

Exova Warringtonfire
Chiltern House
Stocking Lane
Hugghenden Valley
High Wycombe
Buckinghamshire
HP14 4ND

T: +44 (0) 1494 569 800
F: +44 (0) 1494 564 895
E: globalfire@exova.com
W: www.exova.com



Testing, calibrating, advising.

Title:

Global Fire Resistance Assessment
of PT Yasanda Decorative Grooved
Doorsets

30 Minutes Fire Resistance

Valid From: 17th August 2016

Valid Until: 17th August 2021

WF Report No:

Chilt/A11118 Revision A

WF Contract No:

BMT/CNA/F16103

Prepared for:

PT Yasanda

JL Pertahanan No. 2
Patumbak 20361
Deli Serdang
Sumatera Utara
Indonesia

Exova Warringtonfire – the new name for BM TRADA

On December 1st 2015, Chiltern International Fire Limited (trading as BM TRADA) commenced trading under the name Exova Warringtonfire.

To coincide with this change, our Technical Reports, Test Reports, Product Assessments, company stationery and marketing collateral have been updated to reflect the Exova Warringtonfire branding.

The validity of all documents previously issued by Chiltern International Fire Limited including certificates, test reports and product assessments is unaffected by this change. A letter to this effect is available upon request by e-mailing globalfire@exova.com

About Exova Warringtonfire

Exova Warringtonfire is part of the Exova Group one of the world's leading laboratory-based testing groups, trusted by organisations to test and advise on the safety, quality and performance of their products and operations. Headquartered in Edinburgh, UK, Exova operates 143 laboratories and offices in 32 countries and employs around 4,500 people throughout Europe, the Americas, the Middle East and Asia/Asia Pacific. With over 90 years' experience, Exova specialises in testing across a number of key sectors from health sciences to aerospace, transportation, oil and gas, fire and construction.

Be assured that whilst the name will change, your service provision and primary contacts have not. What will be available to you is a wider team of testing experts and an extended range of testing capabilities including structural steelwork testing, ventilation duct and damper testing, ASTM testing, water mist system testing and smoke toxicity testing and covering additionally both the rail and marine sectors.

If you have any questions, please do not hesitate to contact a member of the team and we will do our best to answer them. We appreciate your business to date and we look forward to working with you in the future.

Kind regards

Exova Warringtonfire

T: +44 (0) 1494 569 800

E: globalfire@exova.com

Contents

	Page No.
1 Introduction.....	4
2 General Description of Construction	4
3 Leaf Sizes.....	4
4 Configuration	4
5 Leaf Size Adjustment.....	5
6 Overpanels	5
7 Decorative Grooves	6
8 Glazing	7
9 Leaf Facing Materials	10
10 Lippings.....	10
11 Door Frames	11
12 Adhesives.....	14
13 Intumescent Materials	14
14 Tested Hardware	14
15 Additional & Alternative Hardware	15
16 Supporting Construction	17
17 Fixings.....	17
18 Door Gaps.....	17
19 Sealing to Structural Opening.....	17
20 Insulation.....	18
21 Smoke Control.....	19
22 Conclusion.....	19
23 Declaration by the Applicant	20
24 Limitations	21
25 Validity.....	21
Appendix A - Performance Data	22
Appendix B - 30 Minute Proprietary Glazing Systems	23
Appendix C - Assessed Groove Profiles & Door Style Options	26
Appendix D - Revisions	28
Appendix E - Data Sheets	29

1 Introduction

This document constitutes a Global Assessment relating to decoratively grooved fire resisting doorsets, produced by PT Yasanda. The assessment uses established extrapolation and interpretation techniques in order to extend the scope of application by determining the limits for the design based on the tested constructions and performances obtained. The assessment is an evaluation of the potential fire resistance performance, if the elements were to be tested in accordance with BS 476: Part 22: 1987.

2 General Description of Construction

The basic tested construction of door leaves covered by this assessment comprises the following elements:

Element	Materials	Dimensions (mm)	Min. Density (kg/m ³)
Stiles & Rails	None fitted	-	-
Core	3No. layers of nominally 14.6mm(t) particleboard	Nominally 44(t) with 10(d) x 16(w) grooves to accept the inserts	600 ¹
Moulding Inserts	Oak	10(d) x 16(w) with an 8(d) x 9(w) groove	650 ¹
Facing	Oak Veneer	0.6(t)	-
Lippings – all edges	Oak	18(t)	650 ¹

¹ Stated density, not checked by laboratory.

3 Leaf Sizes

The approval for increased leaf dimensions is based on the tests listed in Appendix A and takes into account the margin of over-performance above 30 minutes integrity for the design and the characteristics exhibited during test. Data sheets specifying the maximum approved leaf sizes and graphs showing the permitted gradient between maximum height and width are contained in Appendix E.

Doorsets with reduced dimensions are deemed to be less onerous. Therefore, doors with dimensions that are less than those tested and stated in Appendix E may be manufactured.

4 Configuration

Based on the test evidence listed in Appendix A, this assessment covers the following doorset configurations:

Abbreviation	Description
LSASD & ULSASD	Latched & unlatched, single acting, single doorsets
DASD	Double acting, single doorsets
LSADD & ULSADD	Latched & unlatched, single acting, double doorsets
DADD	Double acting, double doorsets

Unequal leaf double doorsets are covered by this assessment with no restriction on the smaller leaf dimension.

5 Leaf Size Adjustment

Door leaves to this design may be altered as follows:

Element	Reduction
Leaf	The manufactured dimensions of the leaf may be reduced in height or width providing grooves are no closer than 60mm to any door edge as stipulated in section 7 (smaller doors may be manufactured - see section 3).
Lipping	The dimensions stated in section 9 may be reduced by 20% for fitting purposes.

6 Overpanels

6.1 Solid

Overpanels of the same construction as the door leaves may be used only when separated by a transom. The overpanel must be fully contained within the door frame (see following diagram).

The transom required to separate the leaf heads from the overpanel must be to the same specification as the door frame (see the note under the table in section 11.1).

Door frame joints must utilise one of the following methods: mortice and tenon joints or butt joints (see section 11.2).

Either method requires joints to be tight, with no gaps, and require mechanical fixing with the appropriate size ring shank nails or screws. Butt joints must be additionally bonded with urea formaldehyde or equivalent.

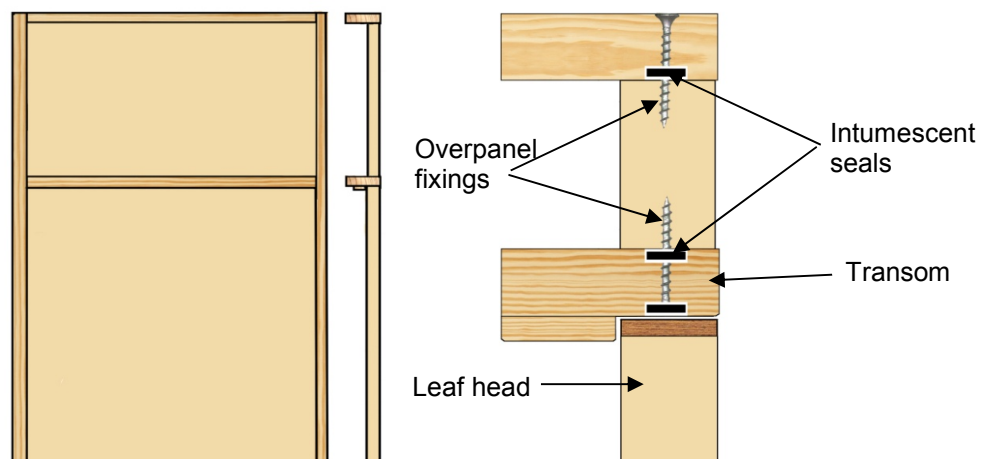
Overpanels must be fixed using the following method:

- screwing through the rear of the frame with steel screws passing at least 30mm into the centre line of the overpanel. Fixings must be no more than 100mm from each corner and a maximum of 250mm centres in between.

The intumescent seals specified for the jambs in Appendix E may be fitted in the overpanel edges or frame reveal, if required for the manufacturing process. Providing the intumescent seals are fitted to all edges of the overpanel, the frame to overpanel junction is permitted to have a maximum 2mm gap tolerance.

Maximum overpanel height is as follows:

Configuration	Max. Overpanel Height (mm)
Single doorsets	2000
Double doorsets	1500



Note: Drawing is representative of doorset construction only; actual construction must be as the text within this document specifies.

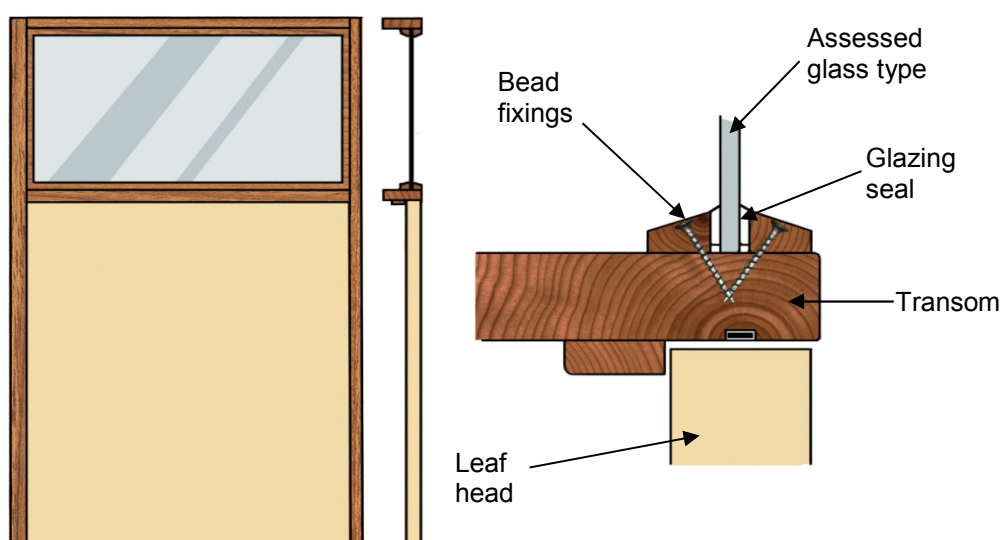
6.2 Glazed Fanlights

Timber frame doorsets including a transom may include a glazed fanlight. The timber frame and glazing beads must be hardwood with a minimum density of 640kg/m³, whilst the frame section for the transom must be a minimum of 70mm x 44mm. All other elements of timber door frame and transom construction must comply with the specification contained in section 11.

The maximum assessed fanlight dimensions are detailed in the table below, subject to the following restriction:

- The glazing system and glass must be able to demonstrate adequate performance when tested as a window or screen in accordance with BS 476: Part 22: 1987 or BS EN 1634-1, at the pane dimensions to be installed.

Screen Element	Configuration	Height (mm)	Width (mm)
Fanlight	Single & double doorsets	≤600	Overall door width



Note: Drawing is representative of doorset construction only; actual construction must be as the text within this document specifies.

7 Decorative Grooves

The doorset design was tested with the following decorative grooves:

Oak Inserts (dims-mm)	Groove Dimensions (mm)	Orientation	Position of Grooves (dims-mm)
16(w) x 10(d)	10(w) x 7(d)	Horizontal	Equispaced 295 from top & bottom edges
16(w) x 10(d)	10(w) x 7(d)	Vertical	Equispaced 61 from vertical edges

Assessment is made that the position and number of grooves may be varied subject to the following restrictions:

- Grooves must be a minimum of 60mm from any leaf edge.
- Grooves must be a minimum of 60mm apart.
- The number of grooves may be increased or decreased to suit the required leaf dimensions.
- The profile of grooves machined into the Oak inserts may be varied to use any of the options depicted in Appendix C.

5. Combinations of grooves may be used to produce any of the style options depicted in the diagrams contained in Appendix C, subject to the glazing restrictions specified in section 8.

8 Glazing

8.1 General

Based on the glazed doorset design A tested in RF11045, the door design may include a maximum glazed area of 0.97m² for all doorset configurations. The glazing must meet the criteria contained in the following sections:

8.2 Assessed Glazing Systems

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

Glazing System	Manufacturer
1. Therm-A-Strip 30	Intumescent Seals Ltd.
2. Fireglaze 30	Sealmaster Ltd.
3. Firestrip 30	Hodgsons Sealants Ltd.
4. System 36 Plus	Lorient Polyproducts Ltd.
5. Pyroglaze 30	Mann McGowan Ltd.
6. R8193	Pyroplex Ltd.
7. Flexible Figure 1 (FF1)	Lorient Polyproducts Ltd.

8.3 Assessed Glass Products

Assessed glass types are as follows:

Glass Type	Manufacturer	Thickness (mm)
1. Pyroshield 2	Pilkington Group Ltd.	6 & 7
2. Pyran S	Schott Glass Ltd.	6
3. Pyrostem	Pyroguard UK Ltd.	6
4. Pyroguard EW 30	Pyroguard UK Ltd.	7
5. Pyrobelite 7	AGC Flat Glass Europe	7
6. Pyrodur 30-104	Pilkington Group Ltd.	7
7. Pyrodur 60-10	Pilkington Group Ltd.	10
8. Pyroguard EW MAXI	Pyroguard UK Ltd.	11
9. Pyranova 15-S2.0	Schott Glass Ltd.	11
10. Pyrobelite 12	AGC Flat Glass Europe	12
11. Pyrodur 60-20	Pilkington Group Ltd.	13
12. Pyroguard EI30	Pyroguard UK Ltd.	15
13. Pyrostop 30-10	Pilkington Group Ltd.	15
14. Pyrobel 16	AGC Flat Glass Europe	16

Note: All glass types must be fitted fully in accordance with the manufacturers' tested details/installation requirements, particularly with respect to edge cover and expansion tolerances.

8.4 Glazing Beads & Installation

Glazing beads must be as specified in the following table:

Material	Profile	Application	Min. Density (kg/m ³)
Hardwood	Splayed	All proprietary systems detailed in section 8.2 & shown in Appendix B & all glass types listed in section 8.3	≥640
Hardwood	Square	Proprietary system 1 – 3 as specified in section 8.2 & glass types 5 – 14 listed in section 8.3	≥640

Sectional drawings detailing the tested and approved proprietary glazing systems are contained in Appendix B.

See Appendix B for square and splayed bead profile options. A 6 – 10mm thick square aperture liner is permitted for use with square beads providing it is constructed from hardwood of minimum density 640kg/m³ and glued in position using a UF, PVA or PU type adhesive.

Glazing beads must be retained in position with 50mm long steel pins or 40mm long No. 6-8 screws, inserted at 35-40° to the vertical. Fixings must be at 150mm maximum centres and no more than 50mm from each corner. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 8.5 below.

Glazed openings must not be less than 100mm from any door edge. Multiple apertures are acceptable within the permitted glazed area, with a minimum dimension of 80mm of door core between apertures.

Timber for glazing beads must be straight grained joinery quality hardwood, free from knots, splits and checks.

Aperture shape is not restricted providing the glazing system can accommodate the profile.

False timber beads may be bonded to the glass face. Suitable glass for this application is restricted to types 5 – 14 in section 8.3. One of the following intumescent glazing products must be used:

Glazing System	Manufacturer
1. Therm-A-Strip 30	Intumescent Seals Ltd.
2. Fireglaze 30	Sealmaster Ltd.
3. Firestrip 30	Hodgsons Sealants Ltd.
4. Envirograf Product 77 – G10/10	Intumescent Seals Ltd.
5. Intumescent mastic or silicone tested for glazing applications to BS 476: Part 22: 1987 or BS EN 1634-1	Various

Note: Seals for glazing beads must be a minimum of 10mm wide x 0.5 – 3mm thick. Preformed strip systems 1 – 4 may be self-adhesive and grooved into the rear of the glazing bars.

8.5 Gun (Pneumatically) Fired Pins

The following pin specification is permitted and has been considered suitable for gun (pneumatically) fired applications:

8.5.1 Option 1 – Round, Oval & Rectangular Pins

The following dimension of pin has been approved for round, oval and rectangular shaped pins:

- Minimum Standard Wire Gauge (SWG) 16.
- Minimum cross section area of 2.03mm².
- Minimum linear dimension of 1.6mm in any direction.

Round pin diameter (mm) = minimum 1.6mm:



Oval/rectangular pin minimum diameter linear dimension = 1.6mm:



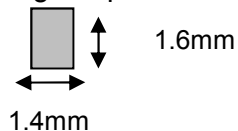
8.5.2 Option 2 – Rectangular Pins

Dimensions

The following dimension of rectangular pin has been deemed suitable for gun (pneumatically) fired applications:

- Minimum Standard Wire Gauge (SWG) 16.
- Minimum cross section area of 2.24mm².
- Minimum linear dimension of 1.4mm.

Rectangular pin minimum diameter linear dimension = 1.4mm:



8.5.3 Note of Caution

Pins with dimensions less than those stated above are not covered by this assessment.

9 Leaf Facing Materials

9.1 General

Doors to this design are constructed from 3 layers of particleboard forming the finished thickness, therefore alternative facings are not assessed.

9.2 Additional Decorative & Protective Facings

The following materials are permitted for this door design, in addition to the primary tested material, since they would degrade rapidly under test conditions without significant effect:

Facing Material	Maximum Permitted Thickness (mm)
Paint	0.5
Timber veneers	2
Plastic laminates	2
Decorative paper/Non-metallic foil	0.5

Notes:

1. Metallic facings are not permitted (except for push plates & kick plates).
2. The door leaf thickness must not be reduced to accommodate the finish.
3. Materials must not conceal intumescent strips.
4. Plastic and resin laminates must not be applied to the leaf edge.

10 Lippings

Doors must be lipped on all edges. Lippings must meet the following specification:

Type	Dimensions (mm)	Min. Density (kg/m ³)
Flat lipping	18 – 23 thick	≥650
Rounded lipping	18 – 23 thick with a maximum 2 rounding to the leaf edges	
Rebated lipping	Not permitted	

Note: Timber for lippings must be straight grained, joinery quality hardwood, free from knots, splits & checks.

11 Door Frames

11.1 Door Frame Construction

Timber based door frames for this door design must be constructed to meet the following specification:

Material	Min. Section Size (mm)	Min. Density (kg/m ³)
Softwood or Hardwood	70 x 32 (excluding the stop)	510

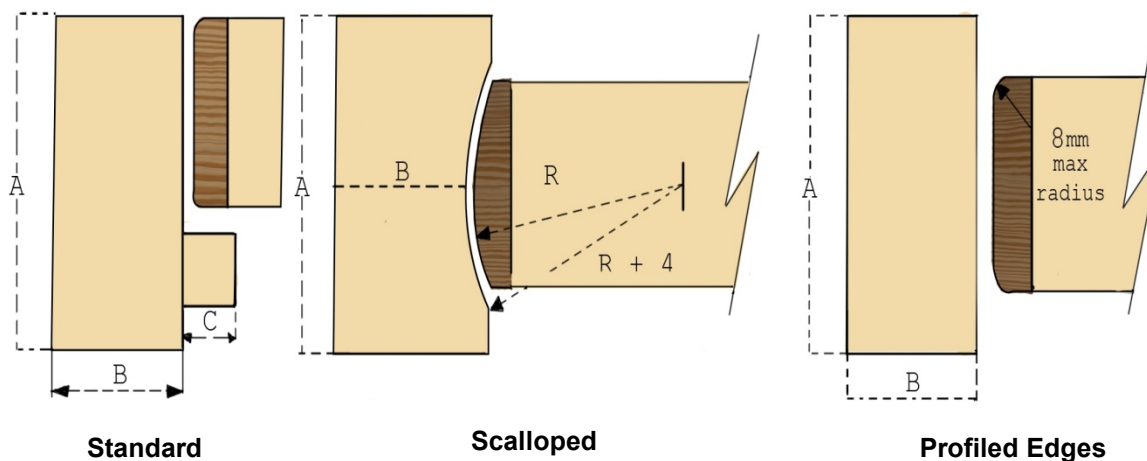
All door frame timber must be straight grained, joinery quality, free from knots, splits and checks.

A 12mm deep planted stop is adequate for single acting frames whilst double acting frames may be scalloped or square (see diagram below).

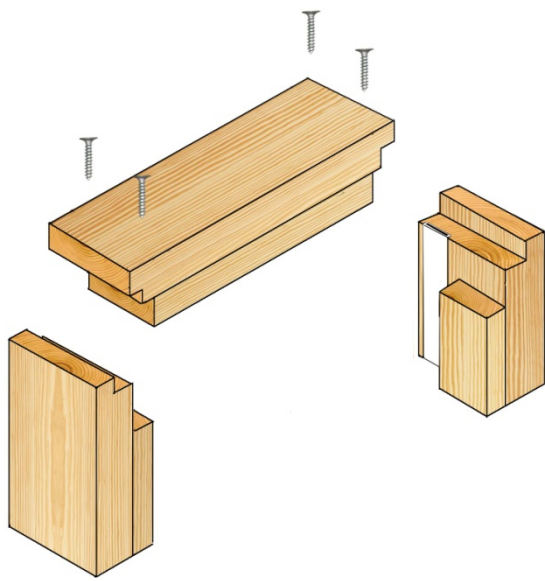
Frame joints may be mortice and tenoned, mitred, half lapped or butted and with no gaps (see section 11.2). All jointing methods require mechanical fixing with the appropriate size ring shank nails or screws.

The following diagram depicts the assessed frame profiles and dimensions:

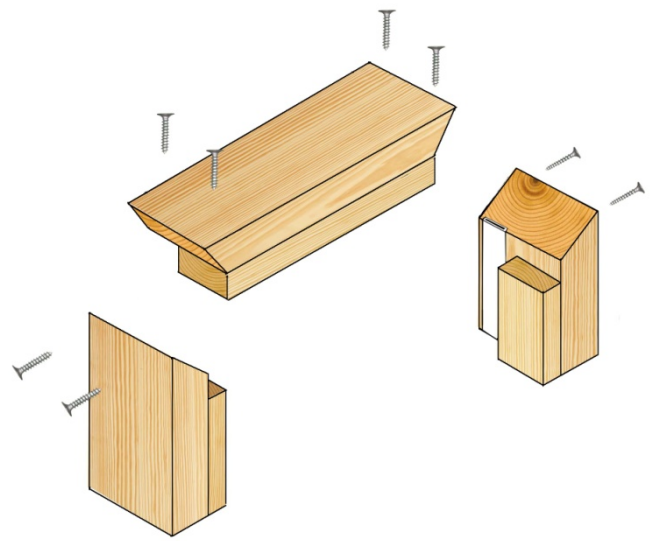
A = Min. 70mm B = Min. 32mm (see table above) C = Min. 12mm
R = Radius from floor spring 8mm radius to create maximum 2mm edge profiling



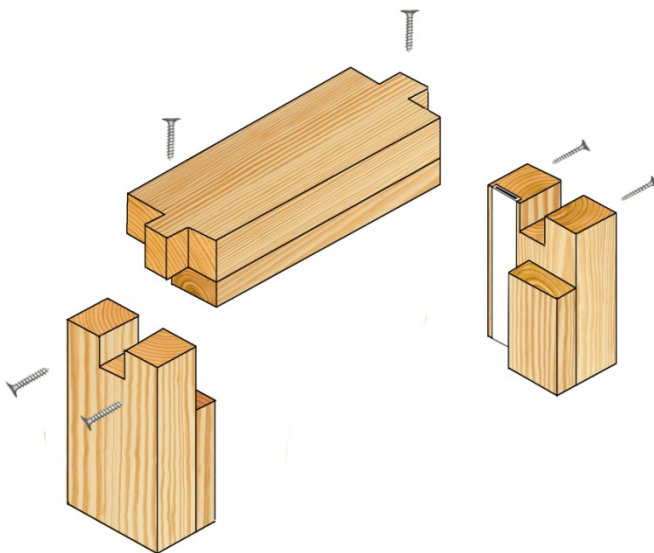
11.2 Door Frame Joints



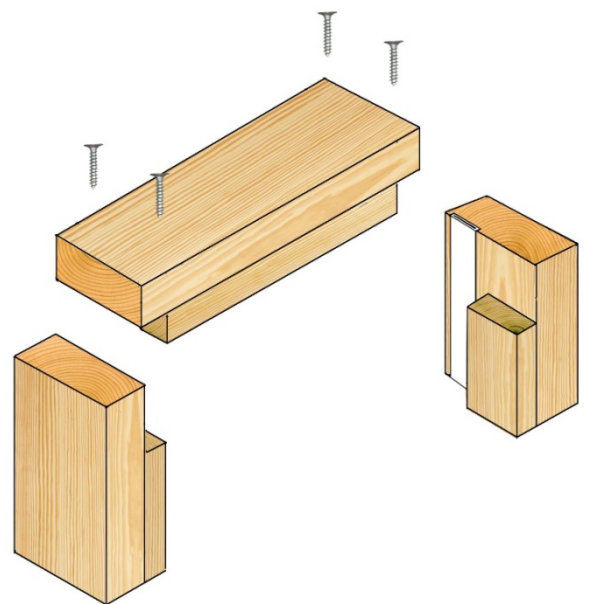
Half Lapped Joint



Mitre Joint



Mortice & Tenon Joint

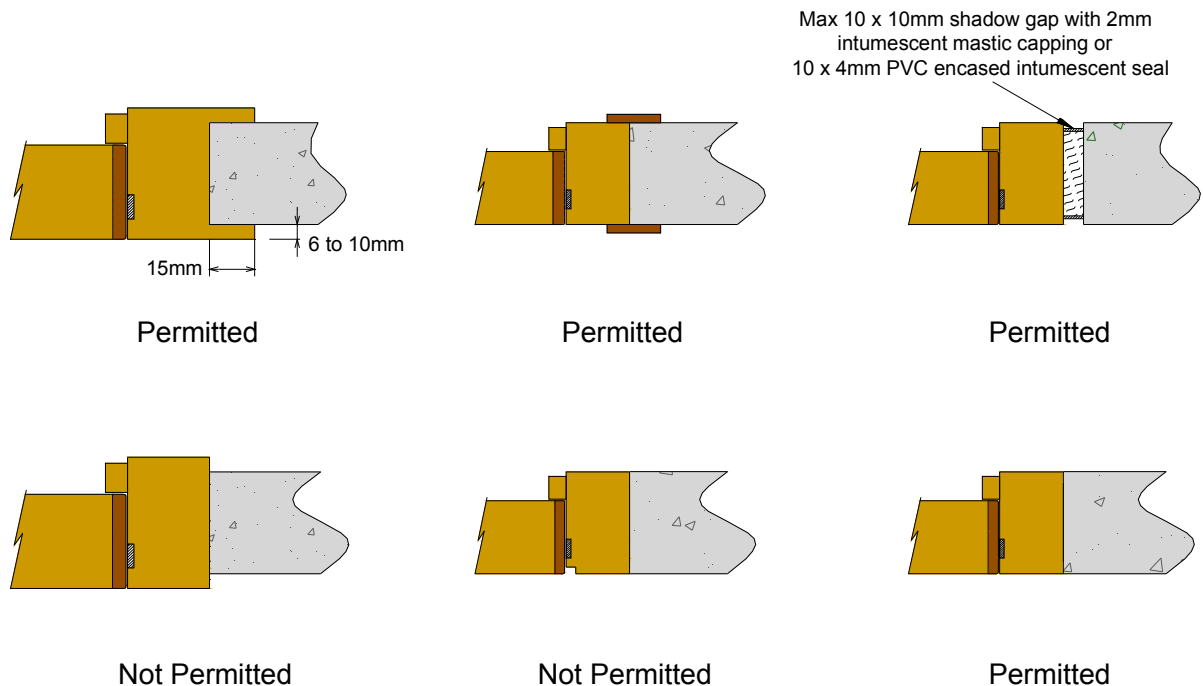


Butt Joint

Note: Drawing is representative of each type of door frame joint; actual construction in terms of intumescent seal location and material, etc. must be as the text within this document specifies.

11.3 Door Frame Installation

The following diagrams indicate acceptable and unacceptable door frame installations:



Notes:

1. Drawing is representative of door frame installation; actual installation must be as the text within this document specifies. See section 19 for specification on sealing to structural opening.
2. For the shadow detail depicted above (top right), the sub-frame material must be manufactured from one of the following materials, tightly fitted and with no gaps:
 - Timber with a density $\geq 450\text{kg/m}^3$;
 - Plywood with a density $\geq 600\text{kg/m}^3$;
 - MDF with a density $\geq 700\text{kg/m}^3$;
 - Particleboard with a density $\geq 600\text{kg/m}^3$;
 - Non-combustible board.

12 Adhesives

The following adhesives must be used in construction of this doorset design:

Element	Adhesive Type
Lipping	Koyobond KR 560
Core	MEM 5132 (B3)
Facing	Koyobond KR 560

13 Intumescent Materials

13.1 General

The intumescent materials tested and assessed for this doorset design are as follows:

Element		Product	Size (mm)	Location
Head & jambs of frame reveal for all doorsets		Lorient Polyproducts Ltd. LP1504 Type 617	15 x 4	Centrally fitted in the leaf edge or door frame reveal
Double doorsets	Closing edge of one leaf only	Lorient Polyproducts Ltd. LP1504 Type 617	15 x 4	Centrally fitted in one meeting edge only
Under hinge blade		Not required	-	-
Encasing latch body		Not required	-	-
Under latch forend (only required for double doorsets)		Lorient Polyproducts Ltd. MAP Paper	1 thick	Fitted under the forend
Under latch keep (only required for double doorsets)		Lorient Polyproducts Ltd. MAP Paper	1 thick	Fitted under the keep
Top pivots & mounting plates		Intumescent Seals Ltd. Therm-A-Strip gasket; Dufaylite Developments Ltd. Interdens	1 thick	Protecting top pivots & all mounting plates

Note: The seal specification for each configuration is contained in Appendix E.

14 Tested Hardware

The following hardware has been successfully incorporated in the tests on this design:

Element	Product	Size (mm)	Location
Hinges	3No. Royde & Tucker RT105 lift-off type hinges	100 x 35 (blade size)	Fitted 150, 1000 & 1855mm from the head of the leaf
Closer	Dorma UK Ltd. TS71 overhead closer	232 x 68 (footprint size)	Fitted on exposed face as per manufacturer's instructions
Latch	E*S tubular steel mortice latch	57 x 26 (forend size)	Fitted 1000mm from threshold
Furniture	Aluminium lever type handle	100 x 38 (footprint size)	Fitted appropriate to the latch on both faces

15 Additional & Alternative Hardware

The following section details the permitted scope and constraints for fitting hardware to this door design.

The following items of hardware must also bear the CE Mark:

- Single Axis Hinges: Standard EN 1935
- Latches & Locks: Standard EN 12209
- Controlled Door Closing Devices: Standard EN 1154
- Panic Exit Hardware: Standard EN 1125.

15.1 Hinges

Door leaves must be hung on a minimum of 3No. hinges, whilst leaves over 2300mm high must fit 4No. hinges. Hinges with the following specification are acceptable:

Element	Specification	
Blade height	90 – 120mm	
Blade width (excluding knuckle)	30 – 36mm	
Blade thickness	2.5 – 4mm	
Fixings	Minimum of 4No. 30mm long No. 8 or No.10 steel wood screws per blade	
Materials	Steel or stainless steel	
Hinge positions	Top	150 – 200mm from leaf head to top of hinge
	Bottom	200 - 250mm from threshold to bottom of hinge
	Remainder	Equispaced between top & bottom hinges
Intumescent protection	Not required	

15.2 Latches & Locks

Latches and locks must either be as tested, or alternatively components with the following specification are acceptable:

Element	Specification
Maximum forend & strike plate dimensions	235mm high by 25mm wide by 4mm thick
Maximum body dimensions	180mm high by 100mm wide by 18mm thick
Intumescent protection	See section 13
Materials	All parts essential to the locking/latching action (including the latch bolt, forend & strike) to be steel
Location	Between 850 – 1200mm from the threshold

15.3 Automatic Closing

Automatic closing devices must either be as tested or components of equal specification that have demonstrated contribution to the required integrity performance of this type of doorset design, when tested to BS 476: Part 22: 1987 or BS EN 1634-1.

Floor spring top pivots and all mounting plates must be protected with 1mm thick Interdens or 1mm thick Therm-A-Strip gaskets. Alternatively, the hardware manufacturer's tested gaskets may be used.

15.4 Pull Handles

Handles may be surface-fixed or bolted through the door leaf, providing they are steel or brass and the length is limited to 1200mm between the fixing points. If through fixed, there must be no more than 1mm clearance between the hole and stud.

15.5 Push Plates & Kick Plates

Face-fixed hardware such as push plates and kick plates may be fitted to the doorsets provided that their fitting requires the removal of no part of the door leaf. These items of hardware are permitted up to a maximum of 20% of the door leaf area if mechanically fixed and a maximum of 30% if bonded with a thermo-softening contact adhesive. Plates must not return around the door leaf edges.

15.6 Door Security Viewers

Door security viewers with brass or steel bodies of a diameter less than or equal to 15mm may be fitted provided that the through-hole is bored tight to the case of the viewer (maximum tolerance +1mm). Lenses must be glass and the item must be protected with acrylic intumescent mastic.

15.7 Panic Hardware

Panic hardware may be fitted, providing the installation does not require the removal of any timber from the leaf, stop or frame reveal and it does not interfere with the self-closing action of the door leaf.

15.8 Environmental Seals

Silicon based flame retardant acoustic, weather and dust seals (e.g. Halspan Triple Fin; Ref: SLS-TRI-100 range, Norsound 710, Lorient IS1212, IS1511, IS7025, IS7060, Sealed Tight Solutions ST1009) may be fitted to this doorset design without compromising the performance, providing their fitting does not interfere with the activation of the intumescent seals or hinder the self-closing function of the leaves.

15.9 Threshold Seals

The following types of automatic threshold drop seals may be recessed in to the bottom rail of leaves to this design without compromising the performance:

Manufacturer	Product
Lorient Polyproducts Ltd.	LAS8001Si
Raven	RP8Si
Athmer	Schall-Ex Duo L-15
Norsound Ltd.	NOR810, NOR810S, NOR810dB+

15.10 Letter Boxes/Plates

Letter boxes/plates may be fitted providing the product has demonstrated contribution to the required integrity performance of these types of doorset designs, when tested to BS 476: Part 22: 1987 or BS EN 1634-1, when installed in a timber based doorset of comparable thickness. Products may be fitted up to 1200mm from floor level and not closer than 100mm to any leaf edge.

16 Supporting Construction

The supporting construction must provide the required level of fire resistance designated for the doorset design and be a suitable medium to permit adequate fixity.

17 Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 500mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.

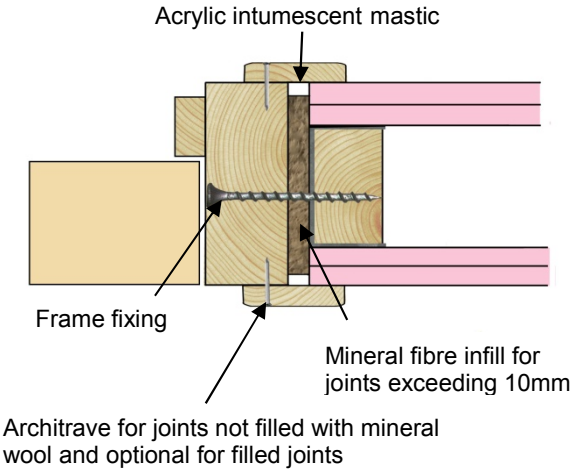
18 Door Gaps

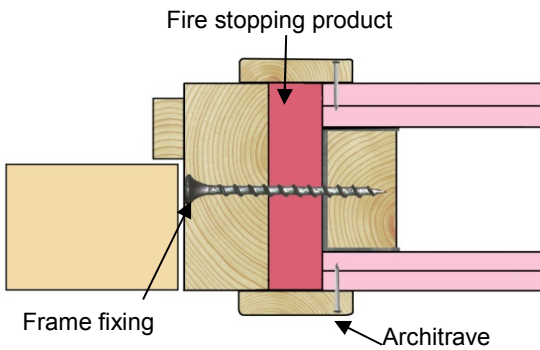
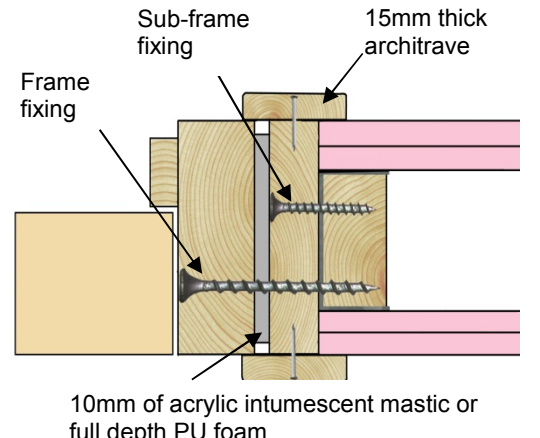
For fire resistance applications, door gaps and alignment tolerances must fall within the following range:

Location	Dimensions
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of the door frame or each other by more than 1mm
Threshold	10mm between bottom of leaf and top of floor covering

19 Sealing to Structural Opening

The door frame to structural opening gap must be protected using one of the following methods:

1. Gaps up to 10mm must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	 Acrylic intumescent mastic Frame fixing Mineral fibre infill for joints exceeding 10mm Architrave for joints not filled with mineral wool and optional for filled joints
2. Gaps between 10mm and 20mm must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.	

3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	
4. Timber based or non-combustible sub-frame up to 50mm thick, with gaps up to 10mm between the components filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	

Guidance for various methods of sealing the frame to structural opening gap is also given in BS 8214: 2008, "Code of practice for fire door assemblies", which may be referred to where appropriate.

Note: Drawings are representative of doorset installation only; actual installations must be as the text within this document specifies.

20 Insulation

Insulation performance may be claimed for a doorset to this design meeting the following:

Type	Details
Partially insulating	Doorsets incorporating up to 20% of non-insulating glazing
Fully insulating	Unglazed doorsets or doorsets including 30 minute insulating glazing (e.g. Pyrostop 30-10 or Pyrobel 16)

21 Smoke Control

21.1 General

If the doorset design is required to provide a smoke control function to comply with Building Regulations, in the absence of a suitable pressurisation system, the doorset must meet one of the following criteria:

- (a) have a leakage rate not exceeding $3\text{m}^3/\text{m}/\text{hour}$ (head and jambs only) when tested at 25Pa under BS 476 *Fire tests on building materials and structures*, Section 31.1 – *Methods for measuring smoke penetration through doorsets and shutter assemblies, Method of measurement under ambient temperature conditions*; or
- (b) meet the additional classification requirement of Sa when tested to BS EN 1634-3: 2004 – *Fire resistance tests for door and shutter assemblies*, Part 3 – *Smoke control doors*.

Smoke seals or combined intumescent/smoke seals that are fitted to the door to achieve the performance requirements specified above, must have been tested in accordance with the associated test method. Providing the smoke seals, any interruptions, door gaps, and the type/configuration of the doorset are consistent with the detail tested, the doorset will comply with current smoke control legislation under Approved Document B; and a suffix 'S' or 'Sa', as appropriate, may be added to the designation. Any other components installed where smoke leakage may occur must also be taken into account.

21.2 Further Considerations

Note that there is other guidance available, including BS EN 9999-2008 – *Code of practice for fire safety in the design, management and use of buildings*, which may impose different or additional requirements, such as consideration of the gap between door leaf and threshold.

Responsibility for the appropriate smoke sealing specification and performance of the doors should be agreed between the relevant parties (i.e. specifier, manufacturer, contractor) prior to commencing manufacture and/or installation.

22 Conclusion

If the PT Yasanda decorative groove doorset design, constructed in accordance with the specification documented in this Global Assessment, were to be tested in accordance with BS 476: Part 22: 1987, it is our opinion that it would provide a minimum of 30 minutes integrity and insulation (subject to section 20).

23 Declaration by the Applicant

1. We the undersigned confirm that we have read and comply with obligations placed on us by FTSG Resolution No. 82: 2001.
2. We confirm that the component or element of structure, which is the subject of this assessment, has not to our knowledge been subjected to a fire test to the Standard against which this assessment is being made.
3. We agree to withdraw this assessment from circulation should the component or element of structure be the subject of a fire test to the Standard against which this assessment is being made.
4. We are not aware of any information that could adversely affect the conclusions of this assessment.
5. If we subsequently become aware of any such information we agree to ask the assessing authority to withdraw the assessment.

Signed: 

Name: Sunarman

For and on behalf of: PT YASANDA

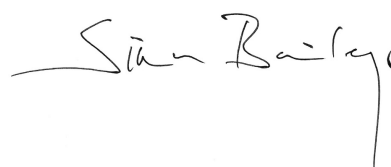
24 Limitations

The following limitations apply to this assessment:

1. This assessment addresses itself solely to the elements and subjects discussed and does not cover any other criteria. All other details not specifically referred to should remain as tested or assessed.
2. This assessment is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available, Exova Warringtonfire reserves the right to withdraw the assessment unconditionally but not retrospectively.
3. This assessment has been carried out in accordance with Fire Test Study Group Resolution No. 82: 2001.
4. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
5. This assessment relates only to those aspects of design, materials and construction that influence the performance of the element(s) under fire resistance test conditions. It does not purport to be a complete specification ensuring fitness for purpose and long-term serviceability. It is the responsibility of the client to ensure that the element conforms to recognised good practice in all other respects and that, with the incorporation of the guidance given in this assessment, the element is suitable for its intended purpose.

25 Validity

1. The assessment is valid for a period of 5 years from the issue date shown on the front cover, after which time it must be submitted to Exova Warringtonfire for re-appraisal.
2. This assessment report is not valid unless it incorporates the declaration given in Section 23 duly signed by the applicant.

Signature:		
Name:	A M Winning	S Bailey
Title:	Lead Product Assessor	Senior Product Assessor

Appendix A

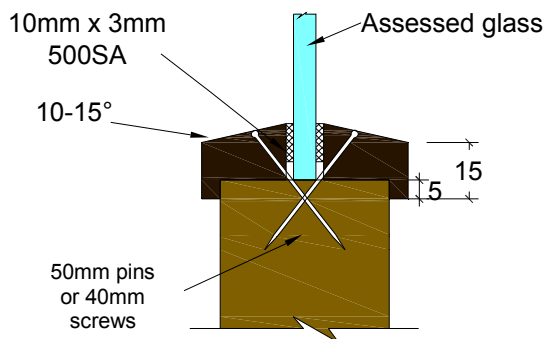
Performance Data

Report No.	Configuration	Leaf Size (mm)	Test Standard	Performance (mins)	
RF11045	A: ULSASD	2135	BS 476: Pt 22: 1987	Integrity	49
		916		Insulation	0
	B: ULSADD	44		Integrity	26 ¹
		2135		Insulation	26 ¹
		915/352			
		44			

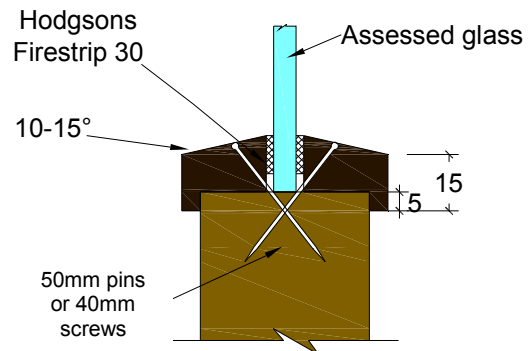
1. Premature failure occurred at the latch position only and the remainder of the doorset continued without failure until 48 minutes. Assessment is made that intumescent gasket protection must be fitted to the lock forend and keep for all double doorsets to achieve a minimum of 30 minutes integrity.

Appendix B

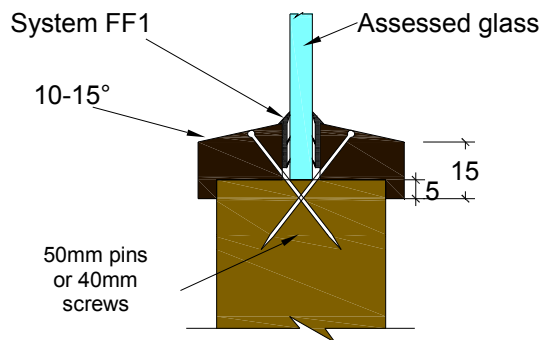
30 Minute Proprietary Glazing Systems



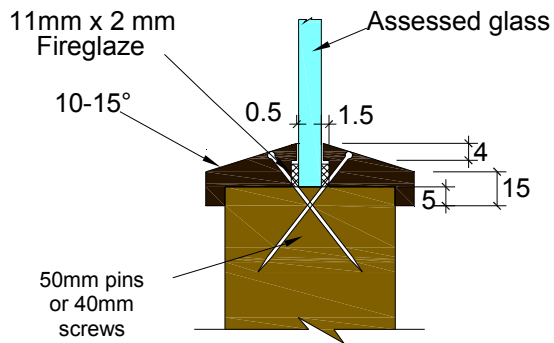
Pyroglaze 30
Mann McGowan Ltd



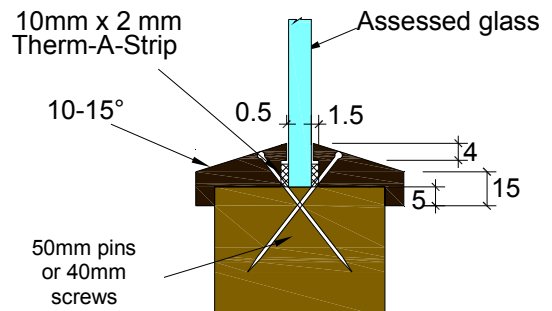
Firestrip 30
Hodgsons Sealants Ltd



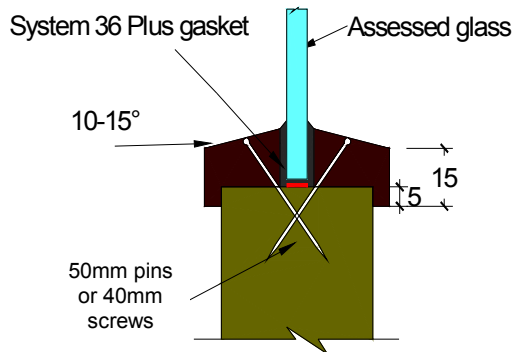
System FF1
Lorient Polyproducts Ltd



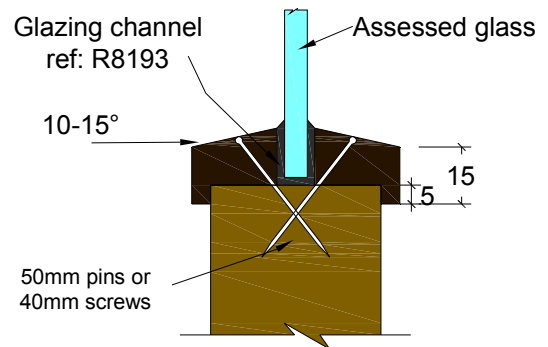
Fireglaze
Sealmaster Ltd



Therm-A-Strip
Intumescent Seals Ltd



System 36 Plus
Lorient Polyproducts Ltd

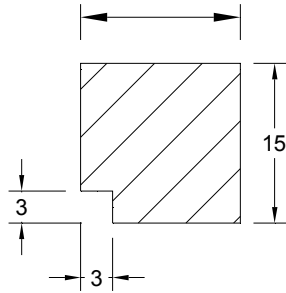


Pyroplex Ltd

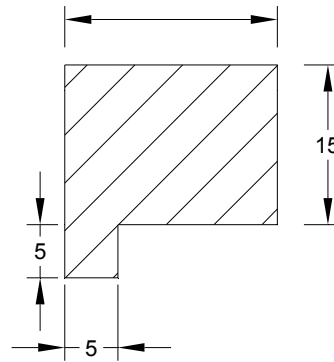
Assessed Square Glazing Bead Profiles

(The following square bead profiled may be used as an alternative to the splayed beads detailed above – refer to section 8 for glazing system and glass restrictions).

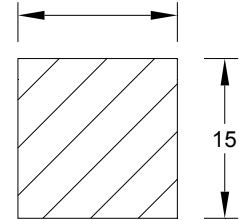
To finish flush with the leaf face



Suited to glass thickness

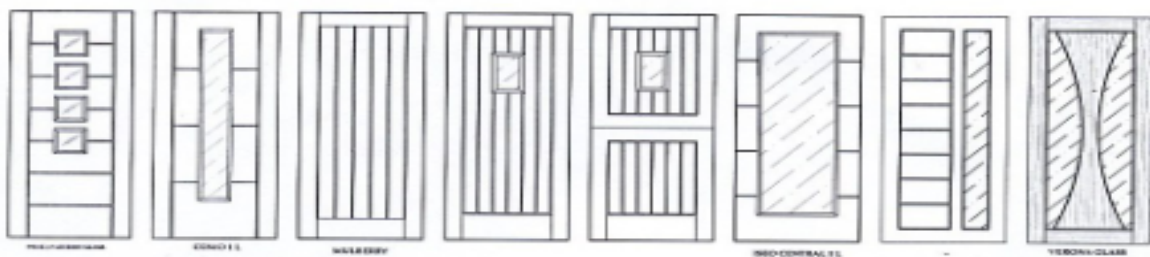
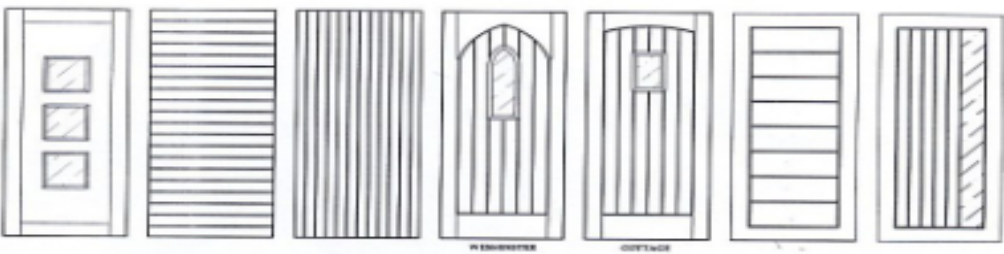
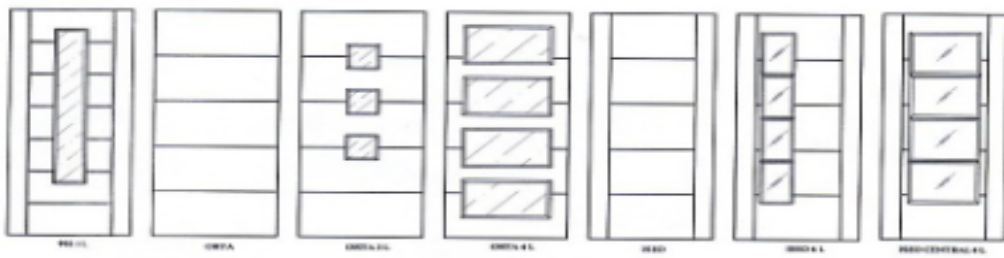
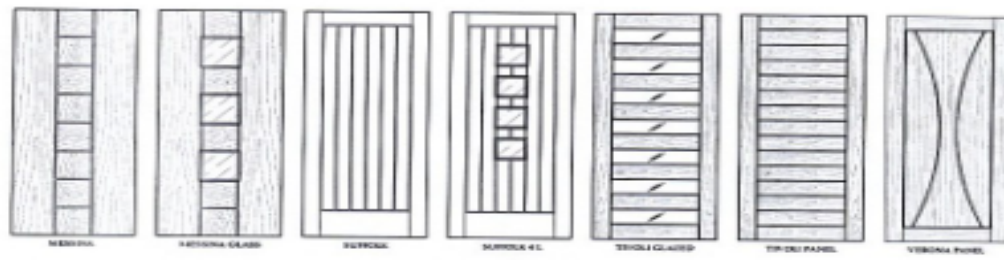
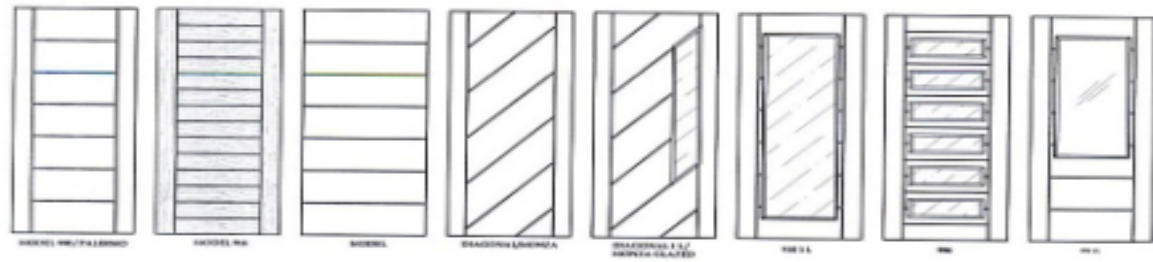


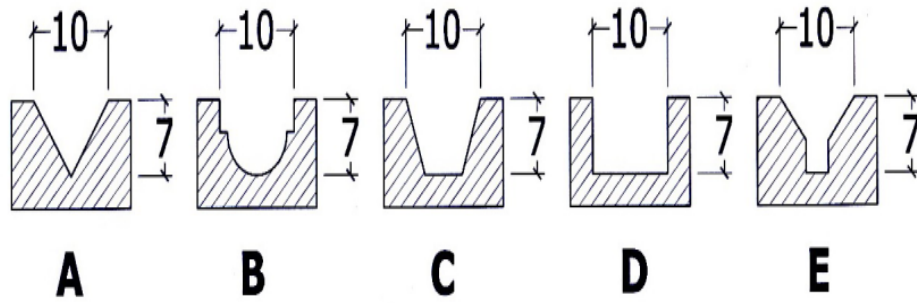
To finish flush with the leaf face



Appendix C

Assessed Groove Profiles & Door Style Options





PT. YASANDA			
CUSTOMER :	DRAWN BY :	APPROVED BY :	DOC. NO : F2-MKT-03
	Dwn		REV. NO : 0
MODEL :	CHECKED BY :		REV. DATE :
	TS Bun		DATE : 17 - 02 - 2011
			SCALE : NOT TO SCALE
U-GROOVE DETAIL			MATERIAL :

Appendix D
Revisions

Rev.	Ref.	Date	Description
A	CNA/F16103	17/08/16	A technical review, format update and revalidation for a further 5 years.

Appendix E

Date Sheets for:

PT Yasanda Decorative Grooved Doorsets

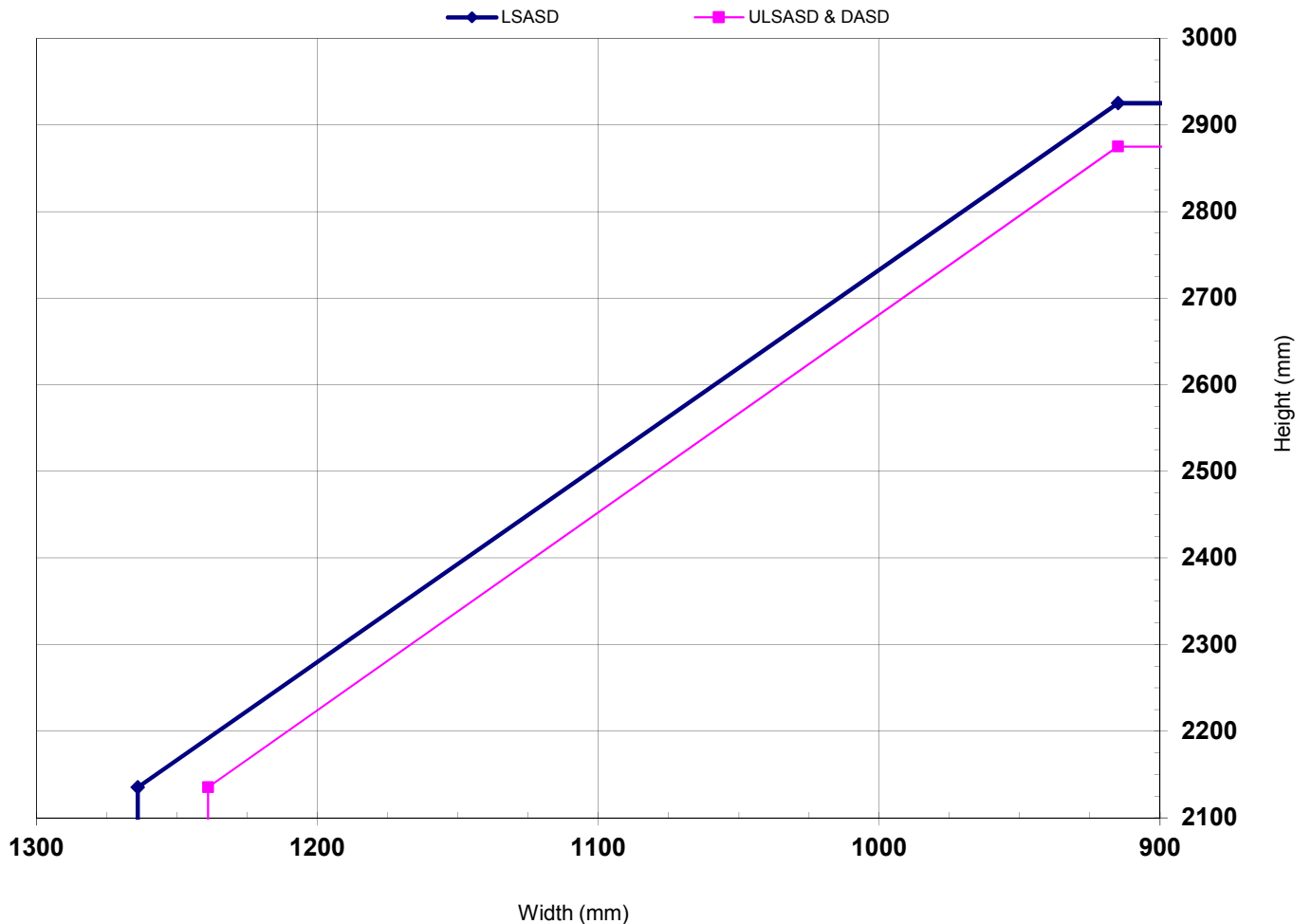
30 Minutes Fire Resistance

PT Yasanda Decorative Grooved Doorsets – 30 Minutes Fire Resistance

Latched & Unlatched, Single Acting, Single Doorsets

	Configuration		Height (mm)	Width (mm)
Leaf Sizes	LSASD	From:	2135	x 1264
		To:	2925	x 915
	ULSASD & DASD	From:	2135	x 1239
		To:	2875	x 915
Maximum Overpanel Height (mm)		Transomed	2000	
Glazing		Max. Glazed Area	0.97m ² (see section 8 for details)	
		Approved Systems	See section 8 & Appendix B	
Frame Specification (see section 11)		Material	Softwood or Hardwood	
		Min. Section (mm)	70 x 32	
		Min. Density(kg/m ³)	510	
INTUMESCENT MATERIALS: PVC encased Type 617 – Lorient Polyproducts Ltd.				
HEAD: 1No. 15 x 4mm seal centrally fitted in the leaf or frame head. For leaves over 2400mm high, increase to 1No. 20 x 4mm seal.				
JAMBS: 1No. 15 x 4mm seal centrally fitted in the leaf edges or frame reveal. For leaves over 1100mm wide, increase to 1No. 20 x 4mm seal.				
HARDWARE PROTECTION: See section 13.				

Maximum Door Leaf Size



PT Yasanda Decorative Grooved Doorsets – 30 Minutes Fire Resistance

Latched & Unlatched, Single Acting, Double Doorsets

	Configuration		Height (mm)	Width (mm)
Leaf Sizes	LSADD	From:	2135	x 1214
		To:	2825	x 915
	ULSADD & DADD	From:	2135	x 1189
		To:	2775	x 915
Maximum Overpanel Height (mm)		Transomed	1500	
Glazing		Max. Glazed Area	0.97m ² (see section 8 for details)	
		Approved Systems	See section 8 & Appendix B	
Frame Specification (see section 11)		Material	Softwood or Hardwood	
		Min. Section (mm)	70 x 32	
		Min. Density(kg/m ³)	510	
INTUMESCENT MATERIALS: PVC encased Type 617 – Lorient Polyproducts Ltd.				
HEAD: 1No. 15 x 4mm seal centrally fitted in the leaf or frame head. For leaves over 2400mm high, increase to 1No. 20 x 4mm seal.				
MEETING EDGES: 1No. 15 x 4mm seal centrally fitted in one meeting edge only. For leaves over 1100mm wide, increase to 1No. 20 x 4mm seal.				
JAMBS: 1No. 15 x 4mm seal centrally fitted in the leaf edges or frame reveal. For leaves over 1100mm wide, increase to 1No. 20 x 4mm seal.				
HARDWARE PROTECTION: See section 13.				

Maximum Door Leaf Size

