Field of Application Report

KFS Report PAR/22010/01 Revision A

Fire Resistance Standard: BS476: Part 22: 1987

Partner for Progress

Prepared for:

Royde & Tucker Ltd

Assessed Product/System:

HC605 Concealed Hinges

Assessed Performance:

30 and 60 minutes fire resistance

Issue Date	Expiry Date
July 2023	May 2026

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Kiwa Fire Safety Compliance

Kiwa Fire Safety Compliance (KFS) is part of the Kiwa UK Group. The company is a specialist engineering consultancy delivering independent, honest and practical fire safety solutions to professionals across the built environment. The sought after fire safety advice protects life, preserves property and safeguards business continuity.

Formerly called International Fire Consultants, the company was established in 1985 to provide high quality and impartial technical expertise concerning fire safety. Since then the team of highly qualified Fire Engineers and Fire Safety Professionals have continued to deliver robust, innovative and cost-effective fire safety solutions, including Assessments, Designs and Inspections.

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Private and Confidential

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Report Reference Number:	KFS Report PAR/22010/01 Revision A
Prepared on behalf of:	Royde & Tucker Ltd
Project:	Bilton Road Hitchin Hertfordshire SG4 0SB
Issue Date:	July 2023
Expiry Date:	May 2026
Ref ID:	#24137

Issue and Amendment Record

REV	DATE	AUTHOR	REVIEW	SECTION	AMENDMENTS
Draft	March 2021	WL	CPH	-	-
-	May 2021	WL	CPH	-	-
A	July 2023	WL	CPH	3, 4	Addition of new test report

Contents

1. Introduction

This report has been prepared by Kiwa Fire Safety Compliance, on the instruction of Royde & Tucker Ltd, to define the Field of Application for the HC605 concealed hinges when installed in particleboard door leaves installed in timber frames, that are required to provide 30 or 60 minutes fire resistance performance, when adjudged against BS476: Part 22: 1987.

This assessment has been produced using the principles outlined in the Passive Fire Protection Forum (PFPF): *'Guide to undertaking technical assessments of fire performance of construction products based on fire test evidence, 2021, Industry Standard Procedure'*.

When establishing the variations in the construction that can achieve the required fire resistance performance, KFS complies with the principles found in the following documents.

- BS ISO/TR 12470-2: 2017 *'Fire resistance tests - Guidance on the application and extension of results from tests conducted on fire containment assemblies and products. Part 2: Non-load bearing elements'.*
- EN 15725: 2010: *'Extended application reports on the fire performance of construction products and building elements'.*

It is proposed that variations to the tested specifications, as described in the following sections, may be accommodated by the HC605 concealed hinges, without reducing their potential to achieve a 30 or 60 minute integrity rating, if tested in accordance with the method and criteria of BS476: Part 22: 1987.

The omission of information on any components or manufacturing methods does not imply a lack of approval of those details, but these would need to be the subject of a separate analysis. Only variations specifically mentioned are supported by this assessment document, all other aspects must otherwise be as proven in tests summarised herein.

It is more onerous to test timber door assemblies, hinged, with the specimen installed with the leaf opening in towards the furnace. Testing in this orientation is therefore incorporated into Field of Application Reports to cover doors opening in the opposite direction. The principle is only applicable when the door construction, and any features within the door leaf, such as glazing, are symmetrical.

Unless stated otherwise, herein, this Field of Application considers the scope of approval for door assemblies that may be installed in either orientation, that being with either face exposed to fire conditions.

2. Test Evidence

The test evidence used to support this Field of Application Report is summarised in Appendix C of this report.

The test evidence referenced within this report has been carried out in accordance with BS EN 1634-1: 2014, whilst the scope of approval of this report is detailed if the door assemblies were tested to the fire test standard BS 476: Part 22: 1987. The appropriate performance of fire resisting door assemblies is defined in Approved Document B of the Building, the Scottish Building Standards Technical Handbook or the Building Regulations (Northern Ireland).

Approved Document B, which applies to England and Wales, identifies door assemblies by their performance under test to BS EN 1634-1 or BS476: Part 22: 1987, in terms of integrity for a period of minutes, (e.g. E30/E60, if their performance is measured in terms of EN 1634-1, or FD30/FD60 for BS476: Part 22: 1987). It should be noted that a suffix (S) is added for doors where restricted smoke leakage at ambient temperatures is needed. The Scottish and Northern Ireland documents also refer to the British and European Standards in Section 2D and Section B3 respectively of these documents.

These guidance documents thus give parity of performance between the two test methods, and although the EN 1634-1 and the BS476: Part 22: 1987 test procedures are both generally based upon the ISO 834 fire resistance test method, there are differences. These differences mean that the EN 1634-1 test is generally accepted as being a more onerous test than BS476: Part 22: 1987. This is borne out by Kiwa Fire Safety Compliance's experience of fire resistance testing already performed since the introduction of the European test standard.

As such, it is our opinion that any test results on door assemblies tested to EN 1634-1 can be utilised in situations requiring a performance defined against the BS476: Part 22 test method, or when making assessments and judgements against the BS476 criteria, but not vice versa.

3. Scope of Approval

3.1 Door Assemblies

Constructional specifications for the FD30 and FD60 door types that are permitted to be used with the Royde & Tucker HC605 concealed hinges can be found in the table below.

Note that this Field of Application Report details the requirements of the door assemblies when installed with Royde & Tucker HC605 concealed hinges. All other aspects of door leaf constructions such as core and overpanel construction, glazing details, and hardware specifications are required to be within the limitations of the supporting Field of Application Report for that particular door type.

3.1.1 Configurations

GENERAL REQUIREMENTS/NOTES

• The table below provides an overview of the door configurations that are approved to be used when the door leaves are installed using the Royde and Tucker HC605 concealed hinges.
• The approved leaf configurations may be further restricted when specific design details, leaf/frame facings and/or hardware items are included, and the following supporting Kiwa Fire Safety Compliance Field of Application Reports should be referred to for complete design details.
  • The current revision of PAR/10341/01 – *Field of Application for 30 Minute 44mm Thick Halspan® Optima Door Leaves Installed in Timber, Aluminium and Steel Frames*
  • The current revision of IFCA/06166 – *Field of Application for 30 Minute 44mm Thick Halspan® Prima Door Leaves Installed in Timber, Steel and Aluminium Frames*
  • The current revision of IFCA/08037 – *Field of Application for FD30 Strebord® 44, Strebord® Superpan and Strebord® 54 Door Leaves Installed in Timber and Steel Frames*
  • The current revision of PAR/10341/02 – *Field of Application for 60 Minute 54mm Thick Halspan® Optima Door Leaves Installed in Timber Frames*
  • The current revision of IFCA/06167 – *Field of Application for 60 Minute 54mm Thick Halspan® Prima Door Leaves Installed in Timber and Steel Frames*
  • The current revision of IFCA/08038 – *Field of Application for FD60 Strebord® Door Leaves Installed in Timber and Steel Frames*

CONFIGURATION		FRAME MATERIAL
DESCRIPTION	CODE	TIMBER ONLY
Latched, Single Acting, Single Leaf without Flush Overpanel	LSASD	✓
Unlatched, Single Acting, Single Leaf without Flush Overpanel	ULSASD	✓
Latched, Single Acting, Single Leaf with Flush Overpanel	LSASD+OP	✓
Unlatched, Single Acting, Single Leaf with Flush Overpanel	ULSASD+OP	✓
Latched, Single Acting, Double Leaf without Flush Overpanel	LSADD	✓
Unlatched, Single Acting, Double Leaf without Flush Overpanel	ULSADD	✓
Latched, Single Acting, Double Leaf with Flush Overpanel	LSADD+OP	✓
Unlatched, Single Acting, Double Leaf with Flush Overpanel	ULSADD+OP	✓

3.1.2 Maximum Assessable Door Leaf Sizes

This Field of Application Report is based on fire resistance tests conducted on door leaves that included the Royde & tucker HC605 concealed hinge. In addition to this, the Kiwa Fire Safety Compliance Field of Application Reports that support the use of the door types approved for use with the Royde & Tucker HC605 concealed hinge are considered. These supporting Field of Application Reports are based on test reports which have been analysed using the empirically derived, non-construction specific methodologies which form the basis of Kiwa Fire Safety Compliance's analysis. These methodologies allow the data obtained from the fire test evidence to be evaluated to determine permissible door leaf sizes, without any additional enhancements.

The calculated envelopes of assessed leaf dimensions for each door configuration covered by these supporting Field of Application Reports and approved for use with the Royde & Tucker HC605 concealed hinge are given in the tables below.

Double door assemblies may each be of the same width, up to the maximum width indicated in the tables below. For unequal pairs, there is no limit on the ratio of leaf widths, (although the large leaf must still be within the limitations detailed herein). The width of the small leaf shall not be less than 250mm, since this will affect its vertical stability relative to that of the larger leaf.

FD30 Assemblies

CONFIGURATION	MAXIMUM LEAF SIZE		
	HALSPAN® OPTIMA	HALSPAN® PRIMA	FALCON® STREBORD
LSASD	Appendix A	Appendix A	Appendix A
ULSASD			
LSASD+OP			
ULSASD+OP			
LSADD	2203mm high x 926 + 926mm wide	2203mm high x 926 + 926mm wide	2203mm high x 926 + 926mm wide
ULSADD			
LSADD+OP			
ULSADD+OP			

It shall be ensured that the door leaf sizes permitted above weigh less than 120kg, the maximum weight permitted to be carried by the Royde & tucker HC605 concealed hinges.

FD60 Assemblies

CONFIGURATION	MAXIMUM LEAF SIZE		
	HALSPAN® OPTIMA	HALSPAN® PRIMA	FALCON® STREBORD
LSASD	Appendix B	Appendix B	Appendix B
ULSASD			
LSASD+OP			
ULSASD+OP			
LSADD	2205mm high x 926 + 926mm wide	2205mm high x 926 + 926mm wide	2205mm high x 926 + 926mm wide
ULSADD			
LSADD+OP			
ULSADD+OP			

It shall be ensured that the door leaf sizes permitted above are less than 120kg, the maximum weight permitted to be carried by the Royde & tucker HC605 concealed hinges.

3.1.3 Core Construction - Leaf Thickness

MINIMUM LEAF THICKNESS – FD30	MAXIMUM LEAF THICKNESS – FD60
44mm	54mm

ADDITIONAL REQUIREMENTS/NOTES
• It is permitted to utilise the 54mm thick FD60 cores referenced herein for 30 minute applications • The installation of specific hardware items may necessitate an increase in leaf thickness. Refer to the appropriate supporting Field of Application Reports for full constructional details • The dimensions above exclude the thickness of the decorative leaf facings detailed in the relevant supporting Field of Application Reports

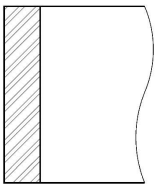
3.1.4 Core Construction - Leaf Core and Overpanel Products

REQUIRE FIRE RESISTANCE	MATERIAL	MINIMUM DENSITY	DIMENSIONS
30 minutes only	Halspan® Optima	620kg/m³	44mm thick
30 minutes only	Halspan® Prima	630kg/m³	44mm thick
30 minutes only	Falcon® Strebord	520kg/m³	44mm thick
30 or 60 minutes	Halspan® Optima	620kg/m³	54mm thick
30 or 60 minutes	Halspan® Prima	630kg/m³	54mm thick
30 or 60 minutes	Falcon® Strebord	520kg/m³	54mm thick

ADDITIONAL REQUIREMENTS/NOTES

• A variation of ±10% is permitted on the minimum core density detailed above
• Full details of the leaf core requirements shall be referenced in the following supporting Field of Application Reports.
  • The current revision of PAR/10341/01 – *Field of Application for 30 Minute 44mm Thick Halspan® Optima Door Leaves Installed in Timber, Aluminium and Steel Frames*
  • The current revision of IFCA/06166 – *Field of Application for 30 Minute 44mm Thick Halspan® Prima Door Leaves Installed in Timber, Steel and Aluminium Frames*
  • The current revision of IFCA/08037 – *Field of Application for FD30 Strebord® 44, Strebord® Superpan and Strebord® 54 Door Leaves Installed in Timber and Steel Frames*
  • The current revision of PAR/10341/02 – *Field of Application for 60 Minute 54mm Thick Halspan® Optima Door Leaves Installed in Timber Frames*
  • The current revision of IFCA/06167 – *Field of Application for 60 Minute 54mm Thick Halspan® Prima Door Leaves Installed in Timber and Steel Frames*
  • The current revision of IFCA/08038 – *Field of Application for FD60 Strebord® Door Leaves Installed in Timber and Steel Frames*

3.1.5 Timber Door Lippings – General

MATERIAL	MINIMUM DENSITY	MINIMUM THICKNESS	PROFILE	LIPPING ADHESIVE
Hardwood	640kg/m³	6mm		• Urea formaldehyde • Phenol formaldehyde • PU

ADDITIONAL REQUIREMENTS/NOTES
• Lippings must be installed to both vertical leaf edges • There must be no gaps present between the core and lippings • All other lipping requirements shall be as per the supporting Field of Application Reports referenced herein.

3.1.6 Intumescent Seals in FD30 Halspan Optima and Prima Door Leaves

Graphite based, Palusol or Lorient 617, pvc encased, seals manufactured by Halspan®, Mann McGowan Fabrications Ltd, Lorient Polyproducts Ltd, Intumescent Seals Ltd, Pyroplex, Norseal or Sealed Tight Solutions Ltd may be employed across the complete range of Halspan Optima and Prima 44mm door leaves approved in this report.

It is recommended that the intumescent seals are manufactured or supplied by members of the Intumescent Seals Associated (IFSA) or that the product is included in a Third Party Certification Scheme, such as that provided by IFC Certification, to ensure product quality and consistency.

If a Palusol specification is chosen, the seal(s) at the head of double door assemblies must be fitted into the frame reveal, or overpanel, as appropriate. Where the specification is a multiple seal arrangement, it is acceptable to use Palusol, subject to maintaining at least one strip in the frame/overpanel to be continuous across the meeting stile joint.

3.1.7 Intumescent Seals in FD30 Falcon Strebord Door Leaves

The following PVC encapsulated perimeter intumescent seals are permitted across the range of Falcon Strebord door leaves approved in this report.

- Palusol 100 – Mann McGowan Fabrications or Lorient Polyproducts Ltd
- Therm-A-Seal – Intumescent Seals Ltd
- Pyroplex – Pyroplex Ltd
- Type 617 – Lorient Polyproducts Ltd
- STS Fire – Sealed Tight Solutions Ltd
- Norfast – Norsound Ltd (fitted in the frame reveal and not approved as a seal for overpanel edges)

It is recommended that the intumescent seals are manufactured or supplied by members of the Intumescent Seals Associated (IFSA) or that the product is included in a Third Party Certification Scheme, such as that provided by IFC Certification, to ensure product quality and consistency.

If a Palusol specification is chosen, the seal(s) at the head of double door assemblies must be fitted into the frame reveal, or overpanel, as appropriate. Where the specification is a multiple seal arrangement, it is acceptable to use Palusol, subject to maintaining at least one strip in the frame/overpanel to be continuous across the meeting stile joint.

3.1.8 Intumescent Seals in FD60 Halspan Optima and Prima Door Leaves

Graphite based, Palusol or Lorient 617, pvc encased, seals manufactured by Halspan®, Mann McGowan Fabrications Ltd, Lorient Polyproducts Ltd, Intumescent Seals Ltd, Pyroplex, Norseal or Sealed Tight Solutions Ltd may be employed across the complete range of Halspan Optima and Prima 54mm door leaves approved in this report.

It is recommended that the intumescent seals are manufactured or supplied by members of the Intumescent Seals Associated (IFSA) or that the product is included in a Third Party Certification Scheme, such as that provided by IFC Certification, to ensure product quality and consistency.

If a Palusol specification is chosen, the seal(s) at the head of double door assemblies must be fitted into the frame reveal, or overpanel, as appropriate. Where the specification is a multiple seal arrangement, it is acceptable to use Palusol, subject to maintaining at least one strip in the frame/overpanel to be continuous across the meeting stile joint.

3.1.9 Intumescent Seals in FD60 Falcon Strebord Door Leaves

Graphite based, Palusol or Lorient 617, pvc encased, seals manufactured by Mann McGowan Fabrications Ltd, Lorient Polyproducts Ltd, Intumescent Seals Ltd, Sealed Tight Solutions Ltd, Pyroplex, Kilargo or Odice may be employed across the complete range of Falcon Strebord 54mm door leaves approved in this report.

It is recommended that the intumescent seals are manufactured or supplied by members of the Intumescent Seals Associated (IFSA) or that the product is included in a Third Party Certification Scheme, such as that provided by IFC Certification, to ensure product quality and consistency.

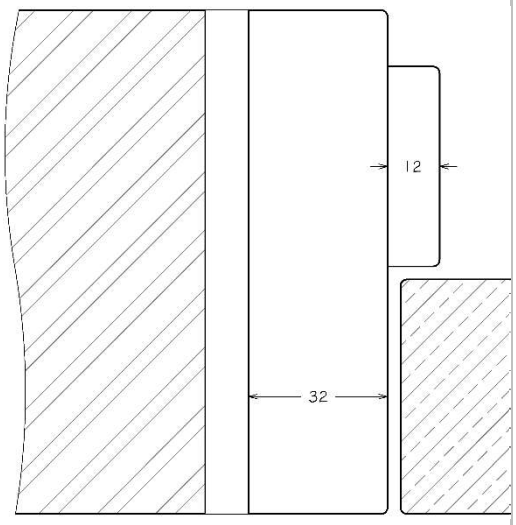
If a Palusol specification is chosen, the seal(s) at the head of double door assemblies must be fitted into the frame reveal, or overpanel, as appropriate. Where the specification is a multiple seal arrangement, it is acceptable to use Palusol, subject to maintaining at least one strip in the frame/overpanel to be continuous across the meeting stile joint.

3.2 Door Frames

3.2.1 FD30 Timber Door Frames – Specifications and Profiles

As a minimum, the following specification for timber door frames is required to be met. However, should the supporting documentation require a higher specification, then this must be adhered to.

TIMBER FRAMES FOR 30 AND 60 MINUTES FIRE RESISTANCE	
FRAME MATERIAL	Hardwood (excluding Beech)
MINIMUM DENSITY	520kg/m³
MINIMUM THICKNESS	32mm
MINIMUM FRAME DEPTH	85mm
MINIMUM STOP DEPTH	12mm



ADDITIONAL REQUIREMENTS/NOTES

- The minimum frame thickness detailed above excludes the door stop
- The doorstop is to comprise the same material as the door frame and must be fixed in place using 40mm long steel pins
- Timber must have a minimum measured density at 15% moisture content. The timber must be straight grained and of appropriate quality in accordance with BS EN 942: 2007. The moisture content shall be 11 ± 2% for the UK market, (or to suit internal joinery moisture content specification of export countries).
- **For 30 minutes** - The frame shall include 1no. 15 x 4mm graphite based intumescent seals. Seals shall be selected from the types approved for use in the supporting Field of Application Reports for the door type.
- **For 60 minutes** - The frame shall include 2no. 15 x 4mm graphite based intumescent seals, spaced 10mm apart and 8mm from the exposed edge. Seals shall be selected from the types approved for use in the supporting Field of Application Reports for the door type.
- **Transom members** – When a transom is used between a door and an overpanel, in single acting door assemblies the member shall be at least 85 x 32mm, and shall include 12mm thick door stops on both sides (i.e. making a minimum 85 x 56mm thick overall section).

3.3 Overpanels

Overpanels may have square or unequally rebated junctions with the door head or be separated by a transom member. Intumescent seals at the panel/frame interface shall be as defined in Appendices A and B. Transom members shall be in accordance with Section 3.2.

The size of overpanels is limited to the full width of the leaf/leaves contained within the door assembly and the following maximum height.

Single Leaves : 2000mm high

Double leaves : 1500mm high

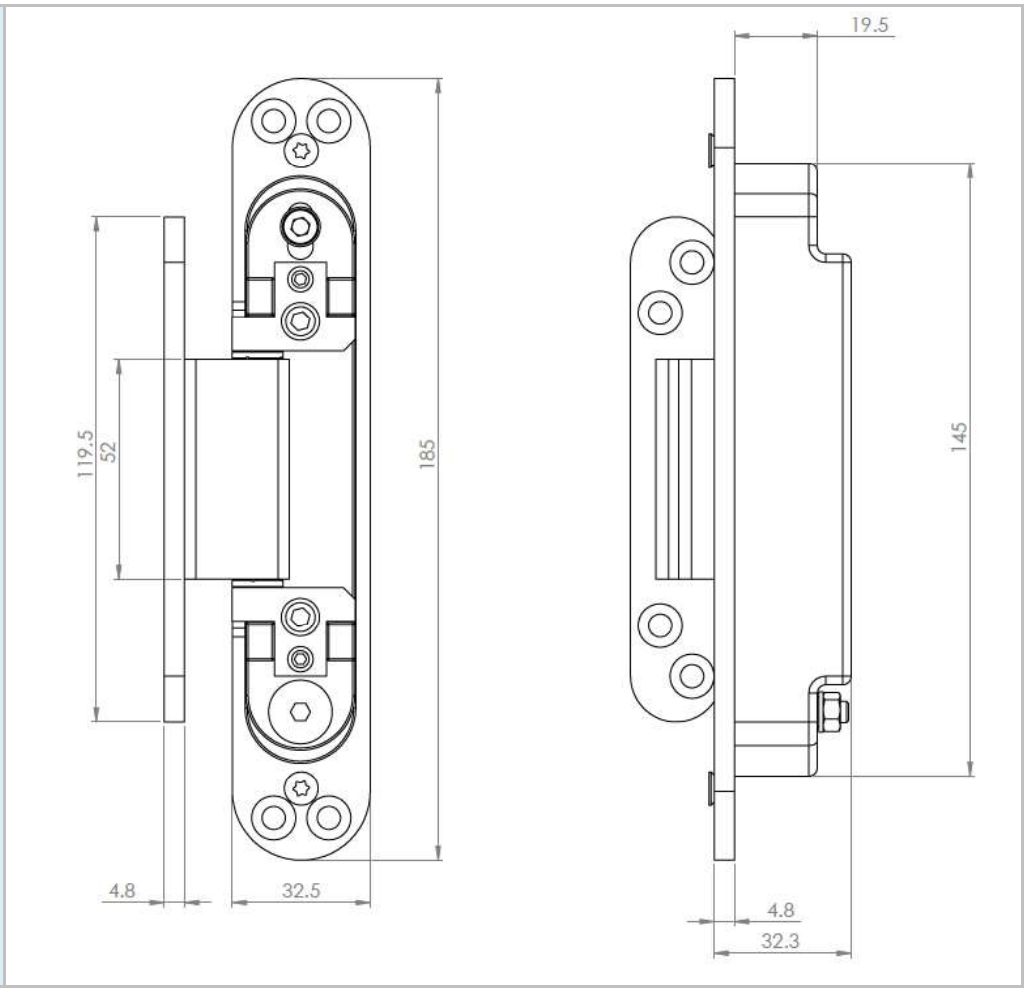
In all cases, the overpanel must be a single piece panel across the frame width; i.e. a “double door” overpanel shall not be used above double door leaves. Approval of an overpanel size by KFS does not indicate that such a size ca be fabricated, this should be checked with the manufacturer, and will be the subject to the ability of the supporting construction providing adequate restraint/support. The overpanel must always be on the same plate as the door(s) below.

For full overpanel installation details the Field of Application Report for the appropriate door type should be consulted.

4. Royde & Tucker HC605 Concealed Hinge

The Royde & Tucker HC605 concealed hinge may be used in the door assemblies approved by this report. Full details of the HC605 concealed hinge and its installation requirements are included below.

ELEMENT		SPECIFICATION/QUANTITY/DIMENSIONS	
APPROVED DOOR FRAME MATERIAL		Timber (Hardwood only – excluding beech)	
MINIMUM NUMBER OF HINGES & POSITIONS		• 2no. for leaves up to 2200mm high • 3no. for leaves greater than 2200mm high • Top hinge to be fitted 250mm from the head of the door leaf to the hinge centre • Bottom hinge to be fitted 250mm from the bottom edge of the door leaf to the hinge centre • When required, the centre hinge shall be fitted equispaced between the top and bottom hinge or 435mm from the top hinge measured from the centre of each hinge body (in frame) • Set back 3mm from the exposed face of the leaf and 20mm from the exposed face of the frame	
HINGE BODY (DOOR)		185mm high x 32.5mm wide x 32.3mm deep	
HINGE BODY (FRAME)		119.5mm high x 22mm wide x 4.8mm deep	
MATERIAL	30 MINUTES	Stainless steel	
	60 MINUTES	Stainless steel	
FIXINGS		• 4no. 4.8mm diameter x 80mm long stainless steel countersunk screws per blade in the leaf • 4no. 4.7mm diameter x 31mm long stainless steel countersunk screws per blade in the frame	
INTUMESCENT PROTECTION		HINGE BODY	1mm thick Interdens wrapped around the body of leaf portion
		BOTTOM OF HINGE MORTICES	2mm thick Interdens fitted under the leaf portion body and under the face plate (leaf and frame portion)
ADDITIONAL REQUIREMENTS/NOTES		• The mortices for the hinges in the door leaf and frame must be cut tightly, such that there are no gaps around the hinge components/intumescent material when the hinges are installed. • It must be ensured that the correct number of hinges are fitted to ensure that the door leaf is supported for the full fire resistance period.	

FIGURES	

5. Conclusion

It is the opinion of Kiwa Fire Safety Compliance that if the proposed Royde and Tucker HC605 concealed hinges were manufactured and installed within the limitations of this Field of Application Report and tested for fire resistance, they would provide a positive contribution to the door assemblies in meeting the integrity criteria of BS476: Part 22: 1987 for 30 or 60 minutes, as applicable.

6. Declaration by the Applicant

KFS Engineering Assessment Report	PAR/22010/01 Revision A
Client	Royde & Tucker Ltd
Project Address	Bilton Road Hitchin Hertfordshire SG4 0SB

We the undersigned confirm that we have read and complied with the obligations placed on us by the

Passive Fire Protection Forum (PFPF) - Industry Standard Procedure 2021

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

- 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.

Signature	
Name	Russell Coldwell
Position	Head of Technical Services
Company Name	Royde and Tucker Ltd.
Date	11th August, 2023.

7. Limitations

This report addresses itself solely to the ability of the proposed assemblies described to satisfy the criteria of the fire resistance test and does not imply any suitability for use with respect to other unspecified criteria.

It is the responsibility of others to establish whether the proposed product meets any other relevant requirements, including any other requirements for fire performance and life safety, as defined in documents such as the Building Regulations, and the Fire Strategy/Risk Assessment for the project.

This document only considers the door assemblies described, herein, and assumes that the surrounding construction will provide no less restraint than the tested assembly and that it will remain in place and be substantially intact for the full fire resistance period.

This assessment is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available to Kiwa Fire Safety Compliance the assessment will be unconditionally withdrawn and the applicant will be notified in writing. Similarly, the assessment evaluation is invalidated if the assessed construction is subsequently tested since actual test data is deemed to take precedence.

As per the guidance outlined in the Passive Fire Protection Forum (PFPF): *'Guide to undertaking technical assessments of fire performance of construction products based on fire test evidence, 2021, Industry Standard Procedure'*, appropriate action has been taken to mitigate the risk of a conflict of interest arising during the preparation of this report. All individuals involved in the production, or subsequent review, of this assessment have declared any perceived conflicts of interest, with regards to the sponsor or subject(s) of this report, prior to working on this project.

The assessor and reviewer have been deemed suitable for involvement in the production of this assessment in accordance with the guidance outlined in the Passive Fire Protection Forum (PFPF): *'Guide to undertaking technical assessments of fire performance of construction products based on fire test evidence, 2021, Industry Standard Procedure'*.

Where the constructional information in this report is taken from details provided to Kiwa Fire Safety Compliance and/or from fire resistance test reports referenced herein, it is, therefore, limited to the information given in those documents. It is necessarily dependent upon the accuracy and completeness of that information. Where constructional or manufacturing details are not specified, or discussed, herein, it should not, therefore, be taken to infer approval of variation in such details from those tested or otherwise approved.

The analysis and conclusions within this report are based upon the likely fire resisting performance of a complete door assembly that is manufactured and installed in accordance with this document, and offered for fire resistance testing in 'perfect' condition. In practice, management procedures must be in place in any building where the door assemblies are installed, to ensure that no parts of the assembly are damaged or faulty. Further, the doors must open and close without the use of undue force. The edge gaps/alignment of door leaves must be in accordance with the tolerances defined, herein, when the doors are closed. Any such shortfalls in respect to the condition of the assemblies will invalidate the approval by KFS, and may seriously affect the ability of the assemblies to provide the required level of fire resistance performance. Determination of what constitutes wear or damage, and any corrective actions in order to return assemblies to the required condition, should only be carried out following consultation with the manufacturer and KFS.

This report is not intended to be a complete specification for the proposed products and it is the responsibility of others to ensure that the products are suitable for the intended purpose; whilst incorporating the requirements of this report. Further, the products must be manufactured/installed by experienced/trained personnel using appropriate and established working practices/techniques.

This report applies to fire door assemblies that are evaluated to BS476: Part 22: 1987; which is an applicable test method currently referenced within guidance to Building Regulations in the United Kingdom, and in building codes in some other countries. However, KFS have a duty of care to advise that introduction of CE Marking may become compulsory for fire resisting doorsets marketed in the EU, during the validity period of this report; in which case, users should contact KFS for further details/advice.

Where the assessed constructions have not been subject to an on-site audit by Kiwa Fire Safety Compliance, it is the responsibility of anyone using this report to confirm that all aspects of the assemblies fully comply with the descriptions and limitations, herein.

Any materials specified in this report have been selected and judged primarily on their fire performance. KFS do not claim expertise in areas other than fire safety. Whilst observing all possible care in the specification of solutions, we would draw the reader's attention to the fact that during the construction and procurement process, the materials used should be subjected to more general examination regarding the wider Health and Safety, and CoSHH Regulations. Designers, manufacturers and installers are reminded of their responsibilities under the CDM Regulations; but particularly with regard to installation and maintenance of heavy or inaccessible items.

This assessment considers the fire resistance performance of the door assemblies when tested with the leaves in the closed position, within the frame reveal; either retained by the latch, or self-closing device, or locked shut, as applicable. The door assemblies will only provide the assessed fire performance when in a similar configuration; and it is the responsibility of the building occupants/owner to ensure that this is the case.

This Report is provided to the sponsor on the basis that it is a professional independent engineering evaluation as to what the fire performance of the construction/system would be should it to be tested to the named standard. It is KFS's experience that such an evaluation is normally acceptable in support of an application for building approvals, certainly throughout the UK and in many parts of Europe and the rest of the world.

However, unless KFS have been commissioned to liaise with the Authorities that have jurisdiction for the building in question for the purpose of obtaining the necessary approvals, KFS cannot assure that the document will satisfy the requirements of the particular building regulations for any building being constructed.

It is, therefore, the responsibility of the sponsor to establish whether this evidence is appropriate for the application for which it is being supplied and KFS cannot take responsibility for any costs incurred as a result of any rejection of the document for reasons outside of our control. Early submittal of the Report to the Authorities will minimise any risks in this respect.

8. Validity

This Field of Application Report has been prepared based on Kiwa Fire Safety Compliance's present knowledge of the products described, the stated testing regime and the submitted test evidence.

The assessment is valid initially for a period of five years after which time it is recommended that it be submitted to Kiwa Fire Safety Compliance for re-evaluation. For this reason, anyone using this document after May 2026 should confirm its ongoing validity.

This assessment report is not valid unless it incorporates the declaration, in Section 5, duly signed by the applicant.

Prepared by:

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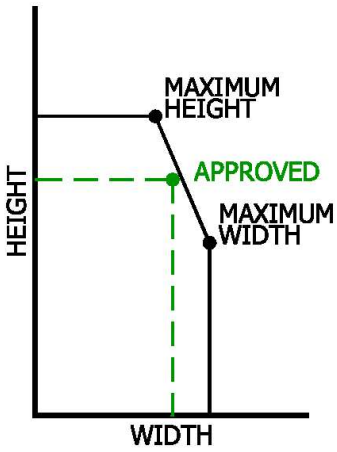
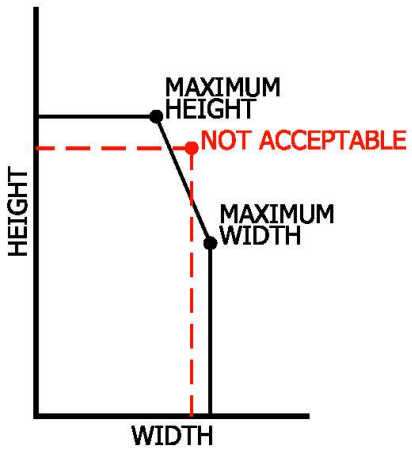
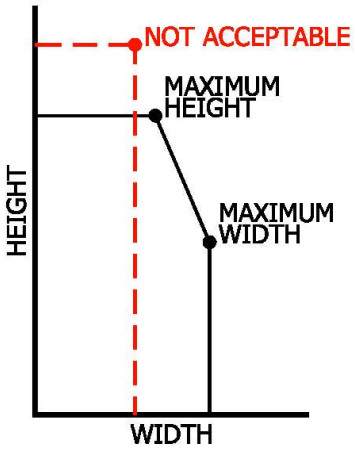
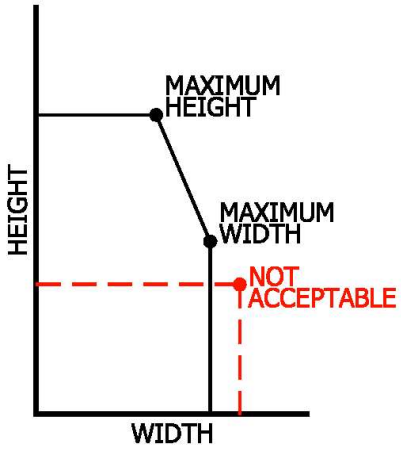
Appendix A - Approved Leaf Envelopes and Perimeter Intumescent Seal Specifications for 30 Minutes

DOOR LEAF AND OVERPANEL CONFIGURATION KEY		
LEAF CONFIGURATION	OVERPANEL CONFIGURATION	CONFIGURATION CODE
Latched, single acting, single leaf	Optional transomed overpanel	LSASD
Unlatched, single acting, single leaf	Optional transomed overpanel	ULSASD
Latched, single acting, single leaf	With overpanel	LSASD+OP
Unlatched, single acting, single leaf	With overpanel	ULSASD+OP
Latched, single acting, double leaf	Optional transomed overpanel	LSADD
Unlatched, single acting, double leaf	Optional transomed overpanel	ULSADD
Latched, single acting, double leaf	With overpanel	LSADD+OP
Unlatched, single acting, double leaf	With overpanel	ULSADD+OP









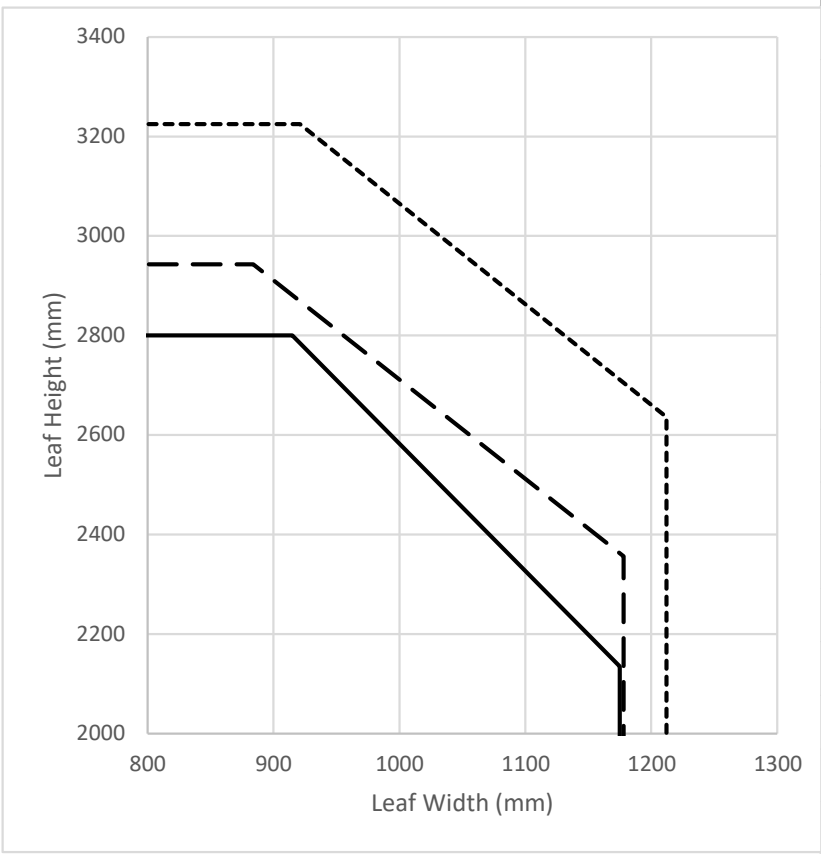
A.1 LSASD For 30 minutes

LATCHED, SINGLE ACTING, SINGLE DOOR ASSEMBLIES OPTIONAL TRANSOMMED OVERPANEL	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2135mm	1175mm
2800mm	915mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2356mm	1178mm
2943mm	884mm

FALCON STREBORD	
HEIGHT	WIDTH
2636mm	1212mm
3225mm	921mm



INTUMESCENT SPECIFICATION	
HEAD	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
JAMBS	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
TRANSOM (IF APPLICABLE)	1no. 15x4mm intumescent seal fitted centrally in the frame reveal, opposing the leaf head
TRANSOMED OVERPANEL INTERFACES (IF APPLICABLE)	1no. 15x4mm intumescent seal, fitted centrally in the frame reveal (including transom) or all overpanel edges

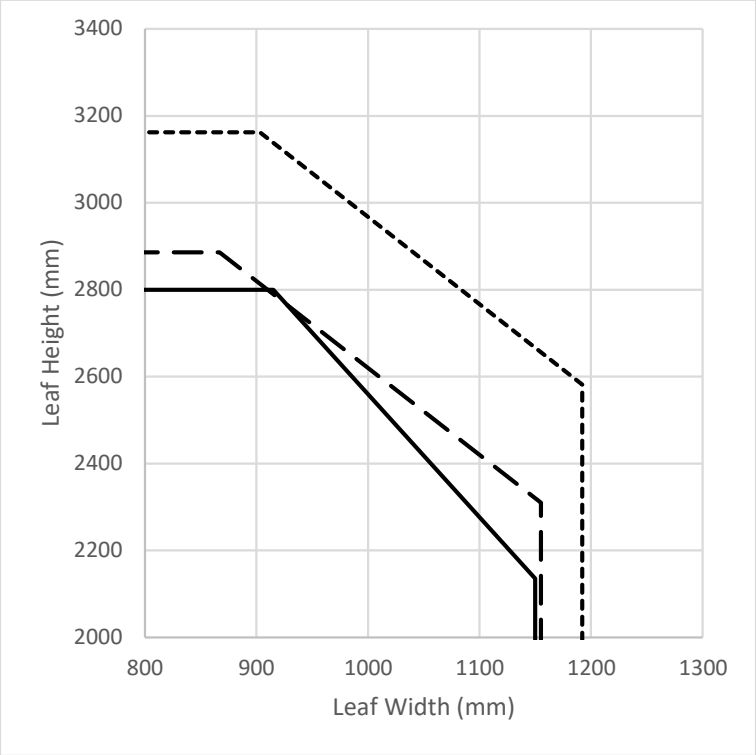
A.2 ULSASD for 30 minutes

UNLATCHED, SINGLE ACTING, SINGLE DOOR ASSEMBLIES OPTIONAL TRANSOMMED OVERPANEL	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2135mm	1150mm
2800mm	915mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2310mm	1155mm
2886mm	867mm

FALCON STREBORD	
HEIGHT	WIDTH
2582mm	1192mm
3162mm	903mm



INTUMESCENT SPECIFICATION	
FRAME HEAD	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
FRAME JAMBS	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
TRANSOM (IF APPLICABLE)	1no. 15x4mm intumescent seal fitted centrally in the frame reveal, opposing the leaf head
TRANSOMED OVERPANEL INTERFACES (IF APPLICABLE)	1no. 15x4mm intumescent seal, fitted centrally in the frame reveal (including transom) or all overpanel edges

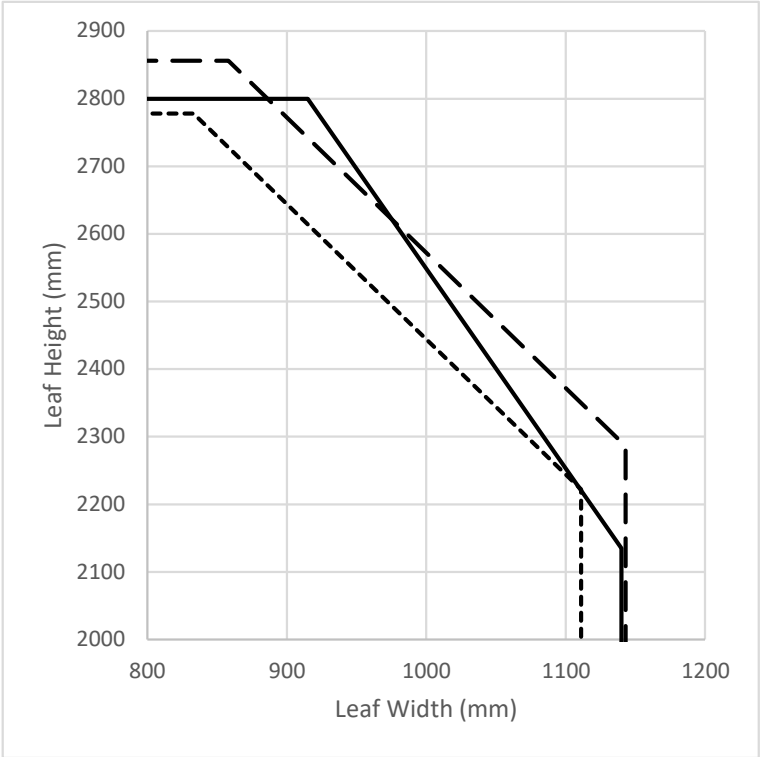
A.3 LSASD+OP for 30 minutes

LATCHED, SINGLE ACTING, SINGLE DOOR ASSEMBLIES WITH OVERPANELS	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2135mm	1140mm
2800mm	915mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2286mm	1143mm
2856mm	858mm

FALCON STREBORD	
HEIGHT	WIDTH
2222mm	1111mm
2778mm	833mm



INTUMESCENT SPECIFICATION	
FRAME HEAD	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
FRAME JAMBS	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
SQUARE OVERPANEL JUNCTION	1no. 15 x 4mm intumescent seal fitted centrally in the leaf or overpanel edge Or 2no. 10 x 4mm intumescent seals fitted centrally in the leaf or overpanel edge, spaced 10mm apart
UNEQUAL REBATED OVERPANEL JUNCTION (HALSPAN CORES ONLY)	1no. 15 x 4mm intumescent seal fitted centrally in the 32mm wide section of the leaf or overpanel edge and 1no. 10 x 4mm seal fitted in the opposite edge Or 1no. 20 x 4mm intumescent seal fitted centrally in the 32mm wide section of leaf or overpanel edge and 1no. 10 x 2mm Interdens or Therm-A-Strip in the opposing edge
EQUAL REBATED OVERPANEL JUNCTION (STREBORD CORES ONLY)	2no. 15 x 4mm seals; each seal fitted centrally in the rebate in each leaf/overpanel edge

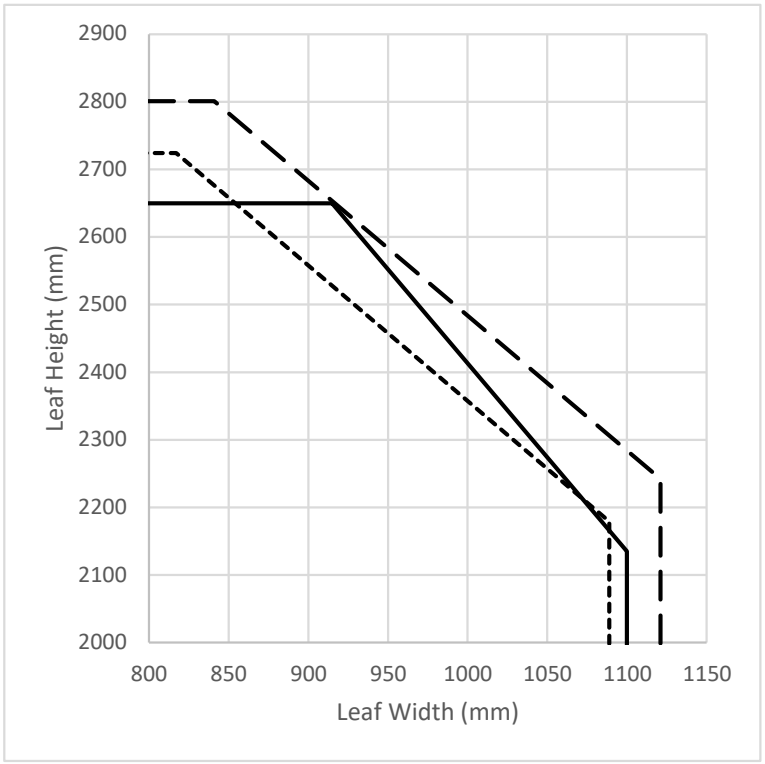
A.4 ULSASD+OP for 30 minutes

UNLATCHED SINGLE ACTING, SINGLE DOOR ASSEMBLIES WITH OVERPANELS	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2135mm	1100mm
2650mm	915mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2242mm	1121mm
2801mm	841mm

FALCON STREBORD	
HEIGHT	WIDTH
2179mm	1089mm
2724mm	817mm



INTUMESCENT SPECIFICATION	
FRAME HEAD	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
FRAME JAMBS	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
SQUARE OVERPANEL JUNCTION	1no. 15 x 4mm intumescent seal fitted centrally in the leaf or overpanel edge Or 2no. 10 x 4mm intumescent seals fitted centrally, in the leaf or overpanel edge, spaced 10mm apart
UNEQUAL REBATED OVERPANEL JUNCTION (HALSPAN CORES ONLY)	1no. 15 x 4mm intumescent seal fitted centrally in the 32mm wide section of the leaf or overpanel edge and 1no. 10 x 4mm seal fitted in the opposite edge Or 1no. 20 x 4mm intumescent seal fitted centrally in the 32mm wide section of leaf or overpanel edge and 1no. 10 x 2mm Interdens or Therm-A-Strip intumescent seal in the opposing edge
EQUAL REBATED OVERPANEL JUNCTION (STREBORD CORES ONLY)	2no. 15 x 4mm intumescent seals; each seal fitted centrally in the rebate in each leaf/overpanel edge

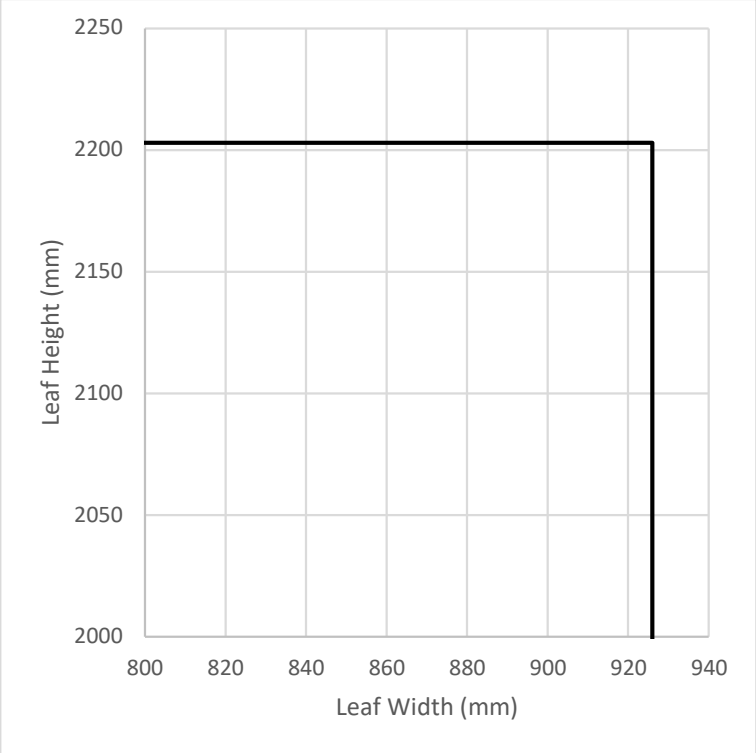
A.5 LSADD for 30 minutes

LATCHED, SINGLE ACTING, DOUBLE DOOR ASSEMBLIES OPTIONAL TRANSOMMED OVERPANEL	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2203mm	926mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2203mm	926mm

FALCON STREBORD	
HEIGHT	WIDTH
2203mm	926mm



INTUMESCENT SPECIFICATION	
FRAME HEAD	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
FRAME JAMBS	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
TRANSOM (IF APPLICABLE)	1no. 15x4mm intumescent seal fitted centrally in the frame reveal, opposing the leaf head
TRANSOMED OVERPANEL INTERFACES (IF APPLICABLE)	1no. 15x4mm intumescent seal, fitted centrally in the frame reveal (including transom) or all overpanel edges
MEETING STILES (SQUARE)	1no. 15 x 4mm seal in one leaf edge (Halspan cores only) Or 2no. 10 x 4mm seals in one leaf edge, centrally fitted, spaced 10mm apart (Halspan or Strebord cores)

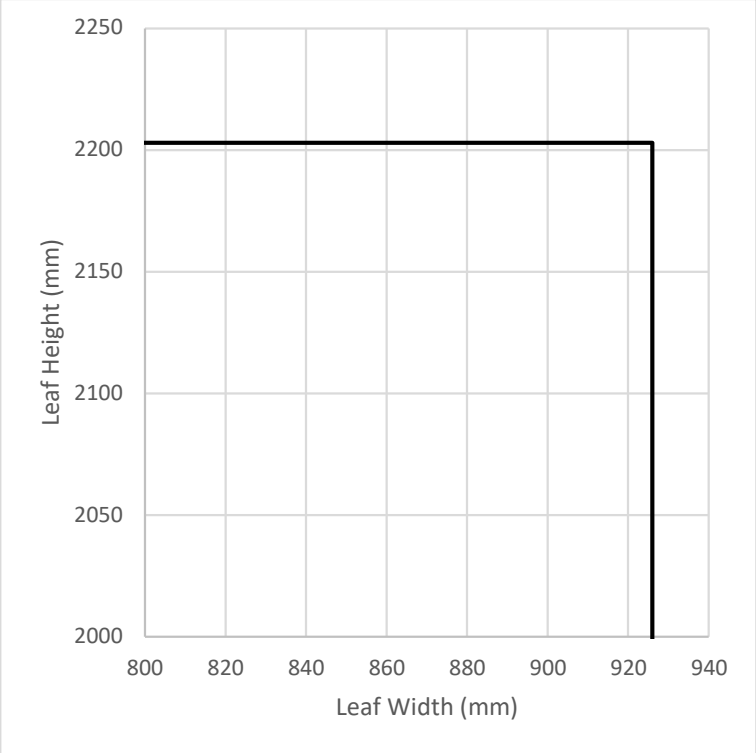
A.6 ULSADD for 30 minutes

UNLATCHED SINGLE ACTING, DOUBLE DOOR ASSEMBLIES OPTIONAL TRANSOMMED OVERPANEL	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2203mm	926mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2203mm	926mm

FALCON STREBORD	
HEIGHT	WIDTH
2203mm	926mm



INTUMESCENT SPECIFICATION	
FRAME HEAD	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
FRAME JAMBS	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
TRANSOM (IF APPLICABLE)	1no. 15x4mm intumescent seal fitted centrally in the frame reveal, opposing the leaf head
TRANSOMED OVERPANEL INTERFACES (IF APPLICABLE)	1no. 15x4mm intumescent seal, fitted centrally in the frame reveal (including transom) or all overpanel edges
MEETING STILES (SQUARE)	1no. 15 x 4mm intumescent seal in one leaf edge (Halspan cores only) Or 2no. 10 x 4mm intumescent seals in one leaf edge, centrally fitted, spaced 10mm apart (Halspan or Strebord cores)

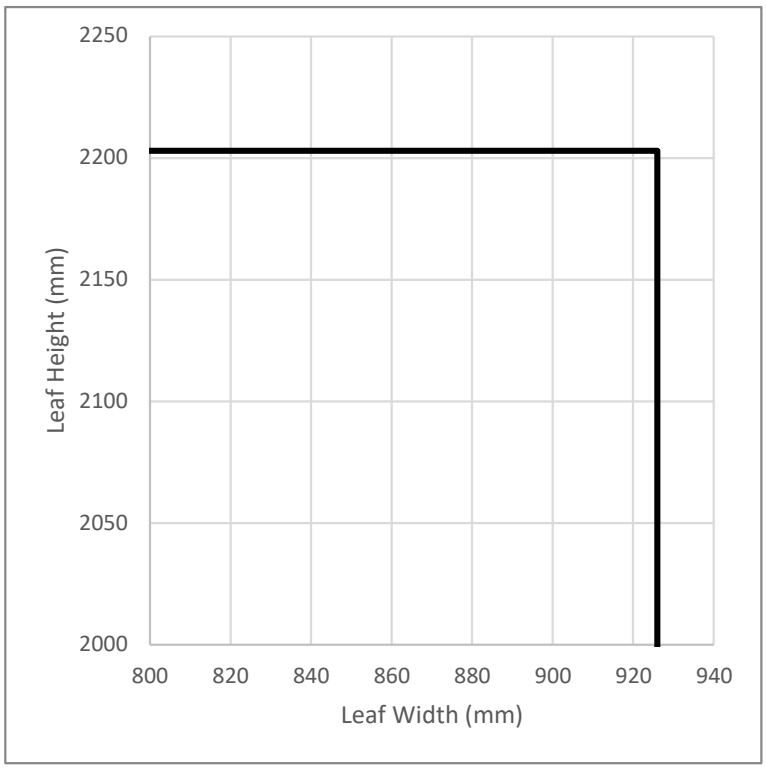
A.7 LSADD+OP for 30 minutes

LATCHED SINGLE ACTING, DOUBLE DOOR ASSEMBLIES WITH OVERPANELS	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2203mm	926mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2203mm	926mm

FALCON STREBORD	
HEIGHT	WIDTH
2203mm	926mm



INTUMESCENT SPECIFICATION	
FRAME HEAD	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
FRAME JAMBS	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
SQUARE OVERPANEL JUNCTION	1no. 15 x 4mm seal in the leaf or overpanel edge Or 2no. 10 x 4mm seals in the leaf or overpanel edge
UNEQUAL REBATED OVERPANEL JUNCTION (HALSPAN CORES ONLY)	1no. 15 x 4mm seal in the 32mm wide section of the leaf or overpanel edge and 1no. 10 x 4mm seal fitted in the opposite edge Or 1no. 20 x 4mm seal in the 32mm wide section of leaf or overpanel edge and 1no. 10 x 2mm Interdens or Therm-A-Strip in opposing edge
EQUAL REBATED OVERPANEL JUNCTION (STREBORD CORES ONLY)	2no. 15 x 4mm seals; each seal fitted centrally in the rebate in each leaf/overpanel edge
MEETING STILES (SQUARE)	1no. 15 x 4mm seal in one leaf edge (Halspan cores only) Or 2no. 10 x 4mm seals in one leaf edge, centrally fitted, spaced 10mm apart (Halspan or Strebord cores)

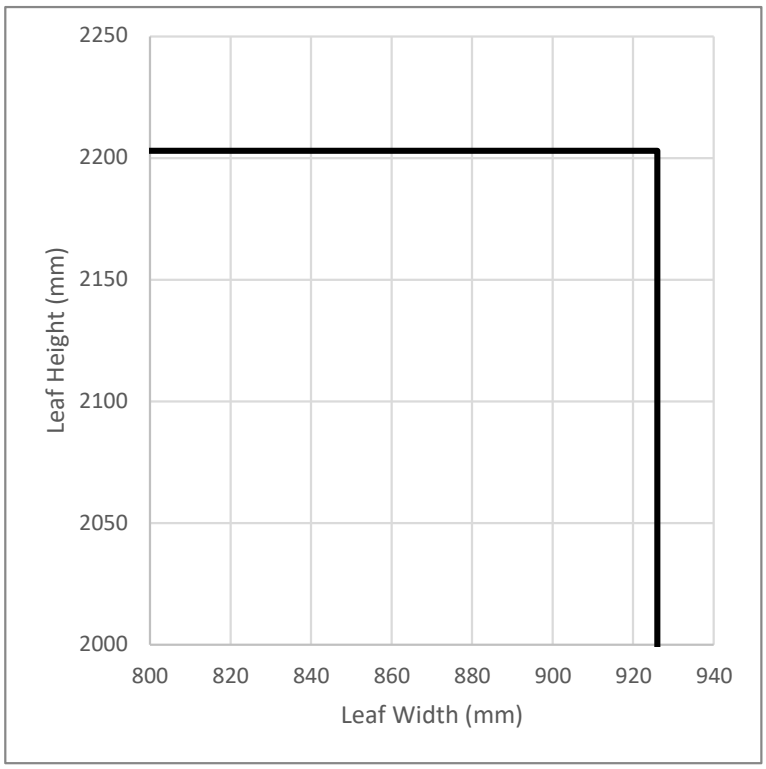
A.8 ULSADD+OP for 30 minutes

UNLATCHED SINGLE ACTING, DOUBLE DOOR ASSEMBLIES WITH OVERPANELS	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2203mm	926mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2203mm	926mm

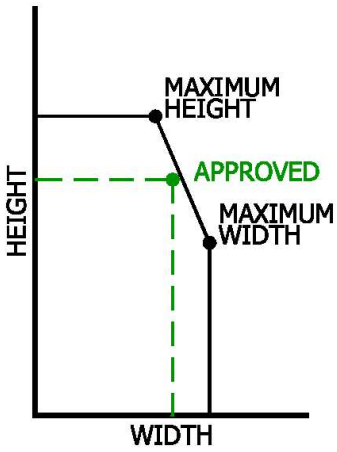
FALCON STREBORD	
HEIGHT	WIDTH
2203mm	926mm

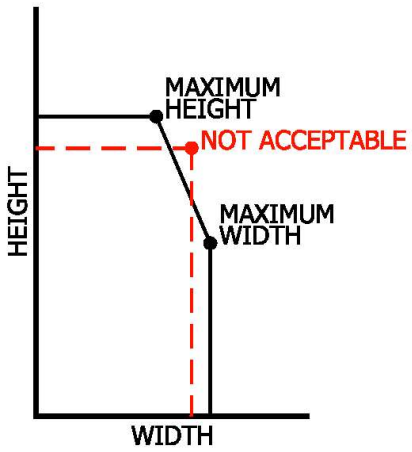


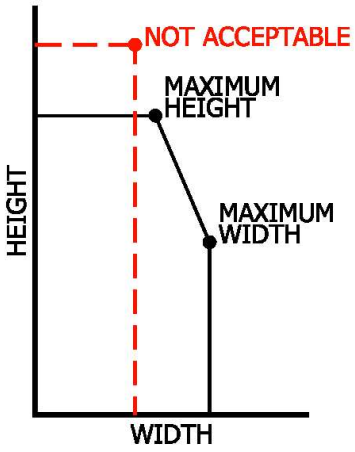
INTUMESCENT SPECIFICATION	
FRAME HEAD	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
FRAME JAMBS	1no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge
SQUARE OVERPANEL JUNCTION	1no. 15 x 4mm seal in the leaf or overpanel edge Or 2no. 10 x 4mm seals in the leaf or overpanel edge, centrally fitted, spaced 10mm apart
UNEQUAL REBATED OVERPANEL JUNCTION (HALSPAN CORES ONLY)	1no. 15 x 4mm seal in the 32mm wide section of the leaf or overpanel edge and 1no. 10 x 4mm seal fitted in the opposite edge Or 1no. 20 x 4mm seal in the 32mm wide section of leaf or overpanel edge and 1no. 10 x 2mm Interdens or Therm-A-Strip in opposing edge
EQUAL REBATED OVERPANEL JUNCTION (STREBORD CORES ONLY)	2no. 15 x 4mm seals; each seal fitted centrally in the rebate in each leaf/overpanel edge
MEETING STILES (SQUARE)	1no. 15 x 4mm seal in one leaf edge (Halspan cores only) Or 2no. 10 x 4mm seals in one leaf edge, centrally fitted, spaced 10mm apart (Halspan or Strebord cores)

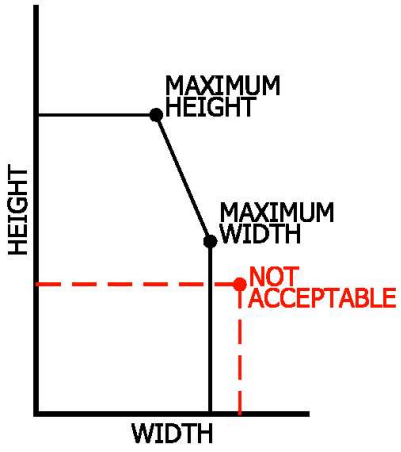
Appendix B - Approved Leaf Envelopes and Perimeter Intumescent Seal Specifications for 60 Minutes

DOOR LEAF AND OVERPANEL CONFIGURATION KEY		
LEAF CONFIGURATION	OVERPANEL CONFIGURATION	CONFIGURATION CODE
Latched, single acting, single leaf	Optional transomed overpanel	LSASD
Unlatched, single acting, single leaf	Optional transomed overpanel	ULSASD
Latched, single acting, single leaf	With overpanel	LSASD+OP
Unlatched, single acting, single leaf	With overpanel	ULSASD+OP
Latched, single acting, double leaf	Optional transomed overpanel	LSADD
Unlatched, single acting, double leaf	Optional transomed overpanel	ULSADD
Latched, single acting, double leaf	With overpanel	LSADD+OP
Unlatched, single acting, double leaf	With overpanel	ULSADD+OP









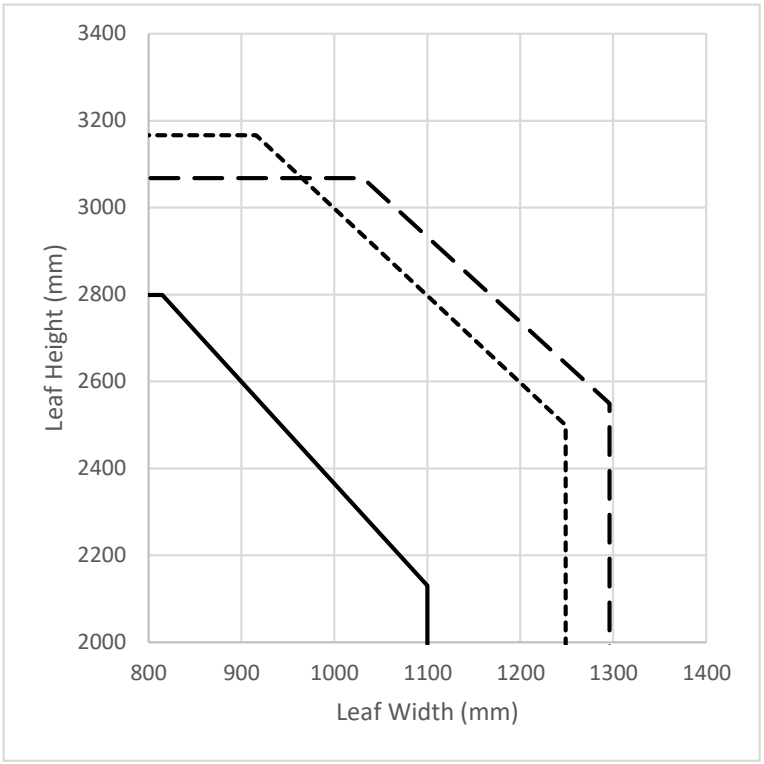
B.1 LSASD for 60 minutes

LATCHED SINGLE ACTING, SINGLE DOOR ASSEMBLIES OPTIONAL TRANSOMMED OVERPANEL	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2130mm	1100mm
2799mm	815mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2549mm	1296mm
3068mm	1031mm

FALCON STREBORD	
HEIGHT	WIDTH
2499mm	1249mm
3167mm	916mm



INTUMESCENT SPECIFICATION	
HEAD	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
JAMBS	2no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
TRANSOM (IF APPLICABLE)	2no. 15x4mm intumescent seals fitted centrally in the frame reveal, opposing the leaf head, spaced 10mm apart
TRANSOMED OVERPANEL INTERFACES (IF APPLICABLE)	2no. 15x4mm intumescent seals fitted centrally in the frame reveal (including transom) or all overpanel edges, spaced 10mm apart

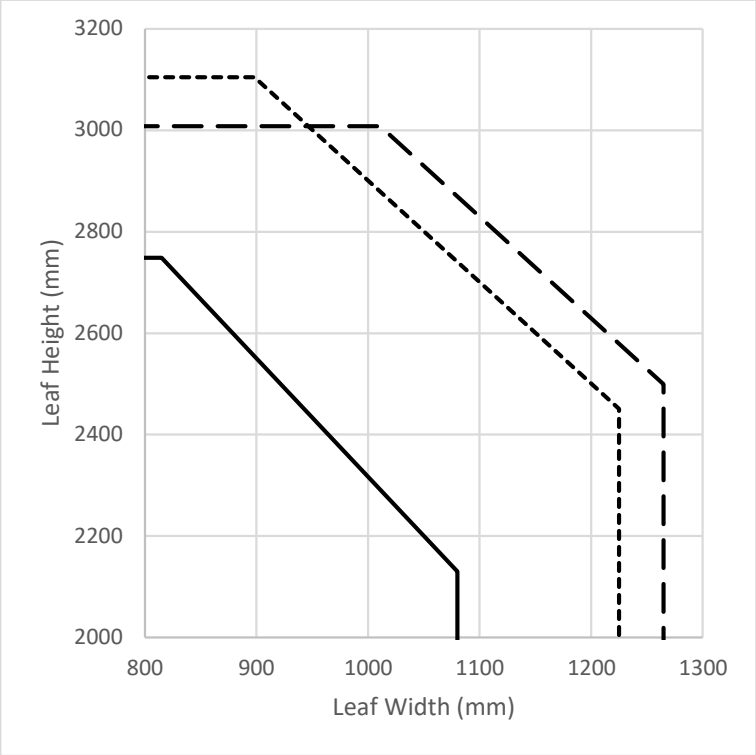
B.2 ULSASD for 60 minutes

UNLATCHED SINGLE ACTING, SINGLE DOOR ASSEMBLIES OPTIONAL TRANSOMMED OVERPANEL	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2130mm	1080mm
2749mm	815mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2499mm	1265mm
3008mm	1011mm

FALCON STREBORD	
HEIGHT	WIDTH
2451mm	1225mm
3105mm	898mm



INTUMESCENT SPECIFICATION	
HEAD	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
JAMBS	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
TRANSOM (IF APPLICABLE)	2no. 15x4mm intumescent seals fitted centrally in the frame reveal, opposing the leaf head, spaced 10mm apart
TRANSOMED OVERPANEL INTERFACES (IF APPLICABLE)	2no. 15x4mm intumescent seals fitted centrally in the frame reveal (including transom) or all overpanel edges, spaced 10mm apart

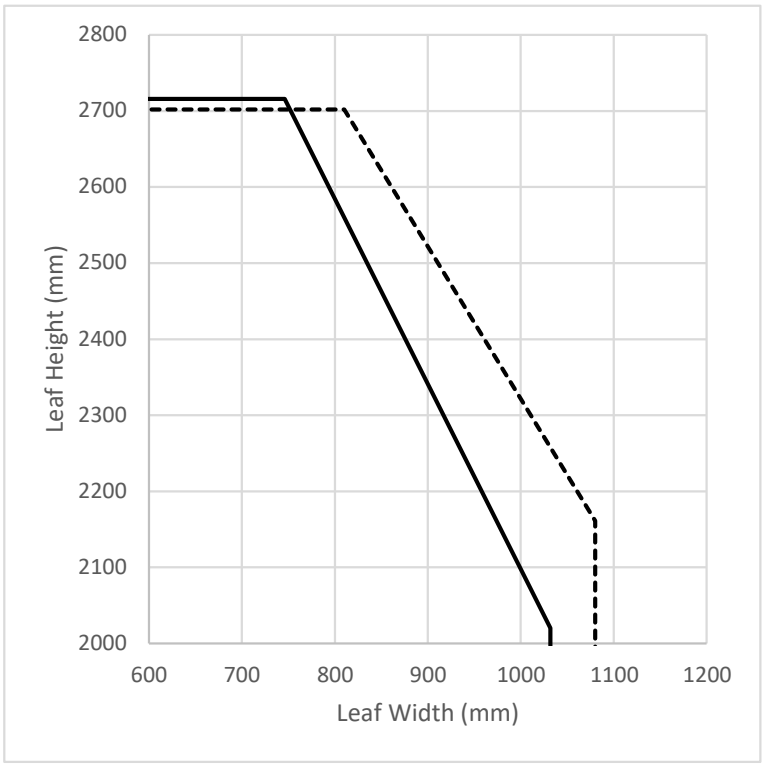
B.3 LSASD+OP for 60 minutes

LATCHED SINGLE ACTING, SINGLE DOOR ASSEMBLIES WITH OVERPANELS	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2020mm	1032mm
2716mm	746mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2020mm	1032mm
2716mm	746mm

FALCON STREBORD	
HEIGHT	WIDTH
2161mm	1080mm
2702mm	810mm



INTUMESCENT SPECIFICATION	
HEAD	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
JAMBS	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
SQUARE OVERPANEL JUNCTION	2no. 15x4mm intumescent seals fitted centrally in the leaf or overpanel edge, spaced 10mm apart
UNEQUAL REBATED OVERPANEL JUNCTION (Halspan Cores only)	1no. 25 x 4mm seal in the 36mm wide section of leaf or overpanel edge and 1no. 10 x 2mm Interdens or Therm-A-Strip in other rebate
UNEQUAL REBATED OVERPANEL JUNCTION (Strebord Cores only)	1no. 25 x 4mm seal fitted centrally in the 32mm rebate and 1no 15 x 4mm seal fitted centrally in the 22mm rebate

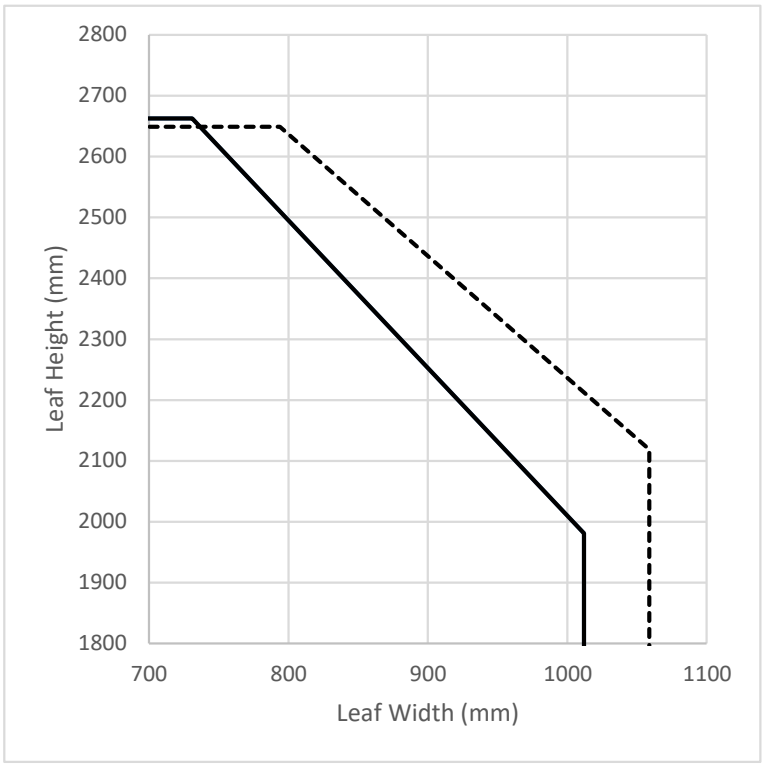
B.4 ULSASD+OP for 60 minutes

UNLATCHED SINGLE ACTING, SINGLE DOOR ASSEMBLIES WITH OVERPANELS	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
1981mm	1012mm
2663mm	731mm

HALSPAN PRIMA	
HEIGHT	WIDTH
1981mm	1012mm
2663mm	731mm

FALCON STREBORD	
HEIGHT	WIDTH
2119mm	1059mm
2649mm	794mm



INTUMESCENT SPECIFICATION	
HEAD	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
JAMBS	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
SQUARE OVERPANEL JUNCTION	2no. 15x4mm intumescent seals fitted centrally in the leaf or overpanel edge, spaced 10mm apart
UNEQUAL REBATED OVERPANEL JUNCTION (Halspan Cores only)	1no. 25 x 4mm seal in the 36mm wide section of leaf or overpanel edge and 1no. 10 x 2mm Interdens or Therm-A-Strip in other rebate
UNEQUAL REBATED OVERPANEL JUNCTION (Strebord Cores only)	1no. 25 x 4mm seal fitted centrally in the 32mm rebate and 1no. 15 x 4mm seal fitted centrally in the 22mm rebate

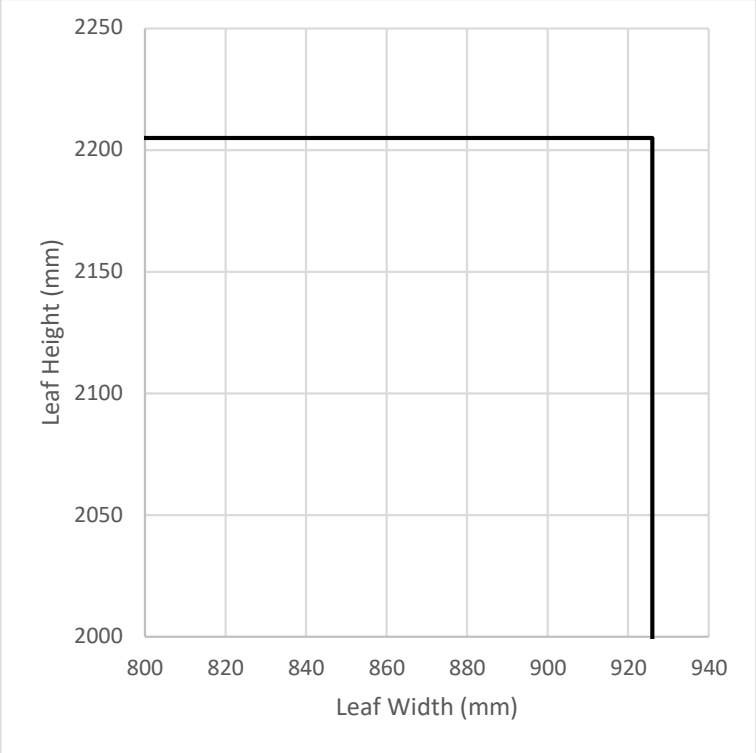
B.5 LSADD for 60 minutes

LATCHED SINGLE ACTING, DOUBLE DOOR ASSEMBLIES OPTIONAL TRANSOMMED OVERPANEL	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2205mm	926mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2205mm	926mm

FALCON STREBORD	
HEIGHT	WIDTH
2205mm	926mm



INTUMESCENT SPECIFICATION	
HEAD	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
JAMBS	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
TRANSOM (IF APPLICABLE)	2no. 15x4mm intumescent seals fitted centrally in the frame reveal, opposing the leaf head, spaced 10mm apart
TRANSOMED OVERPANEL INTERFACES (IF APPLICABLE)	2no. 15x4mm intumescent seals fitted centrally in the frame reveal (including transom) or all overpanel edges, spaced 10mm apart
MEETING STILES (SQUARE)	2no. 15 x 4mm intumescent seals fitted centrally in one meeting edge only, spaced 10mm apart

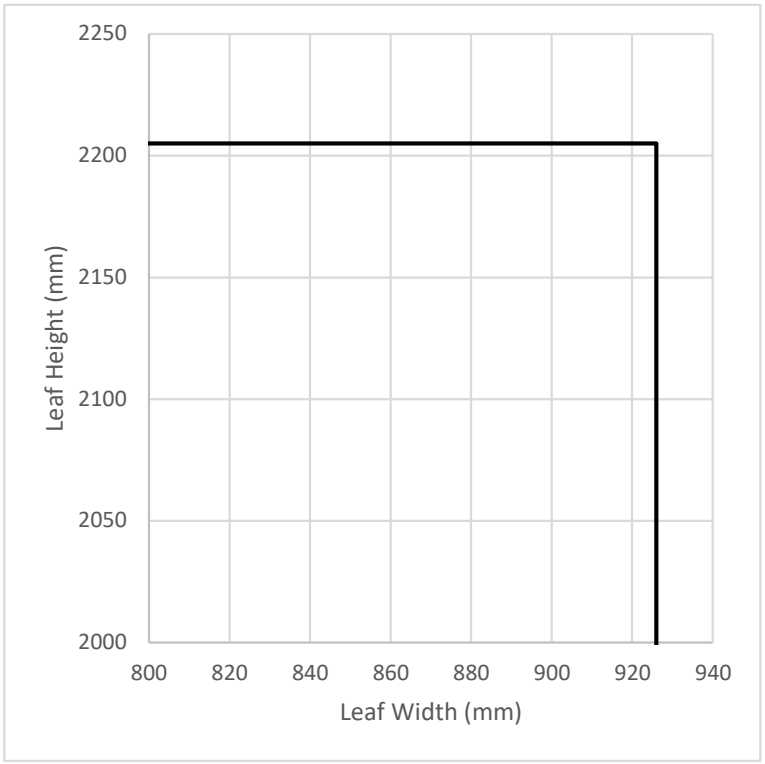
B.6 ULSADD for 60 minutes

UNLATCHED SINGLE ACTING, DOUBLE DOOR ASSEMBLIES OPTIONAL TRANSOMMED OVERPANEL	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2205mm	926mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2205mm	926mm

FALCON STREBORD	
HEIGHT	WIDTH
2205mm	926mm



INTUMESCENT SPECIFICATION	
HEAD	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
JAMBS	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
TRANSOM (IF APPLICABLE)	2no. 15x4mm intumescent seals fitted centrally in the frame reveal, opposing the leaf head, spaced 10mm apart
TRANSOMED OVERPANEL INTERFACES (IF APPLICABLE)	2no. 15x4mm intumescent seals fitted centrally in the frame reveal (including transom) or all overpanel edges, spaced 10mm apart
MEETING STILES (SQUARE)	2no. 15 x 4mm seals in one meeting edge only, spaced 10mm apart

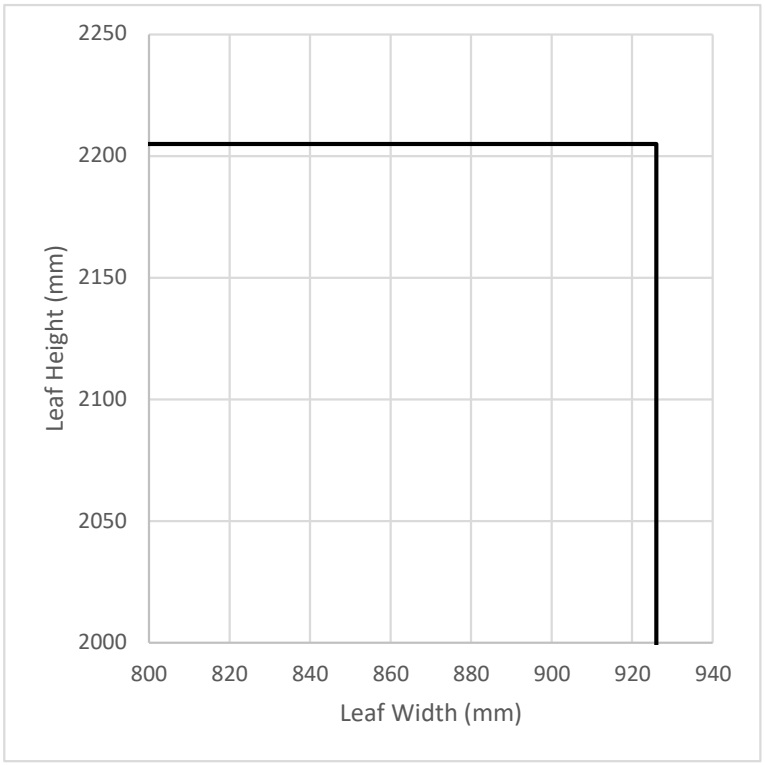
B.7 LSADD+OP for 60 minutes

LATCHED SINGLE ACTING, DOUBLE DOOR ASSEMBLIES WITH OVERPANELS	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2205mm	926mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2205mm	926mm

FALCON STREBORD	
HEIGHT	WIDTH
2205mm	926mm



INTUMESCENT SPECIFICATION	
HEAD	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
JAMBS	2no. 15x4mm intumescent seals fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
SQUARE OVERPANEL JUNCTION	2no. 15x4mm intumescent seals fitted centrally in the leaf or overpanel edge, spaced 10mm apart
UNEQUAL REBATED OVERPANEL JUNCTION (Halspan Cores only)	1no. 25 x 4mm seal in the 36mm wide section of leaf or overpanel edge and 1no. 10 x 2mm Interdens or Therm-A-Strip in other rebate
UNEQUAL REBATED OVERPANEL JUNCTION (Strebord Cores only)	1no. 25 x 4mm seal fitted centrally in the 32mm rebate and 1no. 15 x 4mm seal fitted centrally in the 22mm rebate
MEETING STILES (SQUARE)	2no. 15 x 4mm seals in one meeting edge only, spaced 10mm apart

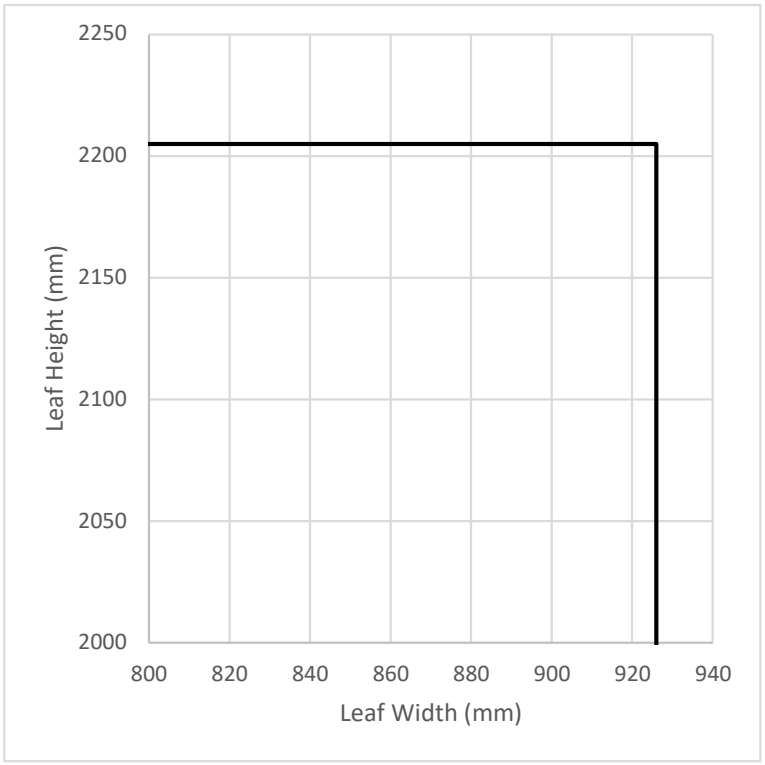
B.8 ULSADD+OP for 60 minutes

UNLATCHED SINGLE ACTING, DOUBLE DOOR ASSEMBLIES WITH OVERPANELS	TIMBER FRAMES

HALSPAN OPTIMA	
HEIGHT	WIDTH
2205mm	926mm

HALSPAN PRIMA	
HEIGHT	WIDTH
2205mm	926mm

FALCON STREBORD	
HEIGHT	WIDTH
2205mm	926mm



INTUMESCENT SPECIFICATION	
HEAD	2no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
JAMBS	2no. 15x4mm intumescent seal fitted centrally in the frame reveal or leaf edge, spaced 10mm apart
SQUARE OVERPANEL JUNCTION	2no. 15x4mm intumescent seals fitted centrally in the leaf or overpanel edge, spaced 10mm apart
UNEQUAL REBATED OVERPANEL JUNCTION (Halspan Cores only)	1no. 25 x 4mm seal in the 36mm wide section of leaf or overpanel edge and 1no. 10 x 2mm Interdens or Therm-A-Strip in other rebate
UNEQUAL REBATED OVERPANEL JUNCTION (Strebord Cores only)	1no. 25 x 4mm seal fitted centrally in the 32mm rebate and 1no. 15 x 4mm seal fitted centrally in the 22mm rebate
MEETING STILES (SQUARE)	2no. 15 x 4mm seals in one meeting edge only, spaced 10mm apart

Appendix C

C.1 Summary of Fire Test Evidence

TEST REPORT	TEST SPONSOR	TEST LAB	TEST DATE	CONFIG	LEAF SIZE	TEST STANDARD	RESULT	ITEMS/DETAILS SUPPORTED BY TEST EVIDENCE
CFR1710131 Door A	Royde & Tucker Ltd	Cambridge Fire Research	13.10.2017	ULSASD	2203mm X 926mm X 54mm	BS EN 1634-1:2014	48 minutes	Royde & Tucker stainless steel 605 concealed hinges installed within a 54mm thick leaf
The premature integrity failure at 48 minutes was caused by ignition of a cotton pad at the top closing corner of the leaf. Further flaming occurred at the head of the leaf at 53 minutes and bottom of closing edge at 58 minutes. No failure was recorded at the hinge locations prior to 66 minutes. Test CFR1711241 Door A summarised below demonstrates the successful test of a 54mm thick leaf including the HC605 concealed hinges for 60 minutes fire resistance.								
CFR1710131 Door B	Royde & Tucker Ltd	Cambridge Fire Research	13.10.2017	ULSASD	2203mm x 926mm x 44mm	BS EN 1634-1:2014	38 minutes	Royde & Tucker 604 cast zinc and stainless steel concealed hinges installed within a 44mm thick leaf
CFR1711241 Door A	Royde & Tucker Ltd	Cambridge Fire Research	24.11.2017	ULSASD	2205mm x 926mm x 54mm	BS EN 1634-1:2014	68 minutes	Royde & Tucker 605 stainless steel concealed hinges installed within a 54mm thick leaf
TR20221215-002312 Door A	Royde & Tucker Ltd	UK Testing and Certification	31.03.2023	ULSASD	2205mm x 926mm x 54mm	BS EN 1634-1:2014+A1: 2018	49 minutes	Royde & Tucker HC605 stainless steel concealed hinge installed within a 54mm thick leaf
The premature integrity failure at 49 minutes was caused by ignition of the cotton pad at the bottom corner on the latch side of the leaf. Further flaming occurred at the head of the leaf at 59 minutes. No failure was recorded at the hinge locations prior to termination of the test at 62 minutes. Further investigation has been undertaken to ensure that the flaming at the head of the leaf was not caused by the failure of the hinges and subsequent dropping of the leaf. It was concluded that the leaf had not dropped on the hinges.								
TR20221215-002312 Door B	Royde & Tucker Ltd	UK Testing and Certification	31.03.2023	ULSASD	2248mm x 998mm x 44mm	BS EN 1634-1:2014+A1: 2018	30 minutes	Royde & Tucker HC605 stainless steel concealed hinge installed within a 54mm thick leaf