August 2023

Field of Application Report

Kiwa Fire Safety Compliance Report PAR/13088/01 Revision B

Fire Resistance Standard: BS476: Part 22: 1987

Partner for Progress

Prepared for:

Sauerland Spanplatten GmbH & Co KG

UK and Ireland Distributor: Acoustic and Fire Door Solutions Ltd

Assessed Product/System:

TriSound S3D FD60 timber based multi-layer door leaves installed in timber frames

Assessed Performance:

60 minutes fire resistance

Issue Date	Expiry Date
August 2023	August 2028

Kiwa Fire Safety Compliance
Ground Floor, Suite A, Building 2
Bear Brook Office Park
Walton Street
Aylesbury, Buckinghamshire
HP21 7GQ
+44 (0)1844 275500
uk.firesafety@kiwa.com

www.kiwa.co.uk

Kiwa Fire Safety Compliance

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HEAD OFFICE/CORRESPONDENCE ADDRESS:
Kiwa Fire Safety Compliance
Ground Floor, Suite A, Building 2
Bear Brook Office Park
Walton Street
Aylesbury, Buckinghamshire
HP21 7GQ

+44 (0)1844 275500
uk.firesafety@kiwa.com

REGISTERED ADDRESS:
International Fire Consultants Limited
Kiwa House
Malvern View Business Park
Stella Way, Bishops Cleeve
Cheltenham
GL52 7DQ

Registered No: 2194010

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Report Reference Number:	Kiwa Fire Safety Compliance Report PAR/13088/01 Revision B	
Prepared on behalf of:	Sauerland Spanplatten GmbH & Co KG UK and Ireland Distributor: Acoustic and Fire Door Solutions Ltd	
Project:	Spanplattenwerk Gotha GmbH Müllersweg 1 D-99867 Gotha	3 Esplanade Broughty Ferry Dundee DD5 3EL
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Issue and Amendment Record

REV	DATE	AUTHOR	REVIEW	SECTION	AMENDMENTS
-	June 2013	PP	DC		
A (#18495)	July 2018	CH	MB		
B (#24334)	August 2023	WL	CPH	All	Reviewed and revalidated for a further 5 year period

Contents

1. Introduction

This report has been prepared by Kiwa Fire Safety Compliance on the instruction of Sauerland Spanplatte Gotha GmbH, to define the Field of Application for Trisound S3D timber-based multi-layer door leaves installed in timber frames, that are required to provide 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, Kiwa Fire Safety Compliance 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 into door assemblies, without reducing their potential to achieve a 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, and all other aspects must otherwise be as proven in tests summarised herein.

It is more onerous to test timber door assemblies, hinged or pivoted, 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 F of this report.

The test evidence referenced in this Engineering Assessment Report is more than 5 years old. In accordance with industry practice, Kiwa Fire Safety Compliance have reviewed this test evidence, and have concluded that the evidence is still valid, and suitable to form the basis of this approval.

The appropriate performance of fire resisting doorsets is defined in Approved Document B of the Building Regulations England (2019 Edition with 2020 and 2022 Amendments), the Scottish Building Standards Technical Handbook (2022 edition), Approved Document B of the Building Regulations Wales (2006 Edition with 2010, 2013, 2016, 2017 and 2020 Amendments) or Technical Book E of the Building Regulations Northern Ireland (2012 Edition with 2014, 2016 and 2022 Amendments).

Table C1 in Appendix C of Approved Document B, which applies to England, identifies doorsets 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, Welsh and Northern Ireland documents also refer to the British and European Standards in Annex 2.A, Table B1 in Appendix B and Table 4.5 in Section 4, respectively of these documents.

These guidance documents thus give a 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. The major ones are thus;

a. The method of measuring the furnace (exposure) temperature in the EN 1634-1 test is by means of plate thermocouples. The 'plates' have a greater thermal inertia than the bead thermocouples used in the BS476: Part 22: 1987 test, and therefore the heat input is higher than that given in BS476 at any given time during approximately the first 15 minutes of a fire resistance test.

b. The furnace pressure in the EN 1634-1 test is neutral at a position 500mm above the threshold, compared to a nominal 1 metre in the BS476: Part 22: 1987 test. As a consequence, the pressure over the upper part of the doorset is higher and, therefore, is more onerous in the EN test.

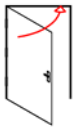
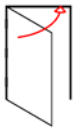
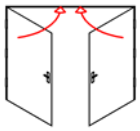
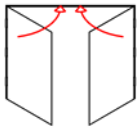
There are other minor procedural matters that also increase the severity of the EN method. These, combined with the issues identified in a) and b) above, mean that the EN 1634-1 test is generally accepted as being a more onerous test than BS476: Part 22: 1987. This is borne out by Kiwa Fire Safety Compliance's 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 doorsets 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 Assembly Configuration

The approved leaf sizes and configurations of door assemblies comprising TriSound S3D door leaves are outlined below:

	CONFIGURATION	ENVELOPE OF APPROVED LEAF SIZES
	• Latched • Single Acting • Single Door • Optional Transommed Overpanel	Figure PAR/13088/01B: D01 in Appendix D
	• Unlatched • Single Acting • Single Door • Optional Transommed Overpanel	Figure PAR/13088/01B: D01 in Appendix D
	• Latched • Single Acting • Double Doors Note 1 • Optional Transommed Overpanel	Figure PAR/13088/01B: D01 in Appendix D
	• Unlatched • Single Acting • Double Doors Note 1 • Optional Transommed Overpanel	Figure PAR/13088/01B: D01 in Appendix D

Note 1 Single acting double leaf door assemblies must have square edged (or slightly rounded) or off-set rebated meeting stiles.

Note 2 Overpanels may be fitted, provide they are separated from the door lead by a transom member.

3.2 Maximum Assessable Door Leaf Sizes

The calculated envelopes of assessed leaf dimensions for each door assembly configuration covered by this Field of Application report are given in Appendix D based upon use of the intumescent seal specifications shown in Appendix C.

Double door assemblies may each be of the same width, up to the maximum width indicated in Appendix D. For latched/bolted unequal pairs, there is no limit on the ratio of leaf widths, (although the large leaf must still be within the limitations in Appendix D). For unlatched unequal pairs, the width of the small leaf shall not be more than 200mm smaller than that of the large leaf (although the large leaf must still be within the limitations in Appendix D). The total 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.

3.3 Door Leaf and Overpanel Specification

The TriSound S3D multi-layer door leaf and overpanel construction comprises a multi-layer chipboard/cork core surrounded by hardwood stiles/rails and faced with MDF, full details of the constructional specifications are given below.

The leaf construction is based upon the test evidence detailed in Appendix F, and defines variations and tolerances where it is considered that these will not adversely affect overall fire resistance. The construction details are limited to the information available from the test reports.

For the sake of clarity, this report only approves doors that are rectilinear; i.e. adjacent door edges shall be straight, and at 90 degrees to each other, when viewed in elevation. In addition, doors shall be "flat"; i.e. not curved, when viewed in plan.

COMPONENT		MATERIAL		MINIMUM DENSITY	DIMENSIONS
CORE Note 3	CENTRAL LAYERS	TriSound S3D by Sauerland	Extruded Chipboard	560kg/m³ Note 4	3no. layers of 13mm thick
	OUTER LAYERS		Cork	220kg/m³ Note 4	3mm thick on each face
STILES/RAILS	INNER	Sapele		650kg/m³ Note 4	45mm thick x 38mm wide
	OUTER	Sapele		650kg/m³ Note 4	45mm thick x 32mm wide
FACINGS		High Density MDF		850kg/m³ Note 4	6mm thick
LIPPINGS Note 5	SQUARE EDGES	Hardwood Note 6 (Excluding Beech)		630kg/m³ Note 4	5–9mm thick
	OFF-SET REBATED EDGES				17-21mm thick, to accommodate a 12mm deep x 39/18mm wide rebate Note 7
ADHESIVE	CORE	Retained on confidential file by KFS		-	-
	FACING	PVA D3 or Urea Formaldehyde			
	LIPPING	PVA, PU or UF			
MINIMUM LEAF THICKNESS		-		-	57mm
OPTIONAL ADDITIONAL DECORATIVE FINISHES		Timber veneer or decorative plastic-based laminate (to leaf faces only)		-	Maximum 2mm thick
		Paint or varnish		-	Maximum 0.5mm thick

Note 3 Leaf construction to be in accordance the Method Statement included in Appendix A.

Unless otherwise tested, and approved by Kiwa Fire Safety Compliance, the core for each leaf shall be formed from whole single sheets of chipboard. Gaps between the core and stiles/rails shall be kept to a minimum, but shall not exceed 1.5mm at any edge.

Note 4 Minimum density, based upon stated density in tests.

Note 5 Lippings to be fitted to vertical edges of each leaf, or can be fitted to all four edges, if required.

Note 6 Lippings to be straight grained hardwood, with minimum measured density at 15% moisture content and of appropriate quality in accordance with BS EN 942: 2007. Moisture content to be 11 ± 2% for UK market in heated buildings between 12-21°C (or to suit internal joinery moisture content specification of export countries).

The machining of the stiles/rails/lipping, and bonding process, must be such to ensure that no gaps occur between stiles/rails and lipping.

Note 7 Where rebated meeting stiles are employed, they should be 12mm deep, with a 39mm wide rebate in one leaf and 18mm wide rebate in the other leaf, or equivalent rebate widths if thicker facings are used.

Note 8 If required, a maximum 2mm may be trimmed from the non-rebated leaf edges after fabrication, subject to the minimum lipping thickness being maintained. Any other adjustments to leaf width, once the door has been fabricated, will require re-lipping and remedial actions in accordance with the Method Statement included in Appendix A.

Square and unequal with rebated meeting stile details are approved across the range of sizes covered by this Field of Application Report for double leaf door assemblies.

3.4 Frames

Timber frames, to the specifications given below, may be used across the complete range of approved sizes and configurations outlined in Appendix D, utilising the intumescent seal specification outlined in Appendix C.

MATERIAL	MINIMUM DENSITY	MINIMUM FACE WIDTH	MINIMUM FRAME DEPTH	MINIMUM STOP DEPTH
Hardwood (Excluding Beech)	650kg/m^3 Note 9	32mm, excluding stop Note 10	95mm	12mm Note 11

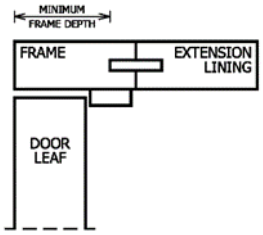
Note 9 Timber must have a minimum measured density at 15% moisture content. The timber must be straight grained and of appropriate quality in accordance with BS EN 942: 2007. The moisture content shall be 11 ± 2% for UK market, (or to suit internal joinery moisture content specification of export countries).

Note 10 These dimensions assume that the rear of the frame is protected by the adjacent wall, (and firestopping), and that the frame does not project out from the wall. See Section 3.8 regarding projecting frames and shadow gaps.

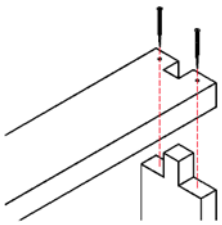
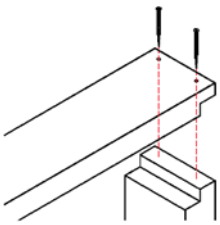
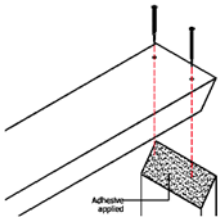
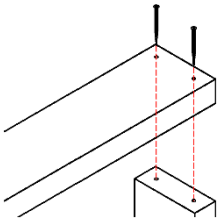
Note 11 The door stop is to comprise the same material as the door frame and may be either planted and pinned using 40mm steel pins, or integral with the main door frame, providing the minimum frame thickness in the plane of the door leaf remains as stated.

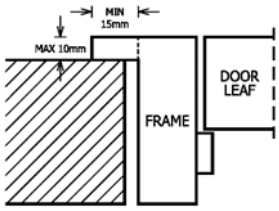
The overall frame depth may be increased by the use of extension linings, but the joint between the main frame and the extension lining must not intrude in the plane of the door thickness.

No joints permitted within the minimum frame depth section outlined within this report.



HEAD/JAMB JOINT	Mortice and tenon, or half-lapped joint or butt joint, head twice screwed to each jamb, mitred joint which is glued with a non-thermally softening adhesive and the head twice screwed to each jamb. .

MORTICE AND TENON JOINT	HALF-LAPPED JOINT
	
MITRED JOINT	BUTT JOINT
	

ARCHITRAVES	Where the face of the frame, and the door, are flush with the face of the wall, loose architraves are optional, and have no fire performance requirements, and so can be freely specified, subject to adequate fire stopping. (See Section 3.8 regarding wall/frame gaps). Where an integral architrave is used, the face of the door may project beyond the face of the wall, providing the thickness of the architrave is no greater than 10mm and it projects at least 15mm beyond the rear face of the door frame. (This 15mm projection shall NOT be formed by machining into the minimum width of frame section, as defined in the Table above, and the frame width shall be increased accordingly). This assumes that the face of the door leaf is flush with the face of the architrave. 
TRANSOM MEMBERS	When a transom is used between a door and an overpanel, the member shall be at least 95 x 32mm, and shall include minimum 12mm thick door stops on both sides (i.e. making a minimum 95 x 56mm thick overall section). The transom must be fixed to the jambs with a mortice and tenon, or half-lapped joint. The overpanel must always be on the same plane as the door(s) below.

3.5 Glazed Apertures

3.5.1 Glass Types

The following glass types are approved for use in the doors considered, herein, which are compatible with the identified approved glazing systems given in Section 3.5.2, although some restrictions on size may be given in subsequent sections.

The codes used, below, for the glass types, glazing materials, and bead types, (e.g. G60/1, S60/1 and B60/1), are not those used by the respective manufactures, and are attributed solely by Kiwa Fire Safety Compliance for the purpose of identification and cross-referencing within this assessment.

G60/1 Pyrobelite 12 (by AGC Flat Glass)

G60/2 23mm thick Pyrostop (by Pilkington)

Expansion allowances for all glass types shall be as recommended by the glass manufacturer.

3.5.2 Glazing Materials and Systems

The following glazing materials are approved for use in the doors considered, herein, which are compatible with the identified approved glass types listed above. See also Figure PAR/13088/01B:B01 in Appendix B.

S60/1 For use with G60/1 - 2no. 10 x 2mm (to create a 20 x 2mm thick seal) Interdens F (Various suppliers) with a 54mm x 2mm Norseal glazing liner

S60/2 For use with G60/2 - 10 x 2mm Kerafix 2000 (Kuhn/SVT) to finish flush with the top edge of the glazing bead, with a 54 x 2mm Norseal glazing liner

3.5.3 Bead Profiles and Installation

The approved bead sizes and profiles, and relevant fixing details, are shown in Figure PAR/13088/01B:B01 in Appendix B.

Glazing beads formed from timber with 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 UK market, (or to suit internal joinery moisture content specification of export countries).

Glazing apertures must have 2no. 15 x 2.5mm Sapele inserts centrally fitted 'on edge', spaced nominally 12mm apart, lining the full perimeter of the aperture (see Figure PAR/13088/01B:B01 in Appendix B).

3.5.4 Assessed Aperture Sizes

Apertures are created by cutting directly into the door slab. 3mm wide x 17mm deep grooves are cut along the joint between the chipboard core layers, into which, 2.5mm thick x 15mm deep hardwood inserts are to be bonded using EPI adhesive (see Figure PAR/13088/01B:B01 in Appendix B).

Based upon the size of apertures tested, and subsequent analysis, the following limitations apply to glazed apertures in the door leaves considered herein;

Maximum area of single aperture	-	0.16m² Note 12
Maximum total area of multiple apertures	-	0.27m² Note 12
Maximum vertical length of aperture	-	959mm
Maximum horizontal length of aperture	-	222mm
Minimum distance from leaf edge (top)	-	150mm
Minimum distance from leaf edge (sides)	-	160mm
Minimum distance between apertures	-	200mm
Minimum distance from bottom of leaf	-	250mm

Use of certain hardware items may impose further limits upon margins; refer to Appendix F.

Note 12 Any aperture(s) for intumescent air transfer grilles, (see Appendix E), must also be included in the total area permitted for apertures given above. Margins between apertures apply whether for glazing or grilles.

3.6 Overpanels

Overpanels shall be separated by a transom member and intumescent seals fitted around the overpanel perimeter/opposing frame reveal shall be as defined in Appendix C. Transom members shall be in accordance with Section 3.4 and the installation as defined in Section 3.8.

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 Kiwa Fire Safety Compliance does not indicate that such a size can be fabricated, this should be checked with the manufacturer, and will be subject to the ability of the supporting construction providing adequate restraint/support. The overpanel must always be on the same plane as the door(s) below.

3.7 Hardware

Some of the various items of hardware to be used with the proposed door assemblies will have a positive contribution to the overall performance ('essential hardware') and others are classed as 'non-essential'. However, in all cases it must be ensured that choice of items, or their installation within the assemblies, does not have a detrimental effect upon their achievement of the required period of fire resistance.

General guidance for all items of hardware is outlined in Appendix E, based upon the range of items tested. All hardware beyond the scope of the general guidance must have been subjected to fire resistance testing, and/or assessed by Kiwa Fire Safety Compliance to support its use in door assemblies where the leaf construction and thickness, and all details at the frame interface, are similar to those proposed herein.

3.8 Installation, Supporting Construction and Door Edge Gaps

The 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 door openings. If fitted into timber or steel stud partitions, the method of forming the door assembly aperture must be as tested by the partition and/or door assembly manufacturer.

Note 13 Reference to steel stud partitions is in the context of permanent elements, such as those designed and proven by the plasterboard manufacturers, with plasterboard on both faces of the studs. This report does not approve use of the proposed door assemblies in proprietary 'demountable' partitions, which must be subject to a full and independent appraisal of the particular system and door assemblies therein.

No part of the rear of the frame section shall be exposed once installed, (except for integral architraves, see Section 3.4) 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 timber frames (such features could, however, be assessed on an individual basis).

This report only applies to scenarios where the frame is fully aligned within the plane of the fire-resisting wall/partition, unless an integral architrave is used as outlined in Section 3.4. The approval in this report does not apply where the wall/partition includes decorative 'cladding' on the face of the fire-resisting construction, (e.g. timber panelling on battens, or plasterboard on studs/dabs), such that any part of the frame is aligned within the plane of this decorative cladding. This detail is likely to adversely affect the fire resistance of the door assembly, and Kiwa Fire Safety Compliance should be consulted for specific advice, to determine upgrading measures that will be required in such cases.

The gap sealing between the supporting construction and timber frames should follow the recommendations given in Section 9.4 of BS8214: 2016, *'Timber-based fire door assemblies – Code of practice'*, using a product proven in such timber applications.

The gap between the door and the frame or between meeting stiles (and between any door and overpanel, where applicable) shall be 1.5–4mm. Gaps under the door(s) shall not exceed 6mm for fire performance, although, if smoke control is also required, these gaps shall only be 3mm, or smoke seals shall be included (see also Section 3.10 regarding suitability of smoke seals).

The door assembly design shall be such that, when closed, single acting leaves are fully flush within the frame. The face of leaves in double door assemblies shall be flush with each other (+/- 1mm) at meeting stiles, when closed.

Overpanels shall be secured into the frame using steel screws fixed through the rear of the frame members, passing at least 40mm into the centre line of the overpanel thickness. (Screws must not be fixed through the overpanel into the stops, or vice versa). Screws must be no more than 100mm from each corner of the overpanel, and at maximum 400mm centres, with a minimum of 2no. screws per overpanel edge. The gap between overpanel and frame should not exceed 3mm.

3.9 Intumescent Seals

The intumescent seal specifications, widths, and positions are shown in Appendix C, based upon tested details.

Intumescent protection is required for specific items of building hardware, and this is detailed in Appendix E based upon details tested.

3.10 Ambient Temperature Smoke Seals

Smoke seals, or combined intumescent/smoke seals (using the specification outlined in Appendix C), 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 Appendix C, in which case, the latter shall take precedence; and smoke sealing may not be effected.

Test evidence to BS476: Part 22: 1987 (or EN1634-1) shall be available to demonstrate that the smoke seals will not adversely affect the overall fire resistance of timber door assemblies, of similar design and thickness, when fitted in the proposed arrangements.

Note 14 KFS have a duty of care to advise that effective smoke control is not solely a function of seals at the leaf perimeter. Testing in accordance with BS EN 1634-3: 2004, or BS476: Part 31: Section 31.1: 1983, also evaluates the leakage through apertures for glass and hardware, and it is the responsibility of others to ensure that the TOTAL leakage is not more than $3m^3/m/hr$ at 25Pa.

4. Conclusion

Based upon the available test evidence, and subsequent analysis performed by Kiwa Fire Safety Compliance, if the proposed door assemblies utilising TriSound S3D timber-based multi-layer door leaves installed in timber frames were manufactured and installed in accordance with the limitations of this Field of Application Report and tested for fire resistance, they would satisfy the integrity criteria of BS476: Part 22: 1987 for 60 minutes.

Partially insulating door assemblies are determined using the criteria given in section 7 of BS476: Part 22: 1987. These assemblies are evaluated as partially insulating door assemblies on the basis that the 'solid' part of the leaf satisfies the temperature criteria given in section 10.4 of BS476: Part 20: 1987 and any non-insulating features, such as glazing, are less than 20% of the surface area of the leaf. The assemblies outlined, herein, are permitted to have glazed areas and air transfer grilles, and so could, therefore, be evaluated to this standard if the maximum total aperture area is less than 20% of the leaf size.

The leaves may include small apertures, up to a maximum of 20% of the leaf size, and can be evaluated to Section 7 in BS476: Part 22: 1987 as partially insulating door assemblies for 60 minutes fire resistance.

The doors can also be assessed to Section 6 of BS476: Part 22: 1987 for a 60 minute performance rating for both integrity and insulation without apertures in the leaves (unless fully insulating glass is included in the assessment).

This Field of Application Report considers that the door assemblies within the scope approval, herein, may be installed in either orientation and so be exposed to fire conditions from either face.

5. Declaration by the Applicant

Kiwa Fire Safety Compliance Engineering Assessment Report	PAR/13088/01 Revision B
Client	Sauerland Spanplatten GmbH & Co KG
Project Address	Spanplattenwerk Gotha GmbH Müllersweg 1 D-99867 Gotha

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	
Position	
Company Name	Sauerland Spanplatten GmbH & Co KG
Date	

6. 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 Kiwa Fire Safety Compliance 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 Kiwa Fire Safety Compliance.

This report is not intended to be a complete specification for the proposed assemblies and it is the responsibility of others to ensure that the assemblies are suitable for the intended purpose; whilst incorporating the requirements of this report. Further, the assemblies 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, Kiwa Fire Safety Compliance have a duty of care to advise that introduction of CE Marking may become compulsory for fire doorsets marketed in the EU, during the validity period of this report; in which case, users should contact Kiwa Fire Safety Compliance 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. Kiwa Fire Safety Compliance 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 Kiwa Fire Safety Compliance'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 Kiwa Fire Safety Compliance have been commissioned to liaise with the Authorities that have jurisdiction for the building in question for the purpose of obtaining the necessary approvals, Kiwa Fire Safety Compliance 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 Kiwa Fire Safety Compliance 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.

7. 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. For this reason, anyone using this document after August 2028 should confirm its ongoing validity.

This Field of Application Report is not valid unless it incorporates the declaration by the applicant given in Section 6 duly signed by the applicant.

Prepared by:

Will Lightfoot
BEng (Hons) MSc AIFireE ACABE
Senior Fire Safety Engineer
Kiwa Fire Safety Compliance.
(part of the Kiwa UK Group)

Reviewed by:

Chris Houchen
BSc AIFireE
Associate Director of Product Evaluation
Kiwa Fire Safety Compliance.
(part of the Kiwa UK Group)

Appendix A Construction Method Statement

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

TriSound S3D by Sauerland Acoustic Blank Construction Method Statement

Acoustic & Fire Door Solutions

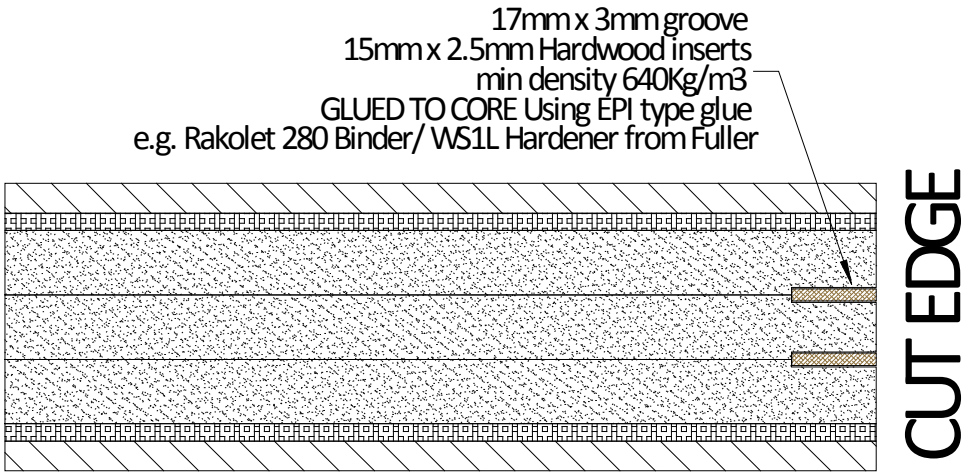
Tel: +44(0)7815 589447
Email: kshepherd@afdsl.com

Materials

- TriSound S3D by Sauerland 45mm thick 3-Ply acoustic core with Cork outer layers (nom 2000x800mm)
- Sapele (min density 630kg/m^3 at 12% mc) 45x38mm section perimeter timber
- 2no 6mm High Density MDF (min density 850kg/m^3 at 12% mc) sheets for substrates
- Min 20x12mm steel staples
- PVA D3 or UF adhesive (and EPI adhesive if core is to be reduced in width)
- Sapele (min density 630Kg/m^3 at 12% mc) 15x2.5mm IF core is to be reduced in width

Method

1. Cut Core to internal size:
    a. Core Height: Blank Height – 152mm (see section ii below)
    b. Core Width: Blank Width – 152mm (see section iii below)
    c. Where Fire performance is required the following conditions must be adhered to:
        i. the core must only be used in the "portrait" orientation
        ii. When cutting the core to height it is imperative to ensure that the required amount is ONLY trimmed from one end of the core. The cut end MUST be located at the bottom of the leaf. If the top (non-cut) end requires squaring-up this can be achieved by trimming a maximum of 6mm before the remainder is trimmed from the opposite end.
        iii. When cutting the core to width it is imperative to ensure that the required amount is ONLY trimmed from one edge of the core. Where greater than 6mm is removed from the edge, two grooves 17mm deep by 3mm wide MUST be cut along the CUT edge positioned along the joint between core layers (see diagram below). The grooves are to be filled with 15mm x 2.5mm Sapele inserts glued to the cores using an EPI type glue (e.g. Rakolet280 Binder/WS1L hardener from Fuller).



If the non-cut edge requires squaring-up this can be achieved by trimming a maximum of 6mm before the remainder is trimmed from the opposite edge as above.

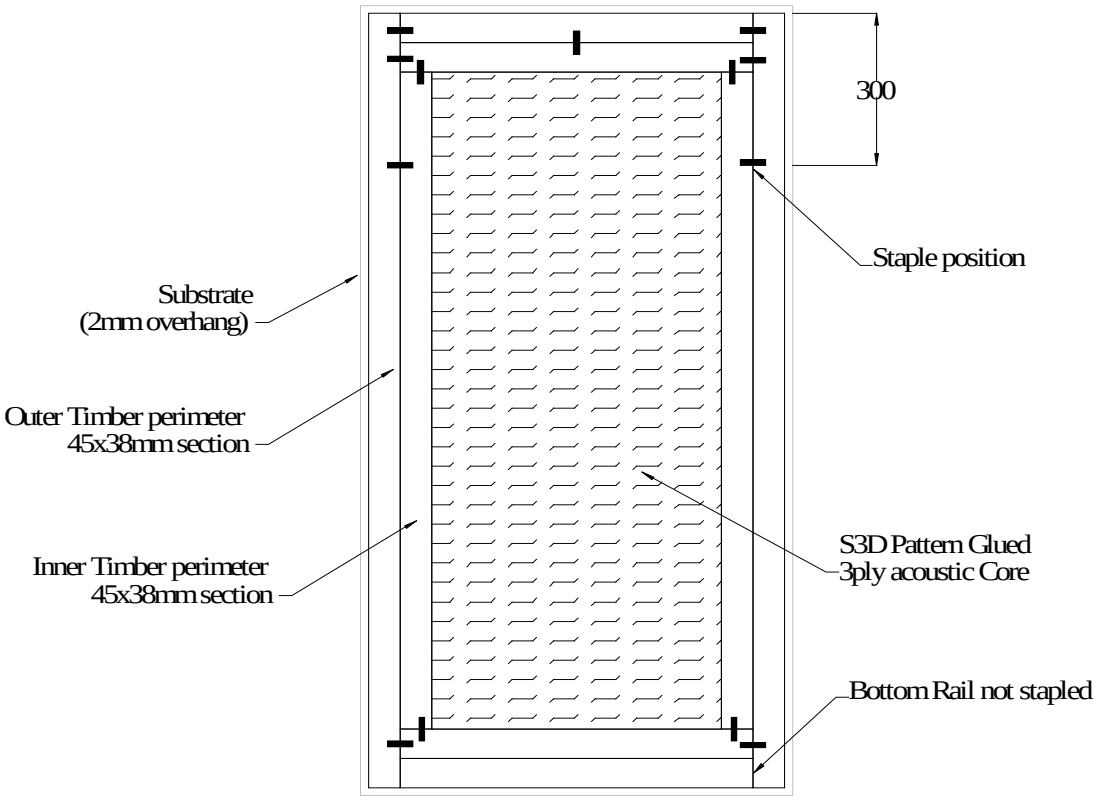
iv. The core is normally supplied at 2000x800mm dimensions. If a wider core size is required this must be custom-manufactured.

v. In any event the overall leaf sizes should be limited to the permissible envelope provided with the fire performance evidence.

2. Cut Perimeter Timber:
   a. Outer stiles: Blank Height
   b. Inner stiles: Blank Height – 152mm
   c. All rails: Blank Width – 76mm

3. Cut substrate
   (2no 6mm substrates):
   a. Height: Blank Height + 4mm
   b. Width: Blank Width + 4mm

4. Assemble Perimeter using steel staples from both faces, in locations shown below, ensuring tight fit of timber at joints and where butted up. Gaps of > 0.5mm are unacceptable. Note that the bottom rail is not stapled.



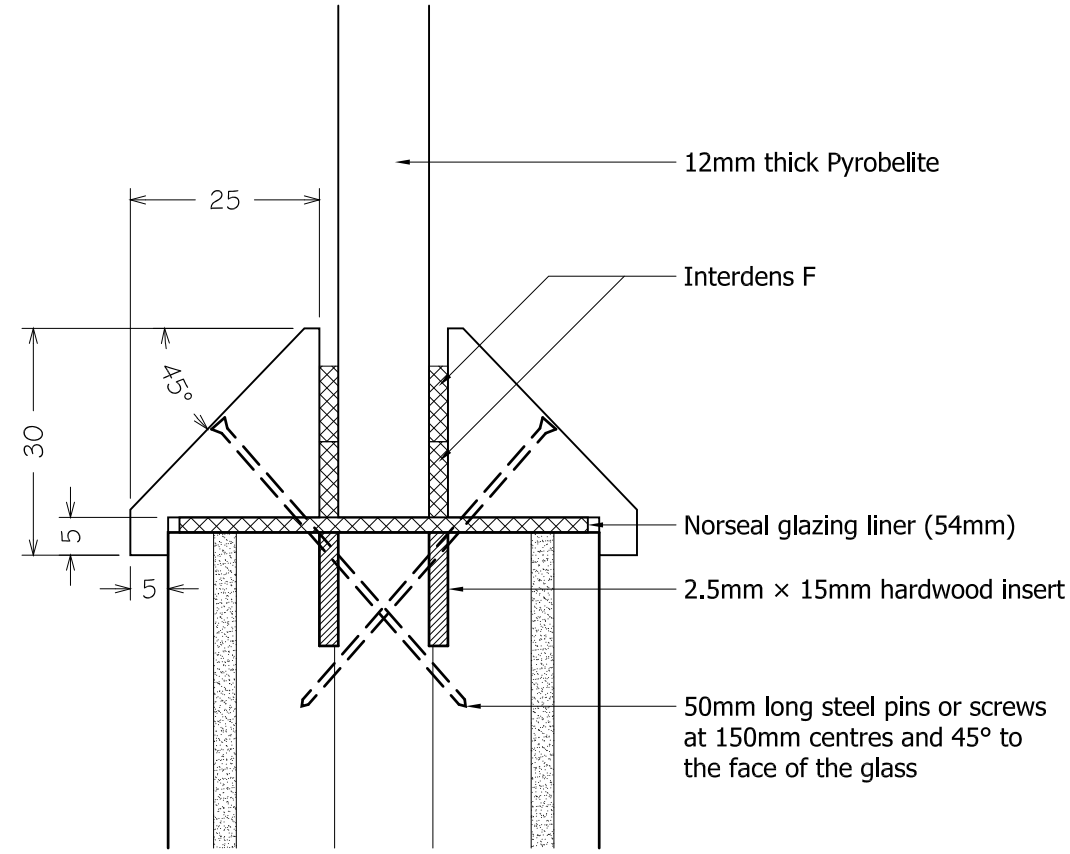
5. Coat one substrate with PVA-D3 or UF adhesive. Place (adhesive side up) on pressing platform
6. Place perimeter onto substrate with 2mm overlap all round
7. Place the bottom rail ensuring tight fit

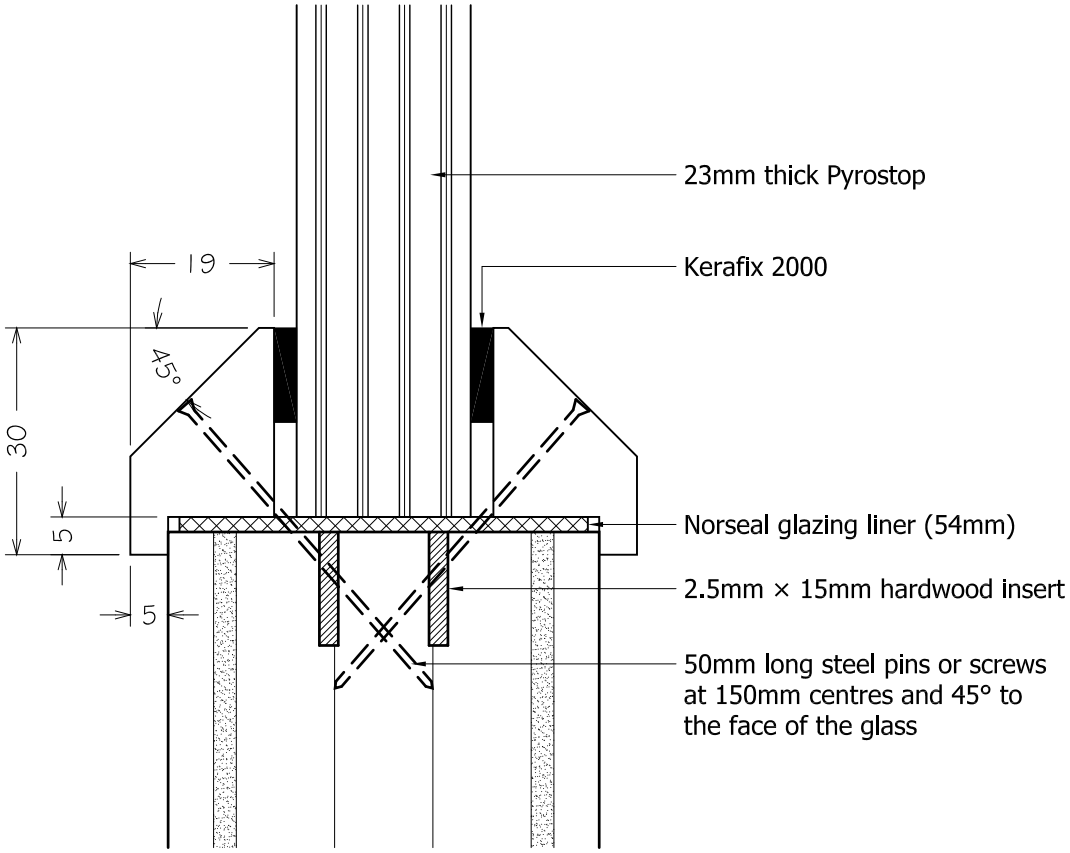
8. Place cut-to-size core material into the perimeter ensuring tight fit and that the top end of the core (see section 1-ii) is at the top end of the leaf
9. Coat second substrate with PVA-D3 or UF adhesive place on top of core/perimeter with 2mm overhang all round.
10. Press in a hot press until adhesive is cured to the handling stage. Suggested time in a hot press would normally be around 20-30 minutes but the time required will vary due to press temperature and other conditions. It is possible to use a cold press although pressing time to reach the handling stage will be significantly increased, e.g. in a 21°C environment the handling stage would normally be reached in around 75 minutes, although again this will vary due to conditions. For more information see the adhesive manufacturers Technical Data Sheet
11. Once the handling stage of curing is reached the blank can be removed from the press but handling should be kept to a minimum until full cure has been achieved. Time required to achieve full cure varies with temperature and other conditions but as a guide a blank stored in normal conditions should achieve full cure after around 24 hours.
12. Mark "Top" on the top perimeter frame.
13. Once full cure has been reached the blank can be trimmed and lipped.
14. The blank can now be veneered/trimmed/primed/painted according to requirements. See the relevant Technical Manual for more information regarding use of the blank.

Appendix B Glazing Details

Figures PAR/13088/01B:B01

The figures in this Appendix are not included in the sequential page numbering of this report





kiwa | IFC
International Fire Consultants Ltd
Ground Floor, Building 2,
Bear Brook Office Park, Walton Street,
Aylesbury, HP21 7GQ
uk.firesafety@kiwa.com
www.kiwa.co.uk +44 (0)1844 275500

Field of Application Report
PAR/13088/01 Revision B
Sauerland Spanplatten GmbH & Co KG
TriSound S3D FD60 Timber-Based
Multi-Layer Door Leaves Installed
in Timber Frames

Glazing Details

Job number: 18495	
Drawn by: CSP	Checked by: WL
Not To Scale	Drawn: Jul 2023

PAR/13088/01B:B01

Appendix C Assessed Intumescent Seal Specifications

The assessed Intumescent Seal Specifications for TriSound S3D Timber-Based Multi-Layer Door Leaves Installed in Timber Frames is as follows:

LOCATION	SPECIFICATION
STILES/JAMB	2no. 15 x 4mm seals, centrally fitted, spaced 10mm apart, in either the leaf edge, or opposing frame reveal
HEAD	2no. 15 x 4mm seals, centrally fitted, spaced 10mm apart, in either the leaf edge (see note below), or opposing frame reveal
SQUARE MEETING STILES	2no. 15 x 4mm seals, centrally fitted, spaced 10mm apart in the active leaf edge
UNEQUALLY REBATED MEETING STILES	2no. 10 x 4mm seals fitted 10mm apart, centrally, in the 39mm wide rebate and 1no. 10 x 4mm seal, fitted centrally, in the 18mm wide rebate in the opposing leaf face
INTERFACE BETWEEN OVERPANEL AND FRAME/TRANSOM	2no. 15 x 4mm seals, centrally fitted, spaced 10mm apart, in either the overpanel edge, or opposing frame/transom reveal

Note:

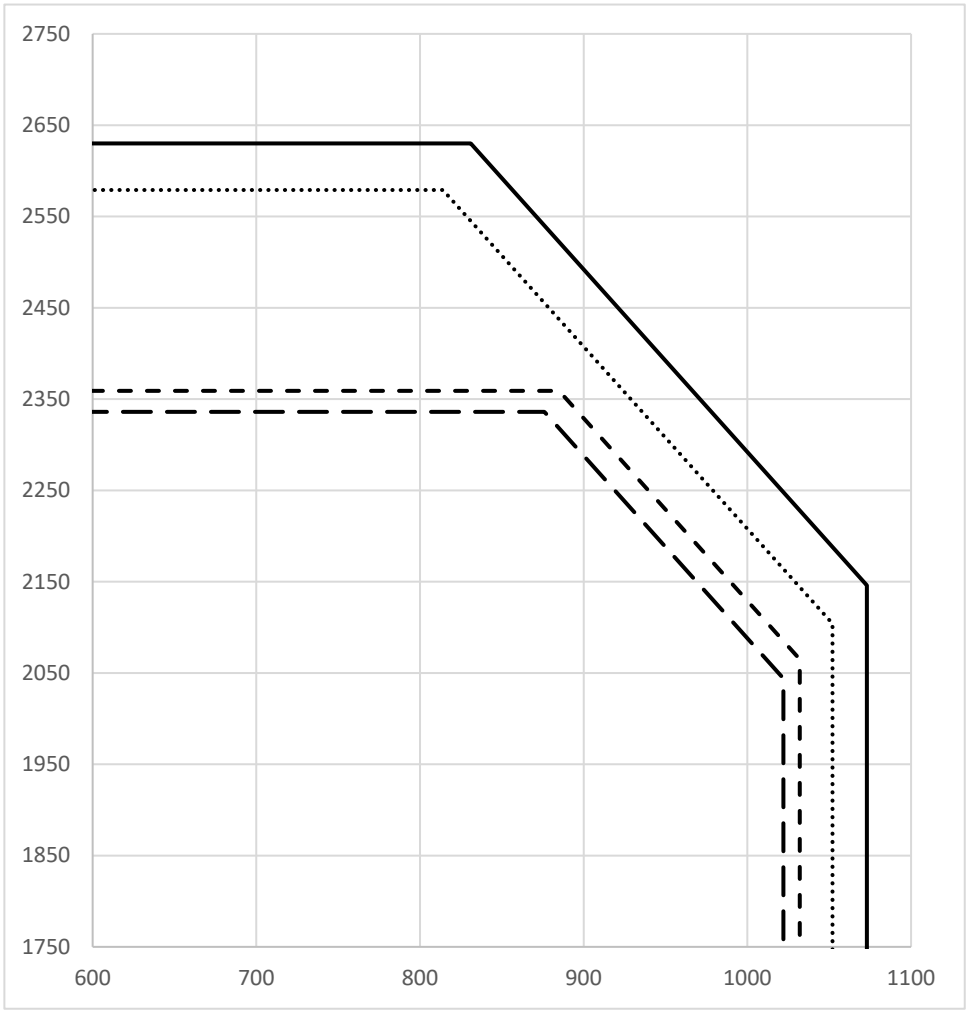
The intumescent seals must be graphite-based in a pvc case and should be obtained from members of the Intumescent Fire Seals Association (IFSA). Combined intumescent/smoke seals may be used, maintaining the widths specified above (and subject to the conditions outlined in Section 3.10).

Appendix D Assessed Leaf Size Envelopes

Figure PAR/13088/01B:D01

Assessed Leaf Size Envelopes for TriSound S3D Door Leaves Installed in Timber Frames

FIGURE D01	FD60	TRISOUND S3D DOOR LEAVES INSTALLED IN TIMBER FRAMES



Door Type	Leaf Height	Leaf Width
LSASD	2146mm	1073mm
	2630mm	831mm
ULSASD	2104mm	1052mm
	2579mm	814mm
LSADD	2065mm	1032mm
	2359mm	885mm
ULSADD	2044mm	1022mm
	2336mm	876mm

Note – The leaf core shall be produced from a single piece without the need for joints to achieve the above sizes. The above sizes do not indicate that such sizes are possible to be manufactured.

Appendix E General Guidance on Installation of Hardware

E.1 Hinges

The door design has been tested utilising Hafele SUS 304 hinges which are thus proven to make a positive contribution to the required 60 minutes integrity performance. Other makes of hinge may be used as alternatives providing they comply with the following specification:

ELEMENT	SPECIFICATION
HINGE TYPE	Fixed pin, washered butt, ball bearing butt, lift-off type or journal supported hinges may be used.
NUMBER OF HINGES	3no (1½ pairs) per leaf. (4no per leaf should be used on leaves greater than 2300mm high).
POSITIONS	The top hinge must be positioned 175-225mm down from the head of the leaf to the top of the hinge and the bottom hinge positioned 200-250mm up from the foot of the leaf to the bottom of the hinge. The middle hinge must be either equispaced between the top and bottom hinge, or 200–250mm below the top hinge.
FIXINGS	Steel screws, as recommended by the hinge manufacturers, but in no case smaller than No. 8 (3.8mm diameter) by 32mm long, and having thread for the full length. Position of screws (in relation to the door face) in blades of alternative hinge types shall be similar to hinges tested with the proposed door type.
HINGE BLADE SIZES	2.5–3.5mm thick x 89–110mm high x 30–35mm width. (These dimensions refer to the blade size, i.e. the part of the hinges that are recessed into the edge of the leaves/frame).
HINGE MATERIALS	Phosphor Bronze, Steel or Stainless Steel. (Brass, Aluminium, Nylon or 'Mazac' are not permitted). No combustible or thermally softening materials to be included.
ADDITIONAL PROTECTION	Hinge blades to be bedded on minimum 1mm thick Interdens/Therm-A-Strip intumescent sheet material. One intumescent strip in the frame/leaf edge shall run continuous past the hinges.

Rising butt, cranked butts and spring hinges (single or double action) are not suitable for use on doors approved within the scope of this Field of Application Report.

E.2 Mortice Latches/Locks

The door design has been tested with a Laidlaw LA60SS/R mortice lock centrally fitted in the large rebate of the unequally rebated edge meeting stiles. This mortice lock is thus proven to make a positive contribution to the required 60 minutes integrity performance; although the latch was disengaged, and so latches are not 'compulsory'. Other mortice latches/locks may be used, subject to compliance with the specifications below:

ELEMENT	SPECIFICATION	
LATCH/LOCK TYPE	Mortice latches, tubular mortice latches, sashlocks and deadlocks	
MAXIMUM DIMENSIONS	FOREND PLATE	235mm long x 20mm wide, or, 200mm long x 25mm wide
	BODY	165mm high x 100mm wide x 16mm thick
	STRIKE PLATE	170mm long x 24mm wide
MATERIALS	Latches must have no essential part of their structure made from polymeric or other low melting point (<800°C) materials, and should not contain any flammable materials.	
POSITIONS	• Centred at 1000mm (± 200mm) above the bottom of the door leaf. • Latch to be central in the 39mm wide rebate of unequal rebated meeting stiles; or central in leaf thickness where doors have square meeting stiles, and in single leaf doors.	
ADDITIONAL PROTECTION	• Minimum 1mm thick Interdens/Therm-A-Strip intumescent sheet material encasing the latch body, and under the strike plate and forend. In double leaf door assemblies, the cut-out 'box' for the latch keep should be lined with minimum 1mm thick graphite-based sheet (e.g. Norseal graphite sheet). • In rebated meeting stiles, the intumescent strip in the rebate of the passive leaf shall be continuous past the strike plate; and 5mm width of both intumescent strips in the active leaf shall be continuous past the forend. • In square meeting stiles, 5mm width of both intumescent strips in the active leaf shall be continuous past the latch/lock forend. • In single leaf assemblies, 8mm width of one of the intumescent strips in the frame shall be continuous past the strike plate.	

Over-morticing is to be avoided; mortices shall be as tight as possible to the latch. If gaps around the case exceed 2mm, then these must be made good with intumescent mastic or sheet material. Holes for spindles or cylinders should be kept as small as is compatible with the operation of the hardware.

Where glazing apertures are also incorporated, and are positioned such that locks/latches are included in the margin between the aperture and door edge, care must be taken to ensure that the effective door 'stile' is not weakened by the mortice. It is a condition of this assessment that, except where tubular latches are employed, the margin must be at least 75mm wider than the lock/latch mortice. If the mortice latch/lock is fitted in line with a 'rail' between two apertures, no part of the lock mortice shall be closer than 50mm to the edge of any aperture.

E.3 Door Closers

Where required by regulatory guidance or specific fire strategy, each hinged door leaf must be fitted with a self-closing device unless they are normally kept locked shut and labelled as such with an appropriate sign which complies with the BS 5499 series of standards.

Overhead surface mounted closers are recommended. Concealed overhead and concealed jamb mounted closers are not approved by this Report.

Surface mounted overhead door closers (and accessories such as soffit brackets) may be used if they have been tested, assessed or otherwise approved for use on unlatched FD60 cellulosic door leaves in timber frames. Any accessory that is located within the door reveal must have appropriate test or assessment evidence. In addition, where areas of uninsulated glazing are adjacent to the closer, the selected closer type must have been tested on the unexposed face of an uninsulated steel door, or a fully glazed door fitted with uninsulating glass, to demonstrate that the closer does not emit flammable fluids onto the glass face that would otherwise cause integrity failure before the required period of fire resistance.

It is essential that all closers are of the correct power rating for the width and weight of the doors (minimum power size 3). They must be fitted according to the manufacturer's instructions, and be adjusted so that they are capable of fully closing the door leaf, against any friction imposed by the latch (and smoke seals, if fitted), from any position of opening.

It is essential that all closers fulfil the requirements of BS EN 1154: 1997 and are of the correct power rating for the width and weight of the doors (minimum power size 3). They must be fitted according to the manufacturer's instructions, and be adjusted so that they are capable of fully closing the door leaf, against any friction imposed by the latch (and smoke seals, if fitted), from any position of opening.

A variety of closers may be used, subject to compliance with the specifications below.

- Face-fixed overhead door closers (and accessories such as soffit brackets) that have been tested, assessed or otherwise approved for use on unlatched FD60 cellulosic door leaves in timber frames may be used.
- Any accessory that is located within the door reveal must have appropriate test or assessment evidence.
- In addition, where areas of uninsulated glazing are adjacent to the closer, the selected closer type must have been tested on the unexposed face of an uninsulated steel door, or a fully glazed door fitted with uninsulating glass, to demonstrate that the closer does not emit flammable fluids onto the glass face that would otherwise cause integrity failure before the required period of fire resistance.

E.4 Flush Bolts

The door design has been tested with Laidlaw 34 002.2 flush bolts centrally fitted in the 39mm nib of the passive leaf edge at the meeting stiles, and engaged. These flush bolts are thus proven to make a positive contribution to the required 60minute integrity performance. Other flush bolts may be utilised subject to compliance with the specifications below:

Unless specific fire test evidence is available, all bolts shall be steel. The following limitations and protection apply;

- Maximum size of flush bolt is 205mm long x 20mm wide and 21mm deep;
- The head of the frame should contain a minimum 15mm width of intumescent strip local to the keep plate. If the keep plate is offset, this will allow one strip to be continuous. Alternatively, if the keep plate is central, then 8mm of each strip should be continuous;
- The body of the bolt should be bedded on 1mm thick Interdens/Therm-A-Strip intumescent sheet material;
- In rebated meeting stiles, edge fixed bolts shall be positioned in the 39mm wide nib of the passive leaf, with the single 10 x 4mm seal remaining continuous alongside it, in the 18mm rebate);
- In square meeting stiles, edge fixed bolts shall be positioned centrally in the leaf thickness (the 2no. 15 x 4mm intumescent seals defined in Appendix C shall be fitted in the active leaf opposing the flush bolt).

E.5 Non-Essential Hardware Items

E.5.1 Dropseals

The door design was tested with a Norsound NOR 810S dropseal, fitted 10mm in from the unexposed face of the leaves; such that a 10mm wide intumescent strip was continuous alongside the end plates of the drop seal, in both leaves. This dropseal is thus proven not to be detrimental to achieving the required 60 minutes integrity performance.

Norsound NOR 810S dropseals are thus approved, but the following conditions apply;

- In doors with rebated meeting stiles, the drop seal shall be positioned offset in the 39mm wide zone, (as tested), with a single 10 x 4mm seal remaining continuous alongside the end plates of the dropseal, in BOTH meeting edges;
- In doors with square meeting stiles, the drop seal may be either positioned centrally in the leaf thickness (i.e. passing 'between' the 2no. 15 x 4mm intumescent seals, defined in Appendix C, in the meeting stile of the active leaf). Alternatively, if the passive leaf also includes flush bolts, the drop seal may be positioned offset, in both leaves, and it is acceptable for the drop seal to interrupt one of the 15mm wide seals in the meeting stile of the active leaf.
- In single leaf doors, the drop seal shall be central in the leaf thickness.
- Where a drop seal is fitted in the passive leaf of double leaf doors that also includes flush bolts, the drop seal must be truncated 'behind' the lower flush bolt. If the drop seal is included to contribute to smoke control, it is the responsibility of others to determine if effective smoke sealing is maintained.

E.5.2 Push Plates, Kick Plates etc

Plastic, pvc or metal plates may be surface-mounted to the doors, but, if more than 800mm in length by nominally 200mm wide, they must be attached in a way that would prevent them distorting the door leaf, e.g. glued with thermally softening adhesive or screwed with short aluminium screws and fitted in such a way so they will not be prevented from falling away by being trapped under door stops, glazing beads or handle escutcheons etc.

E.5.3 Pull Handles

These may be fixed to the face of doors, provided that the fixing points are no greater than 800mm apart. Pull handles that are fixed through the leaf should use clearance holes as close fitting as possible to the bolt; and fixings passing through the leaf shall be steel. Handles/fixings shall be at least 40mm away from the door edge, and from any aperture.

E.5.4 Intumescent Air Transfer Grilles

These must be tested, assessed by Kiwa Fire Safety Compliance or otherwise approved for use with 54mm thick (or less) cellulosic FD60 doors. They must be fitted fully in accordance with the manufacturer's instructions, including all intumescent liners and cloaking grilles/beads. They must be no larger than that for which test or assessment evidence exists. See Section 3.5.4, for restrictions on maximum size and placement of any apertures; these apply to those for grilles, which must also be included in the total area permitted for apertures given in Section 3.5.4. Positioning above floor level will depend upon the test evidence for the intumescent grille.

Note E1 The installation of such items in a door leaf may compromise its performance as a smoke control door assembly.

E.5.5 Lever Handles

ELEMENT	SPECIFICATION
MATERIAL	Metal/alloy – should not contain any flammable materials
SPECIFIC INSTALLATION REQUIREMENTS	Holes through the leaf shall be as close fitting as possible to the spindles and/or fixing screws; which must be steel
INTUMESCENT PROTECTION	None required
ADDITIONAL NOTES	This generic approval only applies to traditional 'mechanical' lever handles and does not apply to electro-mechanical handlesets (with security functions); which must be the subject of independent fire testing, and further analysis by Kiwa Fire Safety Compliance

Appendix F Fire Test Evidence

F.1 Summary of Fire Test Evidence

Summary of Primary Fire Test Evidence

TEST LABORATORY AND REPORT NO.	TEST DATE	CONFIGURATION TESTED	LEAF SIZE TEST	TEST STANDARD	INTEGRITY
Chiltern International Fire Chilt/RF13011 Revision A	05.03.2013	ULSADD	2100mm high x 970mm + 958mm wide x 57mm thick	BS EN 1634-1: 2008	62 minutes

ULSADD = Unlatched, Single Acting, Double leaf Door assembly

The test evidence referenced in this Engineering Assessment Report is more than 5 years old. In accordance with industry practice, Kiwa Fire Safety Compliance have reviewed this test evidence, and have concluded that the evidence is still valid, and suitable to form the basis of this approval.

The test evidence is not owned by Sauerland Spanplatten GmbH & Co KG; but Kiwa Fire Safety Compliance have written permission from the test sponsor, to use the evidence in support of this assessment.

Note: Where appropriate, fire test evidence from glass, hardware, and intumescent seal manufacturers has also been considered when preparing this Field of Application Report.