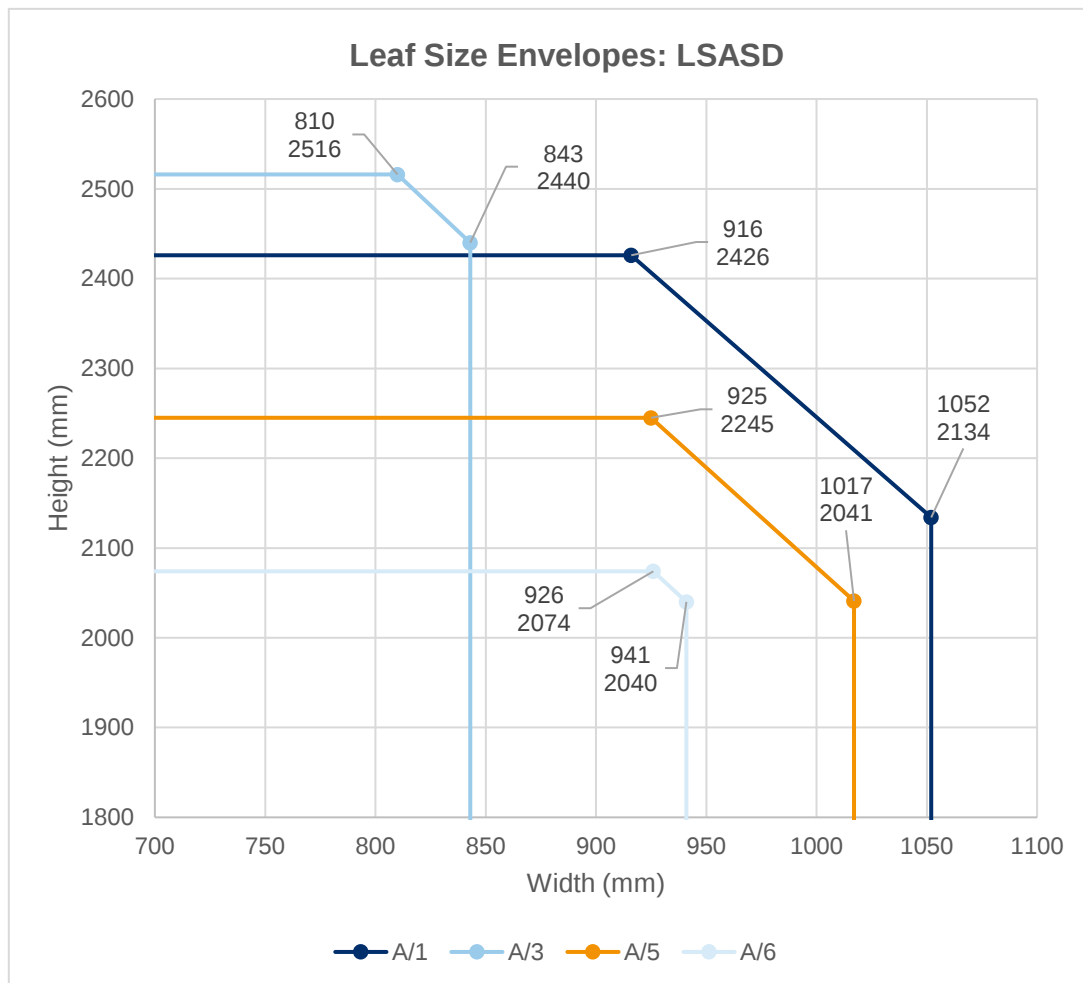
* See Section 7 for specific limitations with respect to the framing types

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4.5.5 LSASD Configuration: Leaf Sizes & Intumescent Specification

4.5.5.1 Leaf 1 + Frame 1



Intumescent Specification for LSASD Leaf 1 (XT60) with Frame 1 (Hardwood)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
A/1 (RF13144)	Halspan SLS	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart
A/3 (CFR2001231_2 Rev 1)	Halspan SLS	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 20x4. Fitted centrally in leaf head
A/5 (CFR2007212)	Lorient 617	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart

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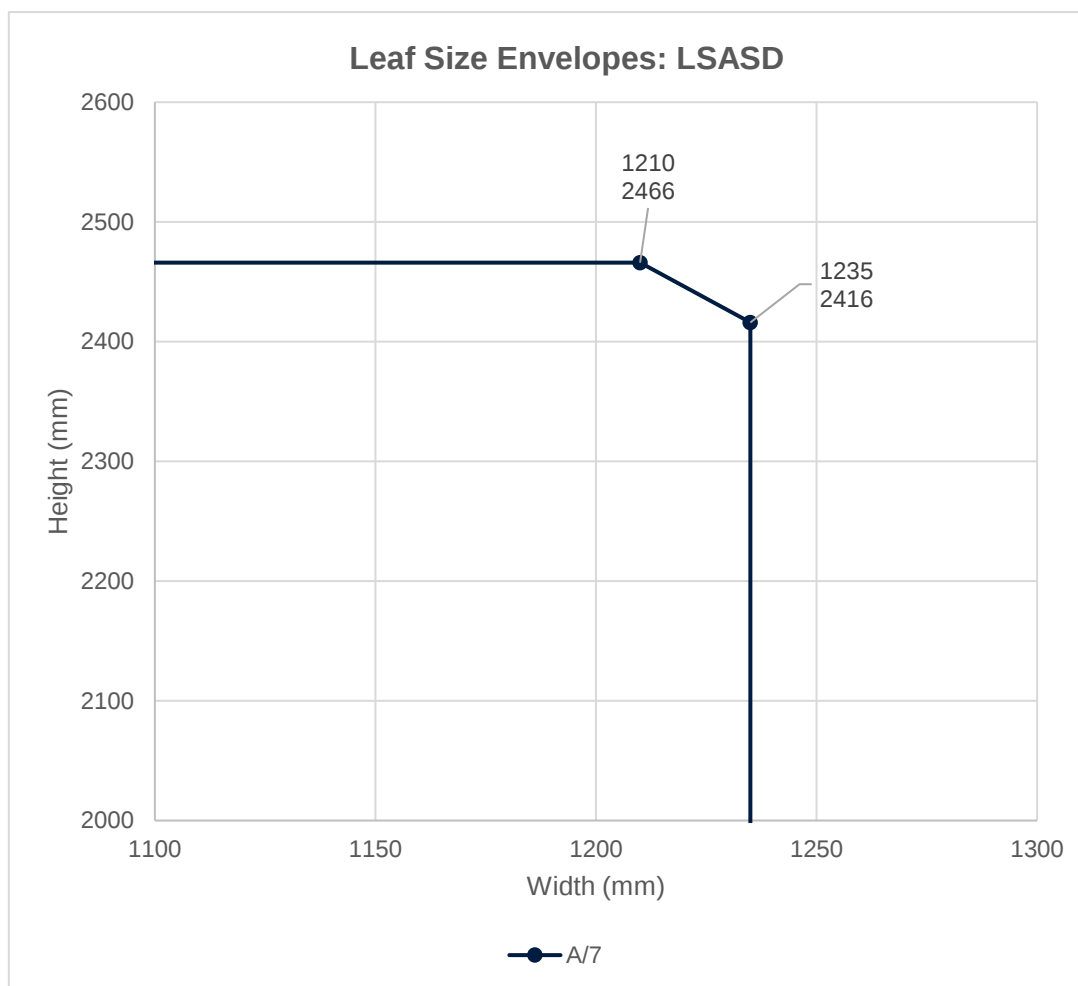
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Intumescent Specification for LSASD Leaf 1 (XT60) with Frame 1 (Hardwood)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
A/6 (WF512409B Ver3)	Pyroplex 8700	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 15x4. Fitted centrally in leaf head

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4.5.5.2 Leaf 2 + Frame 1

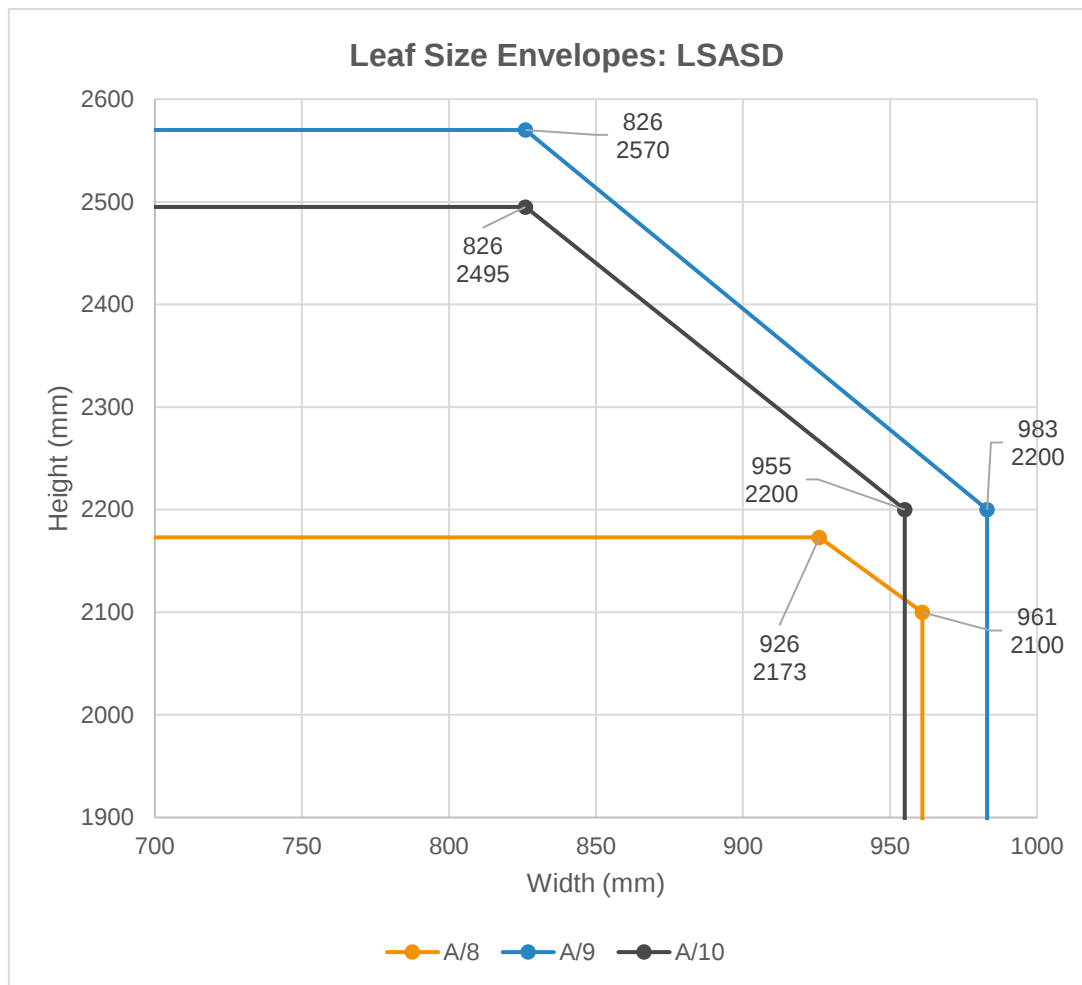


Intumescent Specification for LSASD		
Leaf 2 (IT60) with Frame 1 (Hardwood)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
A/7 (CFR1509101 LH)	Pyroplex 8700	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart

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4.5.5.3 Leaf 2 + Frame 1 and 2



Intumescent Specification for LSASD		
Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
A/8 (CFR2101191)	Lorient 617	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 15x4. Fitted centrally in leaf head
A/9 (WF542706 Version 2)	Lorient 617	Head: 1no 15x4. Fitted centrally in frame reveal 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf vertical edge

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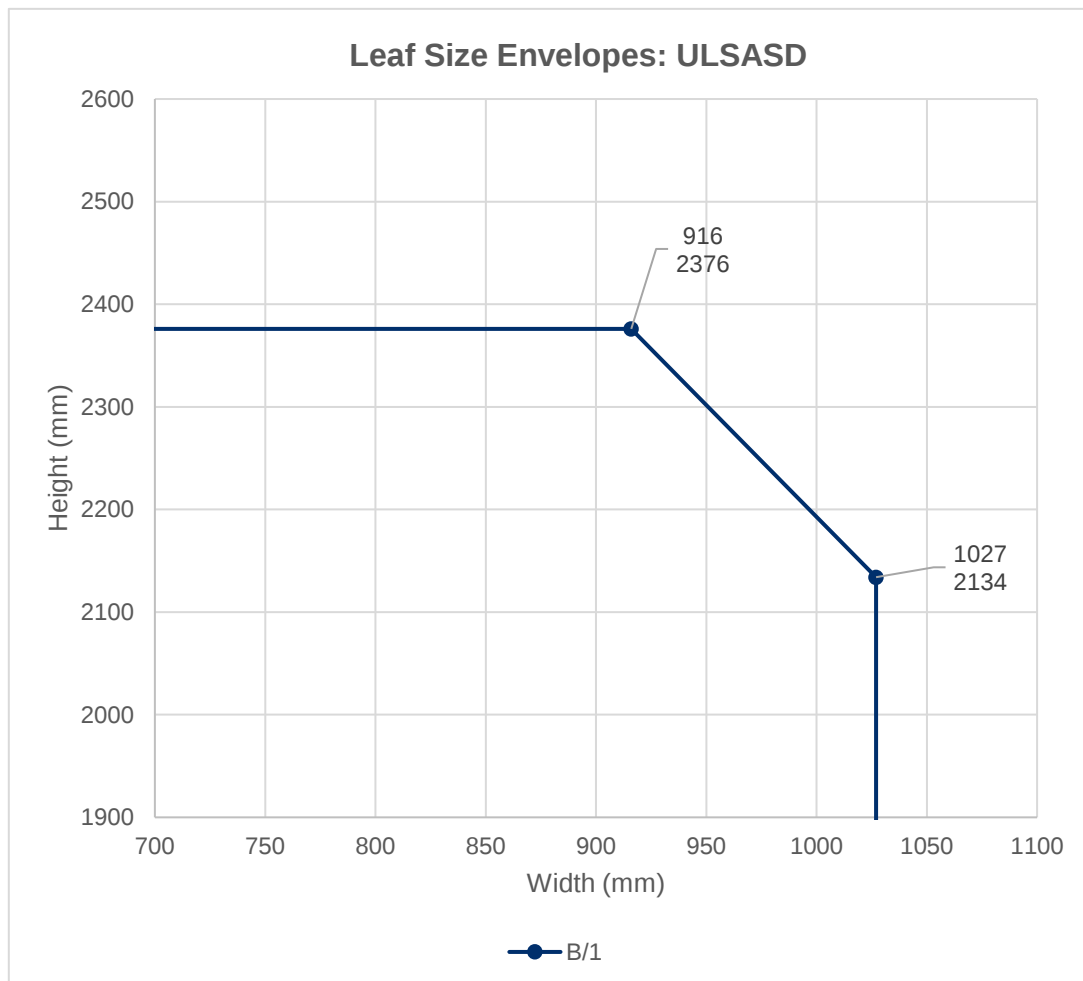
Intumescent Specification for LSASD Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
A/10 (WF542753)	Lorient 617	Head: 2no 10x4. Fitted centrally in frame reveal and 25mm apart 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf vertical edge

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4.5.6 ULSASD Configuration: Leaf Sizes & Intumescent Specification

4.5.6.1 Leaf 1 + Frame 1

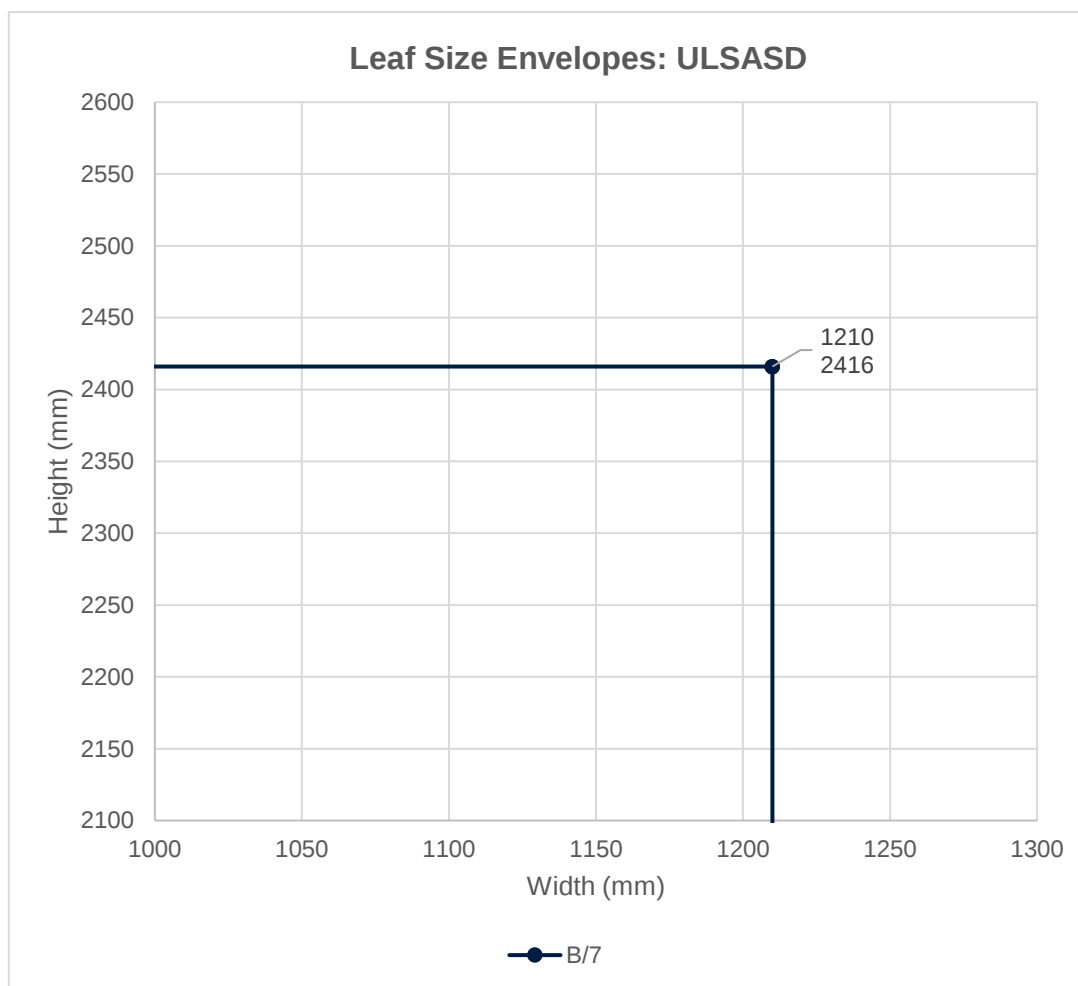


Intumescent Specification for ULSASD Leaf 1 (XT60) with Frame 1 (Hardwood)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
B/1 (RF13144)	Halspan SLS	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart

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4.5.6.2 Leaf 2 + Frame 1

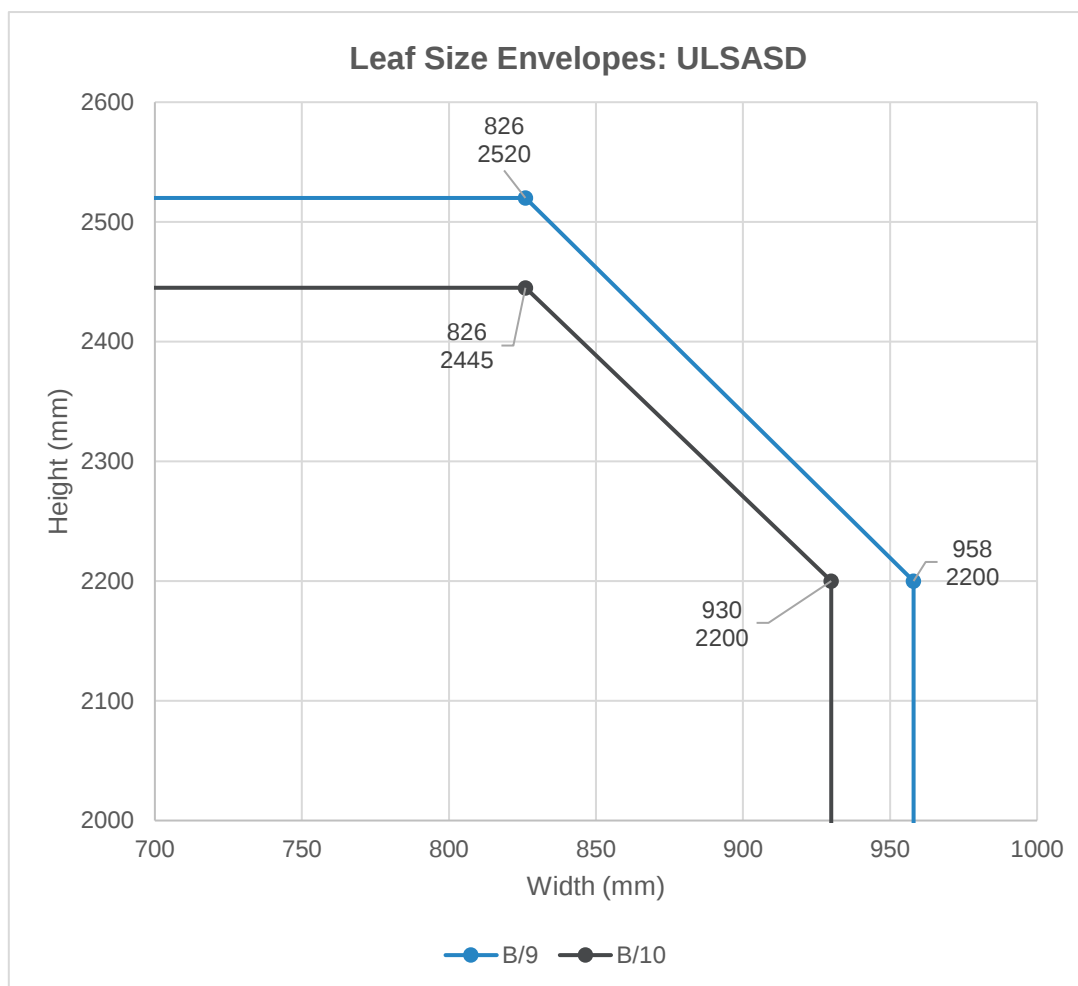


Intumescent Specification for ULSASD Leaf 2 (IT60) with Frame 1 (Hardwood)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
B/7 (CFR1509101 LH)	Pyroplex 8700	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart

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4.5.6.3 Leaf 2 + Frame 1 and 2



Intumescent Specification for ULSASD		
Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
B/9 (WF542706 Version 2)	Lorient 617	Head: 1no 15x4. Fitted centrally in frame reveal 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf vertical edge
B/10 (WF542753)	Lorient 617	Head: 2no 10x4. Fitted centrally in frame reveal and 25mm apart 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf vertical edge

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4.5.7 DASD Configuration: Leaf Sizes & Intumescent Specification

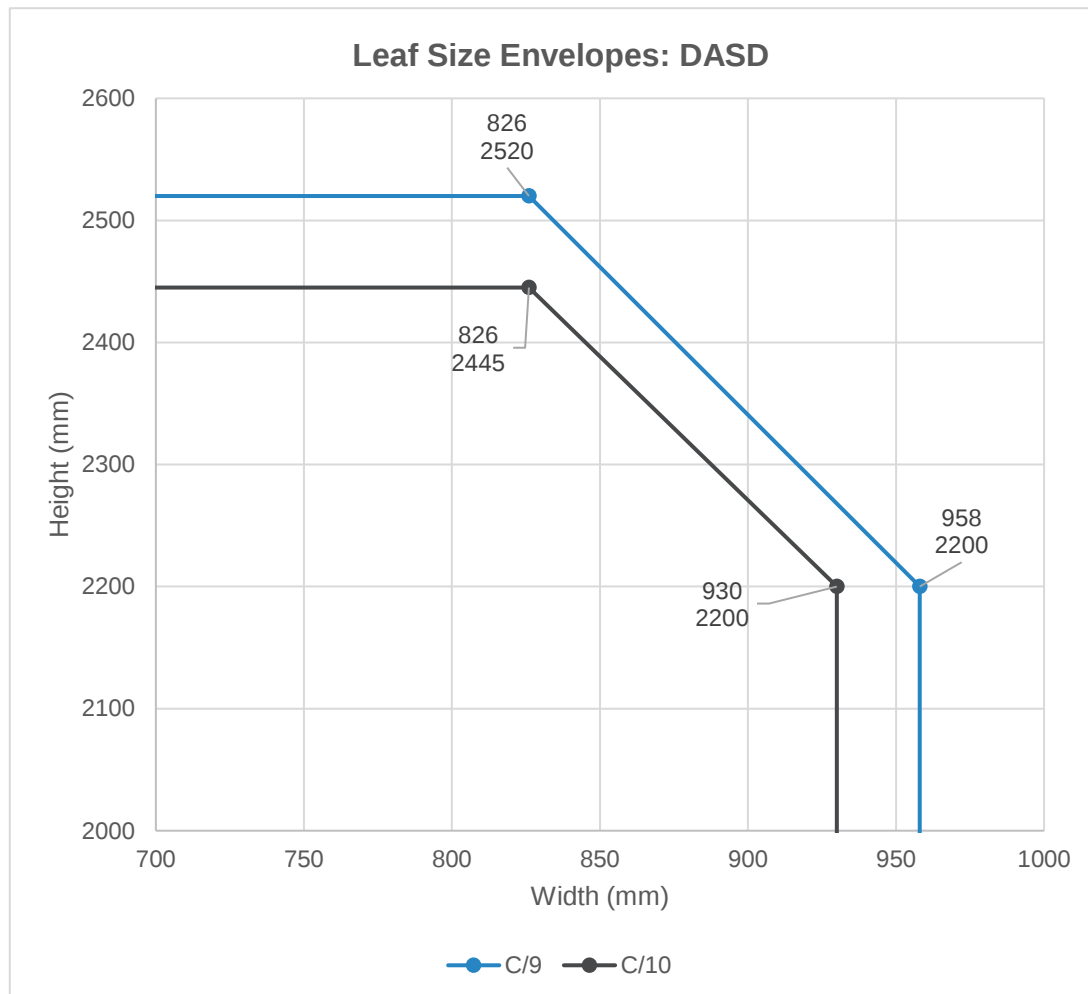
4.5.7.1 Leaf 1 + Frame 1

For leaf size envelopes for DASD using Leaf 1 and Frame 1 see intumescent specification B/1 within section 4.5.6.

4.5.7.2 Leaf 2 + Frame 1

For leaf size envelopes for DASD using Leaf 2 and Frame 1 see intumescent specifications B/7 within section 4.5.6.

4.5.7.3 Leaf 2 + Frame 1 and 2



Intumescent Specification for DASD Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
C/9 (WF542706 Version 2)	Lorient 617	Head: 1no 15x4. Fitted centrally in frame reveal 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf vertical edge

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

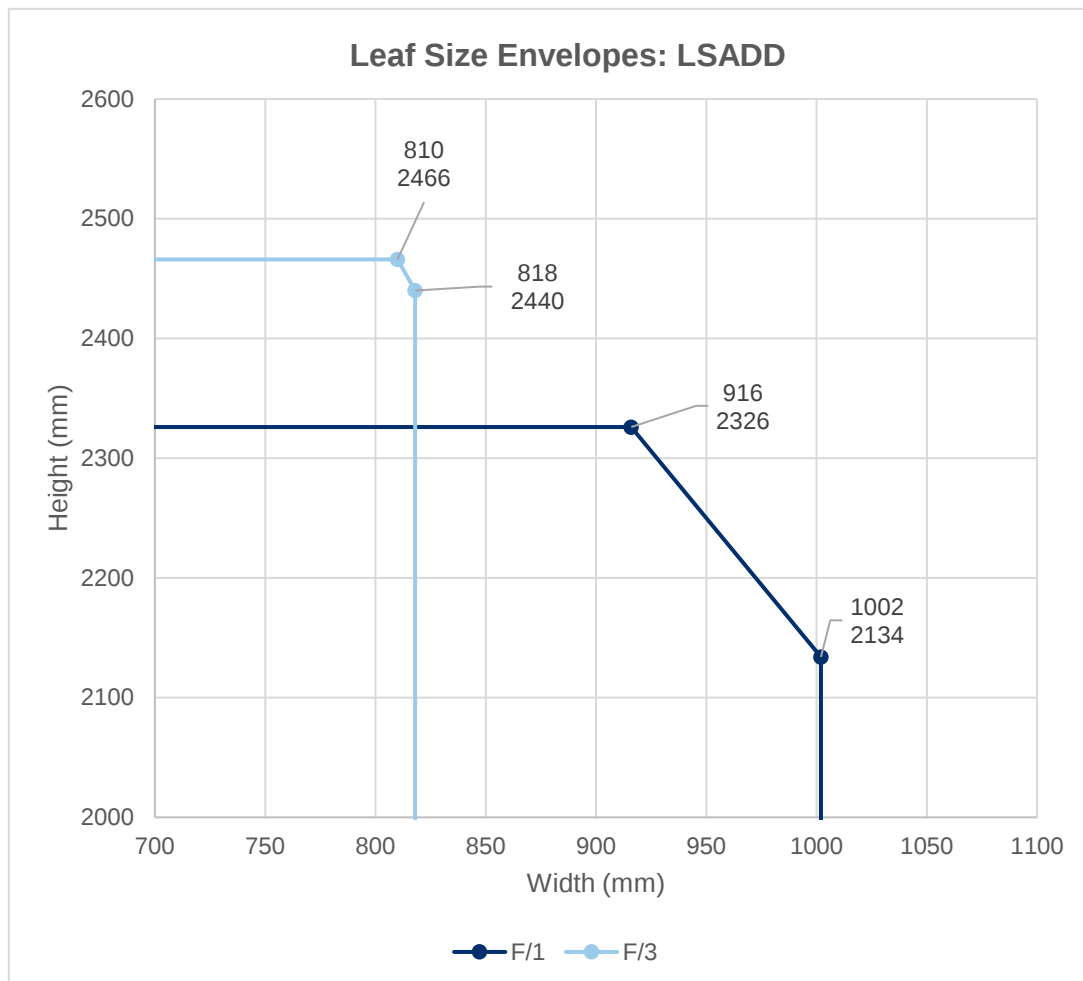
Intumescent Specification for DASD Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
C/10 (WF542753)	Lorient 617	Head: 2no 10x4. Fitted centrally in frame reveal and 25mm apart 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf vertical edge

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4.5.8 LSADD Configuration: Leaf Sizes & Intumescent Specification

4.5.8.1 Leaf 1 + Frame 1



Intumescent Specification for LSADD Leaf 1 (XT60) with Frame 1 (Hardwood)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
F/1 (RF13144)	Halspan SLS	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart Meeting edge junction: With flat lipping meeting edge: Meeting Edge: 2no 15x4, fitted centrally and 10mm apart in one leaf

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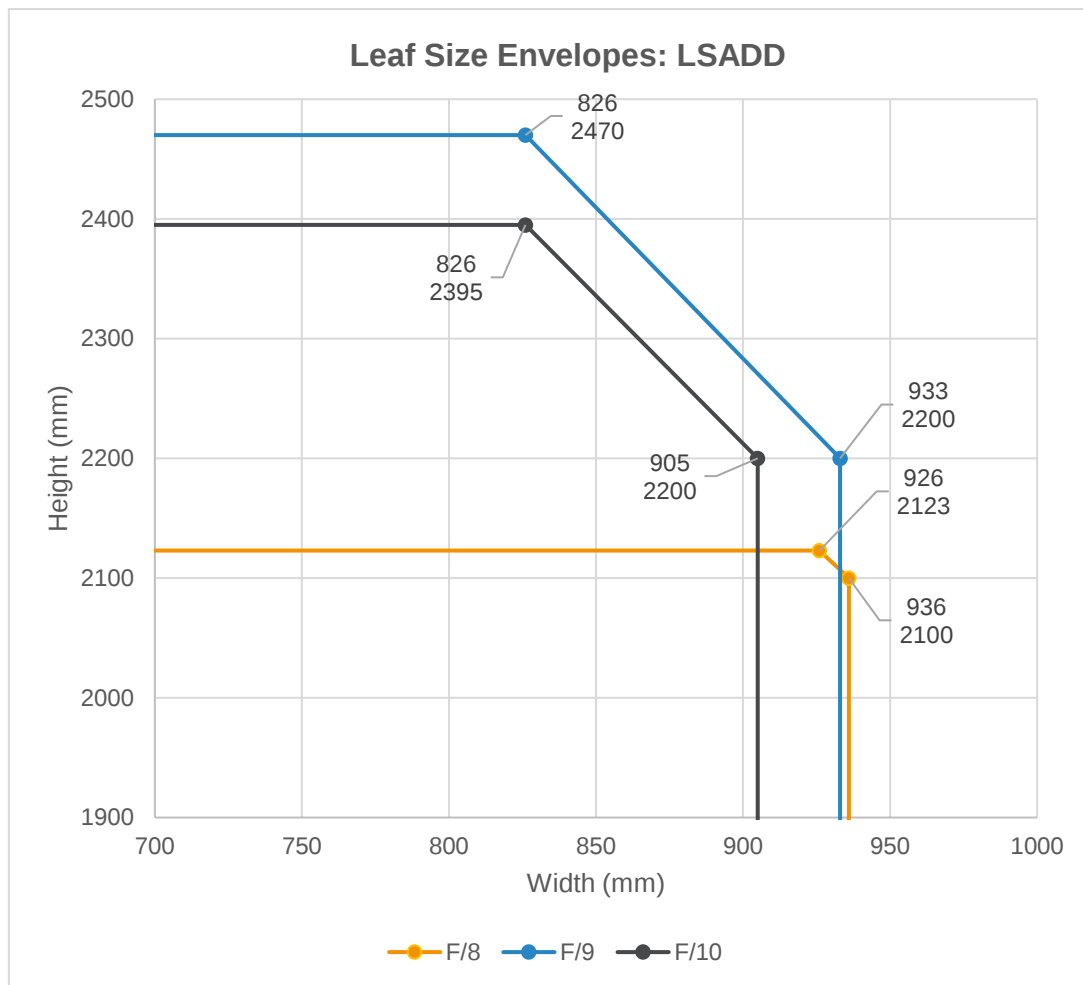
Written permission must be obtained from Halspan Limited in order to manufacture doorsets within the scope of this assessment.

Intumescent Specification for LSADD Leaf 1 (XT60) with Frame 1 (Hardwood)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
F/3 (CFR2001231_2 Rev 1)	Halspan SLS	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 20x4. Fitted centrally in leaf head Meeting edge junction: Option 1) With equal rebated meeting edge: Meeting Edge: 2no 15x4. fitted centrally and 10mm apart in one leaf (1no in upstand and 1no in the rebate) Option 2) With flat lipping meeting edge: Meeting Edge: 2no 15x4, fitted centrally and 10mm apart in one leaf

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4.5.8.2 Leaf 2 + Frame 1 and 2



Intumescent Specification for LSADD		
Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
F/8 (CFR2101191)	Lorient 617	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 15x4. Fitted centrally in leaf head Meeting edge junction: With flat lipping meeting edge: Meeting Edge: 2no 15x4, fitted centrally and 10mm apart in one leaf

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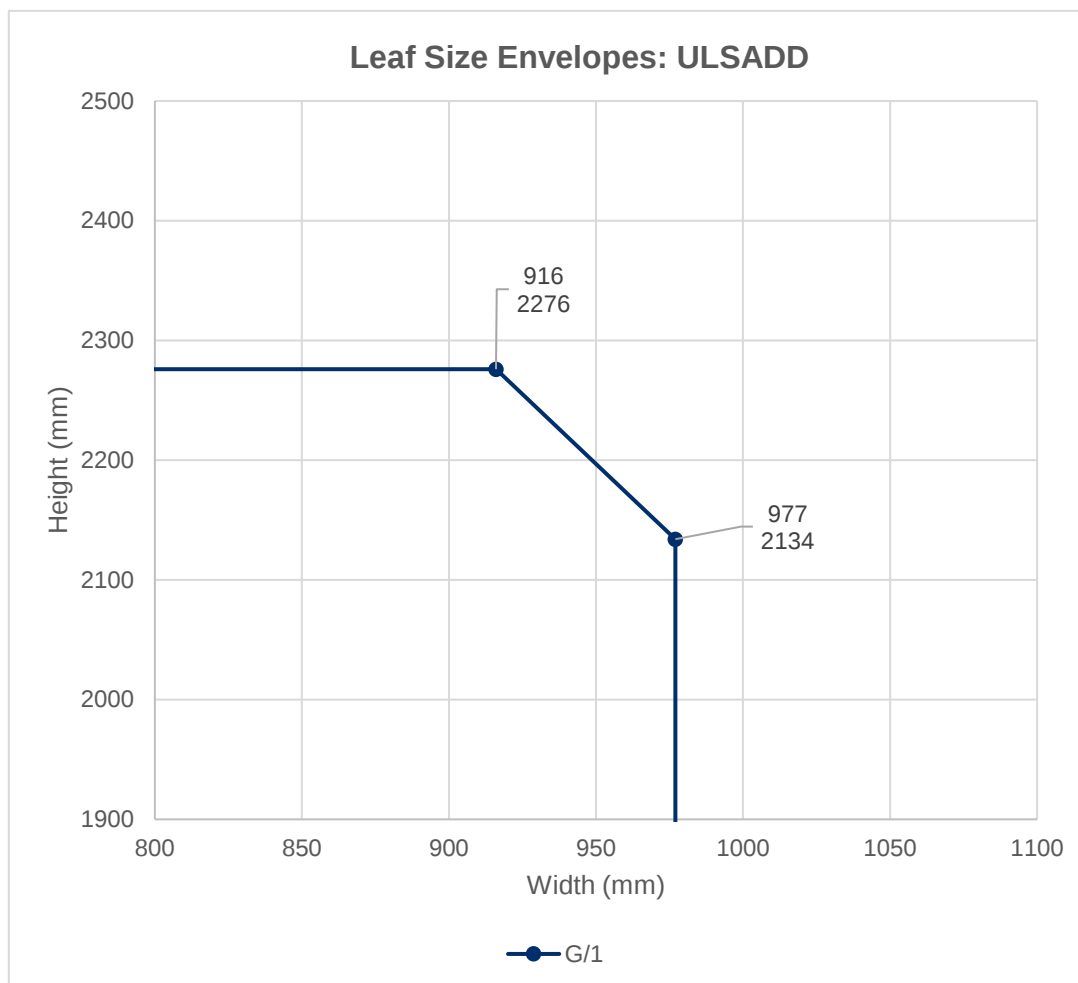
Intumescent Specification for LSADD Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
F/9 (WF542706 Version 2)	Lorient 617	Head: 1no 15x4. Fitted centrally in frame reveal 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf hanging edge Meeting edge junction: With flat lipping meeting edge: Meeting Edge: 2no 15x4, fitted centrally and 10mm apart in one leaf 1no 15x4, fitted centrally in the other leaf
F/10 (WF542753)	Lorient 617	Head: 2no 10x4. Fitted centrally in frame reveal and 25mm apart 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf hanging edge Meeting edge junction: With flat lipping meeting edge: Meeting Edge: 2no 15x4, fitted centrally and 10mm apart in one leaf 1no 15x4, fitted centrally in the other leaf

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4.5.9 ULSADD Configuration: Leaf Sizes & Intumescent Specification

4.5.9.1 Leaf 1 + Frame 1

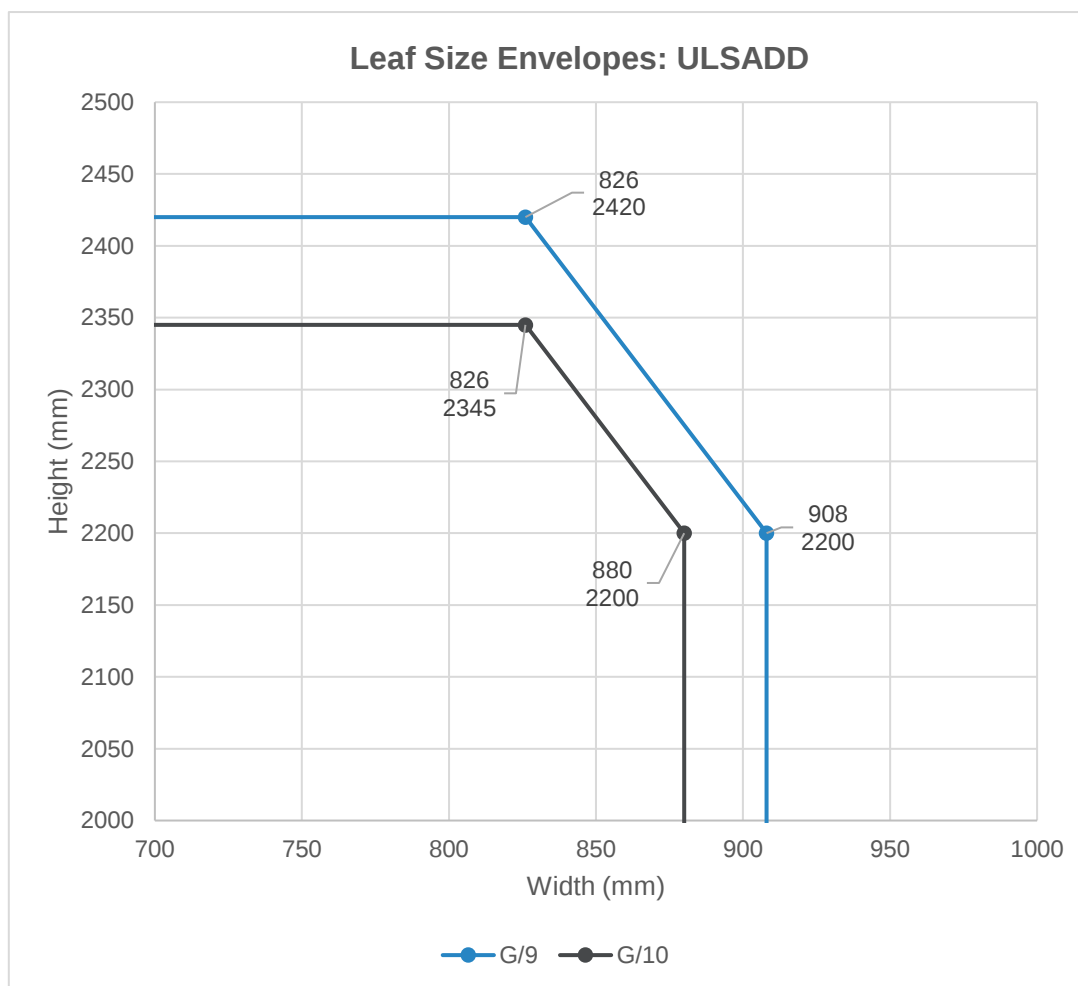


Intumescent Specification for ULSADD Leaf 1 (XT60) with Frame 1 (Hardwood)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
G/1 (RF13144)	Halspan SLS	Head & Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart Meeting edge junction: With flat lipping meeting edge: Meeting Edge: 2no 15x4, fitted centrally and 10mm apart in one leaf

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4.5.9.2 Leaf 2 + Frame 1 and 2



Intumescent Specification for ULSADD		
Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
G/9 (WF542706 Version 2)	Lorient 617	Head: 1no 15x4. Fitted centrally in frame reveal 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf hanging edge Meeting edge junction: With flat lipping meeting edge: Meeting Edge: 2no 15x4, fitted centrally and 10mm apart in one leaf 1no 15x4, fitted centrally in the other leaf

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Intumescent Specification for ULSADD Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
G/10 (WF542753)	Lorient 617	Head: 2no 10x4. Fitted centrally in frame reveal and 25mm apart 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf hanging edge Meeting edge junction: With flat lipping meeting edge: Meeting Edge: 2no 15x4, fitted centrally and 10mm apart in one leaf 1no 15x4, fitted centrally in the other leaf

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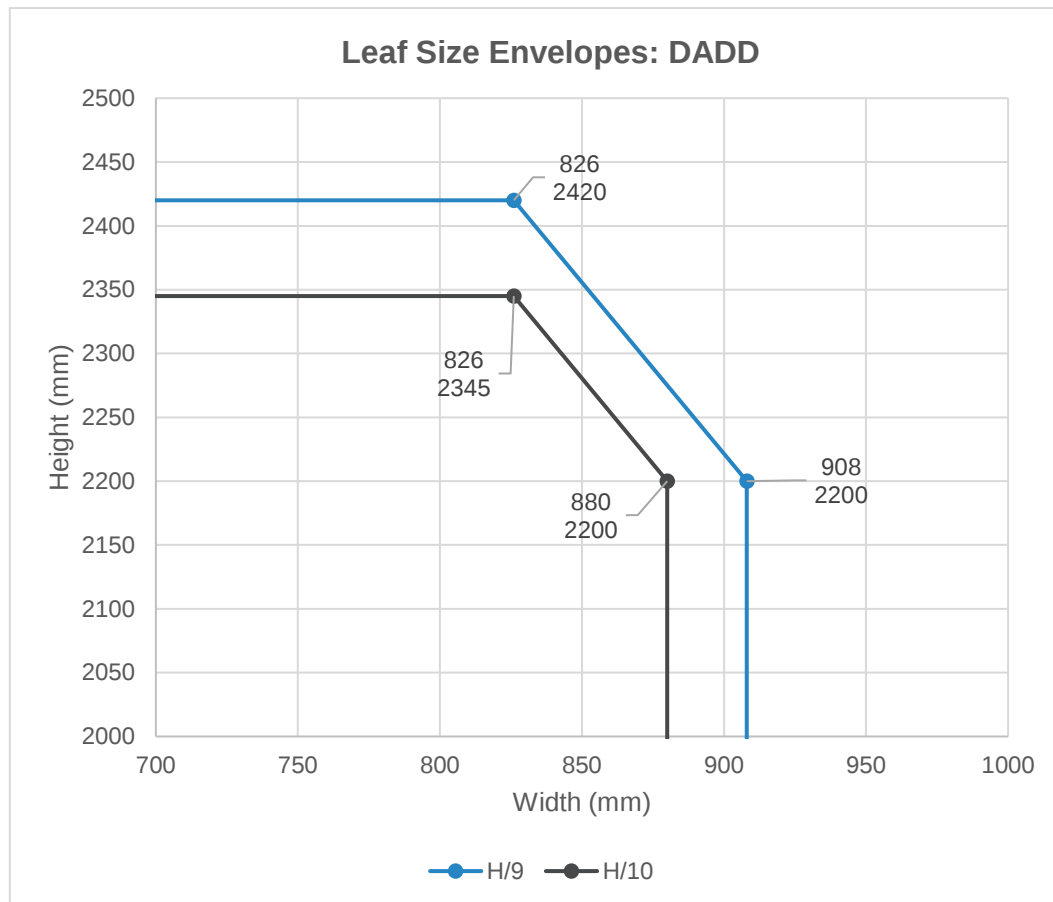
Written permission must be obtained from Halspan Limited in order to manufacture doorsets within the scope of this assessment.

4.5.10 DADD Configuration: Leaf Sizes & Intumescent Specification

4.5.10.1 Leaf 1 + Frame 1

For leaf size envelopes for DADD using Leaf 1 and Frame 1 see intumescent specifications G/1 within section 4.5.9.

4.5.10.2 Leaf 2 + Frame 1 and 2



Intumescent Specification for DADD		
Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
H/9 (WF542706 Version 2)	Lorient 617	Head: 1no 15x4. Fitted centrally in frame reveal 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf hanging edge Meeting edge junction: With flat lipping meeting edge: Meeting Edge: 2no 15x4, fitted centrally and 10mm apart in one leaf 1no 15x4, fitted centrally in the other leaf

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Intumescent Specification for DADD Leaf 2 (IT60) with Frame 1 (Hardwood) or Frame 2 (MDF)		
Intumescent Spec. Reference (Test Reference)	Make / Type	Location & Size
H/10 (WF542753)	Lorient 617	Head: 2no 10x4. Fitted centrally in frame reveal and 25mm apart 2no 15x4. Fitted centrally in leaf head and 10mm apart Jambs: 2no 15x4. Fitted in frame reveal and 10mm apart 1no 10x4. Fitted centrally in leaf hanging edge Meeting edge junction: With flat lipping meeting edge: Meeting Edge: 2no 15x4, fitted centrally and 10mm apart in one leaf 1no 15x4, fitted centrally in the other leaf

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5. General Description of Construction

5.1 Leaf Core Construction

The two door leaf options are detailed below are approved by this assessment.

5.1.1 Leaf 1 – XT60 – 54mm thick

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

Element	Material	Dimensions (mm)	Minimum Density (kg/m ³)
Core	Mixed Pine 3-layer core comprising outer vertically orientated lamels and inner horizontal lamels	12 ± 0.5 (t) x 36 ± 2 (w)	450
Facing	Eucalyptus core 5 ply hardwood plywood EN 636-3	9 (t)	450

The leaf must be lipped as specified in section 5.4.

The minimum leaf thickness after calibration is 53mm (i.e. a maximum of 0.5mm from both sides).

The minimum leaf thickness after finishes are applied is 54mm.

5.1.2 Leaf 2 – IT60 – 54mm thick

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

Element	Material	Dimensions (mm)	Minimum Density (kg/m ³)
Core	Mixed Pine 3-layer core comprising outer vertically orientated lamels and inner horizontal lamels	12 ± 0.5 (t) x 36 ± 2 (w)	450
Facing	MDF	9 (t)	830

The leaf must be lipped as specified in section 5.4.

The minimum leaf thickness after calibration is 53mm (i.e. a maximum of 0.5mm from both sides).

The minimum leaf thickness after finishes (including encapsulation) are applied is 54mm.

5.2 Comparison of Door Core Designs

Following a review of the test evidence supplied for this assessment, it has not been possible to provide a conclusive justification that the leaves may be interchangeable as far as the perimeter intumescent and configurations are concerned. However, it has been possible to provide assessment of certain aspects from one leaf to the other. Where tested hardware and glazing have been incorporated within tests of one of the leaf types it has been considered suitable for inclusion in the other leaf type. Where applicable, further information has been included within the relevant section of this report.

5.3 Leaf Size Adjustment During Manufacture – 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 finished leaf is lipped in accordance with section 5.4 and any encapsulation is applied once the resizing has been completed.
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 5.4.

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5.4 Timber Lipping – Leaf Type 1 & 2

The testing documented in Appendix A has generally been undertaken using 6-10mm thick flat lippings applied to either the vertical edges or all edges using Sapele at varying densities. Additionally, rounded lippings of 8mm with PVC encapsulation have been tested at the hanging edge (WF542706 Version 2 and WF542753) and rebated meeting edge lippings have been tested (CFR2001231_2 Rev 1). A number of different adhesives have also been used to bond the lippings.

On the above basis, XT60 and IT60 door blanks (leaf type 1 & 2) must be lipped with the following specification, for all leaf types and solid panels (overpanels or sidepanels), where appropriate.

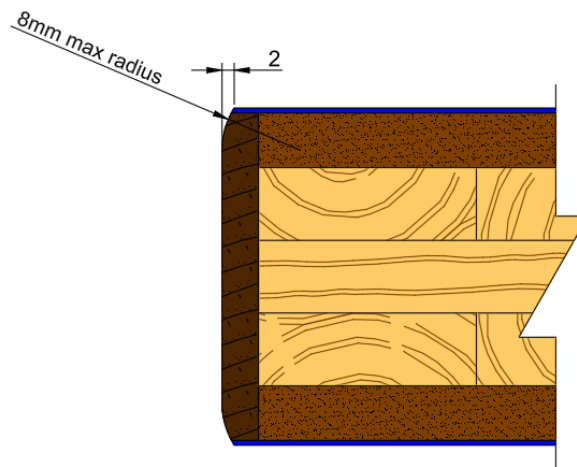
Timber Lipping Specification for Halspan door blanks		
Material	Size (mm)	Min Density (kg/m ³)
Hardwood	1. Flat = 6 – 12 thick 2. Rounded ⁷ = 8 – 12 thick with a radius matching the distance between leaf edge and floor pivot (see section 7.1.2 & 7.2.2) 3. Rebated = 19 – 22mm thick with an equal rebate of 13mm deep x maximum 28mm wide	640

Notes:

1. All lippings are to be the same thickness as the door leaf either prior to the application of decorative facing materials or once they have been applied. (Excluding encapsulation)
2. Overpanels separated from the leaf heads with a transom do not need to be lipped, but may be optionally lipped on all edges.
3. Doorsets with or without transomed overpanels must be lipped on all edges.
4. Double doorsets may use square or rebated meeting edges, providing the intumescent material is required as specified in section 4.5 is able to be fitted.
5. Lippings can be bonded with lipping adhesives as detailed in section 9.
6. For flat lippings it is permitted to apply one of the following:
 - a. Maximum 2mm radius to the corners of the lippings at vertical edges to create edge profiling.
 - b. Maximum of 2mm x 2mm chamfer applied to the corners of the lippings at vertical edges to create edge profiling.
 - c. Maximum 2mm wide x 5mm deep chamfer to the vertical leading edges of the leaves, if this would result in a conflict with intumescent positioning this option is not permitted.
7. For rounded lippings a minimum overall thickness of 8mm shall be measured at the greatest thickness of the lipping. This lipping type may only be applied to the hanging edges of the leaves. Radius applied for the application of pivots must not impinge into the leaf facing material.

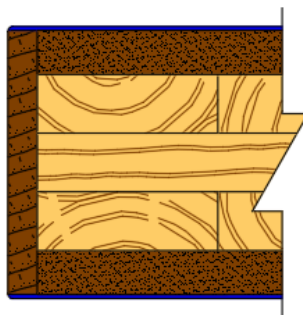
5.4.1 Example Illustrations of Lipping Details

Vertical closing edge

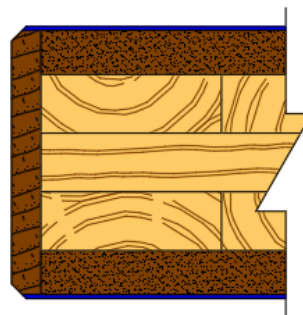


Edge Profiling Details

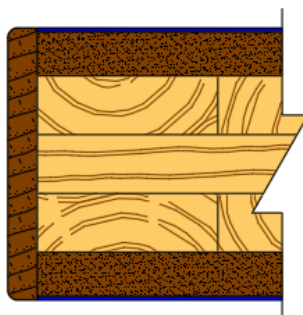
Concealed



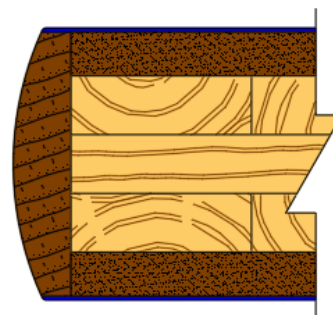
Semi-Concealed



Exposed



Scalloped



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5.5 Decorative & Protective Facings

One of the following options contained within section 5.5.1 or 5.5.2 may be applied to any individual doorset design.

The determination of which of the permitted perimeter intumescent specifications may be utilised is dependent on the presence of encapsulation applied to the leaf (See section 5.5.2) and/or encapsulation applied to the frame (See section 7.5.2).

5.5.1 Applied to the leaf face – 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	0.2
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 54mm 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.

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

5.5.2 Leaf encapsulation – Leaf 2 only

The permitted scope of application for leaf encapsulation has been considered on the basis of WF542706 Version 2 and WF542753 which included doorsets with encapsulated leaves and frames.

On the basis of the testing, the use of leaf encapsulation is suitable for use within the following scope:

Leaf option: 2 only

Frame options: 1 & 2

Configurations: All configurations

Perimeter Intumescent Specifications: As detailed in section 4.5, specifications A/9, A/10, B/9, B/10, C/9, C/10, F/9, F/10, G/9, G/10, H/9, H/10

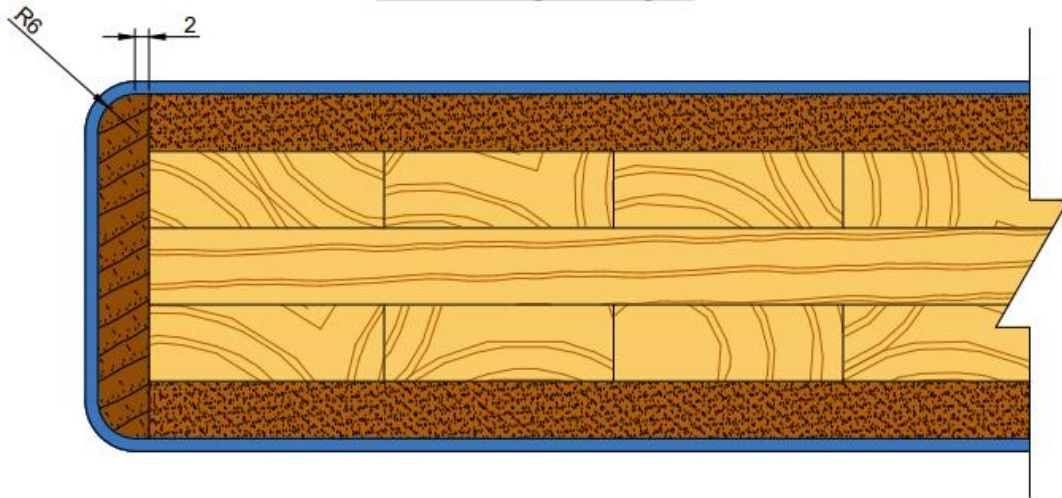
The following materials may therefore be utilised to encapsulate the door leaves of any individual doorset. Where encapsulation has been applied it must be applied to all leaves within the doorset.

Encapsulation Specification	
Facing Material	Maximum Permitted Thickness (mm)
Textured or Smooth PVC	2

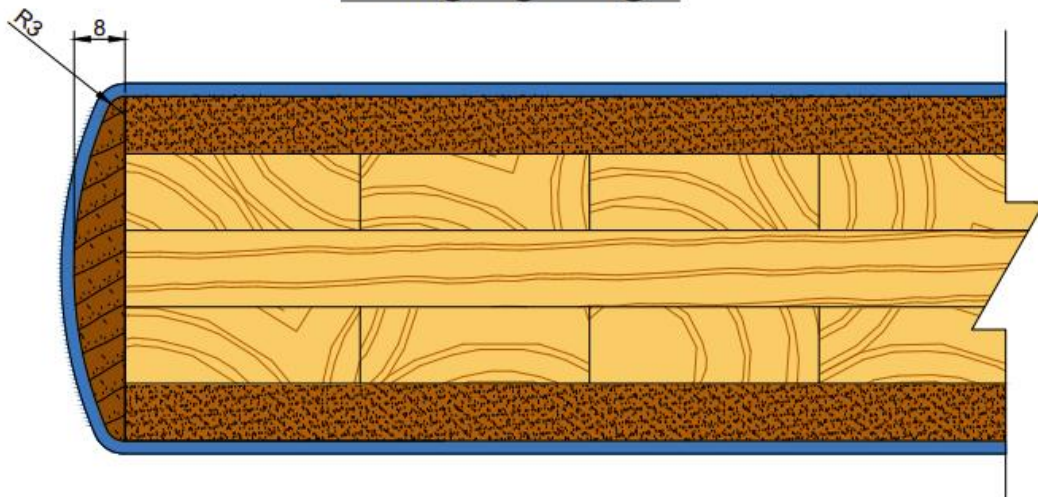
Notes:

1. Where encapsulation is referred to herein it refers to the application of specified materials covering the leaf faces and edges. Based on the evidence available it is permitted to optionally apply the same materials to the top and bottom edge.
2. It is permitted to apply the encapsulation material over glazing beads where it is identified that their encapsulation is acceptable, refer to section 6 for specifically permitted solutions.
3. Joints in encapsulation materials must be tight as tested.
4. See section 5.1.2 for calibration and leaf thickness requirements.
5. The leaf must be lipped in accordance with section 5.4 on all edges prior to encapsulation.
6. When applied to the vertical edges of the door leaf the flat Hardwood lippings are permitted to have up to a R6 radius applied to each edge to allow for encapsulation. (as shown overleaf)
7. When applied to the vertical edges of the door leaf the rounded Hardwood lippings are permitted to have up to a R3 radius applied to each edge to allow for encapsulation.
8. Encapsulation materials must not conceal intumescent strips.
9. The encapsulation is applied using adhesives listed in the table in section 9.

Closing Edge



Hanging Edge



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5.6 Decorative Planted on Timber Mouldings – all Leaf Options

On the basis that decorative timber planted on mouldings would not be expected to have a negative effect on the burn through of the leaf, it is the opinion of Warringtonfire that decorative mouldings can be applied to the leaf providing the following criteria is adhered to:-

The mouldings:

1. Are surface applied to the door
2. Are no higher than 30mm i.e. proud of the door
3. Are no wider than 50mm
4. Cover no more than 20% of the door leaf area
5. Are no closer than 80mm to the door leaf edge
6. Are bonded into position and small pins may be used up to 12mm penetration into the door core.
7. Are bonded using any glue which is suitable for bonding the lipping of the door.
8. Once applied the visible surfaces of timber mouldings may be clad in materials which are permitted for application to the leaf face. (section 5.5)

5.7 Feature Grooves – Leaf 1 only

Feature grooves were included within test reference CFR2105131, WF512409 A and B, tested with Leaf 1 designs, without being of detriment to the overall performance of the doorset. After isolation of failures which are not considered applicable to the fitting of feature grooves for the fire resistance performance considered herein, the doorsets they were included within achieved 64, 61 and 62 minutes respectively.

Feature grooves may be applied to the leaves hung within frame option 1 only.

Both sides of the door leaves may be grooved to the following specification.

Feature grooves cannot be located within 20mm of any mortice for hardware (i.e. any item which requires material to be removed from the door).

Grooves may be applied to the leaf faces of glazed and unglazed doorsets.

When applied to the face of a doorset including a glazed aperture the grooves shall not continue under the minimum dimensions provided for bolted glazing bead elements.

Where maximum leaf dimensions are given in the specifications for feature grooving these must not be exceeded.

The following section details the tested grooving arrangement and the limitations associated with each groove option.

Grooves which are in the same linear plane but are not continuous are considered to count as one single groove.

5.7.1 Groove Option A

Groove Option A		
Element	Details	
Max. groove size (mm)	10mm wide x 5mm deep, any groove shape is permitted within the dimension.	
Inserts	Not essential. Inserts are permitted to provide a decorative detail if required. Inserts must be Hardwood (minimum density 640kg/m ³) or MDF. The insert can be grooved without restriction.	
Adhesive	See Section 9 (Adhesives)	
Maximum Number of grooves	8No. grooves divided between horizontal and vertical orientations as required.	
Proximity to door edges (mm) (Edge of the door leaf to the edge of the groove)	Horizontal Grooves	No closer than 95mm to top edge of leaf. No closer than 175mm to bottom edge of leaf. Must not extend full width and are not permitted closer than 95mm to the vertical edges of the leaf.
	Arched Groove	An arched groove with a radius such that the top centre of the arch is no closer than 95mm to the top edge of the leaf and the outer ends of the arch are no closer to the top corners of the leaf than 150mm from the top edge and 95mm from the vertical edges. No closer than 175mm to bottom edge of leaf. Must not extend full width and are not permitted closer than 95mm to the vertical edges of the leaf.
	Vertical Grooves	No closer than 95mm to vertical edge of leaf. Must not extend full height and are not permitted closer than 95mm to the horizontal edges of the leaf.
Groove spacing (mm)	No closer than 135mm apart. Vertical and horizontal grooves may intersect each other and/or terminate at each other as corners.	
Orientation	Horizontal, Arched or Vertical	
Configuration	LSASD	
Leaf option	Leaf 1 only	
Leaf size range (mm)	Maximum 2040 x 926	
Frame option	Frame 1 only	
Perimeter intumescent seal specification	All perimeter intumescent specifications given in section 4.5, which include a minimum of 2no 15x4 mm seals in the frame reveal. Subject to the permitted configurations given within this table (above).	

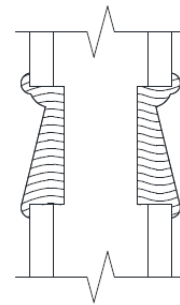
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5.7.2 Groove Option B

Groove Option B		
Element	Details	
Max. groove size (mm)	45mm wide x 13mm deep, rectangular shape only	
Inserts	Required. Full depth inserts are required to be fitted within the groove. They are permitted to protrude up to 3mm from the face of the leaf and may include optional bolections of up 5mm (w) x 3mm (t) as tested. Inserts must be Hardwood (minimum density 640kg/m³) The insert may be optionally grooved with a maximum of 6mm deep (beyond the face of the leaf) x 30mm wide groove. A minimum of 2mm wide of insert must remain at both sides of the groove in the insert. The groove may be any shape as required.	
Adhesive	See Section 9 (Adhesives)	
Maximum Number of grooves	10No. grooves divided between horizontal and vertical orientations as required.	
Proximity to door edges (mm) (Edge of the door leaf to the edge of the groove)	Horizontal Grooves	No closer than 100mm to top or bottom edge of leaf. Must not extend full width and are not permitted closer than 100mm to the vertical edges of the leaf.
	Vertical Grooves	No closer than 100mm to vertical edge of leaf. Must not extend full height and are not permitted closer than 100mm to the horizontal edges of the leaf.
Groove spacing (mm)	Adjacent parallel grooves no closer than 100mm apart. Vertical and horizontal grooves may intersect each other and terminate at corners to create rectangular mock panel designs.	
Orientation	Horizontal or Vertical	
Configuration	LSASD	
Leaf option	Leaf 1 only	
Leaf size range (mm)	Maximum 2040 x 926	
Frame option	Frame 1 only	
Perimeter intumescent seal specification	All perimeter intumescent specifications given in section 4.5, which include a minimum of 2no 15x4 mm seals in the frame reveal. Subject to the permitted configurations given within this table (above).	

Example of tested design from test reference CFR2105131:



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5.8 Astragal

The inclusion of timber astragals is permitted providing they meet the following specification:

- The astragal shall consist of the same material as the door frame with at least the same or greater density.
- The astragal shall be mechanically fixed using steel screws at no greater than 250mm centres, the screws shall penetrate into the substrate by at least 15mm and no greater than ½ the thickness of the substrate.
- The astragal shall measure 50mm wide x 18mm thick and shall be positioned centrally over the junction.
- The astragal may be clad in materials which are permitted for application to the leaf face. (section 5.5)

Other materials or dimensions of astragals are not permitted.

It has been considered possible to include the above specified astragal based on the fact that the effective rebate of the doorset design will remain unchanged. The addition of the astragal element will provide further protection at the perimeter gaps increasing the time in which failure modes may develop.

Astragals are permitted in the following designs:

- Optionally permitted at meeting edges of double doors.

Astragals may only be fitted to one side of any single doorset design.

When fitted to double doors, a door selector as defined within section 10.12 shall be fitted to the doorset to ensure functionality.

6. Glazing within the Leaf

6.1 General

The testing conducted on the doorset designs have 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 Appendix A.

Specifically, tests WF542753 on the IT60 and WF379945 AR1 on the XT60 included apertures of comparable heights and widths, 1500mm and 1508mm (high) and 350mm and 208mm, respectively. Both tests included successful results supporting the use of apertures within the leaves. The similarity of aperture size allows for comparison to be drawn between the two leaf types.

Glazing is therefore acceptable within the following parameters.

Apertures must not be less than 150mm from top and side edges and 150mm from the bottom edge. (Supported by XT60: Chilt/RF13144 & IT60: BMT/FEP/F15087).

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.

Double glazed units are only permitted where they have been directly tested and must be installed as tested and detailed in section 6.4 below.

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 Appendix A is as follows:

Maximum total permitted aperture within the door leaf (Test reference)		
Maximum Height (mm) (WF379945 AR1)	Maximum Width (mm) (BMT/FEP/F141271 A)	Maximum Area (m ²) (WF379945 AR1)
1860	673	0.678

Multiple apertures are acceptable within the permitted total assessed aperture area, with a minimum dimension of 145mm of core between apertures. (As demonstrated in CFR2006181.)

Maximum glass design thickness permitted is 23mm for single pane glazing.

Minimum glass design thickness permitted is 11mm, 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 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 door design, subject to the following.

- The minimum glass design thickness of glass permitted for alternative glass types is 11mm.
- The maximum glass design thickness of glass permitted for alternative glass types is 23mm.
- 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 54mm. 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.
- Unless explicitly expressed within the selected Certifire certificate the cladding of glazing beads used under this clause is 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 m²) 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 (m²), Height & Width (m)								
Glass Type Manufacturer		Thickness	System & Manufacturer →	1	2	3	4	5	6	7
				SLS-GLZ-202, 25 x 3, applied between the bead and the glass & Therm-A-Line 54 x 2 applied lining the aperture	Therm-A-Bead, 25 x 4, applied between the glass and the bead & Therm-A-Line 54 x 2 applied lining the aperture	Therm-A-Bead, 25 x 4, applied between the glass and the bead & Therm-A-Line 54 x 2 applied lining the aperture & Fire and Acoustic Seals FR Silicone capping the bead	Therm-A-Strip, 10 x 2, applied between the glass and the bead & Therm-A-Line 54 x 2 applied lining the aperture & Fire and Acoustic Seals FR Silicone capping the bead and filling the glazing cavity	Ceramic Fibre Tape, 20 x 4 applied between the glass and the bead & Therm-A-Line 50 x 2 applied lining the aperture	ST105GT(3), 9 x 3 applied between the glass and the bead & ST302, 30 x 2 applied lining the aperture	RF1 24 x 6.5 seal applied between the glass and the bead & 54 x 2 liner applied lining the aperture
				Halspan & Intumescent Seals Ltd	Intumescent Seals Ltd	Intumescent Seals Ltd & Fire and Acoustic Seals Ltd	Intumescent Seals Ltd & Fire and Acoustic Seals Ltd	C H Chemicals Ltd & Intumescent Seals Ltd	Sealed Tight Solutions	Lorient Polyproducts Ltd
				Fire Test Reference	Chilt/RF13144	BMT/FEP/F1508 7	WF419726 & CFR2001231_2	CFR1910291_2	BMT/FEP/F1427 1 A	WF379945 AR1
1	External Grade Pyrodur CS EW60-20 Pilkington UK Ltd	13	WF419726	-	-	Area: 0.511 Height: 1.207 Width: 0.487	Area: 0.227 Height: 0.990 Width: 0.264	-	-	Area: 0.511 Height: 1.207 Width: 0.487
2	Pyronova S2.1.15 Schott	15	BMT/FEP/F14 271 A	-	Area: 0.534 Height: 0.913 Width: 0.673	Area: 0.511 Height: 1.207 Width: 0.487	Area: 0.227 Height: 0.913 Width: 0.264	Area: 0.534 Height: 0.913 Width: 0.673	Area: 0.534 Height: 0.913 Width: 0.420	Area: 0.511 Height: 0.913 Width: 0.487
3	Pyrobelite 12 AGC Flat Glass UK	12	WF379945 AR1	-	-	-	Area: 0.227 Height: 0.990 Width: 0.264	-	Area: 0.678 Height: 1.860 Width: 0.420	-

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

Glass & Glazing System Specification		Maximum Assessed Area (m ²), Height & Width (m)								
Glass Type Manufacturer		Thickness	System & Manufacturer →	1	2	3	4	5	6	7
				SLS-GLZ-202, 25 x 3, applied between the bead and the glass & Therm-A-Line 54 x 2 applied lining the aperture	Therm-A-Bead, 25 x 4, applied between the glass and the bead & Therm-A-Line 54 x 2 applied lining the aperture	Therm-A-Bead, 25 x 4, applied between the glass and the bead & Therm-A-Line 54 x 2 applied lining the aperture & Fire and Acoustic Seals FR Silicone capping the bead	Therm-A-Strip, 10 x 2, applied between the glass and the bead & Therm-A-Line 54 x 2 applied lining the aperture & Fire and Acoustic Seals FR Silicone capping the bead and filling the glazing cavity	Ceramic Fibre Tape, 20 x 4 applied between the glass and the bead & Therm-A-Line 50 x 2 applied lining the aperture	ST105GT(3), 9 x 3 applied between the glass and the bead & ST302, 30 x 2 applied lining the aperture	RF1 24 x 6.5 seal applied between the glass and the bead & 54 x 2 liner applied lining the aperture
				Halspan & Intumescent Seals Ltd	Intumescent Seals Ltd	Intumescent Seals Ltd & Fire and Acoustic Seals Ltd	Intumescent Seals Ltd & Fire and Acoustic Seals Ltd	C H Chemicals Ltd & Intumescent Seals Ltd	Sealed Tight Solutions	Lorient Polyproducts Ltd
				Fire Test Reference	Chilt/RF13144	BMT/FEP/F1508 7	WF419726 & CFR2001231_2	CFR1910291_2	BMT/FEP/F1427 1 A	WF379945 AR1
4	Pyrobel 16EG EI30 AGC Flat Glass UK	21	CFR2001231_2	-	-	Area: 0.514 Height: 1.212 Width: 0.488	-	-	-	-
5	Pyroguard EW60 Impact Pyroguard UK Ltd	11	CFR1910291_2	-	-	-	Area: 0.227 Height: 0.990 Width: 0.264	-	-	-
6	Pyroguard EI30 Pyroguard UK Ltd	15	BMT/FEP/F15087	-	Area: 0.761 Height: 1.188 Width: 0.673	Area: 0.511 Height: 1.207 Width: 0.487	Area: 0.227 Height: 0.990 Width: 0.264	-	Area: 0.678 Height: 1.188 Width: 0.420	Area: 0.511 Height: 1.188 Width: 0.487
7	Pyroguard EI60 Pyroguard UK Ltd	23	Chilt/RF13144	Area: 0.433 Height: 0.795 Width: 0.627	-	-	-	-	-	-

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.
2. None of the above glass types in the tested arrangements are fully insulating for 60 minutes in terms of the criteria set out BS 476: Part 20: 1987.

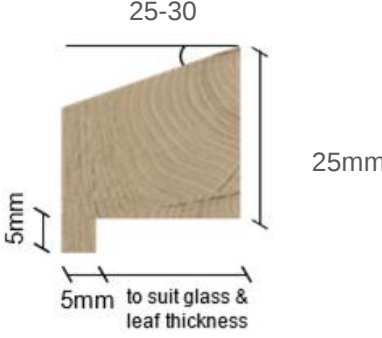
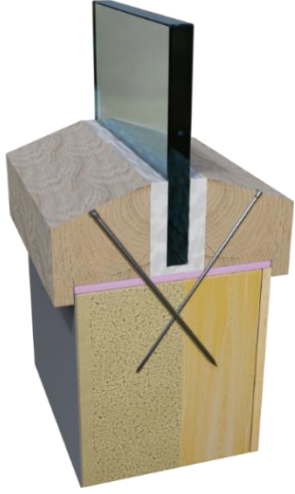
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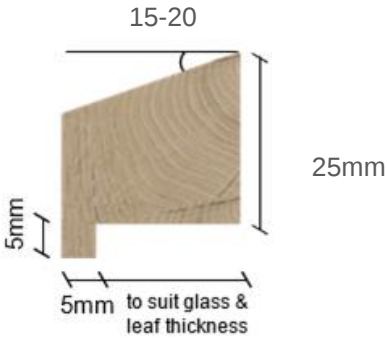
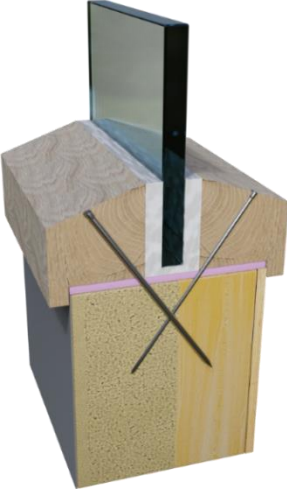
6.3.1 Permitted Glazing Beading and Glass Retention (Timber Beads)

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 Bead (Option 1)

Permitted Glazing Systems (Defined in Section 6.3)	1 & 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/m³ 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 30-35° 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 3 – 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/m³ 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 - For use with glass types 2, 6 & 7, the visible surfaces of the glazing bead may be clad in materials which are permitted for application to the leaf encapsulation. (section 5.5.2)	

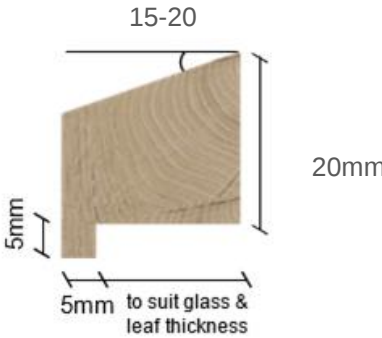
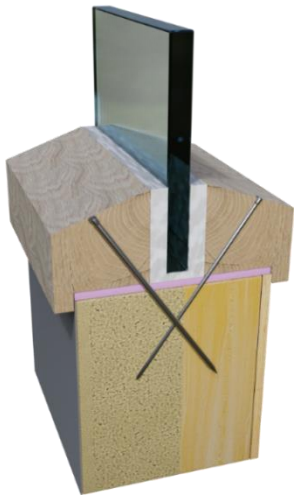
6.3.1.2 Chamfer Bead (Option 2)

Permitted Glazing Systems (Defined in Section 6.3)	3, 6 & 7
	
• 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/m³ density. • Glazing beads must be retained in position with minimum length of 50mm long steel pins or 50mm long No. 6-8 screws, inserted at 35-40° to the vertical. • Fixings must be at 150mm maximum centres and no more than 50mm from each corner. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 6.3.2 below. • A 3 – 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/m³ 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 • For use with glass types 1, 2, 3, 4 & 6, the visible surfaces of the glazing bead may be clad in materials which are permitted for application to the leaf encapsulation. (section 5.5.2)	

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

6.3.1.3 Chamfer Bead (Option 3)

Permitted Glazing Systems (Defined in Section 6.3)	4 & 5
	
• 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/m³ 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 35-40° to the vertical. • Fixings must be at 150mm maximum centres and no more than 50mm from each corner. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 6.3.2 below. • A 3 – 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/m³ 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 • For use with glass types 1, 2, 3 & 6, the visible surfaces of the glazing bead may be clad in materials which are permitted for application to the leaf encapsulation. (section 5.5.2)	

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:

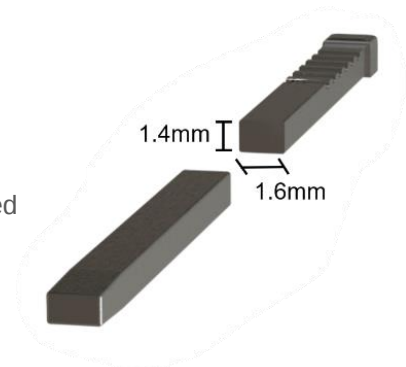
- Minimum Standard Wire Gauge (SWG) 16.
- Minimum cross section area of 2.03mm².
- Minimum linear dimension of 1.6mm in any direction, see figure below. The maximum pin diameter or any linear dimensions may be no greater than 2.0mm.



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 2.24mm².
- 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.

6.4 Double Glazed Units & Glazing Systems

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

The table below specifies the maximum assessed height, width & area of glazing for each permitted glass type and glazing system. The numerical figures in the main body of the table are the maximum area of glass (in m²) that is considered acceptable for an individual glazed aperture, based upon the specific system.

The total area of all glazed apertures must not exceed that stated in section 6.1 above.

Tests referenced WF512409 & CFR2006181 were undertaken with the doorsets opening both in towards the fire exposure and the out away from the fire exposure. The double-glazed units fitted into the leaves were tested in both orientations due to the tested arrangements.

Although integrity failures to Doorset A are noted at 24 and 58 minutes within WF512409 neither of these are localised or attributable to the glass or glazing system. Doorset B achieved 62 minutes fire resistance integrity performance. It is therefore deemed suitable evidence for the glazing option, noted below, to be fitted in either orientation.

CFR2006181 Right hand doorset was also recorded to have failed prior to the intended 60 minutes fire resistance performance, however, the failures were observed local to the fire stopping arrangement and are therefore remote from the double glazed unit being considered below.

Glass & Glazing System Specification		Maximum Assessed Area (m ²), Height & Width (m)		
Glass Type Manufacturer			1	2
		System & Manufacturer →	Halspan SLS-GLZ-112 20mm x 5mm uncompressed applied between the glass and the bead & SLS-GLZ-113 Glazing Liner 54mm x2mm applied lining the aperture & Pyroplex – PFRS310WT Fire Rated Silicone capping the top of the glazing system and between the glazing bead and the leaf face	60 Plus, 20mm x 5mm Tape applied between the glass and the bead & Therm-A-Line, 54mm x 2mm applied lining the aperture plus 2No. 2mm (t) lining the glazing pocket between the beads & Fire and Acoustic Seals, FR Silicone capping the top of the glazing system
			Halspan & Pyroplex	Intumescent Seals Ltd & Fire and Acoustic Seals Ltd
		Fire Test Reference	WF512409	CFR2006181
1	AGC Pyrobelite 12, 12.3mm thick & AGC Stratobel Clearite 33.2 with iplus 1.0 pos.2, 6.8mm thick Hollow box steel spacer 5.5mm wide Total Unit Thickness 25.1mm	WF512409	Area 0.119 Height: 0.47 Width:0.290	-
2	Pyroguard UK Ltd, Pyroguard T-EW60/13-1, 13mm thick & Toughened Glass, 4mm thick Steel spacer, Total Unit Thickness 25.8mm	CFR2006181	-	Area 0.375 Height: 1.44 Width:0.30

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.
2. Double glazed unit No.1 above may include or exclude the tested integral leaded decoration, providing the volume of lead is not increased from the volume tested. Decorative films may not be applied.

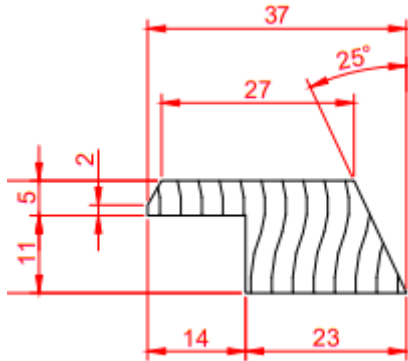
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Written permission must be obtained from Halspan Limited in order to manufacture doorsets within the scope of this assessment.

6.4.1 Glazing Beading Arrangement – Double Glazed Units

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.

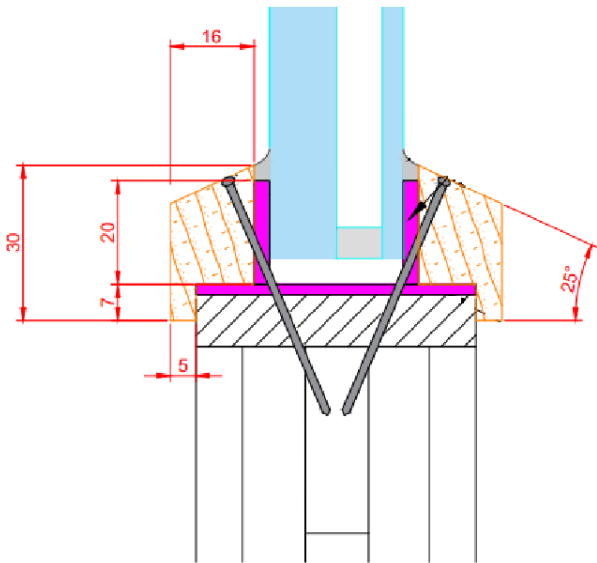
6.4.1.1 Chamfer Bead (Option 1)

Permitted Glazing Systems (As defined in section 6.4)	1
	
- The above detailed bolection may be increased in thickness and height if required, with the dimensions shown being the minimum shown for the bolection. - The 11mm depth of bead detailed above must be increased subject to leaf thickness increases. - The glazing beads must be created from hardwood (not Beech fagus species) of a minimum 640kg/m³ density. - Glazing beads must be retained in position with PU adhesive as well as mechanical fixings with a minimum length of 50mm long steel pins or 50mm long No. 6-8 screws, inserted at 30-40° to the vertical. - Fixings must be at 150mm maximum centres and no more than 50mm from each corner. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 6.4.2 below. - A 6 – 10mm thick square aperture liner is required for use with the above bead and shall be constructed from hardwood (not Beech fagus species) of minimum density 640kg/m³ 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	

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6.4.1.2 Chamfer Bead (Option 2)

Permitted Glazing Systems (As defined in section 6.4)	2
	
• The above detailed bolection may be increased in thickness and height if required, with the dimensions shown being the minimum shown for the bolection. • The depth of bead detailed above must be increased subject to leaf thickness increases. • The glazing beads must be created from hardwood (not Beech fagus species) of a minimum 640kg/m³ density. • Glazing beads must be retained in position with PU adhesive as well as mechanical fixings with a minimum length of 50mm long steel pins or 50mm long No. 6-8 screws, inserted at 30-40° to the vertical. • Fixings must be at 150mm maximum centres and no more than 50mm from each corner. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 6.4.2 below. • A 6 – 10mm thick square aperture liner is required for use with the above bead and shall be constructed from hardwood (not Beech fagus species) of minimum density 640kg/m³ 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	

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

6.4.2 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:

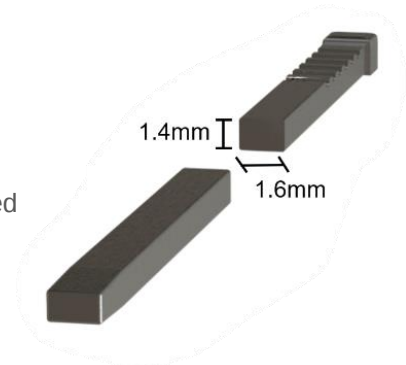
- Minimum Standard Wire Gauge (SWG) 16.
- Minimum cross section area of 2.03mm².
- Minimum linear dimension of 1.6mm in any direction, see figure below. The maximum pin diameter or any linear dimensions may be no greater than 2.0mm.



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 2.24mm².
- 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.

6.5 Hygeno IntaVista & FlushView Units

These glazing units have been successfully tested as shown in the table below. The table identifies the fire test reference, unit overall dimensions and the fire glass included within the Hygeno unit.

Test Report	Hygeno Product	Unit			Fire Glass
		Height	Width	Thickness	
WF542706 Version 2	FlushView	750	500	58	Pyroguard EI30 15mm
	IntaVista	750	500	58	Pyroguard EI30 15mm
WF542753	FlushView	1500	200	58	Pyroguard EI30 15mm
	IntaVista	1500	200	58	Pyroguard EI30 15mm

The Hygeno units are therefore permitted for use within the following specification as detailed below:

- Unit Dimensions:
 - a. For Pyroguard EI30 based units only:
 - i. Maximum height of glazing unit: 750mm
 - ii. Maximum width of glazing unit: 500mm
 - iii. Maximum glazed area: 0.375 m²
 - b. For Pyroguard EI30 based units only:
 - i. Maximum height of glazing unit: 1500mm
 - ii. Maximum width of glazing unit: 200mm
 - iii. Maximum glazed area: 0.3 m²

In all cases the overall unit thickness must be 54mm to 58mm thick, with the variance in size coming from the dimensions of the spacer. The width of the spacers shall be kept in the same ratio as tested.

Description of the units follows in sections 6.5.1 and 6.5.2 which include permitted installation details relevant for each of the units.

Additionally, to the above requirements, due to the complex nature of these glazing units, further installation guidance for both the FlushView and IntaVista glazing systems should be sought from the manufacturer.

6.5.1 Hygeno IntaVista Unit

Hygeno Flush Fit IntaVista is supplied as a unit and comprises a central Pyroguard EI30 15mm pane, with one pane of 6mm toughened glass to one side and with 2 panes of 6mm toughened glass, with an extra layer of movable annealed obscuring glass with a stainless-steel handle to the other side.

This unit has been tested with the operating lever exposed to furnace conditions (WF542753) and on the unexposed face (WF542706 Version 2). Throughout both tests in both orientations no negative influence was observed relating to the presence of the operating lever.

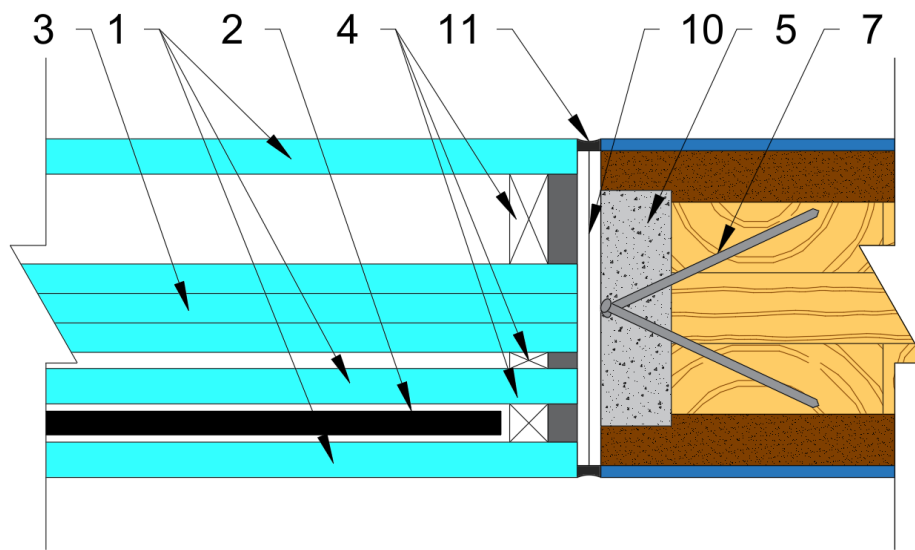
On this basis it is assessed that, subject to the fire resisting pane within the unit's construction remaining uninterrupted, the unit can be considered fire resisting from both sides.

	Make/type	Dimension (mm)	Key to figures
Triple glazed unit	Piper Glass Ltd, Thermally Toughened to BS EN 12150 with Polished Edges ¹	6 thick	1
	Piper Glass Ltd, Annealed glass ¹	4 thick	2
	Pyroguard EI30	15 thick	3
	Thermoseal, spacer bars ¹	15.5 / 10 / 6 wide	4
Expansion allowance	4mm on all edges		-
Lining glazing aperture rebate	Vertical edges – MgO board 40mm wide x 12mm deep		5
	Horizontal edges – MgO board 2No 12mm wide x 12mm deep		6
Fixings	Vertical edges – 50mm long pins or screw centrally fitted within the MgO board in line with the glass as depicted overleaf, located at 50mm from the corners and spaced at 150mm centres.		7
	Horizontal edges – 50mm long pins or screws located at 50mm from the corners and spaced at 150mm centres at 30° to the plane of the glass. Fixing required for each of the calcium silicate blocks. As depicted overleaf.		8
	Horizontal edges – Central glass pane is bedded onto Everbuild Firemate mastic, which is applied fully filling the void between the two MgO boards		9
Intumescent materials	45 x 2mm Interdens® (comprising 45 x 2mm liner + 1mm – 2mm packing sections) fitted centrally to the leaf thickness and interrupted by the central glazing pane at the horizontals		10
	All edges – bead of Otto Chemie S94 or Forgeway Formoa 055 sealant applied between outer panes of toughened glass and door core around the perimeter of glazed unit (approx. 4mm deep bead)		11

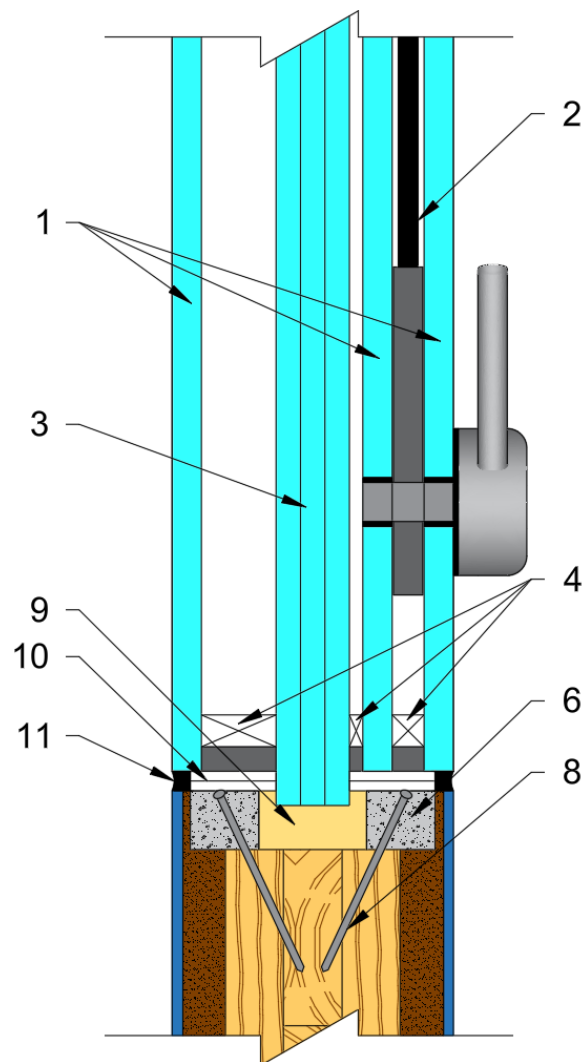
Notes:

- As detailed within section 3 the components must not be changed from the tested detail. Alternatives have not been considered.

Horizontal section detail



Vertical section detail



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

6.5.2 Hygeno FlushView Unit

Hygeno FlushView is supplied as a unit and comprises a central Pyroguard EI30 15mm pane with 6mm toughened glass to either face.

This unit is symmetrical and therefore can be considered fire resisting from both sides supported by the testing undertaken in WF542753 & WF542706 Version 2.

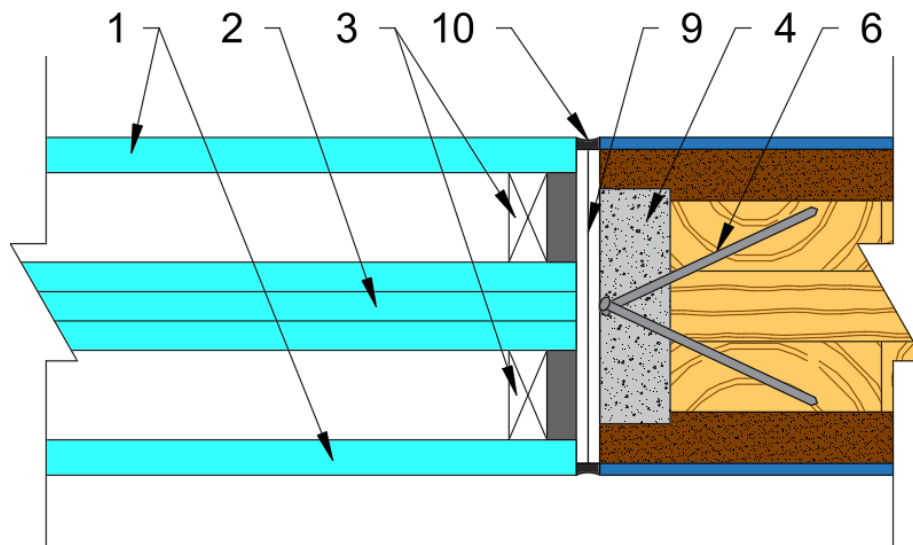
The table below provides information on how the unit is constructed and installed. There is multiple options for some items which may be considered.

	Make/type	Dimension (mm)	Key to figures
Triple glazed unit	Piper Glass Ltd, Thermally Toughened to BS EN 12150 with Polished Edges ¹	6 thick	1
	Pyroguard EI30	15 thick	2
	Thermoseal, spacer bar ¹	15 wide	3
Expansion allowance	4mm on all edges		-
Lining glazing aperture rebate	Vertical edges – MgO board 40mm wide x 12mm deep		4
	Horizontal edges – MgO board 2No 14mm wide x 12mm deep		5
Fixings	Vertical edges – 50mm long pins or screw centrally fitted within the MgO board in line with the glass as depicted overleaf, located at 50mm from the corners and spaced at 150mm centres.		6
	Horizontal edges – 50mm long pins or screws located at 50mm from the corners and spaced at 150mm centres at 30° to the plane of the glass. Fixing required for each of the calcium silicate blocks. As depicted overleaf.		7
Intumescent materials	Horizontal edges – Central glass pane is bedded onto Everbuild Firemate mastic, which is applied fully filling the void between the two MgO boards		8
	45 x 2mm Interdens® (comprising 45 x 2mm liner + 1mm – 2mm packing sections) fitted centrally to the leaf thickness and interrupted by the central glazing pane at the horizontals		9
	All edges – bead of Otto Chemie S94 or Forgeway Formoa 055 sealant applied between outer panes of toughened glass and door core around the perimeter of glazed unit (approx. 4mm deep bead)		10

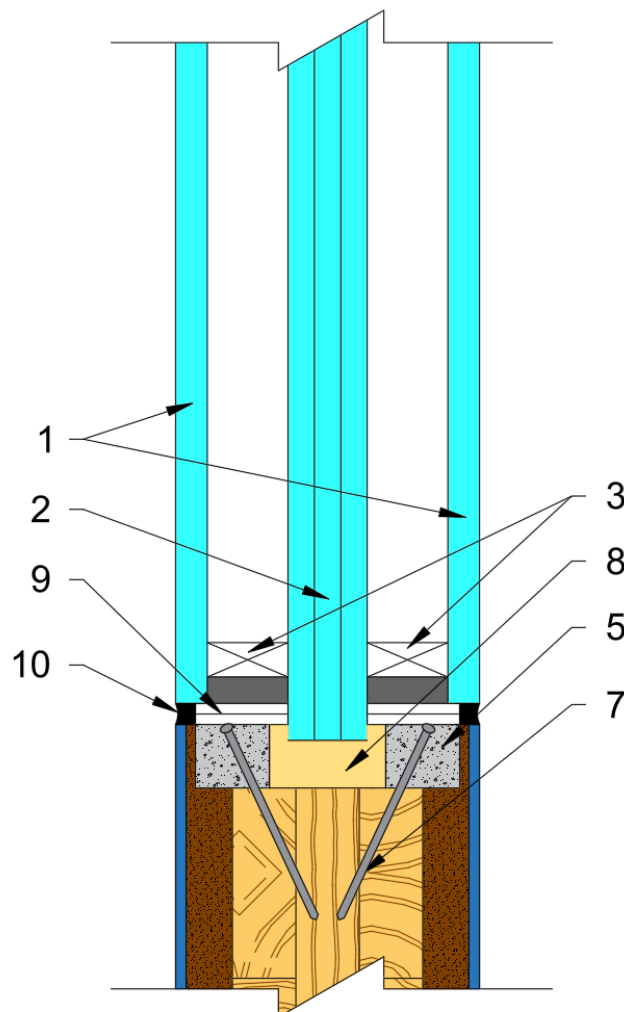
Notes:

- As detailed within section 3 the components must not be changed from the tested detail. Alternatives have not been considered.

Horizontal section detail



Vertical section detail



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7. Door Frame Construction

7.1 Details for Frame 1

Successful test references RF13144 with XT60 and CFR1509101 LH with IT60 included hardwood frames of 70mm x 32mm with 12mm and 15mm stops respectively.

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 and double acting frames, where applicable.

Frame Specification				
Frame Type	Material	Minimum Section Size (mm)	Minimum Density (kg/m ³)	Acceptable Leaf Type
1	Hardwood The use of Beech (<i>Fagus species</i>) is NOT permitted.	Frame: 70(d) x 32 (w) (excluding stop) Stop: 12 (w) (integral or planted on)	640	Leaf 1 and 2

Note:

Minimum section size is subject to size of hardware, use of double acting configuration and the use of transomed overpanel (see frame details below).

Architraves may be rebated into the cross section of the frame in a tongue and groove arrangement providing:

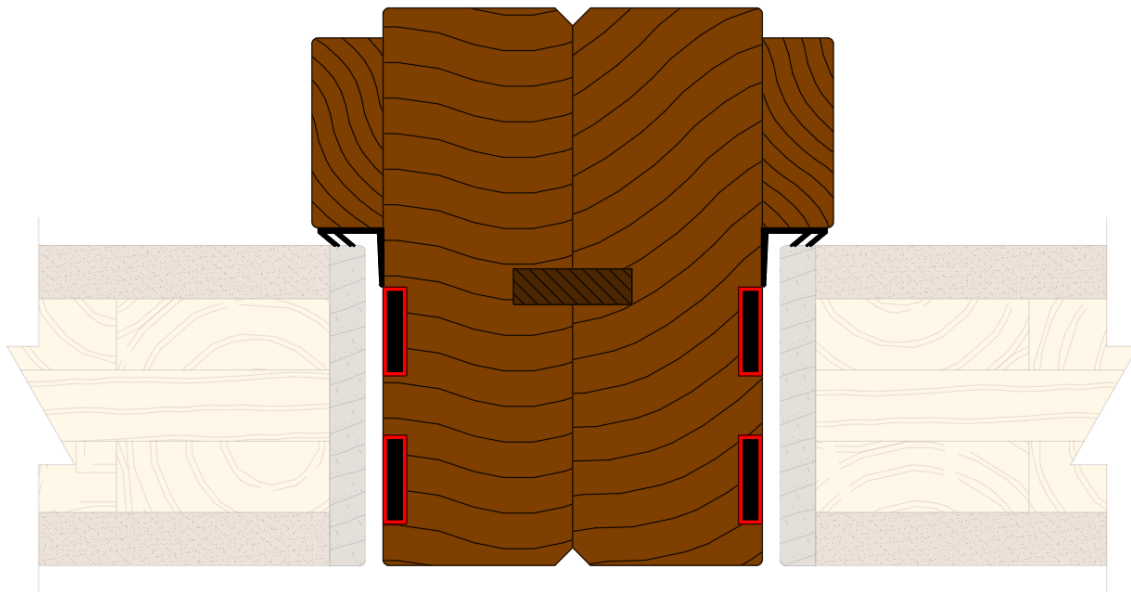
- The tongue fully fills the groove provided within the frame material and the groove is no greater than 10mm wide x 10mm deep.
- The groove must be positioned no closer than 10mm from any frame edge.
- The groove must not coincide with the rebate for items of rebated building hardware.
- The architrave when applied must be bonded on all edges with PU or PVA adhesive.
- The material of the architrave must be the same specification including species as the frame material.

Back-to-Back Frames

Based on the testing detailed within CFR2105131 it has been possible to consider the jointing of 2No. Latched, Single leaf, single acting doorset (LSASD) designs within a single aperture, providing the following criteria is adhered to:

- Each of the two frames are constructed in accordance with the specification of Frame 1 above. Except the minimum depth is increased to 99mm. Each frame must have a stop which is a minimum of 15mm wide x 32mm deep.
- The maximum leaf dimensions for both doorsets is 2040mm high x 926mm wide as tested, door leaves of smaller dimensions are permitted.
- The door leaves must be hung from the jambs which are adjacent to the supporting structure.
- The leaves must be hung on butt hinges.
- Only latched, single leaf, single acting configurations of doorsets may be installed in this manner, when fitted the door leaves must be in line and open in the same direction.
- Fanlights, Sidelights, Sidepanels or Overpanels are not permitted in this configuration.
- The jointing of the frames shall be in accordance with the jointing method outlined below.

Jointing Method for Back-to-Back Frames



The left hand doorset shall be fixed to the right hand doorset with Ø4 x 50 steel countersunk screws, affixed through closing jamb set nominally 38mm from opening face, this may be below intumescent, set 50mm up, 50mm down with a total of 4No. overall equispaced.

The right hand doorset shall be fixed to the left hand doorset with Ø4 x 50 steel countersunk screws, affixed through closing jamb set nominally 13mm from opening face this may be below intumescent, set 50mm up, 50mm down with a total of 4No. overall equispaced.

An 11mm wide x 6mm deep rebate must be positioned centrally to the depth of both frames to facilitate an MDF coupler to be applied between the frames. The MDF coupler must be bonded in position with PU adhesive as tested.

The frame jamb adjacent to the supporting structure must be fixed in line with the requirements of section 11.

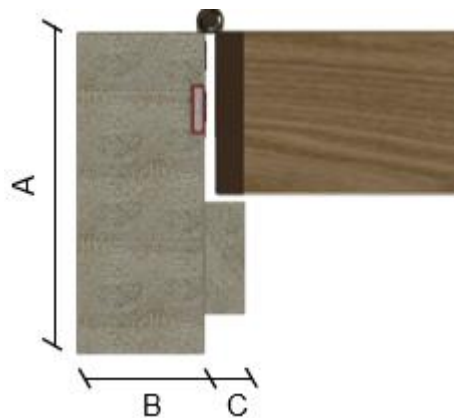
The coupled frame jamb must be fixed to the floor with steel angle bracket as tested, using fixings which penetrate the floor level by a minimum of 50mm.

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

7.1.1 Standard frame detail

The diagram below shows detail of the standard frame construction. Minimum section is permitted in two sizes subject to hardware size and the use of transom overpanel. Any radius to the lipping must comply with section 5.4.



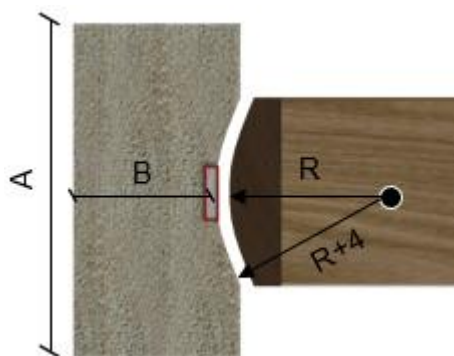
- A: Frame depth = 70mm minimum
- B: Frame width = 32mm minimum
- C: Stop width = 12mm minimum

Minimum section size when using a transomed overpanel:

- A: Frame depth = 70mm minimum
- B: Frame width = 44mm minimum
- C: Stop width = 12mm minimum

7.1.2 Scalloped frame detail for double acting doorsets

The diagram below shows detail of the scalloped frame construction hanging edge only. When using scalloped frames for double acting doorsets, the groove(s) for the specified intumescent strip(s) must be as defined within section 4.5.

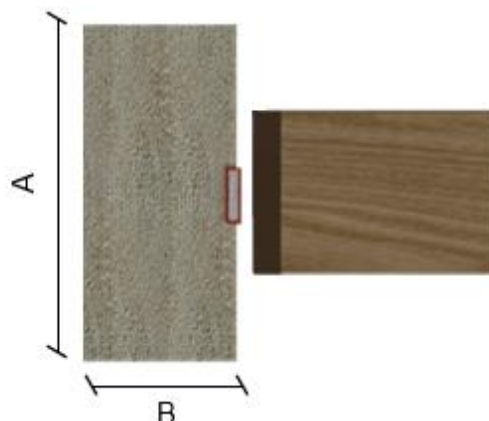


- A: Frame depth = 86mm minimum
- B: Frame width = 32mm minimum
- R: Radius from floor spring or pivot

Each face of the door leaf must be set back from each face of the wall by a minimum of 16mm. i.e from both sides. The face of the leaf must also be a minimum of 16mm from either face of the frame.

7.1.3 Square frame detail for double acting doorsets

The diagram below shows detail of the square frame construction for the closing edge of a double acting doorset. Where utilising square frames for double acting doorsets, any radius to the lipping must comply with section 5.4.



- A: Frame depth = 86mm minimum
- B: Frame width = 32mm minimum

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

7.2 Details for Frame 2

Successful test references CFR2101191, WF542706 Version 2 and WF542753 were tested with MDF frames and IT60 leaves. The use of MDF frames with XT60 has been assessed as acceptable with the scope given herein.

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 and double acting frames, where applicable.

Frame Specification				
Frame Type	Material	Minimum Section Size (mm)	Minimum Density (kg/m ³)	Acceptable Leaf Type
2	MDF – solid lengths	Frame: 100(d) x 30 (w) (excluding stop) Stop: 12 (w) (integral or planted on)	640	Leaf 1 and 2

Note:

The use of shared transomed overpanels is not permitted with Frame 2.

Minimum section size is also subject to hardware requirements (see section 10).

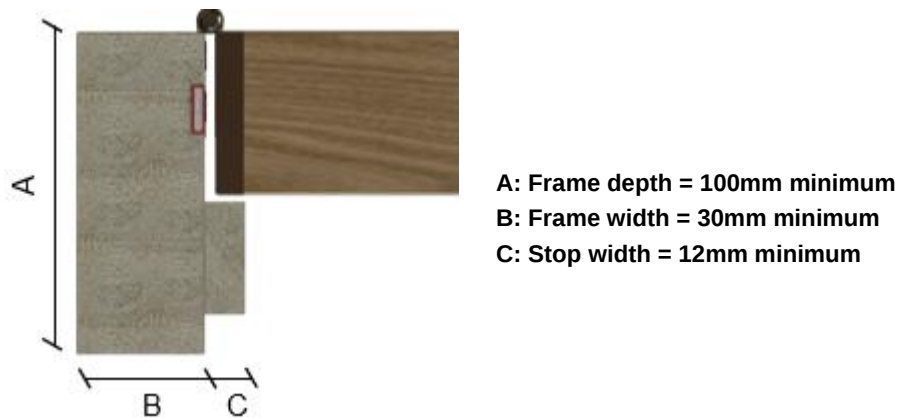
The stop may be glued in position as part of the frame section assembly, in this situation the stop must additionally be pinned and is considered a planted on stop as detailed above.

It is possible to increase the cross-sectional dimensions of the above detailed MDF frame by bonding additional solid lengths together with TensorGrip L71 sprayable moisture cured adhesive. This is supported by the testing demonstrated within WF542706 Version 2 and WF542753. When this option is used the minimum thickness of any individual length shall be no less than 18mm (t) and the minimum thickness adjacent to the reveal is no less than 25mm (t). This only applies when the doorset either:

1. Does not include a stop (double acting arrangements) or
2. Includes a planted on stop

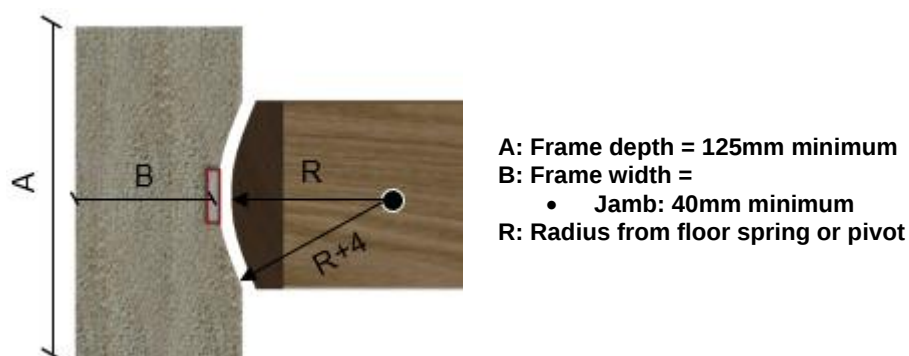
7.2.1 Standard frame detail

The diagram below shows detail of the standard frame construction. Minimum section is permitted in two sizes subject to hardware size and the use of transom overpanel. Any radius to the lipping must comply with section 5.4.



7.2.2 Scalloped frame detail for double acting doorsets

The diagram below shows detail of the scalloped frame construction hanging edge only. When using scalloped frames for double acting doorsets, the groove(s) for the specified intumescent strip(s) must be as defined within section 4.5.

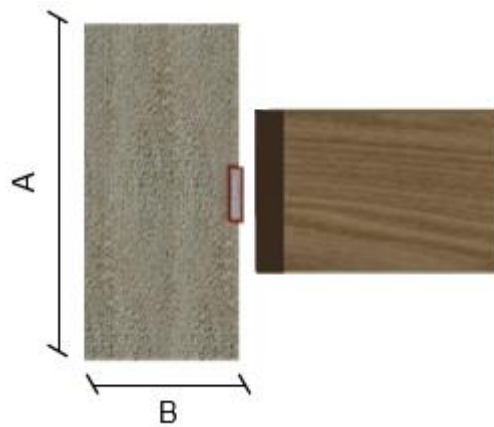


Each face of the door leaf must be set back from each face of the wall by a minimum of 33mm. i.e from both sides. The face of the leaf must also be a minimum of 33mm from either face of the frame.

The above provided minimum dimensions may include thickness of encapsulation as defined in section 7.5.2 where applied.

7.2.3 Square frame detail for double acting doorsets

The diagram below shows detail of the square frame construction for the closing edge and/or head of a double acting doorset. Where utilising square frames for double acting doorsets, any radius to the lipping must comply with section 5.4.



- A: Frame depth = 125mm minimum**
B: Frame width =
- Jamb: 40mm minimum
 - Head: 70mm minimum

The above provided minimum dimensions may include thickness of encapsulation as defined in section 7.5.2 where applied.

7.3 Aluminium Threshold – Frame 1, 2

The table below details the tested aluminium threshold that is approved to be fitted at floor level below the door leaf, between the frame jambs.

Manufacturer & Product Reference (Test evidence)
• Exitex MDS 25/58 RTIB (CFR2006181 & CFR2105131)

On the basis of the testing, the tested aluminium threshold is suitable in the following applications only:

Frame options: 1, 2

Configuration: LSASD

In all cases the following scope must be complied with:

- The threshold must be screwed to the notional floor level with fixings of minimum 25mm long at 250 to 350mm centres. Optionally a bead of acrylic intumescent mastic may be applied in addition to the fixings (though this is not required for fire resistance performance).
- 2No. 15mm wide x 4mm thick Halspan SLS or Pyroplex 8700 seals must be fitted to the bottom edge of the leaf fitted centrally and 10mm apart.
- Threshold drop seals cannot be used when an aluminium threshold is present.
- See section 11.7 for gap requirements at the bottom of the door.

7.4 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. Frame joints may additionally be reinforced with any of the adhesives approved for the application of lippings, on the basis that the approved lipping adhesive has been proven to contribute to the positive fire resistance performance of the timber to timber junction at the door leaf edge.



Half Lapped Joint



Mitre Joint



Mortice & Tenon Joint



Butt Joint



Trenched Joint

Approved door frame jointing options

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

7.5 Decorative and Protective Facings

The following sub-sections define decorative and protective facings for use with frames considered herein.

The determination of which of the permitted perimeter intumescent specifications may be utilised is dependent on the presence of encapsulation applied to the leaf (See section 5.5.2) and/or encapsulation applied to the frame (See section 7.5.2).

One of the following options contained within section 7.10.1 or 7.10.2 may be applied to any individual doorset design.

7.5.1 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
High Pressure Laminates (HPL) or PVC Vinyl's	0.8

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.
4. Decorative finishes listed above may be painted within the limits for paint finish, above.
5. Decorative facings are to be considered separately from the minimum frame dimensions specified above. I.e. in addition to not make up the minimum frame dimension.
6. Rounded or rebated quirk edges to door frames are not permitted. Except for up to a 2mm radius to remove the arris.

7.5.2 Protective Facings (Encapsulation) – Frame 2 only

The permitted scope of application for frame encapsulation has been considered on the basis of WF542706 Version 2 and WF542753 which included doorsets with encapsulated leaves and frames.

On the basis of the testing, the use of leaf encapsulation is suitable for use within the following scope:

Leaf option: 2 only

Frame options: 1 & 2

Configurations: All configurations

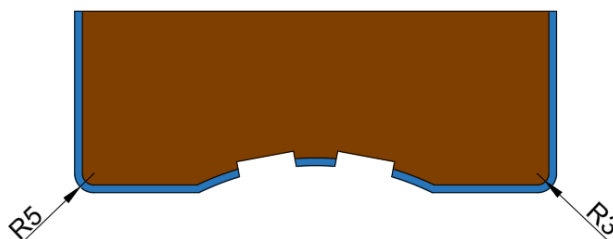
Perimeter Intumescent Specifications: As detailed in section 4.5, specifications A/9, A/10, B/9, B/10, C/9, C/10, F/9, F/10, G/9, G/10, H/9, H/10

The following materials may therefore be utilised to encapsulate the door frame of any individual doorset.

Encapsulation Specification	
Facing Material	Maximum Permitted Thickness (mm)
Textured or Smooth PVC	2

Notes:

1. Where encapsulation is referred to herein it refers to the application of specified materials covering the surfaces of the frame, stops and architraves with a continuous piece of material. Except for the rear of the frame where it would interface with the required fire stopping detail or to the rear of a modular frame.
2. Joints in encapsulation materials must be tight as tested.
3. See section 5.1.2 for calibration and leaf thickness requirements.
4. The leaf must be lipped in accordance with section 5.4 on all edges prior to encapsulation.
5. When applied the corners of the door frame are permitted to have up to a R3 radius applied to each edge such that the PVC has a R5 radius as shown in the example below. Greater radii are not permitted.
6. When applied to stops and architraves a similar R3 radius may be applied.
7. Encapsulation materials must not conceal intumescent strips.
8. The encapsulation is applied using adhesives listed in the table in section 9.



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8. Overpanels & Fanlights, Sidepanel & Sidelights

Overpanels, fanlights, sidepanels and sidelights are permitted based on the testing as summarised within Appendix A, the following sections outline the constructional details of each of the permitted elements and limitations associated with each configuration.

8.1 General

The testing undertaken on the doorset design allows for the application of:

Solid overpanels with two framing options (Modular & Transomed).

Solid sidepanels with one framing option (Modular).

Glazed fanlights with one framing option (Modular).

Glazed sidelights with one framing option (Modular).

Framing options are detailed in the following section depending on the panel or glazing utilised.

It is possible to utilise both methods of framing within any single doorset design providing the restrictions given in the following sections are adhered to. i.e. it is possible to provide a doorset with a solid overpanel separated by a shared transom with a modular framed sidelight beside it.

8.2 Framing

The following framing options as detailed below are permitted for the doorset design and are permitted depending on solid panel arrangement or glazed fanlight / sidelight utilised. Information on the frame type permitted for the solid panel or glazed element is detailed in sections 8.2.1 – 8.2.2.

8.2.1 Modular Framing

Modular framing for the purpose of this document is considered to be an element (glazing or panel) which is independently framed and fixed to the frame of a doorset design. An example of a modular framed solution is given below. This is supported for use in this assessment by test CFR2105131.



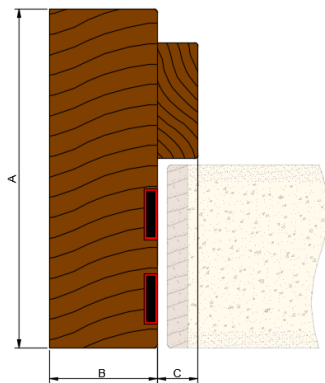
Single leaf doorset with glazed modular sidelight.

8.2.1.1 Standard Frame Detail (Modular Framing)

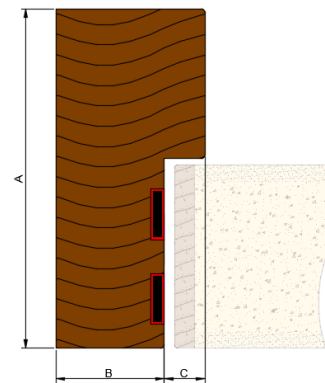
The frame listed below is the minimum size and density which has been successfully tested and assessed by this report. The frame must be constructed to meet the following specification for modular units containing solid panels or glazing, the frame section shall meet this specification on all four edges.

Modular Frame specification		
Material	Minimum section size (mm)	Minimum density (kg/m ³)
Hardwood: (see section 2.1) The use of Beech (<i>Fagus species</i>) is NOT permitted.	Frame: 100 (d) x 32 (w)	640

Standard Stopped Frame Detail
(modular framing)



Standard Rebated Frame Detail
(modular framing)



A: Frame depth = 100mm minimum

B: Frame width = 32mm minimum

C: Stop width = 12mm minimum

Notes:

It is possible to include a 3mm x 3mm quirk detail to the rear edges of the frame where the jointing to the door frame or adjacent modular framing element shall occur.

The depth of the modular frame and the door frame shall be equal, this may result in increasing the depth of the permitted door frame to match the modular frame dimension, or vice versa. In all cases the greater dimension shall be used.

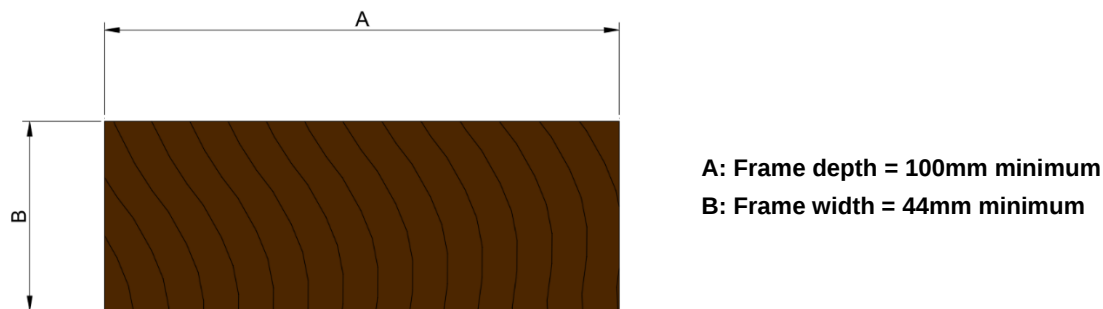
8.2.1.2 Transom or Mullion Detail (Modular Framing)

It is possible to include a single transom within a modular unit applied to the side of a doorset and / or a single mullion within a modular unit applied to the head of a doorset.

When applied the transom or mullion shall meet the following specification:

Modular Frame specification		
Material	Minimum section size (mm)	Minimum density (kg/m ³)
Hardwood: (see section 2.1) The use of Beech (<i>Fagus species</i>) is NOT permitted.	Frame: 100 (d) x 44 (w)	640

The transom or mullion when applied shall be mortice and tenon jointed as depicted in section 8.2.1.3. The joints are required to be tight, with no gaps, and require mechanical fixing with 2No. Ø5 x 80mm steel screws.



Transoms when applied shall not be greater than 1000mm from the centre of the transom to the notional floor level. This may inhibit the use of transoms in some configurations. (This restriction does not apply to transomed overpanels as defined within section 8.2.2.)

Mullions shall not be applied in modular sidepanels or sidelights.

It is possible to include solid panel and glazing arrangements which are permitted as detailed in section 8.3 and 8.4 either side of a transom within a modular unit applied to the side of a doorset subject to the positioning requirement of the transom given above and the maximum permitted glass or panel size given in the following sections.

8.2.1.3 Frame Jointing (Modular Framing)

Below are depictions of the framing joints that are deemed acceptable for corner jointing of modular 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.



Double Rebated Joint



Mitre Joint



Mortice & Tenon Joint



Butt Joint



Trenched or Half Lapped Joint

The modular frame joints are required to be tight, with no gaps, and require mechanical fixing with 2No. Ø5 x 80mm steel screws. Frame joints shall additionally be reinforced with the adhesives approved for the application frame jointing detailed within section 9.

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

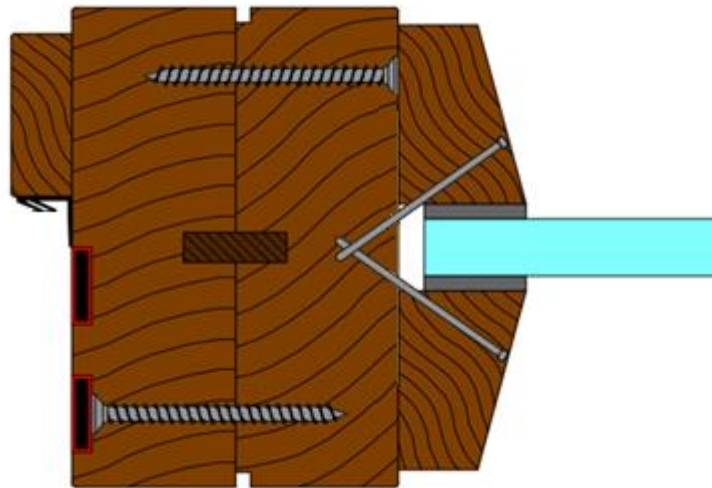
8.2.1.4 Attachment Technique (Modular Framing)

The modular framing must be affixed to the door frame or adjacent modular framed units utilising steel screws appropriate for use with timber substrates.

Screws must be fixed between 100mm and 150mm from corners at maximum of 600mm centres from each face. Fixings shall penetrate approximately half of the depth of the adjacent timber section.

Additionally, a 20mm wide x 6mm thick MDF “Loose Tongue” shall be positioned centrally within the jointed element and bonded to both frame members with PU or PVA adhesive.

A visual representation of the permitted jointing method is detailed below:



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

8.2.1.5 Decorative & Protective Facings – Modular Framing

The following sub-sections define decorative and protective facings for use with modular frames considered herein.

One of the following options contained within section 8.2.1.5.1 or 8.2.1.5.2 may be applied to any individual doorset design. The selection of either Decorative facings or Protective facings must be the same for the door frame and any modular framing for any individual doorset design.

8.2.1.5.1 Decorative Facings

Relatively thin facing materials are deemed to be decorative. 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 modular frame 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 ³	0.2
Timber veneers	0.7
High Pressure Laminates (HPL) or PVC Vinyl's	0.8

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.
4. Decorative finishes listed above may be painted within the limits for paint finish, above.
5. Decorative facings are to be considered separately from the minimum frame dimensions specified above. I.e. in addition to not make up the minimum frame dimension.
6. Rounded or rebated quirk edges to modular frames are not permitted. Except for up to a 2mm radius to remove the arris or unless explicitly permitted elsewhere in this document.

8.2.1.5.2 Protective Facings (Encapsulation)

The permitted scope of application for frame encapsulation has been considered on the basis of WF542753 and WF542706 Version 2 which included doorsets with encapsulated leaves and frames.

The following materials may therefore be utilised to encapsulate the modular frame of any individual doorset.

Encapsulation Specification	
Facing Material	Maximum Permitted Thickness (mm)
Textured or Smooth PVC	2

Notes:

Where encapsulation is referred to herein it refers to the application of specified materials covering the surfaces of the modular frame, stops and architraves with a continuous piece of material. Except for the following positions, where encapsulation is not permitted:

- The rear of the frame where it would interface with the required fire stopping detail, the door frame.
- Under glazing bead or glazing system.

The ability to clad glazing beads in protective material is not considered within this section. For scope on the ability to clad glazing beads refer to section 8.4.

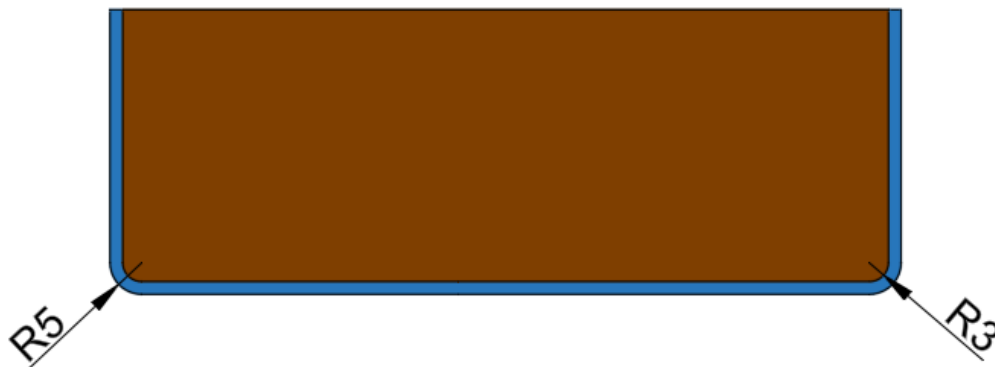
Joints in encapsulation materials must be as tested.

When applied the corners of the modular frame are permitted to have up to a R3 radius applied to each edge such that the PVC has a R5 radius as shown in the example below. Greater radii are not permitted.

When applied to stops and architraves a similar R3 radius may be applied.

Encapsulation materials must not conceal intumescent strips.

The encapsulation is applied using adhesives listed in the table in section 9.



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

8.2.2 Shared framing (Transomed)

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.



8.2.2.1 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 8.2.2.2 below.

8.2.2.2 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:

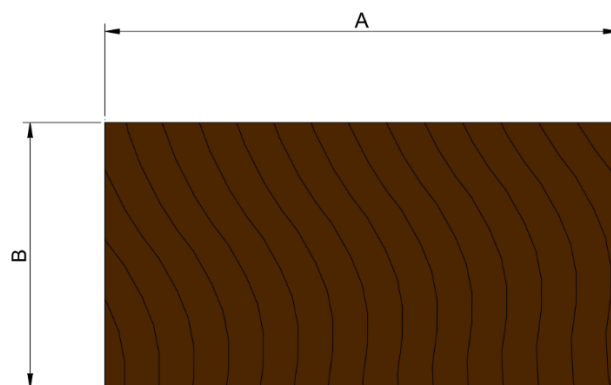
Modular Frame specification		
Frame Type	Minimum section size (mm)	Minimum density (kg/m ³)
Frame 1	Transom: 70 (d) x 44 (w) Stop requirements must match those required in section 7.	640
Frame 2	Not Permitted	

Notes:

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

The transom when applied shall be mortice and tenon, trenched (Half lapped) or butt jointed as depicted in section 8.2.2.3. The joints are required to be tight, with no gaps, and require mechanical fixing with 2No. Ø5 x 80mm steel screws.

Minimum Section Size – Frame 1



A: Transom depth = 70mm minimum
B: Transom width = 44mm minimum

8.2.2.3 Frame Jointing (Transomed)

The framing joints that are deemed acceptable for corner jointing of transomed framing are:

- Mortice & Tenon
- Butt Jointing
- Trench Jointing (When this method is utilised the trench must be limited to no greater than 50% of the trenched element)

The transom when applied must be jointed as detailed above. The joints are required to be tight, with no gaps, and require mechanical fixing with 2No. Ø5 x 80mm steel screws. The joints may be additionally adhered with PU or PVA adhesive.

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8.3 Solid Panels

Solid side and overpanels are permitted for use with the modular framing option given in section 8.2.1 above (Modular Framing).

Solid overpanels are also permitted for use with the shared framing option given in section 8.2.2 above. (Shared Framing).

8.3.1 Solid Panel Construction (Side or Over Panels)

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.

In all instances:

- The panel must be lipped as specified in section 5.4, and the panel shall be constructed of a single board, joints are not permitted within any panels.
- The minimum panel thickness after calibration is 53mm (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 5.5.1.
- Decorative Planted on Timber Mouldings may be applied to the surface of solid panels in accordance with section 5.6.
- The minimum panel thickness after finishes applied is 54mm.

Panels are permitted to be created from the following leaves: (The panel chosen for the application of solid panels must match the leaf type which is included within the doorset design).

8.3.1.1 Leaf 1 – XT60 – 54mm thick

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

Element	Material	Dimensions (mm)	Minimum Density (kg/m ³)
Core	Mixed Pine 3-layer core comprising outer vertically orientated lamels and inner horizontal lamels	12 ± 0.5 (t) x 36 ± 2 (w)	450
Facing	Eucalyptus core 5 ply hardwood plywood EN 636-3	9 (t)	450

8.3.1.2 Leaf 2 – IT60 – 54mm thick

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

Element	Material	Dimensions (mm)	Minimum Density (kg/m ³)
Core	Mixed Pine 3-layer core comprising outer vertically orientated lamels and inner horizontal lamels	12 ± 0.5 (t) x 36 ± 2 (w)	450
Facing	MDF	9 (t)	830

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8.3.2 Intumescent Sealing Arrangement (Side or Over Panels)

Solid side and overpanels when included within a doorset design (in either modular or shared framing) shall include the same intumescent specification as utilised within the door leaf or frame reveal, specifically:

- Solid panels which are fitted within framing which includes protective facings (encapsulation) as defined within sections 7.5.2 and 8.2.1.5.2 must utilise the intumescent specifications defined within sections A/9, B/9, C/9, F/9, G/9, H/9, A/10, B/10, C/10, F/10, G/10 or H/10 from section 4.5, appropriate to the configuration being used.
- Solid panels which are fitted within framing without protective facings (encapsulation) must utilise the intumescent specification defined within section 4.5.

The intumescent must be applied to all edges of the panel, fitted to the panel or frame reveal as appropriate

8.3.3 Fixing Arrangement (Side or Over Panels)

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 40mm.

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.

Where fitted within modular framing the panel may either be nominally in line with the face of the door leaf or centrally within the modular frame depth.

Beading or cover mouldings up to 50mm wide x 50mm deep, may be freely applied to either face of the joint of the solid panel to the framing section, beading or cover moulding material must be the same specification as the frame material.

8.3.4 Maximum Dimensions (Side or Over Panels)

Based on the testing undertaken within the doorset design the following maximum dimensions are permitted for any single panel, subject to the doorset not exceeding 2950mm in width including outer framing dimensions.

Solid Panel & Frame Type	Height (mm)	Width (mm)
Flush Overpanel	Not Permitted	Overall doorset width
Overpanel (Shared Framing)	Up to 1500 for double doorset configurations and 2000 for single doorset configurations.	
Overpanel (Modular Framing)		
Sidepanel (Modular Framing)	Up to maximum dimension given in section 4.5 for leaf size based on intumescent specification used.	Up to maximum dimension given in section 4.5 for leaf size based on intumescent specification used.

The overall assembly shall form a rectilinear shape.

8.4 Glazed Fanlights & Sidelights

Based on the testing detailed within Appendix A, it has been possible to consider the use of glazed fanlights and sidelights with the modular framing given in section 8.2.1 above.

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.

8.4.1 Glass Types & Glazing Systems

The glazing system must have a Certifire certificate – Valid at the date of manufacture of the doorset which has been written in accordance with Warringtonfire Testing and Certification Limited, Technical Schedule 25. More information on the use of Certifire approved glass and glazing systems can be found within section 8.4.2.

The dimensions of any single glazed aperture must not exceed that stated below, nor shall the entire assembly exceed 2950mm wide x 2950mm high for any single doorset including the dimension of the door frame, overpanels, fanlights, sidepanels and sidelights.

8.4.2 Certifire Approved Glass & Glazing Systems

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 Limited, Technical Schedule TS25 - may be utilised to glaze fanlights and sidelights for use with the doorset design, subject to the following.

- The chosen Certifire approved glass and glazing system must detail that it is suitable for use for 60 minutes fire resistance performance within a timber screen.
- Certifire approved glass and glazing systems may be utilised with the doorset design providing they are able to be applied in a self-contained modular frame.
- The modular frame must meet or exceed the specification for modular frames given within section 8.2.1 above, however, must be fixed to the doorset or adjacent modules in the manner specified in section 8.2.1.4.
- Where a Certifire certificate is utilised to justify fanlights and / or sidelights, the full requirements given within that certificate for the frame (which may require an increase in dimensional requirements given in section 8.2.1 for example), glass type, glazing system and glass retention method specified must be complied with.
- Parameters in section 8.4.1 above relating to the overall dimension of the doorset design including fanlight and sidelight modules must not be exceeded.
- Bead Fixings - The required pin or screw specification as given in the supporting Certifire certificate must be used, alternatives fixing details are not permitted.
- The doorset assembly must remain rectilinear.

9. Adhesives

The following adhesives must be used in the construction of the doorsets. These may be hand applied or may be applied by mechanical means. 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	As per manufacturers tested specification
Door Blank Facings	As per manufacturers tested specification
Timber Lippings	PVA (BMT/FEP/F14271 A+B) PU (CFR1509101 Rev 1) MCPU (CFR2001231_2 Revision 1) Hotmelt PUR (WF542706 Version 2)
Decorative & Protective Facings – Applied To Leaf Face	PF, PU, PVA, PVAc or contact adhesive
Decorative & Protective Facings – Leaf Encapsulation	Polychloroprene Contact Adhesive (WF542753)
Decorative Facings – Applied To Frame	PF, PU, PVA, PVAc or contact adhesive
Frame Encapsulation	Polychloroprene Contact Adhesive (WF542753)
Decorative Groove Inserts	PU (CFR2105131)
Frame Jointing	PU, PVA

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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
- Door co-ordinators: Test Standard EN 1158
- 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 Halspan Limited.
- 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

Hardware that is either morticed in or includes a through component or fixing may not be within 200mm of another item of hardware unless there is test evidence to demonstrate 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.

Where maximum leaf dimensions are given in the specifications for items of hardware these must not be exceeded.

10.2 Intumescent to Hardware

Some of 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 for any single item of hardware. For specific items of hardware, the intumescent requirements are detailed within the relevant subsection.

The door gap perimeter intumescent seal specifications are documented in conjunction with the leaf envelope size limitations in section 4.

Hardware Intumescent Specification		
Item	Location	Product/Manufacturer
Hinges	Fitted under each hinge blade	2 (t) Therm-A-Strip (Chilt/RF13144) 1 (t) Halspan SLS-PAD-103 (CFR1509101 Rev 1 LH, CFR1510051 RH) 2 (t) Halspan SLS-PAD-102 (CFR2007212, CFR2101191) 2 (t) Interdens (BMT/FEP/F15087)
Single Point Engagement Lock/latches	Under forend, keep & encasing lock or latch body	2 (t) Therm-A-Strip (Chilt/RF13144) 1 (t) Sealed Tight Solutions Graphite (WF379945 AR1) 1 (t) Halspan SLS-PAD-109 (WF429481) 2 (t) Interdens (BMT/FEP/F15087) 1 (t) Interdens (CFR1509101 Rev 1 LH)
	All concealed faces of latch/lock assembly, forend and strike including tongue for double leaf doorsets with equal rebated meeting edge lippings (See section 10.4.2)	2 (t) Halspan SLS-PAD-105 (CFR2001231_2 Rev 1)
Flush bolts	Encasing the entire body of the flush bolt including the back surface of the face plate	2 (t) Therm-A-Strip (Chilt/RF13144) 2 (t) Flexifire Protection (WF429481)

Note: Halspan intumescent protection is supplied with Halspan hardware, e.g. Halspan sashlock LCK-BSS-104 comes with SLS-PAD-109. The combined product is then referenced BOM-LCK-111.



Example of hinge protection detail



Example of lock & latch protection detail



Example Flush bolt installation and intumescent protection

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.

Where it is stated that intumescent is not required for a particular element of hardware, it is permitted to use up to 2mm thick MAP, Interdens or graphite-based gasket tested for the particular application [as appropriate for the hardware]. It is the opinion of Warringtonfire that the additional protection will not detract from the fire resistance performance under test conditions.

10.3 Essential Hardware

The following table details the essential hardware for the various doorset configurations that are referenced in this assessment. Other items of hardware which are detailed within this report may be fitted in addition to the essential items as required for the selected configuration.

Configuration	Hardware
LSASD	• Latch • Handle • Hinges • Self-closing device (closer)
ULSASD	• Hinges • Self-closing device (closer)
DASD	• Top pivot & bottom strap • Self-closing device (closer)
LSADD	• Latch • Handle • Hinges • Self-closing device (closer) • Flush bolt or face fixed bolt • Door Selector if rebated meeting edge or meeting edge astragal present
ULSADD	• Hinges • Self-closing device (closer) • Flush bolt or face fixed bolt • Door Selector if rebated meeting edge or meeting edge astragal present
DADD	• Top pivot & bottom strap • Self-closing device (closer)

Note:

1. The above table includes a self-closing device, but for some permanently locked fire doors a closer is not required, providing it is fitted with the appropriate signage. If this is the case the doorset must be considered a latched doorset arrangement for the purpose of leaf size envelopes defined within section 4.5.
2. It is permitted to omit the door closer and fit bolts to the inactive leaf of unlatched double doorsets. The active leaf must be fitted with a door closer and both leaves must carry the appropriate signage.

10.4 Latches & Locks

The following sections detail the permitted locks and latches which have been tested or assessed within the Halspan doorset design.

Doorsets fitted with only a lock without a latching function are permitted. The fitting of a lock only is not considered to change the latching arrangement of the doorset and therefore the permitted leaf size shall be established using unlatched doorset configurations as detailed within section 4.5.

Up to 2No. single point engagement locks or latches may be applied within the vertical edge of the door leaf in any individual doorset providing 200mm of uninterrupted perimeter intumescent is maintained between the two hardware items. When fitted the lock or latch bodies shall be installed 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.

Locks fitted within rebated meeting edges shall not be applied when it is required to remove timber from the upstand of the rebate to facilitate their application, except as permitted in section 10.4.2.

10.4.1 Single Point Engagement – for flat lippings

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

Element	Manufacturer & Product Reference
Locks & latches	- Halspan DIN Sashlock - Square Forend - LCK-BSS-100 (Chilt/RF13144, CFR1509101 LH, WF429481) - Halspan DIN Sashlock - Radius Forend - LCK-BSS-104 (CFR2101191) - Halspan Tubular Latch - LCK-LTC-064 (CFR2007212) - Dale Hardware Tubular Latch - CSP 706 SAA Sandal (CFR1510051 RH)

Alternatively, Certifire approved components certified for use within 60-minute fire resistance applications on 54mm thick timber door and timber frames with the following specification are also deemed acceptable for both single and double leaf doorsets.

Element	Specification
Maximum forend and strike plate dimensions	235mm high x 25mm wide x 4mm thick
Maximum body dimensions	165mm high x 100mm wide x 16mm 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 $\geq 800^{\circ}\text{C}$

Notes:

- In all instances the location of the handle must be between 800 – 1500mm from the finished floor level.
- Locks with the above specification must be fitted centrally within the thickness of the leaf.
- Only mechanical locks which meet the specification given above are permitted.

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10.4.2 Single Point Engagement – for equal rebated meeting edge lipping

The table below details the tested latches and locks that are approved for use with double leaf doorsets with an equal rebated meeting edge lipping, with Leaf 1 only.

Element	Manufacturer & Product Reference
Locks & latches	Halspan LCK-BSS-100 with tested forend conversion kit and strike (CFR2001231_2 Rev 1) 

When fitting, the following specifications must be complied with:

Element	Specification
Intumescent protection	see section 10.2

Notes:

1. In all instances the location of the handle must be between 800 – 1500mm from the finished floor level.
2. The lock with the above specification must be fitted centrally within the thickness of the leaf, fitted as tested.

10.4.3 Latches & Locks – Multi Point Engagement

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

Test Evidence (Tested configuration)	Item	Hardware Intumescent Protection	Minimum Perimeter Intumescent (Specified in Section 4.5)
CFR1910291_2 Rev 1 (LSASD)	Yale Lockmaster PLSP18	2mm (t) Halspan SLS-PAD-121, fitted to the rear, top, bottom and sides of all lock bodies, and to all concealed faces of strike and keeps including their respective boxes	2No. 15mm wide x 4mm thick seals fitted within the frame reveal 10mm apart. Intumescent seal specification shall meet the criteria given in the text below this table and correspond to the intumescent permitted in section 4.5.
CFR2006181 (LSASD)	Halspan Crimebeater Autolock	2mm thick Halspan SLS-PAD-122 all faces of the lock body, actuator box and hook boxes and to rear of strike, actuating plate and keeps	
CFR2105131 LH, WF512409 Version 3 (LSASD)	Winkhaus AV2 M105301, Armorplate lock case can be optionally fitted	Winkhaus AV2 intumescent pack Ref 5084041	
CFR2105131 RH (LSASD)	Winkhaus AV3 M113345, Armorplate lock case can be optionally fitted		

Based on the test evidence the above tested and assessed multi-point locks are permitted for use with the doorset design subject to the following parameters:

Frame option: 1

Leaf option: 1 only

Configurations: LSASD

- When a multi-point latch is fitted, the leaf perimeter edge intumescent must be located into the frame reveal along the closing edge.
- Where fitted the approved multi-point locks shall be fitted centrally to the thickness of the door leaf.
- The top and bottom locks do not need to be engaged for fire performance, except where the multi-point lock has an auto throw function the top and bottom locks must be engaged.
- The centre, top and bottom keep plates must be the same as those tested, as supplied by the manufacturer.
- In all instances the location of the spindle must be between 800–1200mm from the threshold. The multi point latch forend must be no closer than 50mm to the top and 50mm to the bottom corners of the leaf
- The frame must be fitted with a stop of minimum 15mm.
- Intumescent protection to the multi-point lock used must be as tested and identified within the table above.
- The frame intumescent must be one of the following tested intumescent seals when using one of the identified multi-point locks:
 - Halspan SLS
 - Pyroplex

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10.4.4 Cylinders

The table below details the tested cylinders that are approved.

Element	Manufacturer & Product Reference
Cylinder	- Vier Precision Design V5 Security range V5EP80DSCE (CFR2001231_2 Rev 1) - Halspan Kinetica 3* Euro Cylinder & Turn (CFR2006181) - Winkhaus XR604/6 (CFR2105131, WF512409 Version 3)

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°C.
- 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:
 - As 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.

10.4.4.1 Cylinder Guards

The testing detailed within section 3 included the following cylinder guard and lock protection plate which are therefore optionally permitted with cylinders and locks within the Halspan doorset design:

Test Evidence (Tested configuration)	Item	Intumescent Protection
CFR2105131 (LSASD)	Winkhaus Armorshield, two-part cylinder anti-tamper shield 64 x 22 x 22	Winkhaus AV2/AV3 intumescent pack, 5084041, fitted to the perimeter of the cylinder shield
WF512409 Version 3 (LSASD)	Winkhaus ArmorPlate GBOX 02 Gearbox plate Reference 5077418	Winkhaus AV2/AV3 intumescent pack, 5084041, fitted to the lock body as tested

The above cylinder guard and lock protection plate may only be utilised with the Winkhaus AV2 or AV3 multipoint lock as detailed within section 10.4.3. The above detailed intumescent protection shall be fitted as tested.

10.4.5 Electronic locks

10.4.5.1 Mortice Head Mounted Locks

The following head mounted locks have been successfully tested within the Halspan doorset design:

Test Evidence (Tested configuration)	Item	Intumescent Protection
WF542706 Version 2 (DADD)	Abloy 351M80	Abloy Intumescent kit – 1mm around the lock body, 2mm under forend and strike plate
WF542753 (DADD)	Abloy 351U80	
	Abloy 352M80	

Based on the test evidence the above morticed head mounted locks are permitted within the following parameters:

Frame option: 1 & 2

Leaf option: 2

Configurations: LSASD, ULSASD, DASD, LSADD, ULSADD and DADD

Further considerations as follows shall be met:

- When fitted the edge of neither the lock body nor keep shall be closer than 100mm to the closing edge of any leaf.
- The lock body must be fitted into the frame head and the keep into the leaf head as tested.
- The perimeter Intumescent (specified in section 4.5) must be one of the following: A/9, A/10, B/9, B/10, C/9, C/10, F/9, F/10, G/9, G/10, H/9, H/10
- The frame thickness when fitting the Abloy series of locks detailed above shall be no less than 44mm excluding stop dimensions.
- Intumescent protection applied to the lock selected shall be as tested and identified within the table above.

The fitting of morticed head mounted locks is not considered to change the latching arrangement of the doorset and therefore the permitted leaf size shall be established using the appropriate doorset configuration based on the other latch/lock hardware fitted to the doorset.

10.5 Handles & Escutcheons

The table below details the tested handles and escutcheons that are approved.

Element	Manufacturer & Product Reference
Handles	- Halspan LVR-200-BSS (WF419726, CFR2007212, CFR2101191) - Dale Hardware GH005706 SAA (CFR1509101 Rev 1 LH) - Stanza SCA030SA (CFR2001231_2 Rev 1) - Hoppe HOP21592S (CFR1910291_2 Rev 1) - Halspan Duo Handle DUO-HDL-100 (CFR2006181) - Winkhaus Palladio quick fit lever (CFR2105131) - Zoo Hardware ZCA030SA (WF429481)
Escutcheons	Zoo ZCS001SS (WF419726)

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 25mm 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 245mm high x 54mm 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.

Alternative 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 Ø54mm overall and up to 12mm thick.

10.6 Hinges and Pivots

10.6.1 Butt Hinges

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

Element	Manufacturer & Product Reference
Butt Hinges	- Halspan Grade 13 Square Corner Hinge - HIN-BSS-103 (Chilt/RF13144, WF419726, CFR2007212, CFR2006181, CFR2105131, WF429481) - Halspan Grade 13 Radius Corner Hinge - HIN-BSS-104 (CFR1509101 Rev 1, CFR1510051 LH, CFR2101191, WF379945 AR1, BMT/FEP/F15087) - Halspan Grade 14 Radius Corner Hinge - HIN-BSS-108 (WF512409 Version 3)

Alternatively, Certifire approved components certified for use with 60-minute fire resisting applications on 54mm thick timber door and timber frames 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

Intumescent protection shall be as defined in section 10.2 in all instances

Note:

- Projection hinges with blade widths greater than the widths detailed above are permitted providing that no more than 35mm of each blade is rebated within the leaf edge or frame.
- In all instances the hinges must be sufficient to support the weight of the door leaf.

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

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.

Leaves less than 1200mm (h) can be hung on a minimum of 2 hinges located 150mm from the top and bottom of the door leaf (top hinge location is measured from the top of the hinge blade to the top of the door leaf and bottom hinge location is measured from the bottom of the hinge to the bottom of the door leaf).

Element		Specification	
Hinge positions:	If 3 hinges are required:	Top	100 –180mm from the head to top of hinge
		2 nd	Minimum 200mm from top hinge or centrally fitted between top and bottom hinge
		Bottom	150 – 250mm from the foot of leaf to bottom of hinge
	If 4 hinges are required:	Top	100-180mm from the head to top of hinge
		2 nd & 3 rd	Equispaced between top and bottom or 2 nd hinge 200mm from top hinge and 3 rd hinge equally spaced between 2 nd and bottom hinge
		Bottom	150 – 250mm from the foot of leaf to bottom of hinge
Intumescent protection:		See section 10.2	

Additional hinges may be added providing the requirement of 200mm between adjacent items of hardware is maintained.

10.6.2 Pivots

Pivots are only permitted with floor springs and concealed transom closers where this is permitted within sections 10.7.3 and 10.7.4.

10.7 Doorset Self Closing

Doorset automatic self-closing can be provided by:

- Overhead face fixed closers
- Concealed overhead closers
- Floor springs with top pivots and bottom straps
- Concealed transom mounted closers

Automatic doorset self-closing devices such as concealed jamb mounted closers and offset pivots used with floor springs are not considered acceptable for use with the Halspan doorset range.

10.7.1 Overhead Face Fixed Closer

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

Elemen	Manufacturer & Product Reference
Overhead face-fixed closers	• Halspan 6000 Series 2-4 Eco Closer CLR-ECO-100 (Chilt/RF13144, WF419726, CFR2007212, WF429481, CFR2001231_2, CFR1509101 LH, CFR1910291_2) • Halspan 6100 Series 2-4 Cam Action Eco Closer CLR-CAM-024 (WF428612/R, CFR2006181) • Halspan 9000 Series 2-5 Power Closer CLR-PWR-100 (BMT/FEP/F15087, WF379945 AR1) • Halspan 9100 Series 2-5 Cam Action Power Closer CLR-CAM-025 (CFR2101191)

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

- Certifire approved overhead face-fixed closers for 30-minute fire resistance applications on 54mm 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.

10.7.2 Concealed Overhead Self Closing Device

The table below details the tested and assessed concealed overhead closers that are approved with the body of the concealed closer morticed into the top of the door leaf and the track morticed into the frame head.

In all instances the maximum leaf dimensions for all doorsets which include concealed overhead closer must not be greater than:

- Height: 2400mm.
- Width: 1060mm

Manufacturer & Product Reference (Test Reference)	Intumescent Protection	Closer Body Dimensions	Closer Slide Arm Dimensions	Permitted Leaf Option	Permitted Frame Option(s)	Permitted Configuration	Perimeter Intumescent Specification (see section 4.5)	Minimum Head Stop Height (mm)
Briton 2420.T.SE (CFR1510051 RH)	2mm (t) Interdens around the body in leaf and encasing the slide arm in frame	Body 42mm (h) x 242mm (l) x 32mm (w)	Track: 440mm (l) x 17mm (h) x 23mm (w)	1	1	LSASD, ULSASD	A/1, B/1	25
				2	1, 2	LSASD, ULSASD, LSADD, ULSADD	A/9, A/10, B/9, B/10, F/9, F/10, G/9, G/10	25
Halspan 9200 CLR-CCL-025 (CFR2105131) Order code BOM-CCL-025 includes CLR-CCL-025 & SLS-PAD-131	2 (t) Halspan SLS-PAD-131 Fitted around closer body, over the top of the closer and closer arm mortice and all around the slide arm rail.	Body: 62mm (h) x 260mm (l) x 37mm (w) Forend: 330mm (l) x 37mm (w) x 3mm (t)	460mm (l) x 30 (w) x 20 (h)	1	1	LSASD	A/6	15
				2	1	LSASD, ULSASD	A/7, B/7	15
					1, 2	LSASD, ULSASD, LSADD, ULSADD	A/9, A/10, B/9, B/10, F/9, F/10, G/9, G/10	15

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

Halspan 6200 CLR-CCL-024 (WF512409 Version 3) Order code BOM-CCL-024 includes CLR- CCL-024 & SLS-PAD-130	2 (t) Halspan SLS- PAD-130 Fitted around closer body, over the top of the closer and closer arm mortice and all around the slide arm rail.	Body: 57mm (h) x 215mm (l) x 32mm (w) Forend: 285mm (l) x 32mm (w) x 3mm (t)	460mm (l) x 30 (w) x 20 (h)	1	1	LSASD	A/6	15
				2	1, 2	LSASD, ULSASD, LSADD, ULSADD	A/9, A/10, B/9, B/10, F/9, F/10, G/9, G/10	15

Note:

Based on the test evidence the above tested and assessed concealed closers are permitted for use with the doorset design subject to the following parameters:

- The details identified in the table above for the following items must be followed for the selected concealed overhead closer, and is based on the tested arrangements:
 - Frame option(s).
 - Permitted configuration(s).
 - The frame must be fitted with a head stop of the minimum size, where required.
 - Intumescent protection to the concealed closer.
 - Leaf perimeter intumescent details.
- It must be ensured that the concealed overhead closer is of sufficient strength and power to ensure the door leaf/leaves fully engage into the frame reveal.
- The dimensions of the concealed overhead door closer must not exceed the dimensions given within the tables above.

10.7.3 Floor Spring Self Closing Device

Based on the test evidence the following floor springs in conjunction with their tested pivot set are permitted for use with the doorset design subject to the following parameters:

- The details identified in the tables below for the following items must be followed for the selected floor springs, and is based on the tested arrangements:
 - Frame option(s)
 - Permitted configuration(s)
 - Leaf perimeter intumescent details.
 - Intumescent protection to the pivot set.
- It must be ensured that the floor spring closer is of sufficient strength and power to ensure the door leaf/leaves fully engage into the frame reveal.
- The dimensions of the floor spring door closer must not exceed the dimensions given within the tables below where identified.
- Transom overpanels are not permitted.

Permitted Leaf Option (Test evidence)	Permitted Frame Option (Test evidence)	Permitted Configuration	Perimeter Intumescent Specification (see section 4.5)
2 (WF542706 Version 2)	1, 2 (WF542706 Version 2)	DASD, DADD	C/9, H/9 except that additionally 1No. 25mm x 4mm Lorient LP2504 must be fitted centrally to the bottom edge of the leaf.

The table below details the tested floor springs and pivots that are approved.

Test evidence	Items	Hardware Intumescent Protection
WF542706 Version 2	Halspan Limited 9300 floor spring – power size 4 9300 pivot set	Halspan 6300/9300 pivot set intumescent kit 2mm graphite around top pivot mortice 1mm graphite under top pivot forend
	Halspan Limited 6300 floor spring – power size 3 6300 pivot set	2mm graphite around top & bottom strap bodies 2mm graphite over the top of the fixings for the bottom strap

Alternatively, components with the following specification are deemed acceptable with leaf 1 or 2 where a perimeter intumescent specification for DASD or DADD is given in section 4.5.

- Certifire approved floor spring self-closers with their specific associated pivot systems for 60-minute fire resistance applications on 54mm thick timber door and timber frames, providing the Certifire certificate is followed entirely.

10.7.4 Concealed Transom closer

Based on the testing listed within this section, these items are suitable in the following applications only:

Frame option: 1, 2

Leaf option: 2

Configurations: DASD, DADD - Transom overpanels or fan lights are not permitted.

The door leaf must be lipped on all edges with hardwood as detailed in section 5.4.

When fitting concealed transom closers with their associated pivots the below specifications for the frame and perimeter intumescent must be met.

Permitted Leaf Option (Test evidence)	Permitted Frame Option (Test evidence)	Minimum frame cross section dimensions	Perimeter Intumescent Specification (see section 4.5)
2 (WF542753)	1, 2 (WF542753)	The head of the frame shall be no less than 125mm (d) x 68mm (h)	C/10, H/10 except that additionally 1No. 25mm x 4mm Lorient LP2504 must be fitted centrally to the bottom edge of the leaf.

The table below details the concealed transom closer that is approved.

Test evidence	Items	Hardware Intumescent Protection
WF542753	Dormakaba - Transom closer: - RTS80EMB power size 4 Foreplate: 360mm long x 108mm wide x 3mm deep Body: 314mm long x 70mm wide x 58mm deep Dormakaba - Transom closer: - RTS87 power size 1-4 Foreplate: 320mm long x 108mm wide x 3mm deep Body: 265mm long x 72mm wide x 51mm deep Fitted with Dormakaba: - Top strap 8530 - Bottom pivot 7475AX - Bottom Strap 7421	Dormakaba RTS87/RTS80 intumescent kit comprising: 2mm graphite to body of Transom Closer 2mm graphite to top strap 1mm Interdens® to mortice bottom strap and 2mm x 175mm x 21mm Interdens® to visible face of bottom strap Floor pivot - None

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

10.8 Bolts

10.8.1 Flush Bolts

The table below details the tested flush bolts that are approved.

Product Reference & Manufacturer (Test Reference)	Size
Carlisle Brass AA79CP (Chilt/RF13144)	101 x 17
Zoo Hardware ZAS03SS (WF429481)	203 x 20

In addition to the tested and permitted flush bolts detailed above, flush bolts which meet the following requirements are permitted.

- Flush bolts must be steel.
- The following maximum dimensions are not exceeded:
 - 203mm long x 20mm deep x 20mm wide.

On the basis of the testing, the tested and alternative flush bolts are suitable in the following applications only:

Frame options: 1 and 2

Configurations: LSADD (Optionally ULSADD & DADD)

In all cases the following scope must be complied with:

- Flush bolts must be fitted centrally within the thickness of the secondary leaf at the meeting edge.
- Flush bolts may be fitted to only the top of the leaf or alternatively to both the top and bottom of the leaf.
- The components are fitted relative to the meeting edge intumescent strips in one of the following ways:
 - Opposing the leaf edge fitted with intumescent strips such that no interruption occurs in either leaf (primary or secondary)
 - Where there are intumescent strips fitted to both the primary and secondary leaf meeting edges a minimum of 2No. intumescent strips shall be in the leaf opposing the flush bolt.
- Intumescent protection: All edges of the mortice of the keep and body must be protected with intumescent gaskets as specified in section 10.2.
- Flush bolts fitted at the bottom of the leaf cannot be used when a morticed in drop seal is present.
- The above flush bolts are not permitted in conjunction with equal rebated meeting edges.
- The mortice to facilitate flush bolts must be as tight to the mechanism as is compatible with its operation and the inclusion of intumescent protection.

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

10.8.2 Surface Mounted Face Fixed Bolts

These items are suitable in the following applications only:

Frame options: All frame types

Configurations: All configurations

The table below details the tested surface mounted face fixed bolts that are approved.

Surface Mounted Bolt
Manufacturer & Product Reference (Test Reference)
Royde & Tucker B151 Barza Bolt (WF419726)
Royde & Tucker Barza 2005 B151-300-22-BSS (CFR2001231_2 Rev 1)
Halspan BLT-BZA-100 (CFR2101191)

In addition to the above summarised tested surface mounted face fixed bolts, alternative surface mounted face fixed bolts constructed from steel, stainless steel, aluminium or bronze may be fitted, providing the dimensions are no greater than:

- 350mm long x 38mm wide (footprint).

Surface mounted face fixed bolts may be applied to the horizontal or vertical edges of the doorset providing the components are fitted at least 40mm from the corners of the leaf.

Intumescent protection is not required where both the bolt and keep are face fixed.

10.9 Pull Handles

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.

Pull handles must be positioned as follows:

- Through fixed components must be positioned such that the through going elements are no closer than 75mm to any adjacent morticed item of hardware, leaf edges or apertures.
- Surface mounted items may be applied without restriction, providing they do not inhibit the operation of the doorset design, nor interact with other items of hardware.

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.

10.10 Push Plates & Kick Plates

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.
- When mechanically fixed the fixings must not penetrate more than 50% of the thickness of the door leaf and must not interfere with other items of hardware applied to the door leaf design (e.g. drop seals).

10.11 Security Viewers

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 viewers that are 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	Zoo ZAB30 (CFR1910291_2 Rev 1)	1 (t) Zoo Architectural ZIDV60 kit
	Halspan DOR-VWR-100 (CFR2105131)	1 (t) Halspan SLS-PAD-127

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 acrylic intumescent mastic and / or a 0.5 – 1.0mm thick graphite based intumescent wrap.

10.12 Door Selectors

These items are suitable in the following applications only:

Configurations: All double leaf door configurations

These may be freely applied, provided that they are not invasive in the leaf edges or door frames and they do not interfere with the self-closing action of the door leaf. Products that are invasive are not considered within this field of application.

10.13 Air Transfer Grilles

Air transfer grilles must be Certifire approved for 60 minutes in doorsets with solid timber door leaves. Restriction relating to size, location and intumescent protection around the air transfer grille must be complied with.

The area occupied by the air transfer grille must not exceed 0.2m² and must be deducted from the area of glazing, if both elements are fitted.

10.14 Environmental Seals

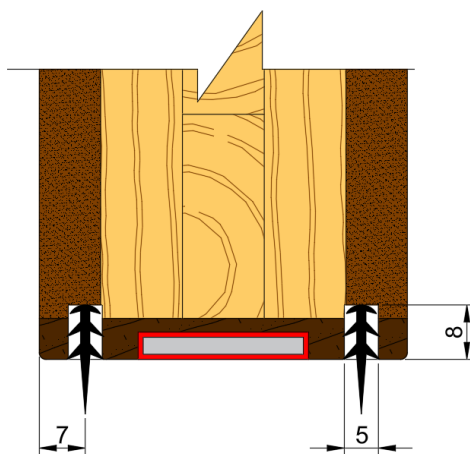
A number of different environmental seals have been successfully tested as part of the Halspan doorset design. Based on this testing the table below details the approved environmental seals included within the summarised evidence within Appendix A:

Product Reference & Manufacturer (Test Reference)
Halspan Triple Fin SLS-TRI (Chilt/RF13144)
Halspan Flipex (WF542706 Version 2)
Sealed Tight Solutions ST1009 (WF379945 AR1)
Schlegel Aquamac 21 (CFR1910291_2 Revision 1)
Schlegel Aquamac 63 (WF419726)

Alternatively, on the basis of the testing undertaken, silicone 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.

Where required may be fitted either rebated into the timber door stop or rebated into the leaf face.

The Halspan Flipex as detailed above may be rebated into the bottom edge of the leaf as tested.



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10.15 Threshold drop Seals

10.15.1 Face mounted threshold drop seal

Aluminium face mounted threshold drop seals may be fitted subject to the following requirements:

- Face mounted threshold drop seal of maximum 62mm high x 22mm wide cross-sectional dimensions.
- Installation must not require the removal of any timber from the leaf, stop or frame reveal (except for screw fixing) and it does not interfere with the self-closing action of the door leaf.
- Screws to affix the threshold drop seal shall be no greater penetration into the leaf than 29mm long.
- 2No. 15mm wide x 4mm thick seals fitted 10mm apart centrally to the bottom edge of the leaf.

The above scope has been assessed based on the positive testing undertaken with aluminium based surface mounted items which have been tested with the Halspan doorset design.

10.15.2 Rebated threshold drop seal

The table below details a selection of the tested rebated drop seals that are approved.

Manufacturer & Product Reference (Test evidence)	Intumescent Protection
Halspan SLS DRP (Chilt/RF13144) Note: Halspan order code BOM-DRP includes the SLS-DRP drop seal and the SLS-PAD-107 intumescent protection	1 (t) Halspan SLS-PAD-107

Alternatively, the components meeting all of the following specifications are also deemed acceptable, recessed into the bottom of leaves:

- Certifire approved threshold drop seals for 60-minute fire resistance applications on 54mm thick timber / cellulosic doors in timber / cellulosic frames.
- The threshold drop seal must not exceed:
 - Body dimensions of 32mm (h) x 14mm (t) and
 - Face plate dimensions of 57mm (h) x 21mm (w) x 1.5mm (t).
- The Certifire certificate shall be adhered to for intumescent protection and fitting requirements.

Note: In all instances, if a rebated drop seal is fitted to the doorset then flush bolts, if approved, may not be fitted to the bottom of the doorset.

10.16 Knockers, Numerals & Signage

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 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 30mm 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.

10.17 Security Chains

The table below details the tested security chains that are approved.

Product Reference & Manufacturer (Test Reference)
Zoo Architectural ZAB15 (WF528612/R & CFR1910291_2 Rev 1)

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.

10.18 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:

- To be kept closed when not in use (Fire Door Keep Shut)
- To be kept locked shut when not in use (Fire Door Keep Locked Shut)
- Held open by an automatic release mechanism or free swing device (Automatic Fire Door Keep Clear).
- HTM 58 (WF542706 Version 2 & WF542753)

When applied to a door leaf the plate shall either be:

- Surface mounted to the face without removing material from the leaf or
- Fitted into a tight rebate into the leaf face such that it finishes flush with the leaf face.

10.19 Panic Hardware

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.

The fitting of panic hardware is not considered to change the latching arrangement of the doorset and therefore the permitted leaf size shall be established using unlatched doorset configurations as detailed within section 4.5.

10.20 Halspan Smart Tags

Based on the testing summarised within section 3, including WF542706 Version 2 & WF542753 the following Near-Field Communication (NFC) devices as detailed below are permitted to be applied to the doorset within the following parameters:

Tested Specification:		
Manufacturer & Reference (Test evidence)	Material	Overall Dimensions
Halspan Limited, Halspan Edge Mounted Smart Tag: TAG-025-BLK (WF542706 Version 2 & WF542753)	PVC	Ø25mm x 3mm thick
Halspan Limited, Halspan Surface Mounted Smart Tag: TAG-028-BLK (WF542706 Version 2 & WF542753)	PVC	Ø28mm x 1mm thick

The following limitations must be adhered to when fitting the smart tag to the doorset:

Edge Mounted (Door leaf edge)

- The TAG-025-BLK smart tag must be fitted into a tight rebate such that the smart tag results in being flush with the lipping material.
- The TAG-028-BLK smart tag may be surface mounted onto the lipping material or fitted into a tight rebate such that the smart tag results in being flush with the lipping material.
- The smart tags shall be applied within the hanging edge of the door leaf only.
- The smart tag shall be positioned centrally within the thickness of the door leaf.
- The smart tag shall be fitted no closer than 100mm below the top hinge position, measured from the centre of the tracker tag.
- The smart tag must be no closer than 87mm to any other element of hardware.
- It is not permitted to interrupt or remove intumescent material within the doorset to apply the above detailed tags.
- The smart tags shall not be applied over intumescent materials within the leaf edge but may be fitted opposing them.

Surface Mounted (Door leaf face)

- The TAG-025-BLK smart tag must be fitted into a tight rebate such that the smart tag results in being flush with the face of the leaf.
- The TAG-028-BLK smart tag may be surface mounted onto the leaf face or fitted into a tight rebate such that the smart tag results in being flush with the leaf face.
- The smart tags may be applied to the leaf face without restriction providing the tags meet the following limitations:
 - The smart tag shall not be applied such that it interfaces with the door stop.
 - The smart tag shall not be positioned directly above or on a glazed aperture.
 - The smart tag must be no closer than 87mm to any other element of hardware, apertures within the leaf or the edge of the leaf.

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

10.21 Rain Deflector

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

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

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

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

10.22 Hold Open Armatures

Armatures for magnetic hold open devices have been assessed on the basis of the performance of the Halspan doorset design including surface mounted items without detriment to the fire resistance performance.

On this basis armatures may be fitted subject to the following requirements:

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

10.23 Mag Lock

Mag locks which have supporting fire resistance test evidence when applied to a timber-based door leaf in a timber frame which has achieved greater than 60 minutes integrity performance when tested to BS 476: Part 22: 1987 or EN 1634-1, 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.

The fitting of mag locks is not considered to change the latching arrangement of the doorset and therefore the permitted leaf size shall be established using unlatched doorset configurations as detailed within section 4.5 where no further mechanical latch is fitted.

10.24 Letter Box / Plate

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

Manufacturer, Product Reference & Intumescent Protection (Test evidence)
Halspan TS008 Certified Letter plate – (WF533911) Aperture in leaf: 54mm x 260mm A 12mm thick x leaf thickness x 260mm hardwood timber aperture liner with a minimum density of 640 kg/m³ must be applied to the top and bottom horizontal edges of the aperture with PU adhesive and 23Ga x 25mm steel pins. Intumescent: Halspan letterplate kit, comprising: 42mm x 6mm graphite to top and bottom of the letterplate aperture (rebated into the aperture liner) 25mm x 3mm graphite internally in the letterplate body 1mm graphite lining the fixing holes through the leaf.

The above letterplate is permitted subject to the following requirements:

- The area of the letter plate (and air transfer grille if present) plus any glazing must not exceed the total permitted area for apertures within the leaf.
- The letterplate shall be installed at a location of 780mm to 1180mm from the bottom of the leaf to the centre of the aperture and shall be no closer than 100mm to the edge of the leaf or any other apertures within the leaf.
- It is possible to install the above detailed letterplate within solid side panels providing the side panel is constructed from the same materials as the leaf and the positioning requirements given above are adhered to.

The above letterplate has been included via assessment based on the performance observed in WF533911, where no failure was observed on the letterplate throughout the duration of the test. The door leaf is timber based and 54mm thick like that of the XT and IT designs contained herein. Because the XT and IT leaves have demonstrated positive performance including apertures with hardwood liners and acknowledging the positive result observed for the letterplate design it has been deemed suitable to introduce the above letterplate into this assessment.

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-coloured seal. For further clarification of the approved firestopping systems see section 11.3.

Architraves requirements are documented in the firestopping section of this report.

11.2.1 Frame Fitted Flush to the Face of the Wall

The following illustrations represent the permitted arrangements where the face of the door frame is installed flush with the face of the supporting structure.

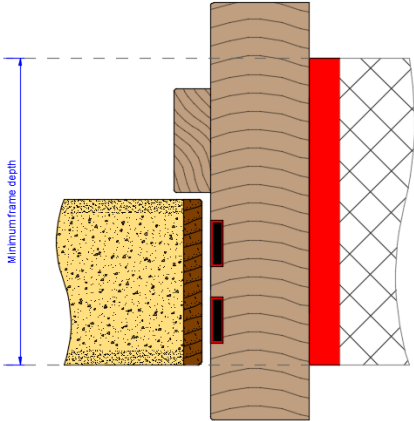
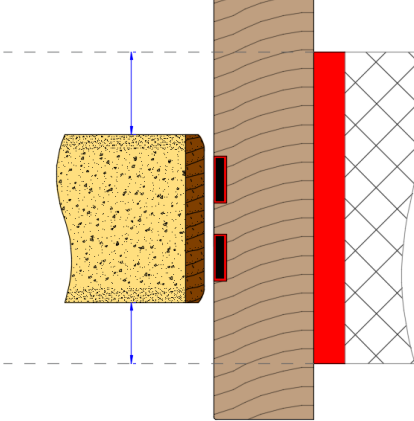
Permitted Installations	
	Instances where the door frame and the wall of the same depth such that architraves are fitted flush to both faces. Note that the minimum door frame section size (width and depth) must be as per the requirements noted in this report – see door frame section.
	Instances where the wall thickness is greater than the door frame depth. In this scenario, architraves when applied, may be fitted to both faces. Where the architrave cannot physically overlap both the wall and the frame it is permitted to apply the architrave abutting the wall as depicted in the figure to the left. Note that the minimum door frame section size (width and depth) must be as per the requirements noted in this report – see section 7.
	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 one of the materials permitted for the construction of door frames.

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.
3. In all instances, if protective facings (encapsulation) are applied (as defined within section 7.5.2, 8.2.1.5.2), this must not be installed such that it interferes with the interface between the fire stopping materials and the rear of the frame.

11.2.2 Frame Fitted Projecting the Face of The Wall (Leaf fitted within the thickness of the wall)

The following illustrations represent the permitted arrangements where the face of the door frame is installed flush with the face of the supporting structure. In particular the requirement to offset each face of the leaf of double acting doorsets from each face of the wall, must be complied with.

Permitted Installations	
	Single Acting Arrangement Instances where the door leaf is fitted flush to wall face. The minimum door frame section size (width and depth) must be as per the requirements noted in this report – see section 7. And be positioned within the grey dotted section (shown left).
	Double Acting Arrangement Instances where the door leaf is fitted set back from each face of the wall as required in section 7 for each permitted frame type respectively. (shown left – in blue). The minimum door frame section size (width and depth) must be as per the requirements noted in this report – see section 7. And be positioned within the grey dotted section (shown left).
Split frames are permitted for single acting arrangements only, providing that: - Both frame sections are secured to the wall in accordance with section 11.5. - The main frame section meets the minimum frame section sizes and projection as shown above is in excess of the minimum frame sizes. - The extension piece must be constructed using the same timber species as the main frame section.	

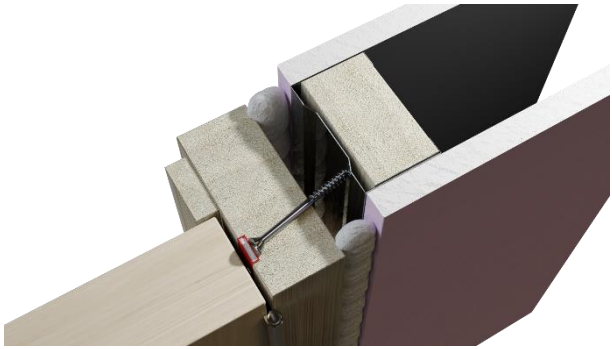
Note:

The drawings are provided as a generalised illustration of the door frame installation only; actual installation must be as per the text within this document specifies.

In all instances, if protective facings (encapsulation) are applied (as defined within section 7.5.2, 8.2.1.5.2), this must not be installed such that it interferes with the interface between the fire stopping materials and the rear of the frame.

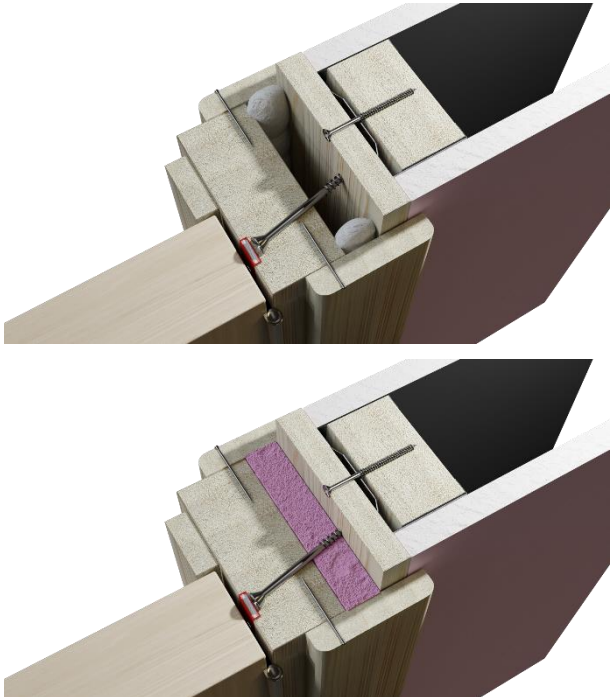
11.3 Firestopping

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
Up to 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. If the evidence for the fire stopping used included architraves, they must be fitted as tested. Architraves may be fitted to both faces.	
Up to 20	Gap must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. If the evidence for the fire stopping used included architraves, they must be fitted as tested. Architraves may be fitted to both faces.	 

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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Gap (mm)	Requirement	3D model depiction
Over 20	A timber based or non-combustible subframe up to 50mm thick x the depth of the frame can be inserted and fixed to the wall bedded on a continuous bead of intumescent mastic, the gap between door frame and subframe filled as follows: Subsequent gaps between the frame and the subframe of 5 to 10mm must be filled utilising one of the options given above. Architraves may be fitted to both faces.	

11.4 Packers

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

Packers should be of a suitable size and set in place to allow the fire stopping materials to be applied over the top.

Packers should not be left exposed when architraves are not applied. Where packers are exposed, regardless of the packing material, they should be cut back at least 5mm and capped with tested intumescent mastic.

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) Blockwork, masonry or homogenous concrete constructions.

Wall types a & b above must have supporting fire resistance test evidence which demonstrates that it is capable of staying in place and intact for a minimum of 60 minutes supporting a doorset design.

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

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

- Plasterboard clad timber stud partitions, the timber stud will be of sufficient dimensions such that the fixing for the door frame penetrates into solid timber.
- Plasterboard clad steel stud partitions will include a timber lining of sufficient dimensions such that the fixing for the door frame penetrates into solid timber.
- Blockwork, masonry or homogenous concrete constructions are anticipated to be solid 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 without sidepanels, the frame jambs only are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corners. 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.

For double leaf doorset without side or over panels, the frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corners. The upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixing at the nominal centre of the width. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.

For all other configurations of doorset, the upper horizontal framing section abutting the structural opening must also be secured to the wall using steel fixings at 600mm maximum centres and maximum of 150mm from corner. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.

For frames which include two elements (including extension liners), both sections of the frame shall be fixed to the supporting structure as detailed above.

11.6 Post Production (Onsite) Leaf Size Adjustment

The Halspan range of doorsets may be altered as follows:

Leaf Size Adjustment Specification	
Element	Reduction
Lipping	For door leaves which are not encapsulated: The post-production lipping thickness for flat timber based lippings may be reduced by 1mm for fitting purposes, providing that the door gaps and intumescent conditions remain as required by this assessment and the minimum limitation in terms of lipping thickness is still maintained. Otherwise, no modification can be made. Door leaves which include encapsulation may not be altered in size once manufactured.

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. The following specific requirement for Double Acting arrangements, take precedence: - Required set back distances given in section 7 must be complied with. The following specific requirement for Single Acting arrangements (as considered in section 11.2.1), take precedence: - Leaves must not be proud of the wall face by more than 1mm but may be fitted to sit back from the opening face of the wall 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 take precedence: Where an aluminium threshold is installed (section 7.3) – no more than 4.5mm between bottom of leaf and aluminium plate.

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

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 area, for example, glazing
Partially insulating	Doorsets incorporating up to 20% of non-insulating area, for example, glazing
Fully insulating	Unglazed doorsets or doorsets including 60-minute insulating glazing

13. Conclusions

If the Halspan doorset designs, 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 expected that they would provide a minimum of 60 minutes of integrity and insulation (subject to section 12).

14. Declaration

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

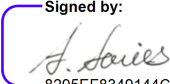
We confirm that any changes to a component or element of structure which are the subject of this assessment have not to our knowledge been tested to the standard against which this assessment has been made.

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.

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.

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 by: 
Signed: 8295EF8349144CB...

Name: Andy Davies

Position: Technical Manager

Date: 24-Sep-2025

For and on behalf of: **Halspan Limited**

15. Limitations

This assessment report:

- Does not provide an endorsement by Warringtonfire of actual products supplied.
- Has been prepared based on information provided by the Applicant. Warringtonfire has not verified the accuracy or completeness of that information and will not be responsible for any errors or omissions that might be incorporated into this report as a result.
- Any figures included in this report are provided for illustrative purposes only and may not fully reflect the actual scope being assessed. Warringtonfire cannot guarantee the accuracy of the drawings against the scope being assessed. The scope of this report is limited to assessments of the modifications to the tested systems as described herein.
- This report 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.
- This 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 should be re-evaluated if the assessed construction is subsequently tested since actual test data is deemed to take precedence.
- This assessment has been carried out in accordance with Fire Test Study Group Resolution No. 82: 2001.
- Opinions and interpretation expressed herein are outside the scope of UKAS accreditation.
- This assessment report relates only to those aspects of design, materials and construction that influence the performance of the element(s) under fire resistance test conditions that are 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 assessment, the element is suitable for its intended purpose.
- This report represents our opinion as to the performance likely to be demonstrated on a test in accordance with the standard to which this assessment concludes, on the basis of the test evidence referred to in this report. We express no opinion as to whether that evidence, and/or this report would be regarded by any Building Control authorities or any other third parties as sufficient for that or any other purpose.
- 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.
- Previous versions of the report(s), if applicable, are withdrawn from the date of the up-issued assessment report with immediate effect. That means that they may no longer be relied upon in support of any products being placed on the market (or for the stated project/address where applicable) from the issue date stated on the front cover of this report. The withdrawal of an assessment report does not affect any reliance placed on the report up to the issue date stated on the front cover of this assessment; however, going forward, the up-issued report must be referenced in any literature or product specifications in place of the previous versions of the assessment.

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

16. Validity

This assessment report is not valid unless signed by all signatories identified within the Signatories and Revision History section of this report.

This assessment report is not valid unless it incorporates the declaration given in Section 14 duly signed by the applicant.

The assessment validity is as stated on the front cover of this report, after which time it is recommended that it be submitted to the assessing authority for re-evaluation.

Appendix A

Summary of supporting 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.

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 BS 476 Part 22: 1987 and EN 1634-1. The latter 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 cited in the following section, tested to both named standards referenced above can be utilised in this assessment which will conclude in terms of the fire resistance performance of the Halspan doorset designs if tested in accordance with BS 476: Part 22: 1987.

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'.

A.1 Primary Evidence

A.1.1 Chilt/RF13144

Test Report Reference Chilt/RF13144			
Report sponsor	Halspan Ltd		
Test laboratory	BM TRADA UKAS No. 1762 (Now trading as Warringtonfire Testing and Certification Limited)		
Test date	26 Jun 2013		
Test standard	BSEN 1634-1: 2008 and BSEN 1363-1: 1999		
Sampling information	Not detailed in test report		
Tested Orientation	Doorset: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset: ULSADD – Unlatched, Single Acting Double Doorset		
Test results	Doorset	Integrity:	68 minutes
		Insulation:	68 minutes
Reason for use	• Leaf size envelopes • Glass and Glazing Systems • Hardware		

A.1.2 CFR1509101 Rev 1 LH

Test Report Reference CFR1509101 Rev 1 LH			
Report sponsor	Sentry Panel Products Limited		
Test laboratory	Cambridge Fire Research UKAS No. 4319		
Test date	10 Sep 2015		
Test standard	BS 476 Part 22: 1987		
Sampling information	Not detailed in test report		
Tested Orientation	Doorset A: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset A: ULSASD – Unlatched, Single Acting Single Doorset		
Test results	Doorset A	Integrity:	60 minutes
		Insulation:	60 minutes
Reason for use	• Leaf size envelopes • Adhesives • Hardware		

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A.1.3 CFR1510051 RH

Test Report Reference CFR1510051 RH			
Report sponsor	Halspan Limited		
Test laboratory	Cambridge Fire Research UKAS No. 4319		
Test date	05 Oct 2015		
Test standard	BS 476 Part 22: 1987		
Sampling information	Not detailed in test report		
Tested Orientation	Doorset B: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset B: ULSASD – Unlatched, Single Acting Single Doorset		
Test results	Doorset B	Integrity:	70 minutes
		Insulation:	70 minutes
Reason for use	• Leaf size envelopes • Hardware		

A.1.4 BMT/FEP/F14271 A

Test Report Reference BMT/FEP/F14271 A			
Report sponsor	Sentry Panel Products Ltd		
Test laboratory	BM TRADA UKAS No. 1762 (Now trading as Warringtonfire Testing and Certification Limited)		
Test date	24 Nov 2014		
Test standard	BSEN 1634-1: 2014 and BSEN 1363-1: 2012		
Sampling information	Not detailed in test report		
Tested Orientation	Doorset A: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset A: LSASD – Latched, Single Acting Single Doorset		
Test results	Doorset A	Integrity:	63 minutes
		Insulation:	56 minutes
Reason for use	• Glass and Glazing Systems • Adhesives		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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A.1.5 BMT/FEP/F14271 B

Test Report Reference BMT/FEP/F14271 B			
Report sponsor	Sentry Panel Products Ltd		
Test laboratory	BM TRADA UKAS No. 1762 (Now trading as Warringtonfire Testing and Certification Limited)		
Test date	24 Nov 2014		
Test standard	BS EN 1634-1: 2014 and BS EN 1363-1: 2012		
Sampling information	Not detailed in test report		
Tested Orientation	Doorset B: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset B: LSASD – Latched, Single Acting Single Doorset		
Test results	Doorset B	Integrity:	56 minutes
		Insulation:	3 minutes
Reason for use	Adhesives		
Failure mode	The Integrity failure observed at 56 minutes and the insulation failure at 3 minutes were localised to the glazing. As the glass and glazing system have not been included and assessed within this document it is the opinion of Warringtonfire that the results do not contradict the conclusion of this assessment. No further failures were deemed to have occurred until 64 minutes.		

A.1.6 WF379945 AR1

Test Report Reference WF379945 AR1			
Report sponsor	Halspan Ltd		
Test laboratory	Exova Ltd UKAS No. 1762 (Now trading as: Warringtonfire Testing and Certification Limited)		
Test date	15 Feb 2017		
Test standard	BS 476 Part 20/22: 1987		
Sampling information	Not detailed in test report		
Tested Orientation	Doorset: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset: ULSADD – Unlatched, Single Acting Double Doorset		
Test results	Doorset	Integrity:	55 minutes
		Insulation:	40 minutes
Reason for use	- Glass and Glazing Systems - Hardware		
Failure mode	Failure observed at 55 minutes was local to the glazing in the left leaf. No further failures were deemed to have occurred until 62 minutes. As the glass and glazing system (bead arrangement on the left leaf) have not been included and assessed within this document it is the opinion of Warringtonfire that the results do not contradict the conclusion of this assessment.		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

A.1.7 WF419726

Test Report Reference WF419726			
Report sponsor	Halspan Ltd		
Test laboratory	Warringtonfire Testing and Certification Limited UKAS No. 1762		
Test date	25 Oct 2019		
Test standard	BSEN 1634-1: 2014+A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference PS190902 on 01/10/19 – 02/10/19.		
Tested Orientation	Doorset: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset: LSADD – Latched, Single Acting Double Doorset		
Test results	Doorset	Integrity:	49 minutes
		Insulation:	23 minutes
Reason for use	- Glass and Glazing Systems - Hardware		
Failure mode	The failure observed at 49 minutes was local to the perimeter of the leaf. For the purposes of this assessment the intumescent specification utilised within the test has not been considered. No further failures not associated to the perimeter of the leaf were deemed to have occurred until 67 minutes. It is the opinion of Warringtonfire that if one of the positively tested perimeter intumescent specification were to have been used then the doorset would have achieved 60 minutes fire resistance performance.		

A.1.8 CFR2001231_2 Revision 1

Test Report Reference CFR2001231_2 Revision1			
Report sponsor	Halspan Limited		
Test laboratory	Cambridge Fire Research UKAS No. 4319		
Test date	23 Jan 2020		
Test standard	BSEN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC19057 on 09/01/20.		
Tested Orientation	Doorset B: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset B: LSADD – Latched, Single Acting Double Doorset		
Test results	Doorset B	Integrity:	62 minutes
		Insulation:	35 minutes
Reason for use	- Leaf size envelopes - Lipping - Glass and Glazing Systems - Adhesives - Hardware		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

A.1.9 BMT/FEP/F15087

Test Report Reference BMT/FEP/F15087			
Report sponsor	Sentry Panel Products Ltd		
Test laboratory	BM TRADA UKAS No. 1762 (Now trading as Warringtonfire Testing and Certification Limited)		
Test date	07 Jul 2015		
Test standard	BS EN 1634-1: 2014 and BS EN 1363-1: 2012		
Sampling information	Not detailed in test report		
Tested Orientation	Doorset: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset: LSADD – Latched, Single Acting Double Doorset		
Test results	Doorset	Integrity:	48 minutes
		Insulation:	42 minutes
Reason for use	- Glass and Glazing Systems - Hardware		
Failure mode	Failures were observed around the perimeter of the test specimen before 60 minutes fire resistance performance. The combination of leaf type, perimeter intumescent, configuration and size has not been included within this assessment and therefore, this test evidence does not contradict the conclusion.		

A.1.10 CFR1910291_2 Revision 1

Test Report Reference CFR1910291_2 Revision 1			
Report sponsor	Halspan Limited		
Test laboratory	Cambridge Fire Research UKAS No. 4319		
Test date	29 Oct 2019		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference PS191001 on 21/10/19 - 22/10/19.		
Tested Orientation	Doorset B: Opening towards the heating condition.		
Specimen summary & tested configuration	Doorset B: LSASD – Latched, Single Acting Single Doorset		
Test results	Doorset B	Integrity:	46 minutes
		Insulation:	5 minutes
Reason for use	- Glass and Glazing Systems - Hardware		
Failure mode	The integrity failure observed at 46 minutes and 59 minutes were local to the lower perimeter of the leaf. The perimeter specifications of this test are not being considered as part of this assessment and is therefore the opinion of Warringtonfire that if one of the positively tested perimeter sealing arrangements had been used defined in section 4.5 then the doorset would have achieved 60 minutes fire resistance performance.		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

A.1.11 WF428612/R

Test Report Reference WF428612/R			
Report sponsor	Halspan Limited		
Test laboratory	Warringtonfire Testing and Certification Limited UKAS No. 0249		
Test date	04 Jun 2020		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of IFC Certification on 14/05/20.		
Tested Orientation	Doorset A: Opening in towards heating condition. Doorset B: Opening away from the heating condition.		
Specimen summary & tested configuration	Doorset A: LSASD – Latched, Single Acting Single Doorset Doorset B: LSASD – Latched, Single Acting Single Doorset		
Test results	Doorset A	Integrity:	49 minutes
		Insulation:	49 minutes
	Doorset B	Integrity:	43 minutes
		Insulation:	43 minutes
Reason for use	Hardware		
Failure mode	Premature failures were observed during testing for both Doorset A and Doorset B. This test in the opinion of Warringtonfire is appropriate to support the use of some of the hardware utilised, where no failures were observed local to these items. The items which have contributed towards the failures observed have been omitted from the permitted design.		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

A.1.12 CFR2006181 LH

Test Report Reference CFR2006181 LH			
Report sponsor	Halspan Limited		
Test laboratory	Cambridge Fire Research UKAS No. 4319		
Test date	18 Jun 2020		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC20099 on 16/06/20.		
Tested Orientation	Doorset A: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset A: LSASD – Latched, Single Acting Single Doorset		
Test results	Doorset A	Integrity:	64 minutes
		Insulation:	32 minutes
Reason for use	• Leaf size envelopes • Glass and Glazing Systems • Thresholds • Hardware		

A.1.13 CFR2006181 RH

Test Report Reference CFR2006181 RH			
Report sponsor	Halspan Limited		
Test laboratory	Cambridge Fire Research UKAS No. 4319		
Test date	18 Jun 2020		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC20099 on 16/06/20.		
Tested Orientation	Doorset B: Opening away from the heating condition.		
Specimen summary & tested configuration	Doorset B: Latched, Single Acting Single Doorset		
Test results	Doorset B	Integrity:	44 minutes
		Insulation:	23 minutes
Reason for use	• Glass and Glazing Systems • Thresholds • Hardware		
Failure mode	Premature failures observed on this specimen were local to the fire stopping medium. No other failures observed during the test.		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

A.1.14 CFR2007212

Test Report Reference CFR2007212			
Report sponsor	Halspan Ltd		
Test laboratory	Cambridge Fire Research UKAS No. 4319		
Test date	21 Jul 2020		
Test standard	BS 476 Part 22: 1987		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC20108 on 13/07/20.		
Tested Orientation	Doorset: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset: LSASD – Latched, Single Acting Single Doorset		
Test results	Doorset	Integrity:	72 minutes
		Insulation:	72 minutes
Reason for use	• Leaf size envelopes • Hardware		

A.1.15 CFR2101191

Test Report Reference CFR2101191			
Report sponsor	Halspan Limited		
Test laboratory	Cambridge Fire Research UKAS No. 4319		
Test date	25 Jan 2021		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC20207 on 13/01/21.		
Tested Orientation	Doorset: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset: LSADD – Latched, Single Acting Double Doorset		
Test results	Doorset	Integrity:	62 minutes
		Insulation:	62 minutes
Reason for use	• Leaf size envelopes • Hardware		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

A.1.16 CFR2105131

Test Report Reference CFR2105131			
Report sponsor	Halspan Limited		
Test laboratory	Cambridge Fire Research UKAS No. 4319		
Test date	13 May 2021		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC21043 on 6 & 10/05/21.		
Tested Orientation	Left Leaf: Opening in towards heating condition. Right Leaf: Opening in towards heating condition.		
Specimen summary & tested configuration	Left Leaf: LSASD – Latched, Single Acting Single Doorset Right Leaf: LSASD – Latched, Single Acting Single Doorset		
Test results	Left Leaf	Integrity:	59 minutes
		Insulation:	46 minutes
	Right Leaf	Integrity:	57 minutes
		Insulation:	57 minutes
Reason for use	• Feature Grooves • Thresholds • Adhesives • Hardware • Back-to-back frames		
Failure mode	The premature failures observed within this test were localised to the tested letterplates with reduced intumescent protection. As the letterplates with reduced intumescent protection have not been included within the assessment it is the opinion of Warringtonfire that the evidence does not contradict the conclusion of this document.		

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

A.1.17 WF429481

Test Report Reference WF429481			
Report sponsor	Halspan Ltd		
Test laboratory	Warringtonfire Testing and Certification Limited UKAS No. 1762		
Test date	30 Jun 2020		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC20092 on 10/06/20.		
Tested Orientation	Doorset: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset: LSADD – Latched, Single Acting Double Doorset		
Test results	Doorset	Integrity:	53 minutes
		Insulation:	51 minutes
Reason for use	Hardware		
Failure mode	The premature failures observed during this test were localised to the perimeter of the leaf. The perimeter specifications of this test are not being considered as part of this assessment and is therefore the opinion of Warringtonfire that if one of the positively tested perimeter sealing arrangements had been used defined in section 4.5 then the doorset would have achieved 60 minutes fire resistance performance.		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

A.1.18 WF512409 Version 3

Test Report Reference WF512409 Version 3			
Report sponsor	Halspan Limited		
Test laboratory	Warringtonfire Testing and Certification Limited UKAS No. 1762		
Test date	27 Jan 2022		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC22001 on 20-21/01/22.		
Tested Orientation	Doorset A: Opening away from the heating condition. Doorset B: Opening in towards heating condition.		
Specimen summary & tested configuration	Doorset A: LSASD – Latched, Single Acting Single Doorset Doorset B: LSASD – Latched, Single Acting Single Doorset		
Test results	Doorset A	Integrity:	24 minutes
		Insulation:	24 minutes
	Doorset B	Integrity:	62 minutes
		Insulation:	49 minutes
Reason for use	• Leaf size envelopes • Feature Grooves • Glass and Glazing Systems • Hardware		
Failure mode	The failure observed on the doorset which opened away from the furnace (doorset A) included a threshold intumescent arrangement which has been omitted on the basis of this failure. The threshold arrangements included within this assessment include an enhanced intumescent protection to the one which has been demonstrated to fail prior to 60 minutes. The further premature failure observed within this test was localised to a letterplate design without a hardwood liner. As the letterplate has not been included within the assessment it is the opinion of Warringtonfire that the evidence does not contradict the conclusion of this document.		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

A.1.19 WF542706 Version 2

Test Report Reference WF542706 Version 2			
Report sponsor	Halspan Limited		
Test laboratory	Warringtonfire Testing and Certification Limited UKAS No. 1762		
Test date	16 Apr 2024		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC24005T on 27/02/24 – 04/04/24.		
Tested Orientation	Doorset: Opening in towards and away from heating conditions.		
Specimen summary & tested configuration	Doorset: DADD – Unlatched, Double Acting Double Doorset		
Test results	Doorset	Integrity:	72 minutes
		Insulation:	55 minutes
Reason for use	• Leaf size envelopes • Leaf Encapsulation • Glass and Glazing Systems • Frame Encapsulation • Adhesives • Hardware		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

A.1.20 WF542753

Test Report Reference WF542753			
Report sponsor	Halspan Limited		
Test laboratory	Warringtonfire Testing and Certification Limited UKAS No. 1762		
Test date	18 Apr 2024		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC24006T on 27/02/24-04/04/24.		
Tested Orientation	Doorset: Opening in towards and away from heating conditions.		
Specimen summary & tested configuration	Doorset: DADD – Unlatched, Double Acting Double Doorset		
Test results	Doorset	Integrity:	72 minutes
		Insulation:	55 minutes
Reason for use	• Leaf size envelopes • Leaf Encapsulation • Glass and Glazing Systems • Frame Encapsulation • Adhesives • Hardware		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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

A.1.21 WF533911

Test Report Reference WF533911			
Report sponsor	Halspan Limited		
Test laboratory	Warringtonfire Testing and Certification Limited UKAS No. 1762		
Test date	11 July 2023		
Test standard	BS EN 1634-1: 2014 + A1: 2018		
Sampling information	The doorsets were sampled by a representative of BM TRADA Certification under contract reference SC23176 on 29/06/23.		
Tested Orientation	Doorset A: Opening out away from heating conditions. Doorset B: Opening in towards heating conditions.		
Specimen summary & tested configuration	Doorset A: LSASD – Latched, Single Acting Single Doorset Doorset B: LSASD – Latched, Single Acting Single Doorset		
Test results	Doorset A	Integrity:	63 minutes
		Insulation:	63 minutes
	Doorset B	Integrity:	65 minutes
		Insulation:	65 minutes
Reason for use	Tested letterplate		

The legal validity of this assessment report can only be claimed on the presentation of the complete assessment report.

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