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IFC FIELD OF APPLICATION REPORT

PAR/10812/01 REVISION A

Field of Application of the Minimum 44mm Thick FDB30 Timber Fire Door Leaves Installed in Timber Frames

Prepared on behalf of:

PKF Global Ltd
Unit 2
Devonshire Business Park
Chester Road
Borehamwood
Hertfordshire
WD6 1NA

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International Fire Consultants Ltd

Head & Registered Office: Park Street Business Centre, Princes Risborough, Buckinghamshire, England HP27 9AH

Tel: +44(0)1844 275500, Fax: +44(0)1844 274002, E-mail: ifc@intfire.com

Registered No: 2194010 England

An International Fire Consultants Group Company

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May 2015	Various	Minor typographical edits, but scope remains unchanged. Revision to IFC current format. Review and Revalidation.

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Author	PG	MB				
Reviewer	DC	DC				

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1. INTRODUCTION

This report has been prepared by International Fire Consultants Ltd (IFC) to define the Field of Application for timber door leaves (PKF reference FDB30) installed in timber frames, that are required to provide 30 minutes fire resistance performance, when adjudged against BS476: Part 22: 1987.

The methodologies used in preparing this document are based upon the guidance in BS ISO/TR 12470: 1998; 'Fire resistance tests - Guidance on the application and extension of results'.

It is proposed that variations to the tested specifications, as described in the following sections, may be accommodated into assemblies, without reducing their potential to achieve a 30 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 tested.

This report defines the scope of approval for the range of doors summarised herein; including the clarification of specifications for other associated elements, such as frames, intumescent seals, hardware, glazing, and installation, that must be employed to create suitable door assemblies; if such assemblies are to provide the assessed levels of fire resistance. The report is published with regard to the standards and requirements in force at the time of issue.

International Fire Consultants Ltd (IFC) have a duty of care to advise users of this report that the Harmonised Product Standard for fire resisting doorsets (EN 16034) was published in October 2014, completing the group of EN documents which relate to the CE marking of doorsets within the scope of the Construction Products Regulations that apply to all Member States of the EU. However, the CE marking of doorsets is not permitted until the Harmonised Product Standard is formally published in the Official Journal of the European Union; this is expected to be in 2015. Furthermore, although all relevant EN standards referenced in the CE marking process will then be in place, and voluntary CE marking can commence, there will be a transition period before CE marking of fire resisting doorsets becomes mandatory. The transition period will be confirmed at the time of publication in the Official Journal and it is possible that CE marking of fire resisting doorsets will become mandatory during the validity period of this report; hence the inclusion of this advice.

Further advice is included in Appendix D of this report, but it is recommended that anyone using this report after January 2016 should seek advice from IFC, or IFC Certification Ltd, as to the ongoing status of the CE marking process, and how it applies to door assemblies approved in this report.

2. TEST EVIDENCE

The test evidence used to support this assessment is summarised in Appendix C of this report.

3. SCOPE OF APPROVAL

3.1 Door Configuration

The following door configurations are approved within the scope of this report:

Latched, Single Acting, Single leaf Door assembly	LSASD
Unlatched, Single Acting, Single leaf Door assembly	ULSASD

3.2 Maximum Assessable Door Leaf Sizes

The calculated envelopes of assessed leaf dimensions for each mode and configuration covered by this Field of Application Report are given in Appendix B, based upon use of the intumescent seal specification shown in Section 3.6.

3.3 Door Leaf Specification

A detailed constructional specification of the basic door construction is given below. This is based upon the test evidence detailed in Appendix C, (and is, therefore, limited to the information available from that test report), but also defines variations and tolerances, where it is considered that these will not adversely affect overall fire resistance.

Component		Species	Dimensions	Minimum Density
Core		Albacia Falcata (Finger jointed lamels)	3no layers with total minimum thickness 38.5mm (centre layer at 90° to outer layers)	330kg/m ³ <i>Note 1</i>
Top rail		Laminated hardwood	4no layers with total minimum height 62mm	550kg/m ³ <i>Note 1</i>
Lippings		Meranti	Minimum thickness 8mm affixed to the top and vertical edges	640kg/m ³ <i>Notes 1 & 2</i>
Facings		Cross grain	2.5mm thick on each face	550kg/m ³ <i>Note 1</i>
Adhesives	Between layers in core	Urea formaldehyde	-	-
	Between vertical lippings and core	Polyvinyl acetate	-	-

Component		Species	Dimensions	Minimum Density
	Between top rail and core	Polyvinyl acetate	-	-
	Between horizontal lipping and top rail	Polyvinyl acetate	-	-
	Between Facings and lippings/core	Urea formaldehyde	-	-
Minimum leaf thickness		-	44mm	-
Optional additional decorative finishes		Timber veneer ^{Note 2} or decorative plastic based laminate to faces only; PVC or paint to faces or edges	Maximum 2mm thick (veneer/laminate)	-

Note 1 Nominal stated density.

Note 2 The following species of hardwood are also acceptable for lippings and veneers:

<i>American Cherry</i>	<i>nominal density 580kg/m³ (+20 - 10%)</i>
<i>American Rock Maple</i>	<i>nominal density 660kg/m³ (+20 - 10%)</i>
<i>Black Cherry</i>	<i>nominal density 580kg/m³ (+20 - 10%)</i>
<i>Sapele</i>	<i>nominal density 640kg/m³ (+20 - 10%)</i>
<i>American White Oak</i>	<i>nominal density 770kg/m³ (+20 - 10%)</i>
<i>American Black Walnut</i>	<i>nominal density 660kg/m³ (+20 - 10%)</i>
<i>Merbau</i>	<i>nominal density 830kg/m³ (+10 - 10%)</i>
<i>Pacific Walnut</i>	<i>nominal density 660kg/m³ (+20 - 10%)</i>
<i>Tropical Cherry</i>	<i>nominal density 580kg/m³ (+20 - 10%)</i>
<i>Dark Red Meranti*</i>	<i>nominal density 640kg/m³ (+20 - 10%)</i>
	<i>[The density of Meranti varies considerably, hence the density of each specific batch used for production must be checked for compliance]</i>

A detailed drawing of the proposed door leaf construction is given in **Figure PAR/10812/01A:01** in Appendix A.

The door leaf core may be reduced in height from the base only, or reduced in width, by any amount, as long as lippings are applied in accordance with the specification given.

3.4 Frames

Door frames must be constructed from softwood with a minimum measured density of 510kg/m³ or hardwood with a minimum measured density of 650kg/m³ (measured at 12% moisture content). Timber must be straight grained and of appropriate quality in accordance with BS EN 942: 1996, or national equivalent. Moisture content shall be 10 ± 2% for UK market, (or to suit internal joinery moisture content specification of export countries).

Minimum dimensions for softwood (minimum 510kg/m³): 32mm face width (excluding stop) x 95mm deep with a 12mm deep doorstop. Doorstop 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 remains at 32mm ^{Note 3}.

Minimum dimensions for hardwood (minimum 650kg/m³): 30mm face width (excluding stop) x 95mm deep with a 12mm deep doorstop. Doorstop 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 remains at 30mm ^{Note 3}.

Note 3 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 or include a shadow gap detail between the frame and the wall.

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.

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

Architraves: Loose Architraves are optional and have no fire performance requirements. (See Section 3.9 regarding wall/frame gaps).

Where an integral architrave is used, the face of the door, and the face of the frame, 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 assumes that the face of the door leaf is flush with the face of the architrave.

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. G1, S1 and B1), are not those used by the respective manufacturers, and are attributed solely by IFC for the purpose of identification and cross-referencing within this assessment.

G1	7mm thick Pyroshield 2 (Pilkington)
G2	7mm thick Pyran S (Schott Glass)
G3	7mm thick Pyrobelite (AGC Flat Glass)
G4	7mm thick Pyrodur Plus (Pilkington)

Expansion allowance 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, although some restrictions on size may be given in subsequent sections. (See also **Figure PAR/10812/01A:02** in Appendix A for limitations).

S1	10 x 2mm Intumescent Seals Therm-A-Glaze 45	(G1, G2, G3 & G4)
S2	13 x 3mm Sealmaster Fireglaze mastic	(G1 & G2)
S3	10 x 2mm Sealmaster G30 strip	(G1, G2, G3 & G4)
S4	10 x 3mm Mann McGowan Pyroglaze 30 strip	(G1 & G2)
S5	Lorient Flexible Figure 1	(G1 & G2)
S6	10 x 5mm Closed cell foam	(G3 & G4)
S7	10 x 4mm Ceramic fibre tape	(G3 & G4)

3.5.3 Bead profiles and installation

The approved bead sizes and profiles, and relevant fixing details, are shown on **Figure PAR/10812/01A:02** in Appendix A, which also define any limitations upon options of interchangeability with glass types and glazing systems.

Where the bead profile extends over the edge of the aperture (see detail A on **PAR/10812/01A:02**), an aperture lining is optional. Where the bead is flush with door face, (detail B), a lining must be included. The aperture lining may be "concealed" under the decorative facings. Where aperture linings are included they must be 8–10mm thick. Lippings and glazing beads shall be formed from straight grained Meranti with 640kg/m³ minimum density (measured at 12% moisture content) ^{Note 4}. Timber must be of appropriate quality in accordance with BS EN 942: 1996. Moisture content shall be 10 ± 2% for UK market, (or to suit internal joinery moisture content specification of export countries).

Note 4 The following species of hardwood are also acceptable for the aperture liner and glazing beads;

American Cherry	nominal density 580kg/m ³ (+20 – 10%)
American Rock Maple	nominal density 660kg/m ³ (+20 – 10%)
Black Cherry	nominal density 580kg/m ³ (+20 – 10%)
Sapele	nominal density 640kg/m ³ (+20 – 10%)
American White Oak	nominal density 770kg/m ³ (+20 – 10%)
American Black Walnut	nominal density 660kg/m ³ (+20 – 10%)

Merbau
 Pacific Walnut
 Tropical Cherry
 Dark Red Meranti*

nominal density 830kg/m³ (+10 – 10%)
 nominal density 660kg/m³ (+20 – 10%)
 nominal density 580kg/m³ (+20 – 10%)
 nominal density 640kg/m³ (+20 – 10%)
 [The density of Meranti varies considerably, hence the density of each specific batch used for production must be checked for compliance]

3.5.4 Assessed aperture sizes

Based upon the size of apertures tested, it the opinion of IFC that the following limitations apply to glazed apertures in the door leaves considered herein;

Maximum area of aperture(s)	-	0.59m ²
Maximum aperture height	-	1193mm
Maximum aperture width	-	496mm
Minimum margin from leaf edge	-	200mm
Minimum distance between apertures	-	150mm

More than one aperture may be included in each leaf subject to the individual limitations above and the framing dimensions given in Section 3.3.

3.6 Intumescent Seals

The following intumescent seal combinations shall be used for the door assembly configurations covered by this report.

Position	Seal Specification
Frame head	1no 20 x 4mm intumescent strip fitted centrally in the frame reveal
Frame jambs	1no 20 x 4mm intumescent strip fitted centrally in the frame reveal
Leaf head	1no 20 x 4mm intumescent strip fitted in the head of the leaf

All intumescent seals are to be graphite based or Lorient 617 type in pvc cases. It is recommended that all intumescent seals are manufactured or supplied by members of the Intumescent Fire Seals Association (IFSA) to ensure product quality and consistency. If smoke control is required, these may be substituted by combined intumescent/smoke seals, subject to the limitations given in Section 3.7.

3.7 Ambient Temperature Smoke Seals

Smoke seals, or combined intumescent/smoke seals (using the intumescent products approved in Section 3.6), that have been tested to BS476: Part 31: Section 31.1: 1983 and shown not to leak by more than 3m³/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 building hardware interruption, and leaf configuration, will need to be as tested to 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 shown in Section 3.6, in which case, the latter shall take precedence.

Test evidence to BS476: Part 22: 1987 shall be available to demonstrate that the smoke seals will not adversely affect the overall fire resistance of timber door assemblies, when fitted in the proposed arrangements.

3.8 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.

All hardware beyond the scope of the general guidance given below must have been subjected to fire resistance testing, and/or assessed by a notified body, to support its use in doors of a similar construction to that proposed, or third party certification shall be available to support its use on door assemblies of the proposed type.

General guidance for all items of hardware is outlined below, based upon the range of items tested.

3.8.1 Hinges

The door construction has been tested utilising Royde and Tucker Hi-Load H105 zinc plated mild steel hinges, (4no hinges per leaf) and are thus proven to make a positive contribution to the required 30 minutes integrity performance. Other makes of hinge may be used as alternatives providing they comply with the following specification:

Hinge types : Fixed pin, washered butt, ball bearing butt or journal supported hinges may be used.

Number of hinges : 4no (2 pairs) per leaf.

- Positions : The top hinge must be positioned 150mm down from the head of the leaf to the top of the hinge and the bottom hinge positioned 295mm up from the foot of the leaf to the bottom of the hinge. The middle hinges may be evenly spaced between the top and bottom hinge. (All positions ± 25 mm).
- Fixings : Steel screws, as recommended by the hinge manufacturers, but in no case smaller than 5mm diameter x 31mm 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 22–32mm 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 : Brass, Phosphor Bronze, Steel or Stainless Steel. (Aluminium, Nylon or 'Mazac' are not permitted). No combustible or thermally softening materials to be included.
- Additional protection : Not required.

Rising butt, non-cranked butts and spring hinges (single or double action) are not suitable for use on doors approved within the scope of this generic assessment, although may be suitable to form the subject of an individual and specific evaluation.

3.8.2 Mortice latches/locks

The door construction has been tested with a Union Architectural Hardware Y-2242-63 mainly steel mortice latch and Frelan Hardware JVCP0030 handle set. These products can, therefore, be included within door assemblies. Other mortice latches or locks can be fitted as an alternative and they should comply with the following specifications:

- Positioning: : Centred at 1000mm (+/-200mm), above the bottom of the door leaf
- Latch/lock types : Mortice latches, tubular mortice latches, sashlocks, deadlocks
- Maximum dimensions : Forend plate: 235mm long x 22mm wide
 Latch body: 18mm thick x 150mm high x 100mm wide
 Strikeplate: 235mm long x 37mm 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.
- Additional protection : None

Over-morticing is to be avoided; mortices should be as tight as possible to the latch. If gaps either side of the case exceed 2mm, then these must be made good with intumescent mastic or sheet (rounding to the top and bottom of the mortice is permitted). Holes for spindles or cylinders should be kept as small as is compatible with the operation of the hardware.

3.8.3 Door closers

Where required by regulatory guidance, 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 BS5499: Part 1: 1990.

The specifications for self-closing devices are as follows:

Face-fixed overhead door closers, (and accessories such as soffit brackets), that have been tested, assessed or otherwise approved for use on unlatched FD30 cellulosic door leaves, may be used. Any accessory that is located within the door reveal must have appropriate test or assessment evidence.

Transom mounted or concealed overhead closers must not be incorporated into any of the door assemblies within the scope of this generic scope of this report.

It is essential that all closers are of the correct power rating for the width and weight of the door leaf. 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.

3.8.4 Non-essential hardware items

Push plates, kick plates, etc.

Plastic, pvc or metal plates may be surface-mounted to the door leaves, but, if more than 800mm in length x 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.

Pull handles

These may be fixed to the door leaves, provided that the fixing points are no greater than 500mm apart. Pull handles that are fixed through the leaf should use clearance holes as close fitting as possible to the bolt.

3.9 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; this applies to jambs and head. 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 either timber or steel stud plasterboard clad partition ^{Note 5}, 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 aperture must be as tested by the partition and/or door manufacturer.

Note 5 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 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) and the leaf must be flush with the face of the wall. There shall be no feature rebates or shadow gaps at the junction of the frame and wall.

The fire stopping between the supporting construction and timber frames should follow the recommendations of Table 2 in BS8214: 2008, "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 2–4mm. 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 3.7 regarding suitability of smoke seals).

The door assembly design should be such that the leaves are fully flush within the frame when in the closed position. They may however be set back from the exposed face of the frame if required.

4. CONCLUSION

It is the opinion of International Fire Consultants Ltd that, if the proposed timber door leaves (PKF reference FDB30) installed in timber frames, were manufactured and installed within the limitations of this assessment, and tested for fire resistance, they would satisfy the integrity criteria of BS476: Part 22: 1987 for 30 minutes.

5. LIMITATIONS

This assessment 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.

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.

Where the constructional information in this report is taken from details provided to IFC and/or 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.

Where the assessed constructions have not been subject to an on-site audit by IFC, 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.

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 the building where the door assembly is installed, to ensure that no parts of the doors 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 door assembly will invalidate the approval by IFC, and may seriously affect the ability of the door assembly to provide the required level of fire resistance performance. Determination of what constitutes wear or damage, and any corrective actions in order to return the doors to the required condition, should only be carried out following consultation with the manufacturer and IFC.

This assessment considers the fire resistance performance of the doors 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 doors 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.

When establishing the variations in the construction that can achieve the required fire resistance performance, International Fire Consultants Ltd. follow the guidance given in BS.ISO/TR12470: 1998, "Fire resistance tests - Guidance on the application and extension of results". This report does not purport to follow the guidance regarding direct or extended application of test results outlined in EN product standards, and the approvals herein should not be used as supporting evidence for CE marking.

Any materials specified in this report have been selected and judged primarily on their fire performance. IFC 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.

This Report is provided to the sponsor on the basis that it is a professional independent engineering opinion as to what the fire performance of the construction/system would be should it be tested to the named standard. It is IFC's experience that such an opinion 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 IFC have been commissioned to liaise with the Authorities that have jurisdiction for the building in question for the purpose of obtaining the necessary approvals, IFC 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 IFC 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.

6. VALIDITY

This assessment 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 May 2018 should confirm its ongoing validity.

Prepared by:



Mark Billingham
Senior Fire Safety Engineer
International Fire Consultants Ltd. (IFC)

Checked by:

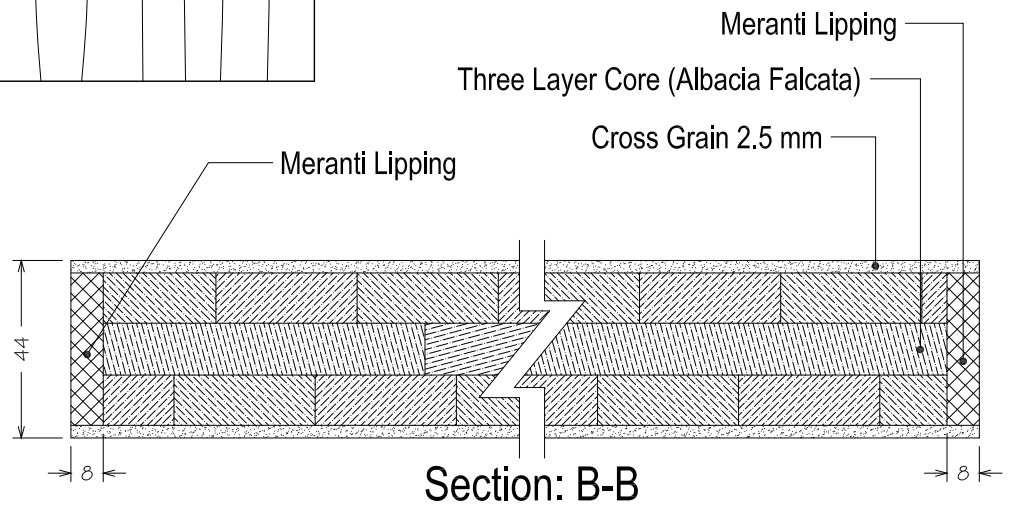
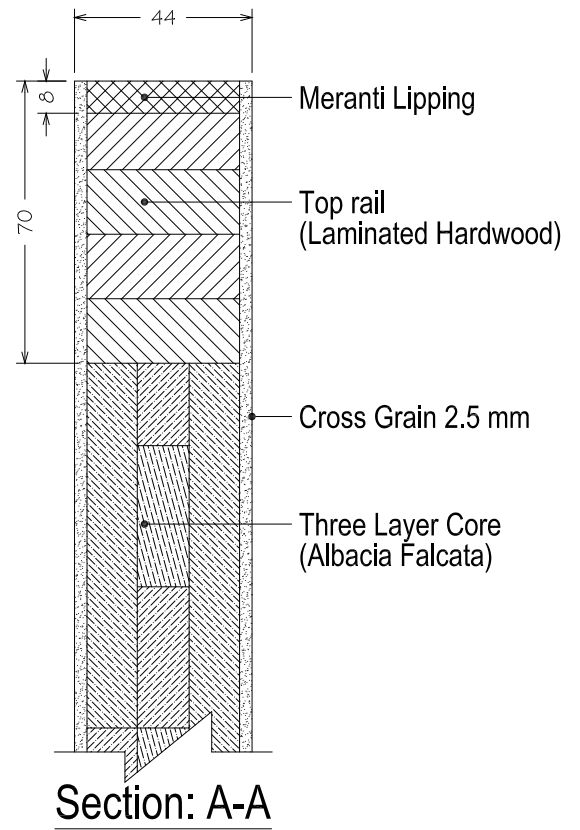
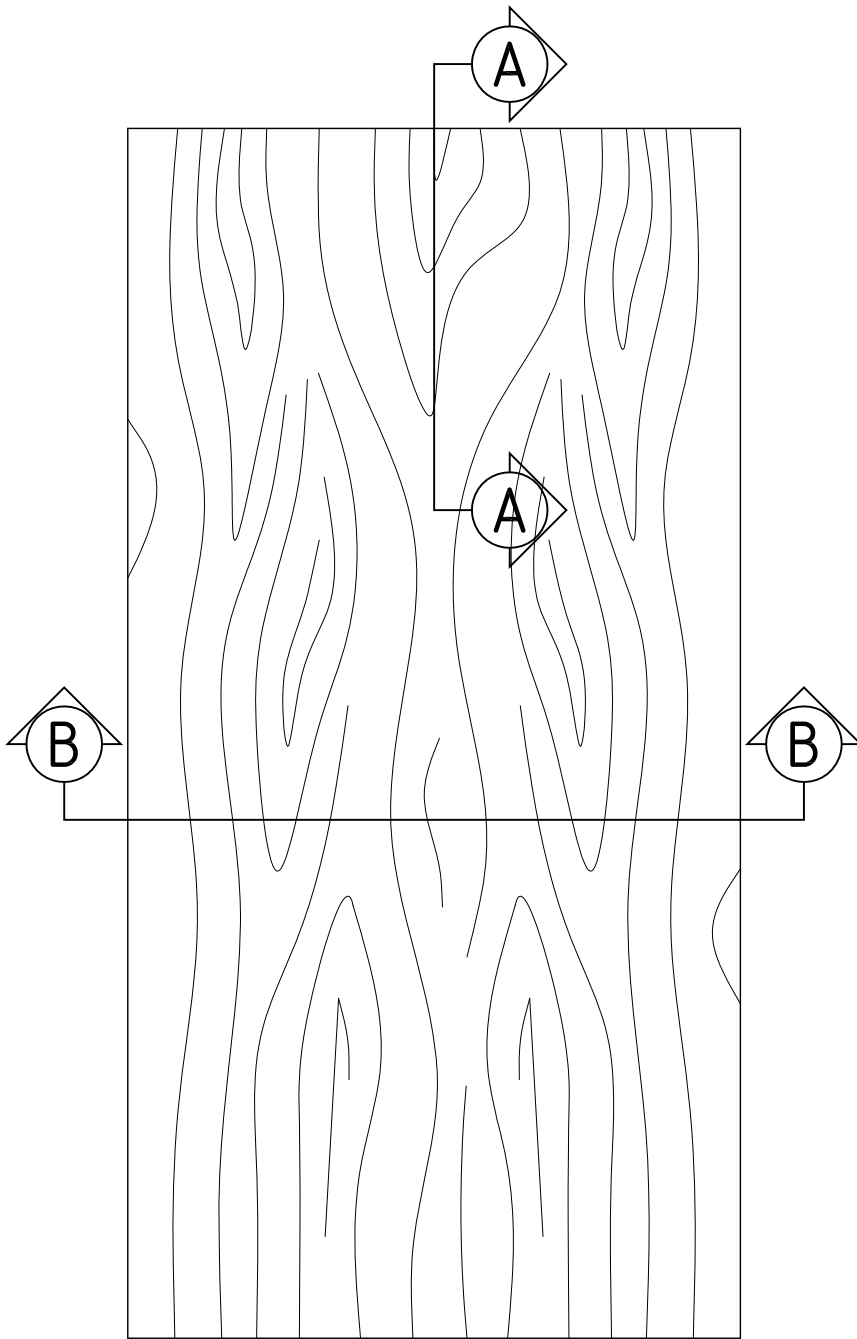


David Cooper BEng (Hons) AIMMM AIFireE
Fire Safety Engineering Manager
International Fire Consultants Ltd. (IFC)

APPENDIX A

**Examples of PKF Global Ltd Door Leaf Constructions
and Approved Glazing details
Figures PAR/10812/01A:01 and 02**

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



This drawing is Copyright©
Contractors must check all dimensions.
Any discrepancies must be reported before
work proceeds.
Only work to dimensions stated on drawing.

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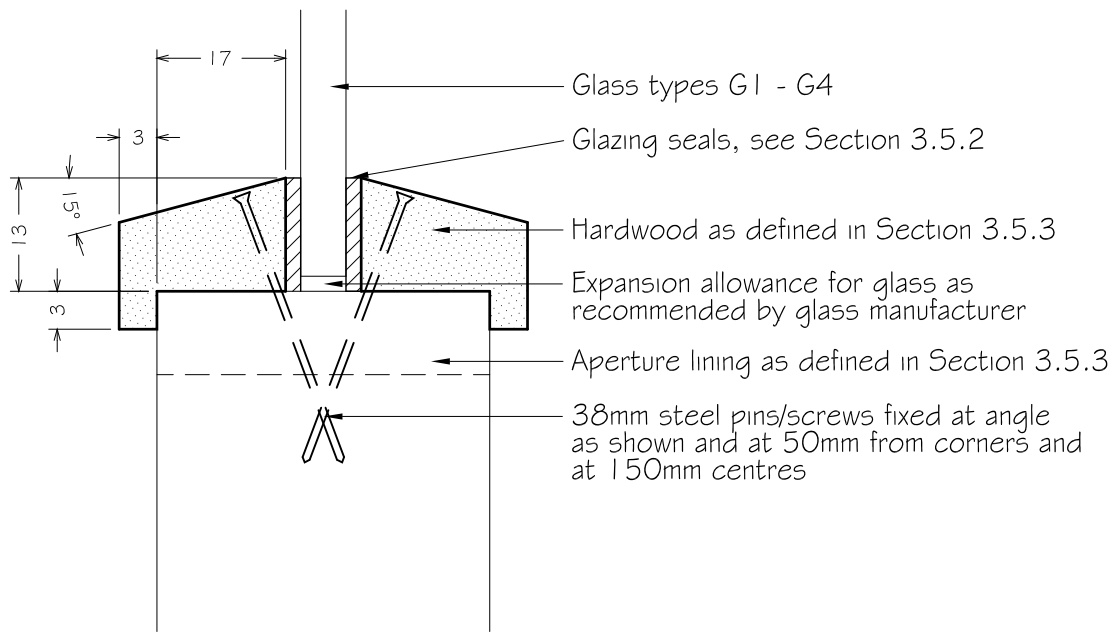
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Tel: +44 (0) 1844 275500 Fax: +44 (0) 1844 274002 Email: ifc@intfire.com Website: <http://www.intfire.com>

Field of Application Report PAR/10812/01 Revision A
PKF Global Ltd
Fire Resistance of Minimum 44mm Thick FDB30
Timber Fire Door Leaves Installed in Timber Frames

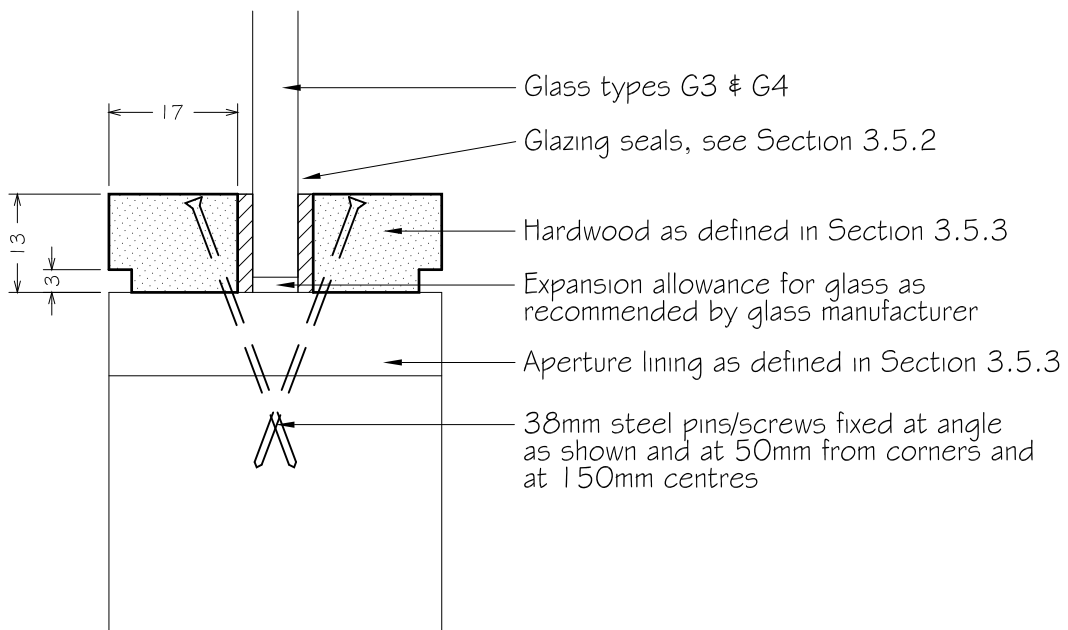
Elevation & Sections

Job number: 14789
Drawn by: CSP Checked by: DJC
Not To Scale Drawn: May 2015

PAR/10812/01A:01



Bead Detail A



Bead Detail B

<p>This drawing is Copyright© Contractors must check all dimensions. Any discrepancies must be reported before work proceeds. Only work to dimensions stated on drawing.</p>	<p>INTERNATIONAL FIRE CONSULTANTS LTD</p> <p>20 Park Street Princes Risborough Buckinghamshire HP27 9AH United Kingdom Tel: +44 (0) 1844 275500 Fax: +44 (0) 1844 274002 Email: ifc@intfire.com Website: http://www.intfire.com</p>	
<p>Field of Application Report PAR/10812/01 Revision A PKF Global Ltd Fire Resistance of Minimum 44mm Thick FDB30 Timber Fire Door Leaves Installed in Timber Frames</p>	<p>Glazing Details</p>	<p>Job number: 14789 Drawn by: CSP Checked by: DJC Not To Scale Drawn: May 2015 PAR/10812/01A:02</p>

APPENDIX B

**Assessed Leaf Size Envelope
Figures PAR/10812/01A:03 and 04**

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

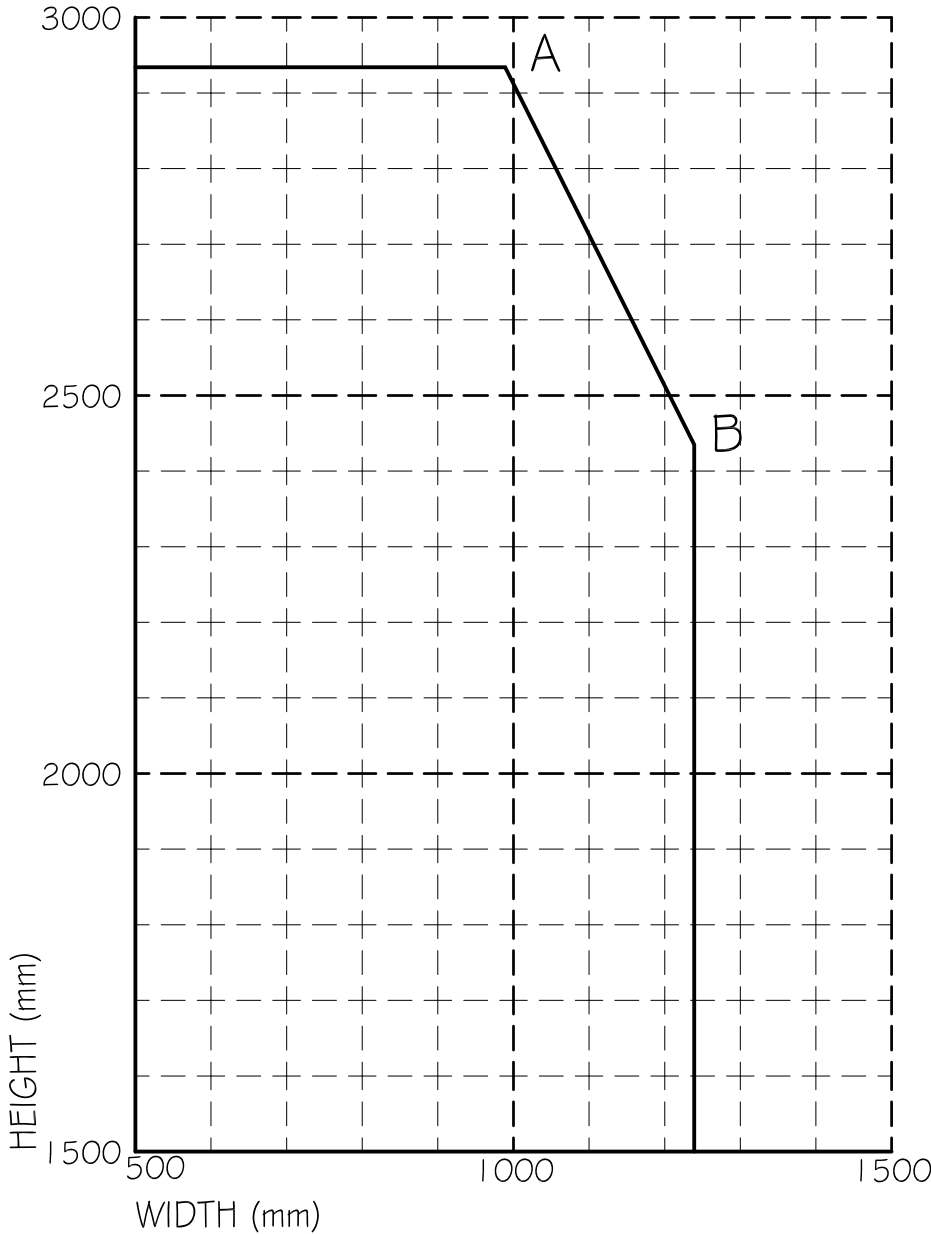
	A	B
Width	989	1239
Height	2934	2435

LEAF SIZE ENVELOPE POINTS

PROPOSED CONFIGURATION

LATCHED
SINGLE ACTING
SINGLE LEAF
WITHOUT OVERPANEL

REQUIRED INTEGRITY: 30 minutes



This figure forms part of International Fire Consultants Ltd's Field of Application Report PAR/10812/01 Revision A, which contains full details of the assessed doorset construction.

ENVELOPE OF APPROVED 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 above are approved. POINTS A & C represent the maximum leaf height and its associated width. POINTS B & D represent the maximum leaf width and its associated height.

<p>This drawing is Copyright© Contractors must check all dimensions. Any discrepancies must be reported before work proceeds. Only work to dimensions stated on drawing.</p>	<p>INTERNATIONAL FIRE CONSULTANTS LTD</p> <p>20 Park Street Princes Risborough Buckinghamshire HP27 9AH United Kingdom Tel: +44 (0) 1844 275500 Fax: +44 (0) 1844 274002 Email: ifc@intfire.com Website: http://www.intfire.com</p>									
<p>Field of Application Report PAR/10812/01 Revision A PKF Global Ltd Fire Resistance of Minimum 44mm Thick FDB30 Timber Fire Door Leaves Installed in Timber Frames</p>	<p>Envelope of Approved Leaf Sizes LSASD</p>	<table border="1"> <tr> <td colspan="2" style="text-align: center;">Job number: 14789</td> </tr> <tr> <td>Drawn by: CSP</td> <td>Checked by: DJC</td> </tr> <tr> <td>Not To Scale</td> <td>Drawn: May 2015</td> </tr> <tr> <td colspan="2" style="text-align: center;">PAR/10812/01A:03</td> </tr> </table>	Job number: 14789		Drawn by: CSP	Checked by: DJC	Not To Scale	Drawn: May 2015	PAR/10812/01A:03	
Job number: 14789										
Drawn by: CSP	Checked by: DJC									
Not To Scale	Drawn: May 2015									
PAR/10812/01A:03										

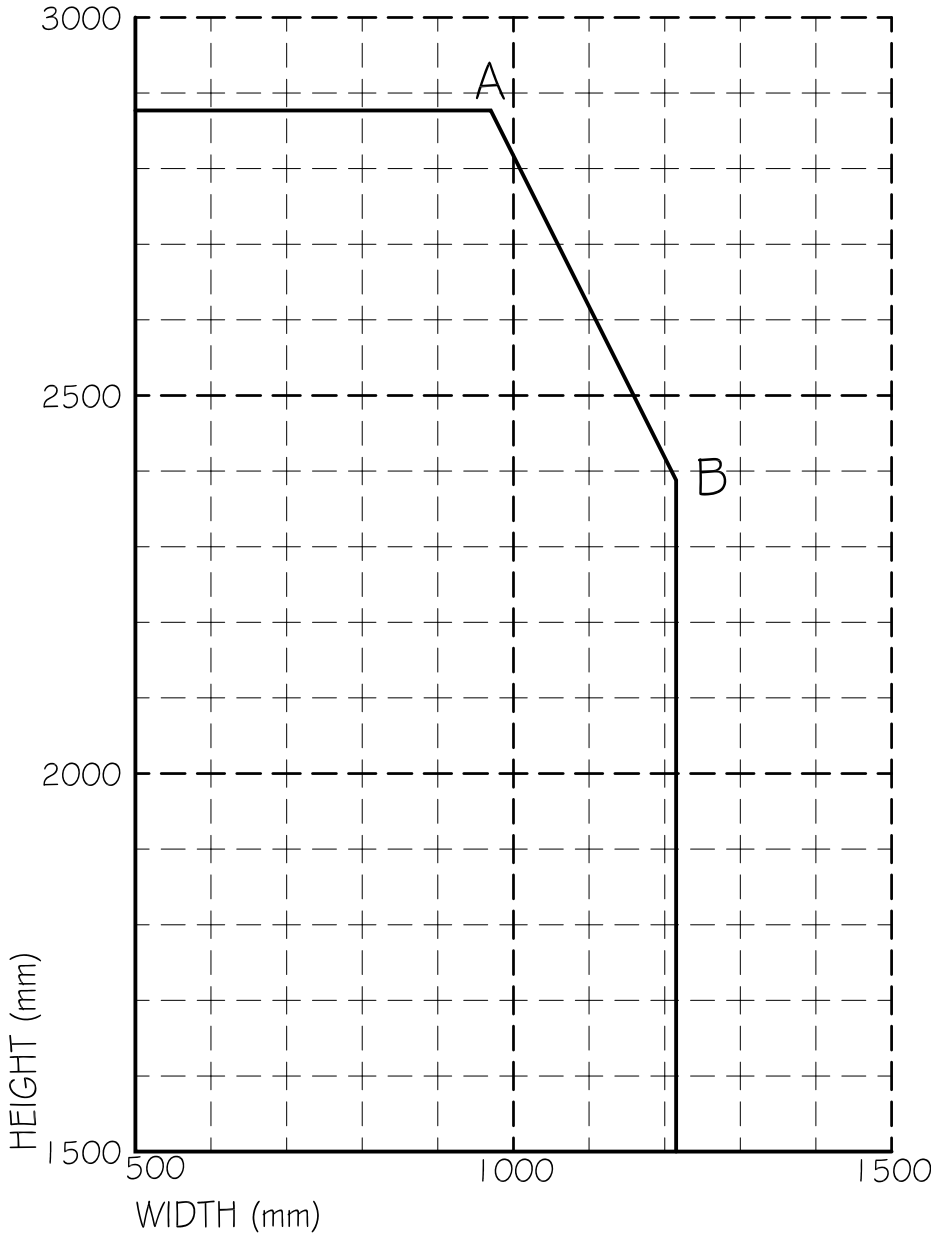
	A	B
Width	970	1215
Height	2877	2388

PROPOSED CONFIGURATION

UNLATCHED
SINGLE ACTING
SINGLE LEAF
WITHOUT OVERPANEL

LEAF SIZE ENVELOPE POINTS

REQUIRED INTEGRITY: 30 minutes



This figure forms part of International Fire Consultants Ltd's Field of Application Report PAR/10812/01 Revision A, which contains full details of the assessed doorset construction.

ENVELOPE OF APPROVED 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 above are approved. POINTS A & C represent the maximum leaf height and its associated width. POINTS B & D represent the maximum leaf width and its associated height.

<p>This drawing is Copyright© Contractors must check all dimensions. Any discrepancies must be reported before work proceeds. Only work to dimensions stated on drawing.</p>	<p>INTERNATIONAL FIRE CONSULTANTS LTD</p> <p>20 Park Street Princes Risborough Buckinghamshire HP27 9AH United Kingdom Tel: +44 (0) 1844 275500 Fax: +44 (0) 1844 274002 Email: ifc@intfire.com Website: http://www.intfire.com</p>	
<p>Field of Application Report PAR/10812/01 Revision A PKF Global Ltd Fire Resistance of Minimum 44mm Thick FDB30 Timber Fire Door Leaves Installed in Timber Frames</p>	<p>Envelope of Approved Leaf Sizes ULSASD</p>	<p>Job number: 14789 Drawn by: CSP Checked by: DJC Not To Scale Drawn: May 2015 PAR/10812/01A:04</p>

APPENDIX C

Summary of Fire Test Evidence

Summary of Fire Test Evidence

Test Report	Configuration Tested	Leaf Size	Test Standard	Integrity
CFR1106141	ULSASD	2388 x 1215 x 44mm	BS476: Part 22: 1987	30 minutes

ULSASD = *Unlatched, Single Acting, Single leaf Door assembly*

Note: *Fire test evidence from glass and intumescent seal manufacturers has also been considered when preparing this report.*

APPENDIX D

Advice Regarding CE Marking of "Fire-Resisting Doorsets"

Advice regarding CE marking of "fire-resisting doorsets"

International Fire Consultants Ltd (IFC) have a duty of care to advise users of this report that the Harmonised Product Standard for fire resisting doorsets (EN 16034) was published in October 2014, completing the group of EN documents which relate to the CE marking of doorsets within the scope of the Construction Products Regulations that apply to all member states of the EU. However, the CE marking process does not become formalised until the Harmonised Product Standard is formally published in the Official Journal of the European Union; which is expected to be in 2015. Furthermore, although all relevant EN standards referenced in the CE marking process will then be in place, and voluntary CE marking can commence, there will be a transition period before CE marking of fire resisting doorsets becomes mandatory. This transition period will be confirmed at the time of publication of the Official Journal, and it is possible that CE marking of fire resisting doorsets will become mandatory during the current validity period of this report; hence the inclusion of this advice.

It should be noted that the Assessment and Verification of Constancy of Performance (AVCP) process to enable the CE marking of doorsets, can only be conducted by a Notified Certification Body, such as IFC Certification Ltd., and only applies to "fire resisting doorsets".

EN16034 defines doorsets as *".....including any frame,... door leaf or leaves,...including any side panel(s), vision panel(s), flush overpanel(s), transom panel(s) and/or glazing together with the building hardware and any seals (whether provided for the purpose of fire resistance or smoke control) which form the assembly and fulfilling the provisions of this European Standard"*.

By implication, CE marking only applies when all of the above mentioned elements of the doorset are assembled and supplied 'at the same time' and 'from a single source'; and so CE marking does not apply to fire doors, (or doors and frames), that are supplied 'in isolation', and where the other elements are supplied/fitted by others.

The recent changes in standards and regulations for construction products are quite complex; particularly since there are National and European standards operating in parallel. For example, the guidance in Approved Document B of the Building Regulations for England & Wales currently requires that 'fire doors' must have evidence of fire performance in accordance with either BS 476: Part 22: 1987, or EN1634-1: 2014. Users of this report may be aware that the CE marking process is related to EN standards, and some may be mistaken in believing that the forthcoming requirement for CE marking of fire resisting doorsets does not apply if they only supply products that claim to comply with BS 476: Part 22:1987. This is not the case, and any fire resisting assemblies that are supplied as 'doorsets' (as defined above) must be CE marked - once the process becomes mandatory - and thus can only be based upon testing to EN1634-1.

It should also be noted that fitting of CE marked products, such as hardware and glass, (which are subject to different standards and procedures), to a fire door, of a design that has been independently type-tested to EN1634-1, (as part of development testing by the manufacturer), does NOT 'convert' the assembly into a CE marked doorset. All items of the assembly must be tested, and the combinations approved, by a Notified Certification Body.

It is recommended that anyone using this report after January 2016 should seek advice from IFC, or IFC Certification Ltd, as to the ongoing status of the CE marking process, and how it applies to doors approved in this report.

The above advice is intended to help suppliers of products understand how the new CPR Regulations/EN Standards affect them. Although based on our current understanding of the requirements, it is not an authoritative interpretation of the Regulations/Standards, which is a matter for the courts. The guide explains the requirements in general terms, but it does not cover all the details. You should refer to the Regulations/Standards themselves for a full statement of the requirements. The Construction Product Regulation, 305/2011, is readily downloadable and gives valuable information on the responsibilities and duties of manufacturers and suppliers. EN16034 and other Standards can be obtained from BSI.