



**Fire Resistance Assessment
of**

**Joinery Style and Flush
30 Minutes Fire Resistance**

Report No: Chilt/A07115 Revision B

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Prepared for:

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1 Introduction

This document constitutes a global assessment supporting the performance of 30-minute fire resisting joinery type and solid timber core doorsets, manufactured by Deanta Wood. 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 conducted in terms of the current fire resistance test standard, BS 476: Part 22: 1987.

2 General Description of Construction

The basic tested construction for these doorsets comprises the following main components.

2.1 Joinery Type Doors

Element	Material	Dimensions (mm)	Density (kg/m ³)
Stiles	Fir, finger jointed vertical lamels*	39 thick x 50 wide x 300 long (each lamel) 200 wide (total stile)	550
Rails - top & bottom	Fir, finger jointed horizontal lamels*	39 thick x 50 wide x 300 long (each lamel) 180 wide (total rail)	550
Core	Fir, finger jointed horizontal lamels*	39 thick x 50 wide x 300 long (each lamel)	550
Panel	12 thick calcium silicate board sandwiched between 4 thick veneered MDF	Overall 20 thick	-
Facings	Oak veneered plywood	2.5 thick	-
Adhesive	Lipping	Urea formaldehyde	-
	Facing	Urea formaldehyde	-
	Core	Urea formaldehyde	-
Lippings	Oak	10 - 12 thick	670

* Stiles and Rails jointed using 2No 15mm diameter timber dowels and urea formaldehyde adhesive.

2.2 Flush Doors

Element		Species/type	Dimensions (mm)	Density (kg/m ³)
Core		Fir finger jointed vertical lamels	39 thick x 50 wide x 300 long (each lamel)	550
Stiles & Rails		None Fitted		
Facings	Option 1	Veneered MDF with 2mm deep 'V' grooves	5 thick	-
	Option 2	Oak veneered plywood	2.5 thick	-
Lippings – all edges		Oak	10-12 thick	670
Adhesive	Lipping	Urea formaldehyde	-	-
	Facings	Urea formaldehyde	-	-
	Core	Urea formaldehyde	-	-

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 D.

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

4 Configurations

Based on the test evidence listed in appendix A, this assessment covers the following doorset configurations.

Abbreviation	Description
Joinery Type Doors	
LSASD & ULSASD	Latched & unlatched single acting single doorset
DASD	Double acting single doorset
Flush Doors (Oak-veneer or MDF faced)	
LSASD & ULSASD	Latched & unlatched single acting single doorset
DASD	Double acting single doorset
LSADD & ULSADD	Latched & unlatched single acting double doorset
DADD	Double acting double doorset

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

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5 Leaf Size Adjustment

Deanta Wood 30 minute fire resisting door leaves may be altered as follows.

Element	Reduction
Joinery Style	Reduction is permitted in height and width without restriction, subject to the minimum framing requirements specified in section 6
Flush Doors	Reduction is permitted in height and width without restriction
Lipping	The dimensions shown in section 12 may be reduced by 20% for site fitting purposes

6 Leaf Framing – Joinery Style Doorsets

Joinery style doorsets must be constructed with framing meeting the following minimum specification.

Element	Dimensions (mm)
Head rails	150
Stiles	150
Mid rails	180
Bottom rails	200
Intermediate framing ¹	110

Notes:

1. To be used where applicable
2. Leaf framing elements must be comprised of the lamel construction as described in section 2.1
3. The basic construction of the core of flush doorset and the leaf framing of the joinery style is identical; test RF06167 is direct evidence for the use of the dimensions in the table above for framing elements
4. All framing joints must be made using 2No 15mm diameter timber dowels and urea formaldehyde adhesive
5. Timber used to construct framing must equal or exceed, in quality, that tested.

7 Panel Construction – Joinery Style Doorsets

Assessed panel construction derived from the available test reports is summarised below. The door leaves may include a minimum of 1 to 10 panels, subject to the provisos for framing elements listed in section 6.

Whilst the cited the data incorporated flat panels, raised and fielded panels may be used, providing the panel construction is such that the minimum dimensions for the flat panel design are maintained at the junction with the leaf framing.

Panels must be retained in a minimum of 17mm deep by 20mm wide grooves in the leaf framing, or fitted with the same depth of planted beads/mouldings as required. The shape of the moulding profile is not restricted providing the basic dimensions of solid timber are no less than tested.

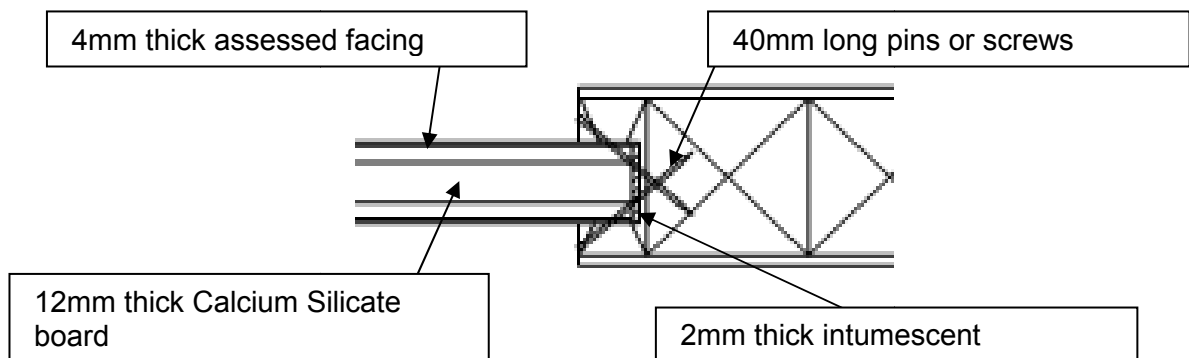
Both loose or integral beads must be fixed with a minimum of 40mm long steel pins or screws, skew driven at 30° to the plane of the panel, at a maximum of 150mm centres with a fixing no more than 50mm from each corner. The purpose of this is so that the steel fixings remain in place, and therefore retain the panels in position once the timber beads have become fully charred. The fixings should not pass through the panel edges.

The panel facings must be bonded to the 12mm thick calcium silicate core material using urea formaldehyde adhesive.

See section 12.2 for details of required intumescent protection.

The maximum individual panel size is limited to 1880mm x 513mm.

Panel Type	Core Material and thickness		Facing material and thickness	
	Flat or raised and fielded	12mm thick	Calcium Silicate Board	4mm thick



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8 Overpanels

Overpanels of the same construction as the door leaves may be used with these doorset designs provided a transom is fitted between the leaf head and overpanel. The transom must be of the same section and material assessed for the door frames, mortice and tenon jointed to the jambs (with no gaps) and bonded with urea formaldehyde adhesive.

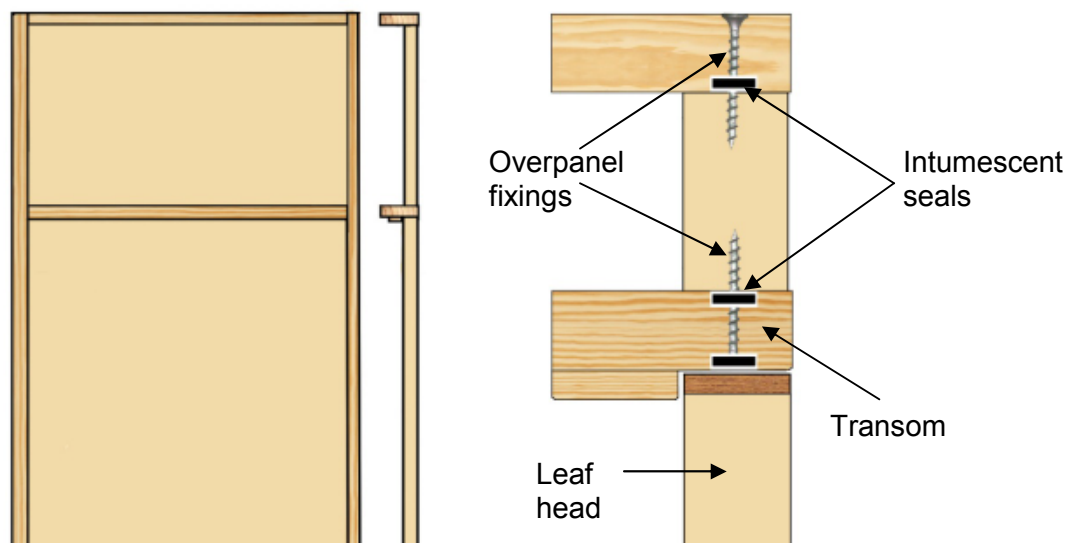
Overpanels must be fixed by:

- 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 at a maximum of 250mm centres in between.

The intumescent seals specified for the jambs specified in appendix D, may be fitted to all edges of the overpanel if required for the manufacturing process. The seals may be fitted in the overpanel edges or frame reveal. 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 heights are 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.

9 Glazing

9.1 General

The testing cited in appendix A conducted on Deanta Wood doorsets has successfully demonstrated that glazed apertures can be included within this type of doorset construction, whilst providing a margin of over performance. Glazing is therefore acceptable within the following parameters.

The maximum assessed glazed area is 1.47m² which may be composed of multiple apertures up to the maximum glazed area.

9.2 Glazing Aperture Position

9.2.1 Joinery Style Doorsets

The leaf framing element dimensions specified in section 6 must be complied with.

9.2.2 Flush Doorsets

Glazed openings must be a minimum of 150mm from the head of the door leaf and 130mm from the vertical edges.

9.3 Assessed Glazing Systems

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

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

Diagrams detailing the systems are contained in appendix B.

9.4 Assessed Glass Products

Glass Type	Manufacturer	Thickness (mm)	Maximum Area (m ²)
1. Pyroshield	Pilkington Group Ltd	6 & 7	1.47
2. Pyroshield II	Pilkington Group Ltd	6 & 7	1.47
3. Pyran S	Schott Glass Ltd	6	1.47
4. Pyrostem	CGI Ltd	6	1.25
5. Pyroguard clear	CGI Ltd	7	0.87
6. Pyroguard wired	CGI Ltd	7	0.87
7. Pyrobelite 7	AGC Flat Glass Europe	7	1.47
8. Pyrodur 30-104	Pilkington Group Ltd	7	1.47
9. Pyrodur 60-10	Pilkington Group Ltd	10	1.47
10. Pyroguard EW Maxi	CGI Ltd	11	0.58
11. Pyranova 15-S2.0	Schott UK Ltd	11	1.47
12. Pyrobelite 12	AGC Flat Glass Europe	12	1.47
13. Fireswiss Foam	CGI Ltd	15	1.47
14. 15mm Pyrostop 30-10	Pilkington Group Ltd	15	1.47
15. Pyrobel 16	AGC Flat Glass Europe	16	1.47

9.5 Glazing Beads & Installation

Glazing beads must be as specified in the following table:

Material	Profile	Permitted Glazing System (section 9.2)	Permitted Glass Type section 9.3)	Minimum Density (kg/m ³)
Hardwood	Chamfer	1 - 7	1 - 15	640
	Square	1 - 3	6 - 15	640

Notes:

- 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
- Glazing beads moulded to match panel mouldings may be used, providing they are hardwood, equal or greater in overall dimensions to that required by the specified proprietary glazing system and have no more than 3mm of the top edge at 90° to the glass face
- Glazing beads must be retained in position with 40mm long x 2mm diameter 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 above

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5. False timber beads may be applied to glass types 9 - 15 using one of the following intumescent glazing products. All seals must be a minimum of 10mm wide x 0.5 - 3mm thick and preformed strip systems 1 - 4 may be self adhesive and grooved in to the rear of the glazing bars.

Glazing System	Manufacturer
1. Therm-A-Strip 30	Intumescent Seals Ltd
2. Fireglaze 30	Sealmaster Ltd
3. Firestrip 30	Hodgson Sealants Ltd
4. Envirograf Product 77 - G10/10	Intumescent Systems Ltd
5. Intumescent mastic or silicone tested for glazing applications to BS 476: Part 22: 1987 or BS EN 1634-1: 2000 or 2008	Various

6. False timber beads may be bonded to the glass face with an intumescent mastic/silicon, or a 0.5 - 2mm thick self adhesive intumescent tape/strip. Suitable glass for this application is restricted to types 9 – 15
7. Timber for glazing beads must be straight grained joinery quality, free from knots, splits and checks
8. Glass types 11 - 15 in section 9.3 are fully insulating for 30 minutes in terms of the criteria set out BS 476: Part 20: 1987.

10 Door Frames

10.1 Door frame construction

Deanta Wood FD30 doorsets must be constructed to meet the following specification.

Material	Minimum Section Size (mm)	Min Density (kg/m ³)
Softwood or Hardwood	70 x 30	550

Notes:

1. All door frame timber must meet or exceed class J30 as specified in BS EN 942: 2007 (subject to adequate repair of any defects)
2. A 12mm deep planted or integral stop is adequate for single acting frames whilst double acting frames may be scalloped or square (see diagram below)
3. Frame joints may be mortice and tenoned, mitred, half lapped or butted and with no gaps. All jointing methods require mechanical fixing with the appropriate size ring shank nails or screws
4. The following diagram depicts the assessed frame profiles and dimensions.

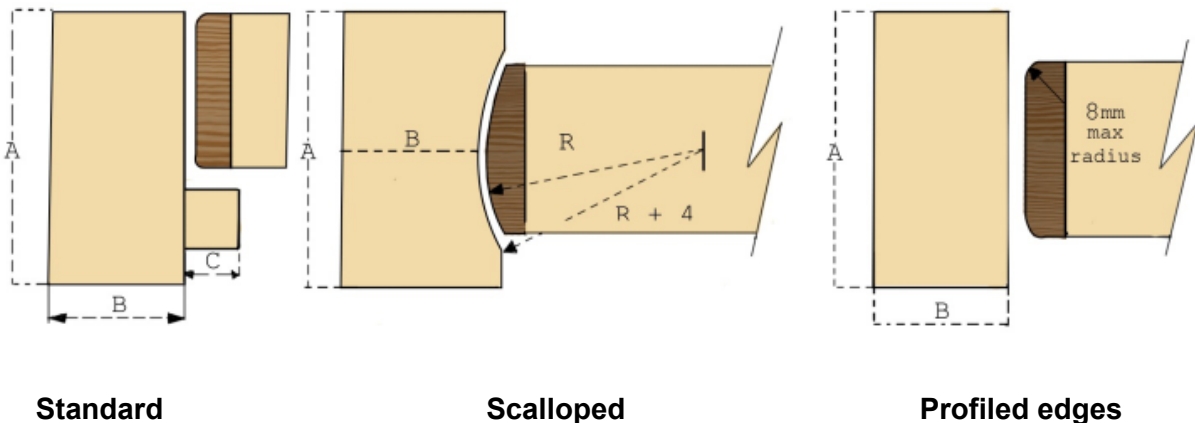
A = min 70mm

B = 30

C = min 12mm

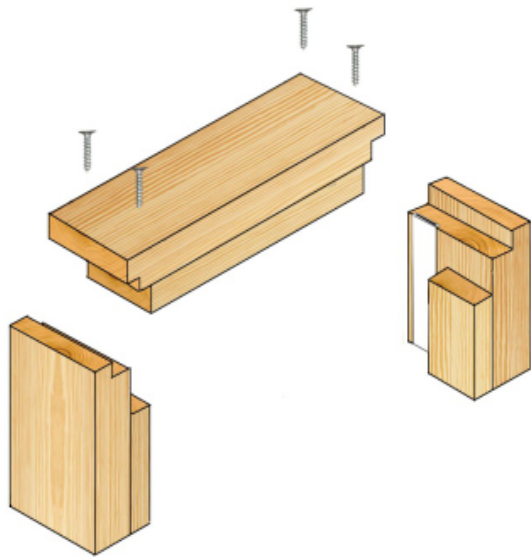
R = radius from floor spring

8mm max radius to create a maximum 2mm edge profiling

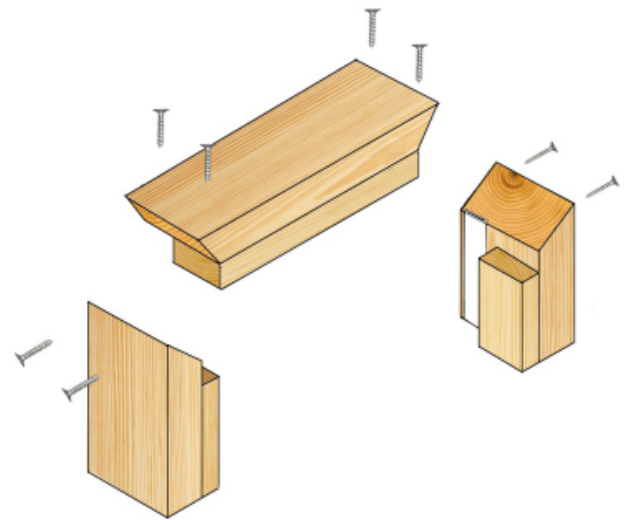


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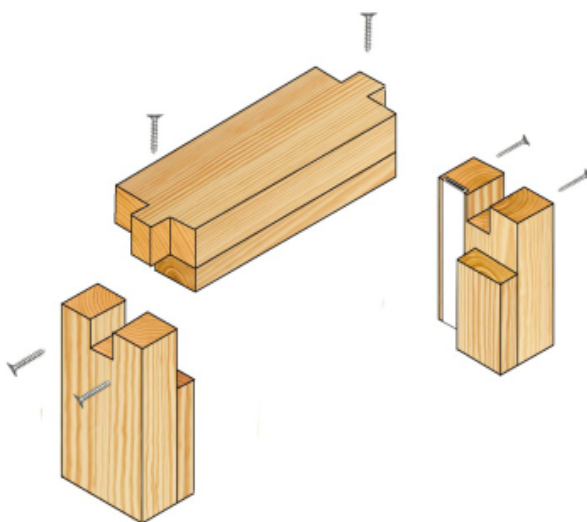
10.2 Door Frame Joints



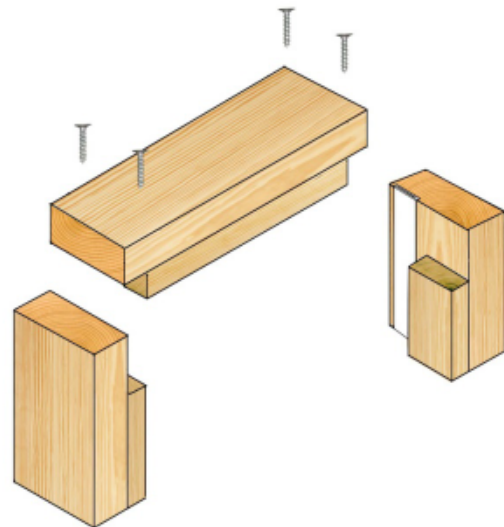
Half Lapped Joint



Mitre Joint



Mortice and Tenon Joint

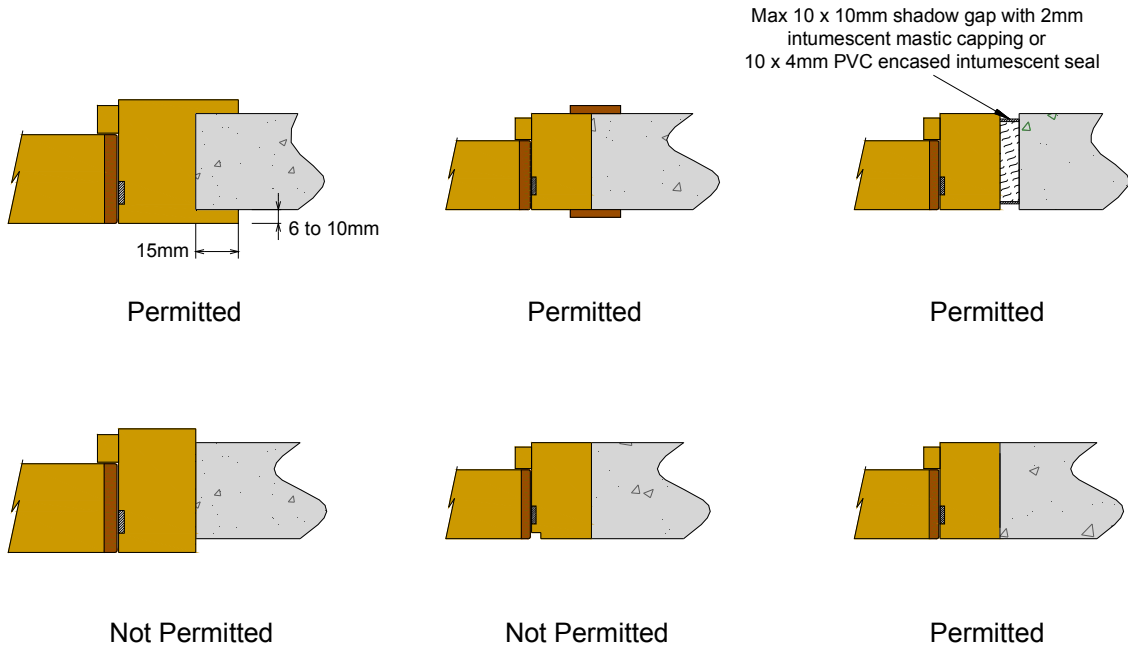


Butt Joint

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.

10.3 Door frame installation

The following diagrams indicate acceptable and unacceptable door frame installations.



Note: 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.

11 Leaf Facing Materials

11.1 General

Data sheets specifying the maximum approved leaf sizes for each doorset design and facing type are contained in appendix D.

11.2 Joinery Style Doorsets

The primary facing material, for the leaf framing elements, evaluated by the tested specimen was 2.5mm thick plywood.

Facings up to a maximum thickness of 3mm are considered to have limited structural and burn through influence upon fire resisting doors. We therefore consider that the following alternative materials may be assessed.

Facing Material	Thickness (mm)	Min. Density (kg/m ³)	Maximum Leaf Size (mm)
Chipboard	3	680	All
MDF	3	750	

11.3 Flush Doorsets

Flush doorsets have been tested with both 5mm thick MDF facings and 2.5mm thick veneered plywood.

11.3.1 Plywood Faced Doorsets

As in section 11.1 we consider that the following alternative materials may be assessed in addition to the 2.5mm thick plywood.

Facing Material	Thickness (mm)	Min. Density (kg/m ³)	Maximum Leaf Size (mm)
Chipboard	3	680	All
MDF	3	750	

11.3.2 MDF Faced Doorsets

At 5mm thick, the tested facing is considered to have significant structural and burn through influence and, therefore substitution with alternative materials is not permitted.

Both faces of the door leaves may be grooved to the following specification. Grooves may coincide with the top and bottom edges of glazed apertures if desired; and also may extend to the edges of the leaf.

Element	Details	
Max groove size (mm)	2 deep 'V' grooves as tested	
Proximity to door edges (mm)	Horizontal Grooves	≥ 150 from top and bottom
	Vertical Grooves	≥ 150 from sides
Groove spacing (mm)	Max 8No grooves divided between horizontal and vertical orientations as required	
Orientation	Vertical or horizontal	

11.4 Decorative and Protective Facings

The following additional facing materials are permitted for this door design since they would degrade rapidly under test conditions without significant effect.

Element	Product/Manufacturer
Paint	0.5
Timber veneers	2
Plastic laminates	2
PVC	2
Decorative paper / non-metallic foil	0.4

Notes:

1. Metallic facings are not permitted except for push plates and kick plates
2. Materials must not return around leaf edges
3. Materials must not conceal intumescent strips.

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12 Intumescent Materials

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

12.1 Leaf Edge Seals

The edge seals must be Rigid Box Seal from Pyroplex Ltd.

The seal specification for each doorset configuration is contained in appendix D.

12.2 Panel Protection

One of the following intumescent materials must be used to protect the perimeter of the panels.

Position	Product & Manufacturer
On all edges of the panel perimeter in the bottom of the framing grooves	1. 15 x 2mm thick Interdens - Dufaylite Developments Ltd
	2. 15 x 2mm MAP - Lorient Polyproducts Ltd
	3. Intumescent mastic, successfully tested in this application to BS476: Part 22: 1987 or BSEN 1634-1: 2000 or 2008, for 30 minutes integrity

12.3 Hardware Protection

The following intumescent gaskets must be used to protect the hardware.

Element	Specification	Location
Hinges	Not Required	-
Locks & latches	<ol style="list-style-type: none"> 1. 1mm MAP paper – Lorient Polyproducts Ltd 2. 1mm thick Interdens – Dufaylite Developments Ltd 3. 1mm G30 – Sealmaster Ltd 4. 1mm Therm-A-Strip – Intumescent Seals Ltd 	Fitted under the forend and keep
Flush Bolts	<ol style="list-style-type: none"> 1. 2mm MAP paper – Lorient Polyproducts Ltd 2. 2mm thick Interdens – Dufaylite Developments Ltd 3. 2mm G30 – Sealmaster Ltd 4. 2mm Therm-A-Strip – Intumescent Seals Ltd 	Lining all sides of the mortices
Floor Springs/ Top Pivots		Lining all sides of the mortices

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13 Lippings

The minimum lipping specification for this design of door leaves is as follows.

Material	Size (mm)	Minimum Density (kg/m ³)
Hardwood	1. Flat = 10 – 15 thick with a maximum of 2mm profiling permitted at corners of lipping (see section 8.1) 2. Rounded = 12 – 17 thick with a radius matching the distance between leaf edge and floor pivot (see section 8.1) 3. Not Permitted	670

Notes:

1. A 2.5° chamfer is permitted to the lipping at the leading edge of leaves providing the door gaps meet the requirements of section 17
2. Timber for lippings must be straight grained joinery quality timber, free from knots, splits and checks
3. Doorsets require lipping on the vertical edges only, but may be lipped on all edges if required
4. Lippings must not conceal intumescent material.

14 Adhesives

The following adhesives must be used in construction.

Element	Product/Manufacturer
Lamel Core	Urea formaldehyde (UF)
Lippings	
Facings	
Stile & Rail Junction	Urea formaldehyde (UF) (plus 2No 15mm diameter timber dowels)

15 Tested Hardware

The following hardware has been successfully incorporated in the tests on Deanta Wood doorsets.

Element	Make/Type	Dimensions
Hinges	Pro-Line journal hinges	98mm x 34mm - blade size
	Pro-Line "Ceri" lift off type hinges	100mm x 20mm - blade size
Closers	Dorma TS73 face fixed overhead closer	233mm x 60mm - footprint size
Locks/latches	Basta 506/506 2 lever sash lock	23mm x 150mm – forend size
Flush Bolts	Basta flush bolts	160mm x 15mm – forend size
Furniture	Brushed aluminium lever handles	153mm x 40mm – footprint size

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16 Additional & Alternative Hardware

16.1 Latches & Locks

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

Element	Specification
Maximum forend and strike plate dimensions:	235mm high by 25mm wide by 4mm thick
Maximum body dimensions:	18mm thick by 100mm wide by 165mm high.
Intumescent protection:	See section 12.3
Materials:	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel
Position	Fitted 1000 – 1200mm above threshold

16.2 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: 2000 or 2008.

Note: The top pivots to floorspring assemblies must be protected with 2mm thick intumescent gasket (see section 12.3) or alternatively the manufacturers tested intumescent pack.

16.3 Pull Handles

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

16.4 Push Plates & Kick Plates

Face-fixed ironmongery such as push plates and kick plates may be fitted to the doorsets providing they do not exceed 10% of the door leaf area.

16.5 Hinges

Leaves must be hung on minimum of 3 hinges. Leaves over 2300mm high must fit 4 hinges. Hinges with the following specification are acceptable.

Element		Specification	
Blade height:		90 - 120mm	
Blade width (excluding knuckle):		30 - 35mm	
Blade thickness		2.5 - 4mm	
Fixings:		Minimum of 4 No. 30mm long No. 8 or No.10 steel wood screws per blade	
Materials:		Steel, stainless steel or brass (melting point = or > 800°C)	
Hinge positions:	If 3 hinges are required:	Top	150 – 200mm from the head to top of hinge
		2 nd	Minimum 250mm from top hinge or centrally fitted between top and bottom hinge
		Bottom	150 – 250mm from the foot of leaf to bottom of hinge
	If 4 hinges are required:	Top	100-200mm from the head to top of hinge
		2 nd & 3 rd	Equispaced between top and bottom or 2 nd hinge 250mm from top hinge and 3 rd hinge equally spaced between 2 nd and bottom hinge
		Bottom	150 – 250mm from the foot of leaf to bottom of hinge
Intumescent protection:		Not Required	

16.6 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.

16.7 Door Selectors

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

16.8 Environmental Seals

Silicon based flame retardant acoustic, weather and dust seals (e.g. Norseal 710, Lorient IS1212, IS1511, IS7025, IS7060) 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.

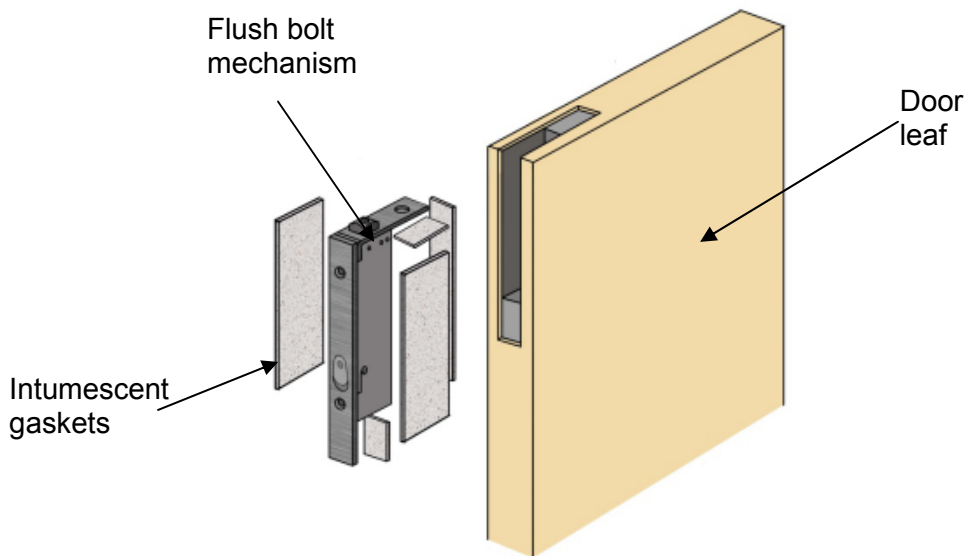
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16.9 Flush Bolts

Flush bolts may be incorporated centrally into the top and bottom of one meeting edge, providing the following maximum dimensions are not exceeded and the components are fitted opposite the edge fitted with intumescent strip.

- 200mm long x 20mm deep x 20mm wide.

Flush bolts must be steel and the mortice must be as tight to the mechanism as is compatible with its operation. All edges of the mortice must be protected with intumescent gaskets as specified in section 12.3. Alternatively the hardware manufacturers tested gaskets may be used.



16.10 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	IS8010si
Raven	RP8Si
Athmer	Schall-Ex Duo L-15
Norseal	810

16.11 Security Viewers

Door security viewers with brass or steel bodies of a diameter less than or equal to 15mm may be used provided that the through-hole is bored tight to the case of the viewer (maximum tolerance +1 mm). Lenses must be glass and the item must be protected with a tested acrylic intumescent mastic. Viewers must only be fitted through solid timber and not panelled areas.

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17 Door Gaps

For fire resisting applications, door gaps and alignment tolerances must fall within the following range.

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

18 Structural Opening

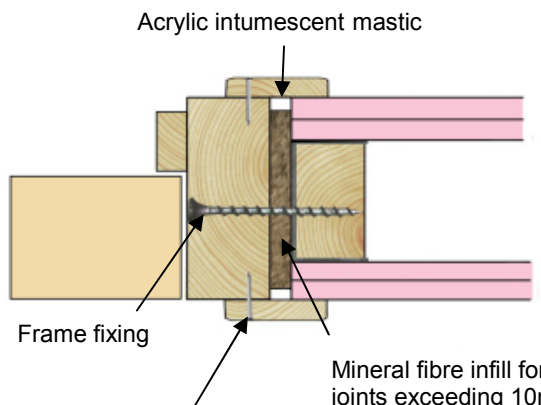
The supporting construction must provide the required level of fire resistance designated for the doorset design and be a suitable medium to permit adequate fixity.

19 Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm 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.

20 Sealing to Structural Opening

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

<p>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: 2000 or 2008. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</p>	 <p>Acrylic intumescent mastic</p> <p>Frame fixing</p> <p>Mineral fibre infill for joints exceeding 10mm</p> <p>Architrave for joints not filled with mineral wool and optional for filled joints</p>
<p>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: 2000 or 2008. Architraves are optional.</p>	

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<p>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: 2000 or 2008. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</p>	
<p>4. Timber based or non-combustible subframe up to 50mm thick, with no gaps between the components. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</p>	
<p>5. Timber based or non-combustible subframe 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: 2000 or 2008. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</p>	

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.

21 Smoke Control

21.1 General

If the doorset design is required to provide a smoke control function to comply with Building Regulations, 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.

Note: The incorrect specification and fitting of smoke seals may impair the operation of a doorset and therefore compromise the fire resistance performance. Advice should be sought from the seal manufacturers regarding the correct specification and installation of smoke seals or combined smoke and intumescent seals.

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.

It is the responsibility of the doorset specifier to stipulate the precise smoke control specification, prior to commencing manufacture and/or installation.

22 Conclusion

If the Deanta 30 Minute Fire Resisting joinery style or flush doorsets designs, 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 they would provide a minimum of 30 minutes integrity performance.

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:

For and on behalf of Deanta Wood.



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, CIF 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 initially valid for five years after which time it must be submitted to CIFL 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	J P Mullett
Title:	Product Assessor	Principal Consultant

The legal validity of this report can only be claimed on presentation of the complete report.

Appendix A Performance Data

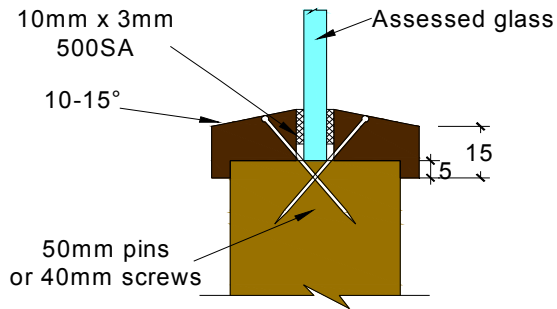
Test/ Assessment No	Configuration	Leaf Size (mm)	Standard	Integrity Performance (mins)
RF06167 (MDF facings - flush doorset)	A: ULSADD	2279 915/460 49.5	BS 476: Part 22: 1987	20* (Latch) 40 (Glazing) 42** (Leaf Edge)
	B: ULSASD	2260 915 49		36 (Latch) 52** (Leaf Edge)
RF06168	ULSADD (Oak veneered facing - flush)	2278 912/460 49.5	BS 476: Part 22: 1987	18* (Latch) 36** (Leaf Edge)
	ULSASD (Oak veneered facing - joinery)	2260 915 49		31 (Latch) 32 (Glazing) 36** (Leaf Edge)

* Both double doorsets failed integrity criteria during testing, at the latch position at 20 and 18 minutes for RF06167 and RF06168 respectively.

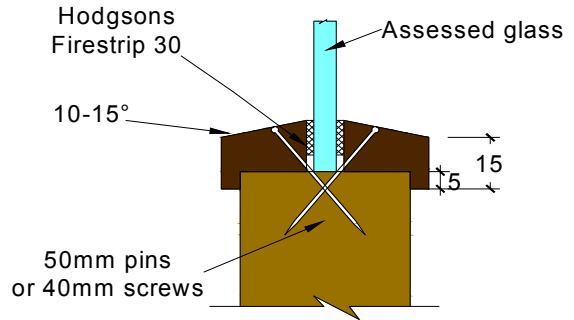
It is our opinion that had an appropriate intumescent material been fitted under the forend and keep, as would normally be expected for double doorsets, the intumescent material would have prevented exploitation at the latch position for the required 30 minute integrity period.

** The times to failure at the leaf edges are the significant values when calculating leaf dimension envelopes; these times have therefore been utilised.

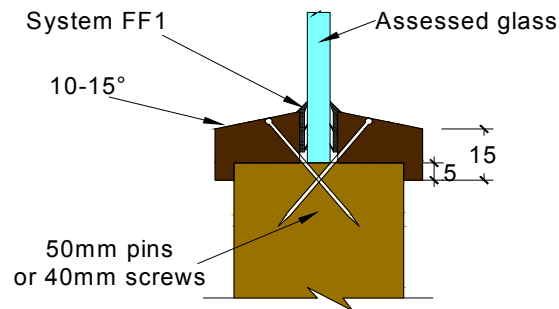
Appendix B 30 Minute Proprietary Glazing Systems



Pyroglaze 30
Mann McGowan Ltd

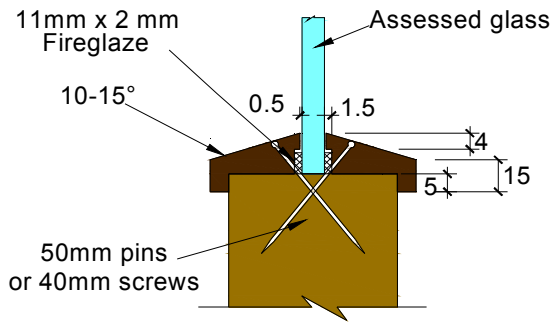


Firestrip 30
Hodgsons Sealants Ltd

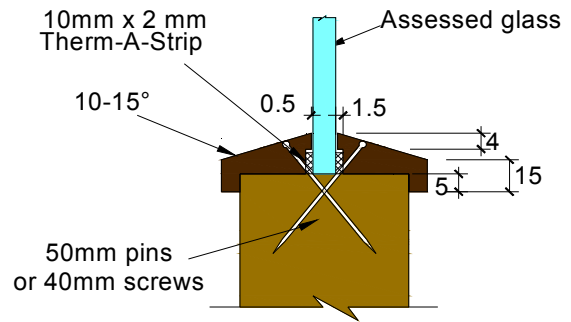


System FF1
Lorient Polyproducts Ltd

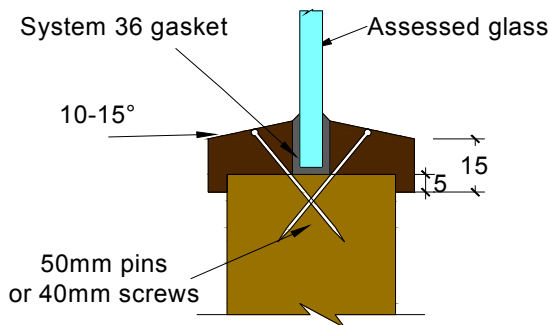
The legal validity of this report can only be claimed on presentation of the complete report.



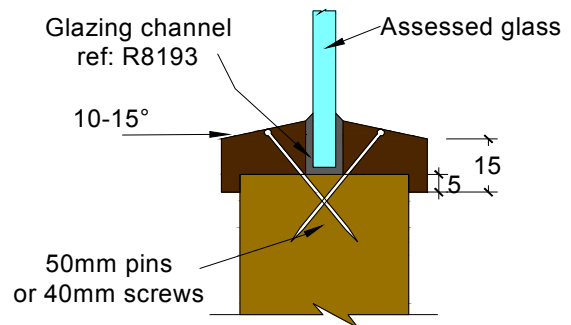
Fireglaze
Sealmaster Ltd



Therm-A-Strip
Intumescent Seals Ltd



System 36
Lorient Polyproducts Ltd

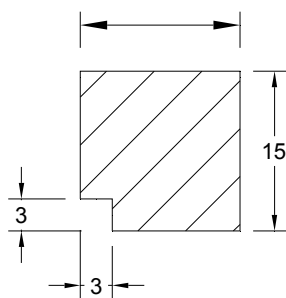


Pyroplex Ltd

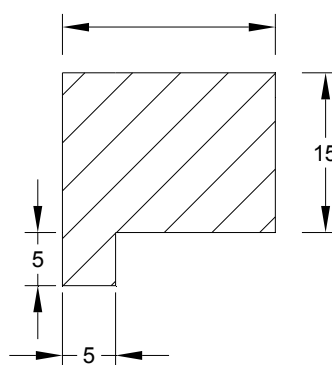
Assessed Square Glazing Bead Profiles

(the following square bead profile may be used as an alternative to the splayed beads detailed above - refer to section 9 for glazing system and glass restrictions)

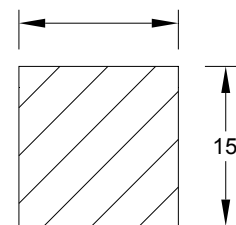
To finish flush with the leaf face



Suited to glass thickness



To finish flush with the leaf face



Appendix C

Revisions and Amendments

Revision No	CIFL Reference	Date	Description
A	Chilt/A12244	15.10.12	Technical review, format update and 5 year revalidation.
B	Chilt/A13064	13.03.13	Reduction in top rail and stile dimensions within section 6

The legal validity of this report can only be claimed on presentation of the complete report.

Appendix D

Data Sheets for

**Deanta Wood
Joinery Style and Flush Doorsets**

30 Minute Fire Resisting Performance

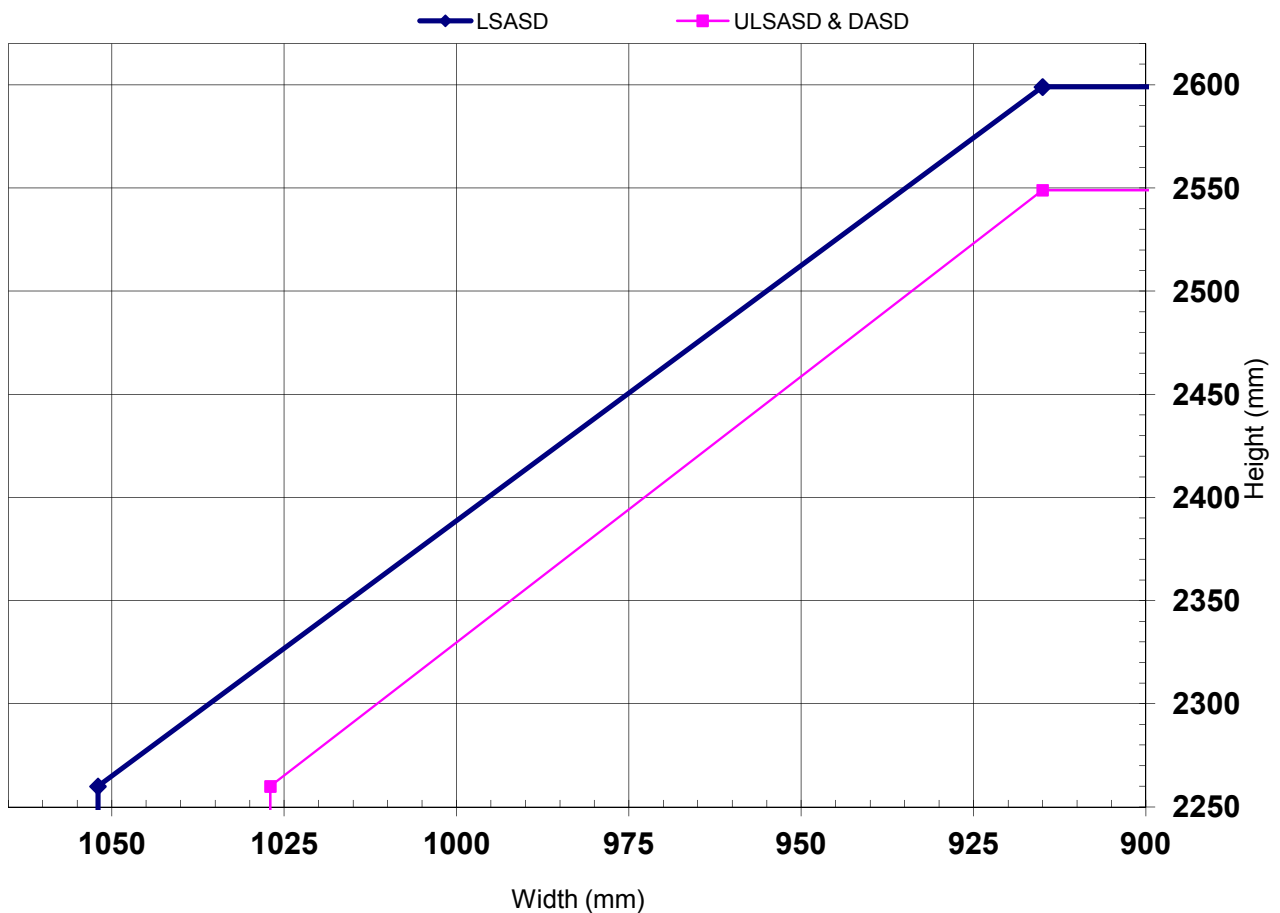
The legal validity of this report can only be claimed on presentation of the complete report.

Deanta Wood – Joinery Style Panelled Doorsets

Latched and Unlatched Single Acting & Double Acting Single Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSASD	From:	2260	x	1052
		To:	2599	x	915
	ULSASD & DASD	From:	2260	x	1027
		To:	2549	x	915
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	1.47 m ²		
		Approved systems:	See section 9 and appendix B		
Frame specification (see section 10)		Material:	Softwood or Hardwood		
		Min. Section (mm):	70 x 30		
		Min. Density(kg/m ³):	550		
Intumescent Materials: Rigid Box Seal – Pyroplex Ltd					
<p>Head, Square: 1 No 15 x 4mm exposed and centrally fitted in the leaf edge or frame reveal. Leaves over 2450mm high, increase seal at head to 20 x 4mm.</p> <p>Jams & Overpanel: 1 No 15 x 4mm exposed and centrally fitted in the leaf edge or frame reveal.</p> <p>Hardware Protection: See section 12.</p>					

Maximum Door Leaf Size



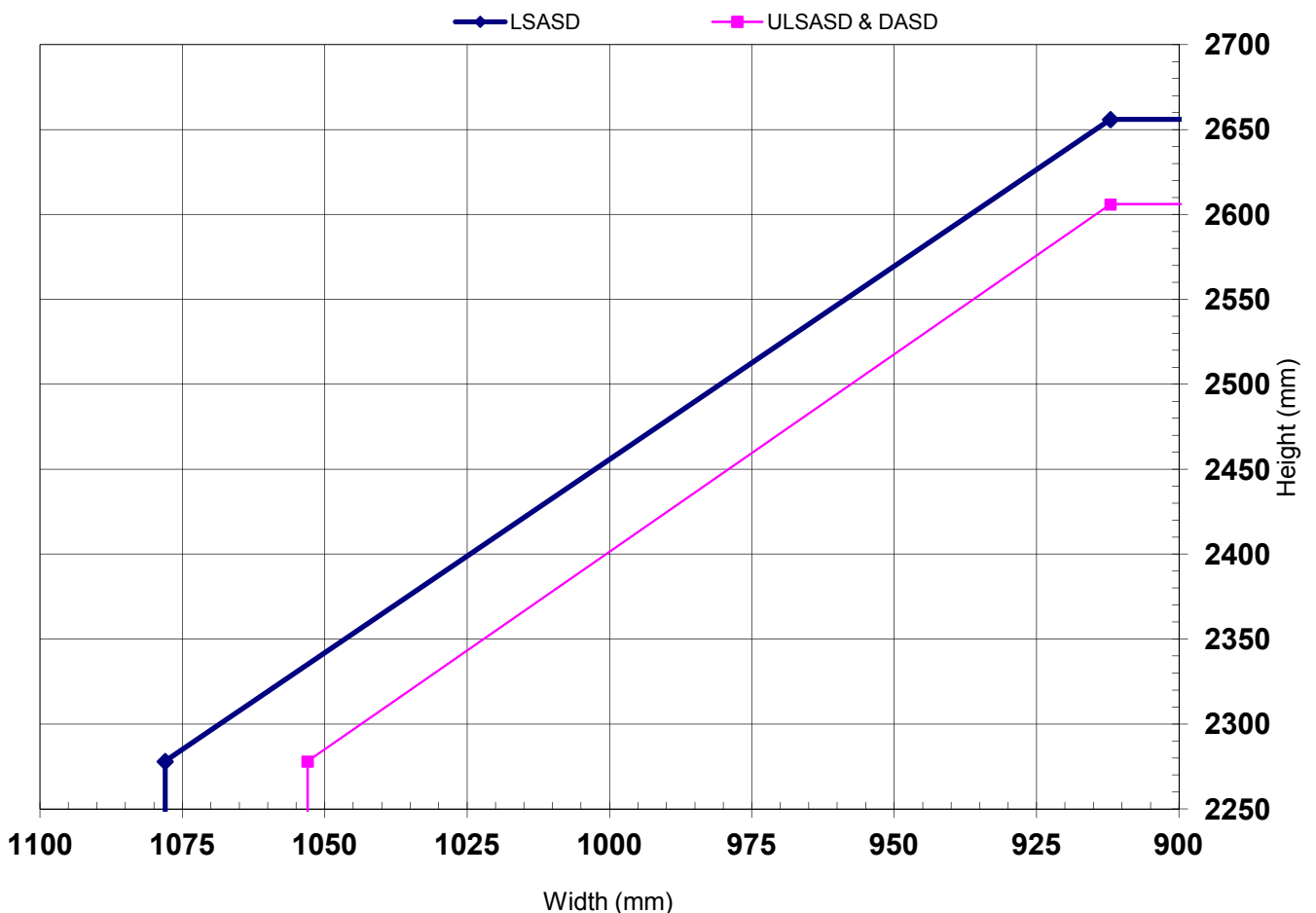
The legal validity of this report can only be claimed on presentation of the complete report.

Deanta Wood – Veneered Plywood Faced Flush Doorsets

Latched and Unlatched Single Acting & Double Acting Single Doorsets

	Configuration		Height (mm)	Width (mm)
Leaf Sizes	LSASD	From:	2278	x 1078
		To:	2656	x 912
	ULSASD & DASD	From:	2278	x 1053
		To:	2606	x 912
Maximum Overpanel height (mm)		Transomed	2000	
Glazing	Maximum Glazed Area:		1.47 m ²	
	Approved systems:		See section 9 and appendix B	
Frame specification (see section 10)	Material:		Softwood or Hardwood	
	Min. Section (mm):		70 x 30	
	Min. Density(kg/m ³):		550	
Intumescent Materials: Rigid Box Seal – Pyroplex Ltd Head, Square: 1 No 15 x 4mm exposed and centrally fitted in the leaf edge or frame reveal. Leaves over 2450mm high, increase seal at head to 20 x 4mm. Jambs & Overpanel: 1 No 15 x 4mm exposed and centrally fitted in the leaf edge or frame reveal. Hardware Protection: See section 12.				

Maximum Door Leaf Size



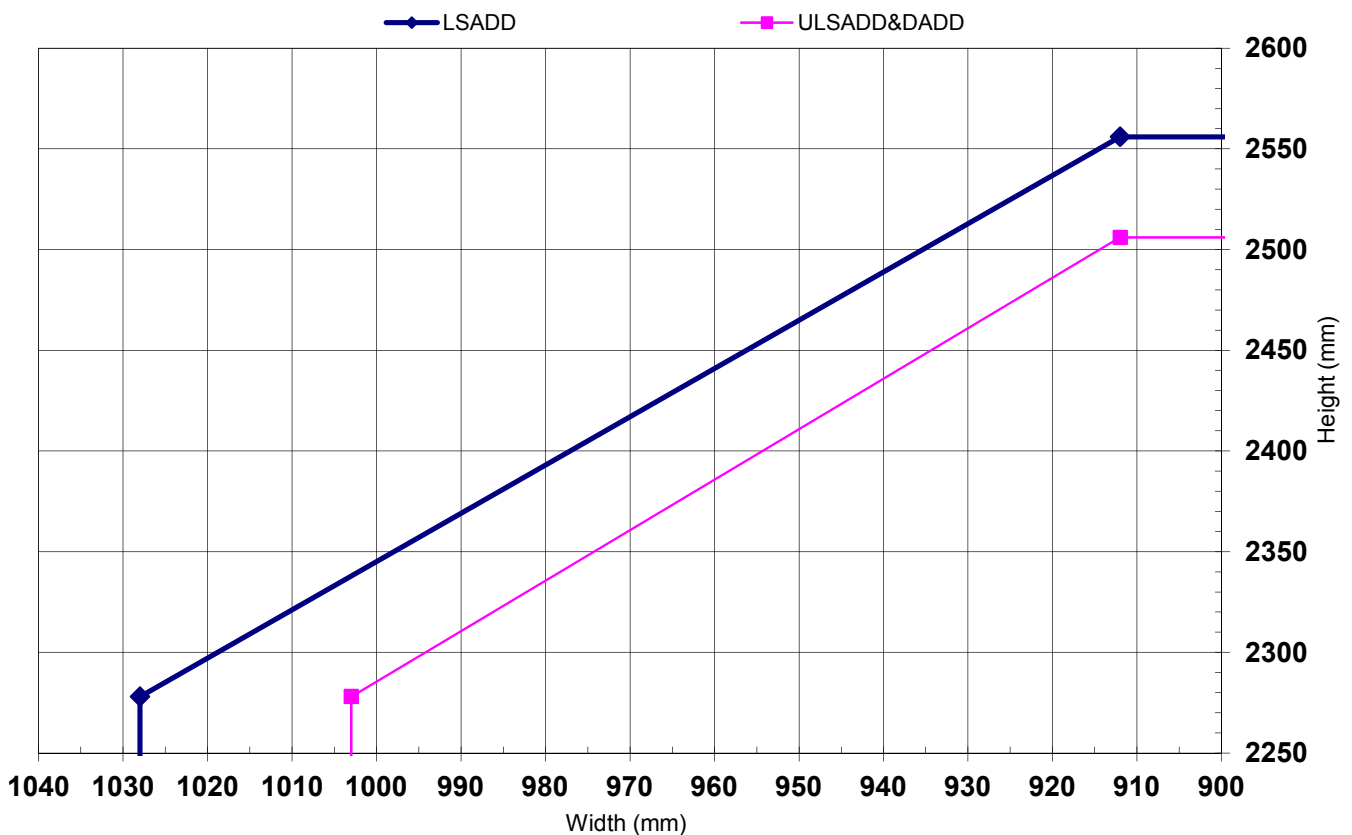
The legal validity of this report can only be claimed on presentation of the complete report.

Deanta Wood – Veneered Plywood Faced Flush Doorsets

Latched and Unlatched Single Acting & Double Acting Double Doorsets

Configuration		Height (mm)		Width (mm)	
Leaf Sizes	LSADD	From:	2278	x	1028
		To:	2556	x	912
	ULSADD & DADD	From:	2278	x	1003
		To:	2506	x	912
Maximum Overpanel height (mm)	Transomed	1500			
Glazing		Maximum Glazed Area:	1.47 m ²		
		Approved systems:	See section 9 and appendix B		
Frame specification (see section 10 for details)		Material:	Softwood or Hardwood		
		Min. Section (mm):	70 x 30		
		Min. Density(kg/m ³):	550		
<p>Intumescent Materials: Rigid Box Seal – Pyroplex Ltd</p> <p>Head, Square: 1 No 15 x 4mm exposed and centrally fitted in the leaf edge or frame reveal. Leaves over 2450mm high, increase seal at head to 20 x 4mm.</p> <p>Jams & Overpanel: 1 No 15 x 4mm exposed and centrally fitted in the leaf edge or frame reveal.</p> <p>Meeting Edges: Square: 1 No 15 x 4mm exposed and centrally fitted in both leaf edges</p> <p>Hardware Protection: See section 12.</p>					

Maximum Door Leaf Size

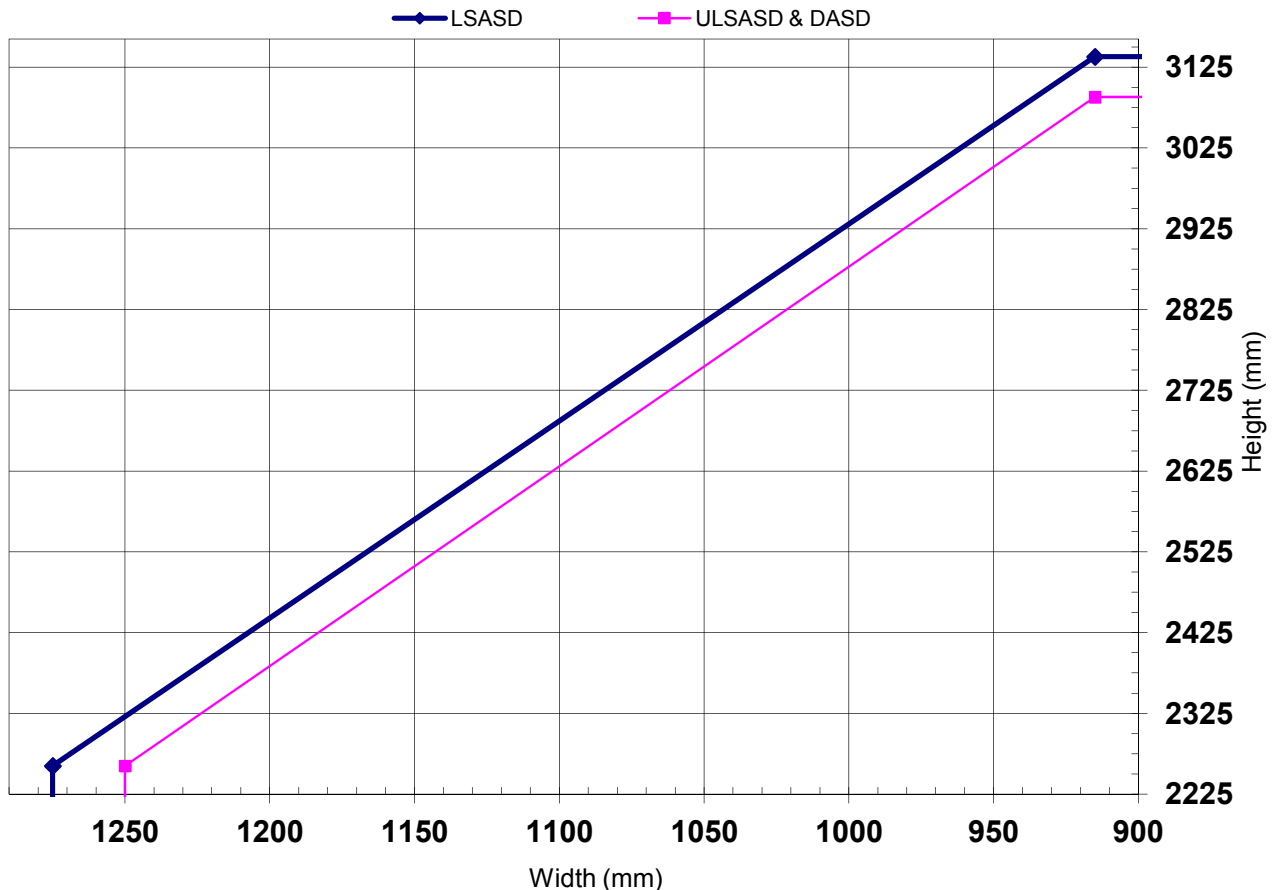


The legal validity of this report can only be claimed on presentation of the complete report.

Deanta Wood – MDF Faced Flush Doorsets
Latched and Unlatched Single Acting & Double Acting Single Doorsets

	Configuration		Height (mm)	Width (mm)
Leaf Sizes	LSASD	From:	2260	x 1275
		To:	3138	x 915
	ULSASD & DASD	From:	2260	x 1250
		To:	3088	x 915
Maximum Overpanel height (mm)		Transomed	2000	
Glazing	Maximum Glazed Area:		1.47 m ²	
	Approved systems:		See section 9 and appendix B	
Frame specification (see section 10)	Material:		Softwood or Hardwood	
	Min. Section (mm):		70 x 30	
	Min. Density(kg/m ³):		550	
Intumescent Materials: Rigid Box Seal – Pyroplex Ltd				
Head, Square: 1 No 15 x 4mm exposed and centrally fitted in the leaf edge or frame reveal. Leaves over 2450mm high, increase seal at head to 20 x 4mm.				
Jambs & Overpanel: 1 No 15 x 4mm exposed and centrally fitted in the leaf edge or frame reveal.				
Hardware Protection: See section 12.				

Maximum Door Leaf Size



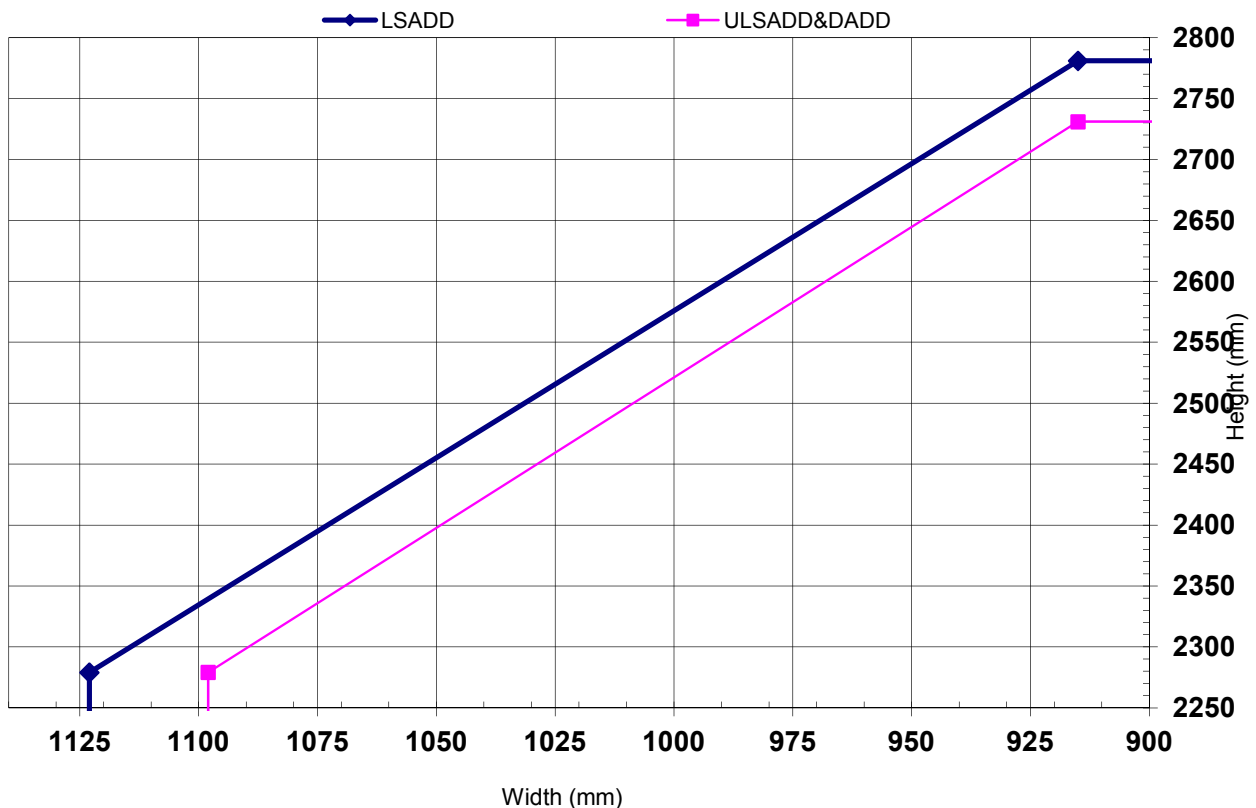
The legal validity of this report can only be claimed on presentation of the complete report.

Deanta Wood – MDF Faced Flush Doorsets

Latched and Unlatched Single Acting & Double Acting Double Doorsets

	Configuration		Height (mm)		Width (mm)	
Leaf Sizes	LSADD	From:	2279	x	1123	
		To:	2781	x	915	
	ULSADD & DADD	From:	2279	x	1098	
		To:	2731	x	915	
Maximum Overpanel height (mm)	Transomed		1500			
Glazing	Maximum Glazed Area:		1.47 m ²			
	Approved systems:		See section 9 and appendix B			
Frame specification (see section 10 for details)	Material:		Softwood or Hardwood			
	Min. Section (mm):		70 x 30			
	Min. Density(kg/m ³):		550			
Intumescent Materials: Rigid Box Seal – Pyroplex Ltd						
<p>Head, Square: 1 No 15 x 4mm exposed and centrally fitted in the leaf edge or frame reveal. Leaves over 2450mm high, increase seal at head to 20 x 4mm.</p> <p>Jams & Overpanel: 1 No 15 x 4mm exposed and centrally fitted in the leaf edge or frame reveal.</p> <p>Meeting Edges: Square: 1 No 15 x 4mm exposed and centrally fitted in both leaf edges</p> <p>Hardware Protection: See section 12.</p>						

Maximum Door Leaf Size



The legal validity of this report can only be claimed on presentation of the complete report.