INTERNATIONAL FIRE CONSULTANTS LIMITED

PRIVATE & CONFIDENTIAL

IFC SUMMARY DOCUMENT

SecureSound VC Timber Door Assemblies for FD30 Fire Resistance and PAS24 Security

Fire Resistance Standard: BS476: Part 22: 1987
Security Standard: PAS24: 2016

IFC Summary Document SFS/18686/01

Prepared on behalf of:

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NOTE: This report should not be manipulated, abridged or otherwise presented without the written consent of International Fire Consultants Ltd

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ISSUE AND AMENDMENT RECORD

Rev	Date	Author	Review	Section	Amendments
Draft	August 2019	SDC	CPH	-	-
Draft 2	August 2019	SDC	CPH	4, 7.2 and 7.6	Door construction amended. Winkhaus AV2 multipoint lock and security viewers now included.
-	September 2019	SDC	CPH	-	-

CONTENTS

1. INTRODUCTION

This summary document has been prepared by International Fire Consultants Ltd (IFC), on the instruction of UK Doorsets Ltd, to define the scope of SecureSound VC timber door assemblies which are required to provide both of the following performance characteristics:

- 30 minutes fire resistance performance when adjudged against BS476: Part 22: 1987
- Enhanced security performance when adjudged against PAS24: 2016

This summary document is based upon test evidence supplied to IFC for both enhanced security and fire resistance (detailed in Section 2). A full analysis of the fire resistance performance of the SecureSound VC door assemblies is detailed within IFC Field of Application Report PAR/18686/01.

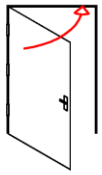
Only variations in hardware specifically mentioned within this summary document are permitted.

2. TEST EVIDENCE

BS476: Part 22: 1987, BS EN 1634-1:2008 and BS EN 1634-1:2014	PAS24	PAS23
• WF386228 • CFR19011031 Rev 1 • WF389552 • Chilt/RF006118 • WF391562 • WF392262 • Chilt/RF12197 • WF354581 • CFR1703061	• Winkhaus TR1056A	• Winkhaus TR1056B

3. LEAF SIZE AND CONFIGURATION

The approved leaf sizes and configurations of door assemblies comprising SecureSound VC door leaves are outlined below:

Configuration	Envelope of Approved Leaf Size
 • **Latched** • **Single acting** • **Single door** • **Without overpanel** • **Flush doors only** • **Hardwood frames only** • **Winkhaus Thunderbolt and Winkhaus AV2 multipoint locks only**	**Figure SFS/18686/01: A01 in Appendix A**

4. LEAF CONSTRUCTION

Component		Material		Density	Dimensions
Core		Particleboard		640kg/m³	37mm thick
Stiles		European Whitewood		420kg/m³	1no. 38mm wide x 37mm thick
Rails		European Whitewood		420kg/m³	2no. 38mm wide x 37mm thick
Structural Facings		Hardwood veneered MDF		730kg/m³	3.2-3.5mm thick
Facing Adhesive		Urea Formaldehyde		-	-
Lippings	Square edges	Hardwood		640kg/m³	6mm (vertical edges)
Lipping adhesive		PU Adhesive		–	–
Optional additional decorative finishes		Leaf faces only	Timber veneer, decorative plastic based laminate, paint or varnish	–	Maximum 2mm thick
		Leaf faces and edges	Paint or varnish		

5. DOOR FRAME CONSTRUCTION

Component	Material/Type	Density	Dimensions
Frame material	Hardwood	640kg/m³	78mm x 47mm with 15mm rebate
Frame joint	Horizontal butt joint	-	-
Frame joint fixings	3no. 80mm x 5mm CSK screws through head into each jamb	-	-
Threshold material	Hardwood	640kg/m³	78mm wide x 15mm thick x full width of frame
Threshold fixings	Threshold to be twice screwed to each frame jamb	-	-

6. SIDELIGHT

Component	Material/Type	Density	Dimensions
Maximum sidelight size	-	-	600mm wide x full height of adjacent door
Maximum fanlight size	-	-	600mm high x full width of door below
Frame material	Hardwood	640kg/m³	78mm x 63mm O/A with 25mm deep rebate
Frame joint	Horizontal butt joint	-	-
Frame joint fixings	3no. 90mm x 5mm CSK screws through head into each jamb	-	-
Glass	12mm Pyrobelite 9EG Note 5, 6 and 7	-	-
Glazing system	Security foam glazing tape (various manufacturers) Note 5	-	12mm wide x 5mm thick
Glazing bead (Security risk side)	Hardwood – integral to frame section	640kg/m³	23mm high x width to suit
Glazing bead (Non-security risk side)	Hardwood – loose bead	640kg/m³	23mm high x width to suit
Glazing bead fixings Option 1	Steel pins - Fixed at 50mm from corners and at maximum 150mm centres Note 8	-	50mm long x 1.8mm dia
Glazing bead fixings Option 2	Steel screws - Fixed at 50mm from corners and at maximum 150mm centres Note 8	-	50mm long x 4mm dia

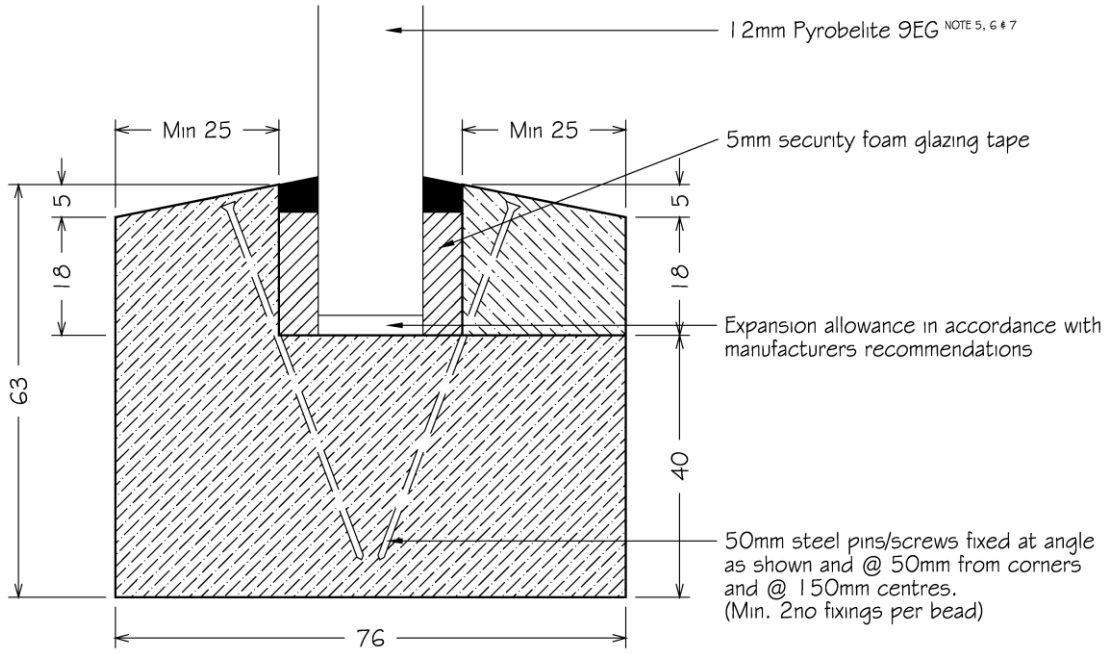


Figure 1

Note 5 *An alternative glass and glazing system may be used subject to the following:*

- *The glass and glazing system must have suitable supporting test evidence when tested as a glazed screen (with or without a door assembly included) at the pane dimensions to be installed. The test evidence must be full scale and the following test standards are acceptable: BS 476: Part 22: 1987, BS EN 1634-1 or BS EN 1364-1.*
- *Test evidence must be available to demonstrate that the glass type is capable of achieving a minimum P1A rating when tested in accordance with BS EN356:2000, as outlined in Approved Document Q of the Building Regulations.*
- *All elements of the fanlights and sidelights must be in accordance with supporting test evidence for the relevant glass type. Glazing bead size, and the frequency/type/size of glazing bead fixings must meet the minimum requirements outlined in the table above or replicate that proven by fire testing, whichever specification is greater.*

Note 6 *Security film may be applied to the selected glass type provided the combination of glass and security film is capable of achieving a minimum P1A rating when tested in accordance with BS EN356:2000, as outlined in Approved Document Q of the Building Regulations.*

Note 7 *A security film must only be applied to the selected glass once the fire risk side of the door/sidelight assembly is established. Security films must always be located on the fire risk side of the door/sidelight assembly.*

Note 8 *Pins or screws must be fixed through both the loose and integral glazing beads.*

7. HARDWARE

7.1 Hinges

Component	Reference/Specification
Hinge model	3no. Nico 4717 Grade 12 Symmetrical Lift-Off Hinge
Hinge dimensions	98mm high x 84mm wide overall (open)
Hinge fixings	5mm x 32mm CSK SPAX screws into frame 5mm x 50mm CSK SPAX screws into door leaf
Intumescent protection	Hinges must be bedded on at least 1mm low-pressure forming intumescent material

7.2 Multipoint Locks

Component	Reference/Specification
Multipoint lock model	Winkhaus Thunderbolt 5 Multipoint Lock
Multipoint lock dimensions	Forend Plate: 1770mm long x 20mm wide x 3mm thick Lock Body: 186mm long x 70mm wide x 17mm thick Hook Boxes: 113mm high x 45mm wide x 17mm thick
Multipoint lock fixings	50mm x 5mm CSK screws
Intumescent protection	Lock cases must be lined with low-pressure forming intumescent sheet (e.g. Interdens) at least 1mm thick.

Component	Reference/Specification
Multipoint lock model	Winkhaus AV2
Multipoint lock dimensions	Forend Plate: 1770mm long x 20mm wide x 2.5mm thick Lock Body: 186mm long x 70mm wide x 17mm thick Hook Boxes: 113mm high x 45mm wide x 17mm thick
Multipoint lock fixings	50mm x 5mm CSK screws
Intumescent protection	Lock cases must be lined with low-pressure forming intumescent sheet (e.g. Interdens) at least 1mm thick.

7.3 Lock Keeps/Strike Plates

Component	Reference/Specification	
Keep model	Winkhaus F24-908 Centre Keep	
Keep dimensions	235mm x 24mm	
Keep fixings	3.5 x 25mm CSK screws	
Intumescent protection	Option A:	Lock keep must be bedded on at least 1mm thick low-pressure forming intumescent material.
	Option B:	Lock keep must be bedded on a 1mm thick layer of intumescent mastic (selected mastic must have been subjected to fire resistance testing or assessed to support its use in doors of a similar construction)

Component	Reference/Specification	
Keep model	Winkhaus F24-908 Outer Keeps	
Keep dimensions	175mm x 24mm	
Keep fixings	3.5mm x 25mm CSK screws	
Intumescent protection	Option A:	Lock keeps must be bedded on at least 1mm thick low-pressure forming intumescent material
	Option B:	Lock keep must be bedded on a 1mm thick layer of intumescent mastic (selected mastic must have been subjected to fire resistance testing or assessed to support its use in doors of a similar construction)

7.4 Handles/Cylinders

Component	Reference/Specification
Handle model	Hoppe Tokyo Lever/Lever handle Note 9
Handle fixings	M5 x 60mm screws as supplied with handle
Cylinder model	Winkhaus XR651 38/38 Anti-Bump Turn cylinder Note 9
Cylinder fixings	M5 x 65mm screw supplied with cylinder
Intumescent protection	N/A

Note 9 *An alternative cylinder and handle combination can be used provided it meets the requirements of Technical Specification TS 007:2014 + A1:2015, produced by the Door and Hardware Federation.*

7.5 Letterplates

Component	Reference/Specification
Letterplate model	Soterian TS008 (UAP Ltd)
Letterplate dimensions	Letterplate external frame: 305mm long x 75mm high Letterplate internal frame: 300mm long x 115mm high x 35mm projection Letterplate cavity: 260mm long x 53mm high
Multipoint lock fixings	All fixings supplied with the letterplate
Intumescent protection	Intumescent kit supplied with letterplate

7.6 Security Viewers

Component	Reference/Specification
Viewer model	CVPL 12mm wide angle security viewer (UAP Ltd)
Viewer dimensions	Barrel: 12mm diameter Lens Cap: 26mm diameter
Intumescent protection	The security viewer barrel must be wrapped in minimum 1mm thick lower pressure intumescent sheet

Component	Reference/Specification
Viewer model	SWALFBR Salamander Firecheck Viewer (UAP Ltd)
Viewer dimensions	Barrel: 14mm diameter Lens Cap: 26mm diameter
Intumescent protection	The security viewer barrel must be wrapped in minimum 1mm thick lower pressure intumescent sheet

7.7 Concealed Door Closers

Component	Reference/Specification
Concealed closer model	Dorma ITS96 (2-4 Model)
Concealed closer dimensions	Closer Body: 277mm long x 32mm wide x 42mm deep Closer Slide Arm: 440mm long x 20mm wide x 12mm deep
Concealed closer fixings	All fixings supplied with closer
Intumescent protection	Intumescent gasket kit as tested and supplied by manufacturer

Component	Reference/Specification
Concealed closer model	Gretsch Unitas Secury L-10002-06 (2-4 Model)
Concealed closer dimensions	Closer Body: 277mm long x 32mm wide x 42mm deep Closer Slide Arm: 440mm long x 20mm wide x 12mm deep
Concealed closer fixings	All fixings supplied with closer
Intumescent protection	Intumescent gasket kit as tested and supplied by manufacturer

Component	Reference/Specification
Concealed closer model	Geze Boxer (2-4 model)
Concealed closer dimensions	Closer Body: 240mm long x 32mm wide x 42mm deep Closer Slide Arm: 440mm long x 20mm wide x 12mm deep
Concealed closer fixings	All fixings supplied with closer
Intumescent protection	Intumescent gasket kit as tested and supplied by manufacturer

Component	Reference/Specification
Concealed closer model	Rutland ITS 11204
Concealed closer dimensions	Closer Body: 243mm long x 32mm wide x 52mm deep Closer Slide Arm: 464mm long x 33.5mm wide x 19mm deep
Concealed closer fixings	All fixings supplied with closer
Intumescent protection	Intumescent gasket kit as tested and supplied by manufacturer

8. PERIMETER SEALS

8.1 Intumescent Seals

Component	Material/Type	Location	Dimensions
Intumescent Seals Note 10	See note below	Frame Reveal	1no. 15 x 4mm intumescent seal fitted adjacent to the door stop in the frame reveal

Note 10 *Graphite based, Palusol or Lorient 617, pvc encased, seals manufactured by Mann McGowan Fabrications Ltd, Lorient Polyproducts Ltd, Intumescent Seals Ltd, Pyroplex or Sealed Tight Solutions may be employed across the complete range of door sizes and configurations approved herein. It is recommended that the intumescent seals are manufactured or supplied by members of the Intumescent Fire Seals Association (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.*

8.2 Weather/Acoustic/Smoke Seals

Component	Material/Type	Location	Dimensions
Weather Seal Note 11	Echelon 625 Weather Seal Note 13	Frame reveal	11mm wide x 9mm high
Acoustic/Smoke Seal Note 11 & 12	FAS35 (Fire and Acoustic Seals Ltd)	Frame reveal	12mm wide x 5mm thick
Dropseal	FAS45 (Fire and Acoustic Seals Ltd)	Bottom door edge	20mm high x 13mm thick x full door width

Note 11 *Alternative weather/acoustic/smoke seals may be used provided fire test evidence to BS476: Part 22: 1987 is available to demonstrate that the specified seals will not adversely affect the overall fire resistance of the timber door assemblies, when fitted in the proposed arrangements.*

Note 12 *Smoke seals, or combined intumescent/smoke seals (using the specification approved in Section 1.8.1), that have been tested in accordance with BS EN 1634-3: 2004 (ambient temperature) or BS476: Part 31: Section 31.1: 1983 and shown not to leak by more than $3m^3/m/hr$ at 25Pa may be used in conjunction with the proposed door assemblies to provide smoke control.*

The orientation of the seals, door edge gaps, degree of hardware interruption, and leaf configuration, will need to be as tested in accordance with BS EN 1634-3: 2004 (ambient temperature) or BS476: Part 31: Section 31.1: 1983 to achieve the desired level of smoke control, unless these conflict with the intumescent seal widths and positions as described in Section 9.1, in which case, the latter shall take precedence.

Note 13 *The Echelon 625 Weather Seal may be included provided it does not flame for in excess of 10 seconds under fire test conditions.*

9. INSTALLATION

Timber frames must be fixed back to the supporting construction with steel fixings at centres not exceeding 600mm on the vertical edges (minimum 200mm from the top and bottom), and a minimum of one fitted centrally across the width of the frame head of double doors. Screws shall be of sufficient length to penetrate the wall by at least 40mm, and shall be positioned such that they are not exploited by charring of the frame, irrespective of the direction of test exposure; (this may necessitate a twin line of screws).

Packers shall be used at all fixing positions, although if combustible packers are employed, these must be protected by a layer of firestopping (see below) aligned near to each face of the door frame.

The supporting construction may be timber or steel stud plasterboard partition, blockwork, brickwork or concrete walls, but shall be of a type that has been tested or assessed to provide in excess of 30 minutes fire resistance, at the required size, when incorporating doorset openings. If fitted into timber or steel stud partitions, the method of forming the doorset aperture must be as tested by the partition and/or doorset manufacturer.

Note 7 *Reference to steel stud partitions is in the context of permanent elements, such as those designed and proven by the plasterboard manufacturers – this report does not approve use of the proposed doorsets in proprietary 'demountable' partitions, which must be subject to a full and independent appraisal of the particular system and doorsets therein.*

No part of the rear of the frame section shall be exposed once installed, (except for integral architraves) and leaves must not project beyond the exposed face of the door frame.

There shall be no feature rebates or shadow gaps at the junction of the frame and wall with steel frames (such features could, however, be assessed on an individual basis).

Shadow gap details may be included in the supporting construction or in a fame extension at the interface of the frame and wall. This is subject to the following restrictions:

- Maximum 10mm wide x 5mm deep shadow gaps can be included, without additional protection, as long as the frame is minimum 32mm wide.
- Maximum 10mm wide x 10mm deep shadow gaps can be included, without additional protection, as long as the frame is minimum 40mm wide.
- Maximum 10mm wide x 10mm deep shadow gaps can be included; providing a 10 x 2mm intumescent strip is securely fitted into the bottom of the shadow gap and the frame is minimum 32mm wide.
- The fire stopping between the supporting construction and timber frames should follow the recommendations of Table 2 and 3 in BS8214: 2016, *"Code of practice for fire door assemblies"*, using a product proven in such timber applications, and with reference to the correct depth of seal to suit the width of gap between wall and frame. The firestopping shall be positioned on the plane of the door leaf (unless combustible packers are employed).

The gap between the door and the frame should be 1.5–4mm. Gaps under the door(s) should not exceed 6mm for fire performance, although, if smoke control is also required, these gaps should only be 3mm, or smoke seals should be included in accordance with BS8214 (see also Section 3.9 regarding suitability of smoke seals).

The door assembly design should be such that single acting leaves are fully flush within the frame when closed.

10. CONCLUSION

It is the opinion of International Fire Consultants Ltd that if the proposed SecureSound VC timber door assemblies were to utilise the configurations detailed within this summary document, they would satisfy the integrity criteria of BS476: Part 22: 1987 for 30 minutes and the Enhanced Security criteria of PAS24: 2016.

11. LIMITATIONS

This summary document addresses itself solely to the ability of the proposed SecureSound VC timber door assemblies described to satisfy the criteria of the BS476 fire resistance test and PAS24: 2016 enhanced security test. It does not imply any suitability for use with respect to other unspecified criteria.

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

This report is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available, IFC reserves the right to withdraw the report unconditionally but not retrospectively.

Where the constructional information in this report is taken from details provided to International Fire Consultants Ltd (IFC) and/or from 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.

12. VALIDITY

This summary document has been prepared based on International Fire Consultants Ltd's present knowledge of the products described, the stated testing regime and the submitted test evidence. For this reason, anyone using this document after September 2024 should confirm its ongoing validity.

Prepared by:

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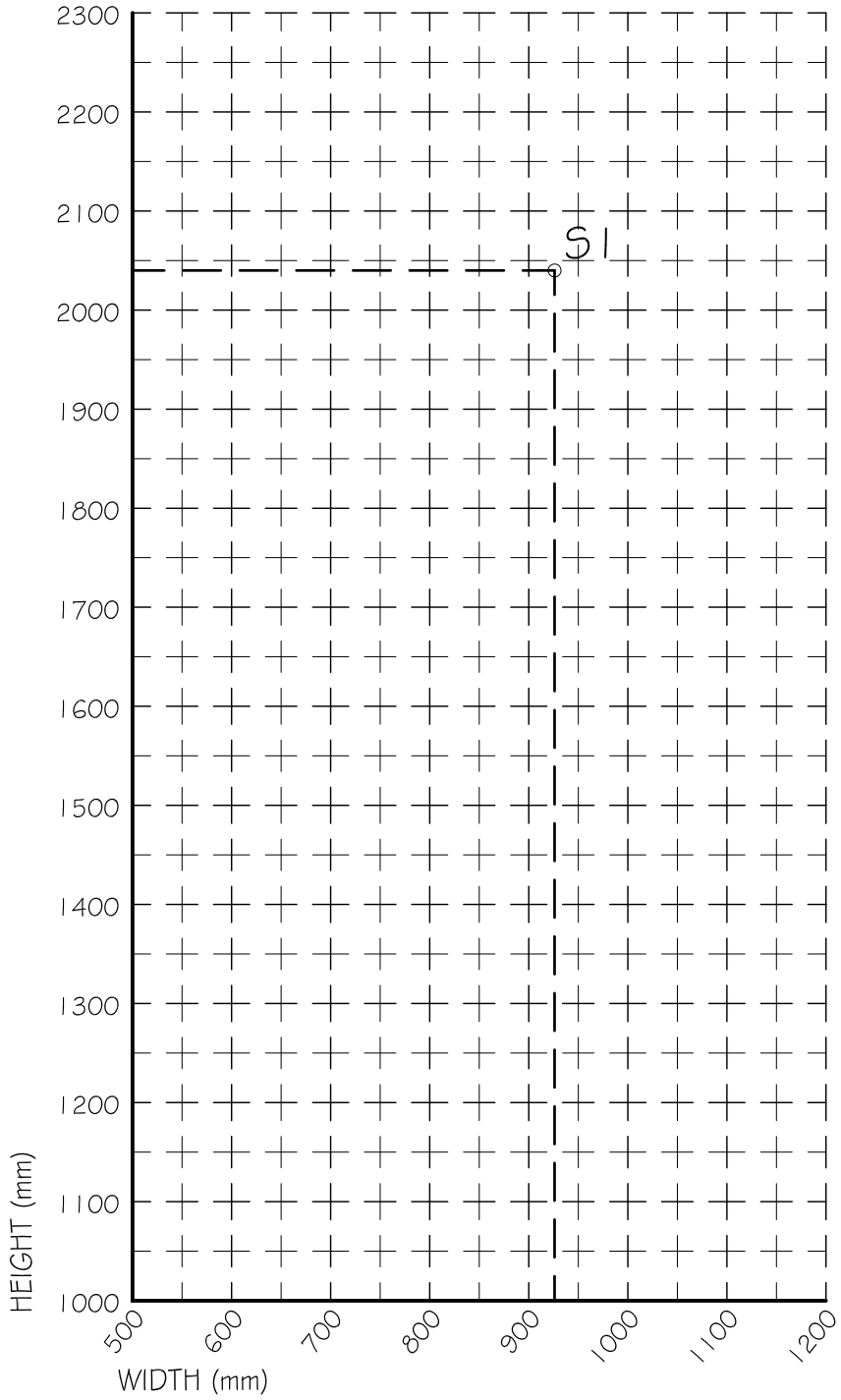
APPENDIX A

Figures SFS/18686/01:A01

Assessed Leaf Size Envelope for SecureSound VC Timber Door Assemblies for FD30 Fire Resistance and PAS24 Enhanced Security

The figure in this Appendix is not included in the sequential page numbering of this report



Flush Doors	
	S1
Width	926
Height	2040
WINKHAUS MULTIPOINT LOCK	

ENVELOPE OF APPROVED FLUSH DOOR LEAF SIZES

The above graph represents the envelope of approved leaf sizes for the proposed door leaf configuration.
Any combination of leaf width and height that falls within the graph axes and the connecting line on the graph are approved.

POINT S1 represents the maximum height and width of a flush door leaf in a timber frame. Winkhaus Multipoint lock only. (As detailed in Section 7.2)

This figure forms part of International Fire Consultants Ltd's Summary Document SFS/18686/01, which contains full details of the assessed door construction.

Configuration

Timber Frames Only - Flush Doors

LATCHED
SINGLE ACTING
SINGLE LEAF

WITHOUT OVERPANEL

REQUIRED INTEGRITY : 30 Minutes

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Summary Document
SFS/18686/01
UK Doorsets Ltd
SecureSound VC Timber Door Assemblies for FD30 Fire Resistance and PAS24 Security

Envelope of Approved Flush Door Leaf Sizes In Timber Frames With Winkhaus Multipoint locks only

Job number: 18686	
Drawn by: CSP	Checked by: SDC
Not To Scale	Drawn: Aug 2019

SFS/18686/01:A01