

# Global Fire resistance Assessment

**Sponsor:**

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## CONFIDENTIAL

**Report:** Chilt/A09243 Revision B

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Global Fire Resistance Assessment of Safeguard Doorsets  
for 30 Minutes Fire Resistance

**Valid From:** 29<sup>th</sup> April 2014

**Valid Until:** 29<sup>th</sup> April 2019

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**BM TRADA – the new name for Chiltern International Fire Ltd.**

From July 1<sup>st</sup> 2013, Chiltern International Fire Ltd. commenced trading under the name of its parent company BM TRADA and at the same time adopted a brand new visual identity.

Historically, the group has delivered its services through a number of individual companies: BM TRADA Certification Ltd, TRADA Technology Ltd, Chiltern International Fire Ltd. (including Chiltern Dynamics) and a network of international offices. Both BM TRADA Group and these individual companies will now trade under the same name - BM TRADA - and adopt the new visual identity.

To coincide with this change, our Technical Reports, Test Reports, Products Assessments, company stationery and marketing collateral have been re-designed to carry the new branding and visual identity.

The validity of all documents previously issued by the individual companies including certificates, test reports and product assessments is unaffected by this change and a letter to this effect will be available to download from our website [www.bmtradagroup.com](http://www.bmtradagroup.com).

**About BM TRADA**

With origins dating back to 1934, we have a deep history and services which are highly valued by our customers. We offer independent certification, testing, inspection, training and technical services around the world. In all these areas we continue to use industry-leading experts in their chosen fields to develop and deliver services – an ethos that has been at the heart of our approach since we began.

A recent review of our businesses and customers revealed that the individual identities sometimes make communications confusing, and that in an already complex business area, clarity and simplicity in communications is rare, but valued. It also revealed that a single identity and combined offer would help us strengthen our appeal.

With this in mind, we brought the companies together under the name BM TRADA and took the opportunity to create a fresh new visual identity.

We have modernised our image and combined our strengths. However, our values, our people and the integrity of our services remain the same. I hope you will welcome these changes and the improvements they will bring.



Jon Osborn  
Chief Operating Officer

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## 1 Introduction

This document constitutes a global assessment to collate the fire resistance test evidence for Pacific Rim Wood Ltd. Safeguard 30 minute fire resisting doorsets, a construction manufactured by P.T. Kutai Timber of Indonesia. The assessment uses established extrapolation and interpretation techniques in order to extend the scope of application. It does this 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 construction of Safeguard 30 minute door leaves includes the following basic components in the design:

Element	Species/type	Configuration (all dims in mm)	Min. Density (kg/m <sup>3</sup> )
<b>Core</b>	Anisoptera species, Palaiium species, Calophyllum species, Tarrietia Javanica	3 layers of lamels laid in alternate directions – grooved to accept the stiles and rails	525
<b>Stiles</b>	'Mixed tropical hardwood'	1No. 26 - 36 thick (depending on facing thickness) x 35 deep, incorporating a 9 x 9 tongue to locate into the core material	610
<b>Top &amp; Bottom Rails</b>	'Mixed tropical hardwood'	1No. 26 - 36 thick (depending on facing thickness) x 35 deep, incorporating a 9 x 9 tongue to locate into the core material	610
<b>Top Rails (for leaves &gt;2135 x 915mm)</b>	'Mixed tropical hardwood'	1No. 26 - 36 thick (depending on facing thickness) x 70 deep, incorporating a 9 x 9 tongue to locate into the core material	610
<b>Facings</b>	Various timber based products – see section 10 for details	Between 3.6 – 9mm – see section 10 for details	Various
<b>Lippings</b>	Hardwood	6 to 18	640

The Safeguard design is supplied with stiles and rails to the specification in the table above. The stiles and bottom rail may either remain in position or be removed for manufacturing since the testing has evaluated constructions with and without these elements.

### Notes:

- Care must be taken to observe the restrictions that apply to the Safeguard 30 design depending on the type and thickness of the facing material used. The restrictions are referenced in the data sheets in appendix D.

### 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
LSASD & ULSASD	Latched & unlatched, single acting, single doorset
DASD	Double acting, single doorset
LSASD+OP & ULSASD+OP	Latched & unlatched, single acting, single doorset with overpanel
DASD+OP	Double acting, single doorset with overpanel
LSADD & ULSADD	Latched & unlatched, single acting, double doorset
DADD	Double acting, double doorset
LSADD+OP & ULSADD+OP	Latched & unlatched, single acting, double doorset with overpanel
DADD+OP	Double acting, double doorset with overpanel

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

### 5 Leaf Size Adjustment

Safeguard 30 door leaves may be altered as follows:

Element	Reduction
Leaf	Door leaves of this design have been tested in single and double leaf configuration both with and without stiles and bottom rails. This therefore permits the door leaves to be reduced in height and/or width without restriction, providing that reduction in height is made from the bottom edge only and the top rail remains in position
Lipping	The dimensions stated in section 9 may be reduced by 20% for fitting purposes

## 6 Overpanels, Fanlights & Side Screens

### 6.1 Overpanels

Overpanels of the same construction as the door leaves may be used either flush with the leaf heads or when separated by a transom. In either case the overpanel must be fully contained within the door frame (see following diagram). The following parameters apply:

- All Safeguard 30 designs may be used in conjunction with an overpanel fitted with a transom.
- For flush overpanel configurations the door leaves and overpanel must be constructed using 4mm plywood faced Safeguard only.

If a transom is used it must be to the same specification as the timber door frame (see section 8). Door frame joints must utilise one of the following four methods: mortise and tenon joints; half lapped joints; mitre joints; butt joints (see section 8.2).

All methods require 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 by the following method:

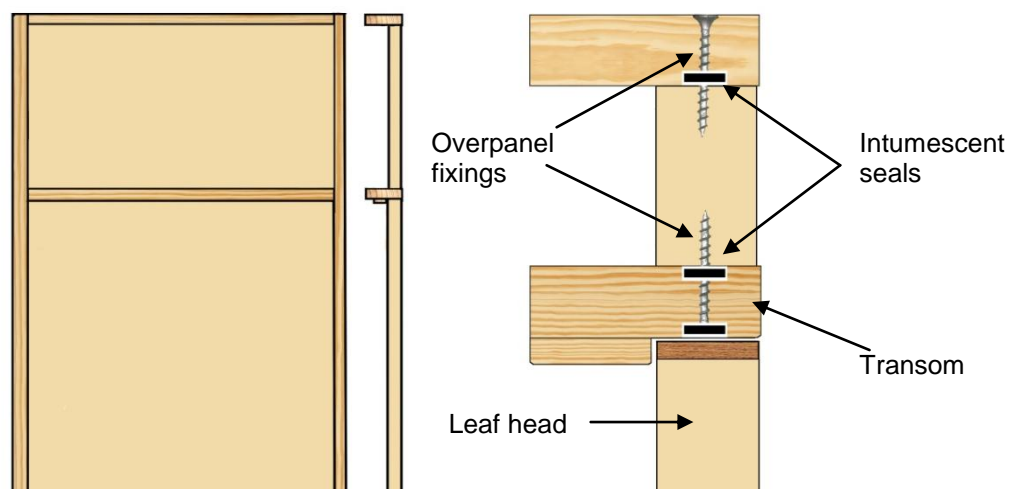
- Steel screws inserted through the rear of the door frame, passing at least 30mm into the centre line of the overpanel. Fixings must be no more than 100mm from each corner and a maximum of 250mm centres in between.

Maximum overpanel heights are as follows:

- Single doorsets - 2000mm
- Double doorsets - 1500mm

The intumescent seals specified for the jambs in appendix D, must also be fitted to all edges of the overpanel. The seals may be fitted in the overpanel edges or alternatively in the frame reveal.

It is permitted to include a glazed aperture within the overpanel providing the glazing is within the parameters given in section 7 and the overpanel is fitted with a transom.



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



**6.2 Glazed Fanlights & Side Screens**

**6.2.1 General**

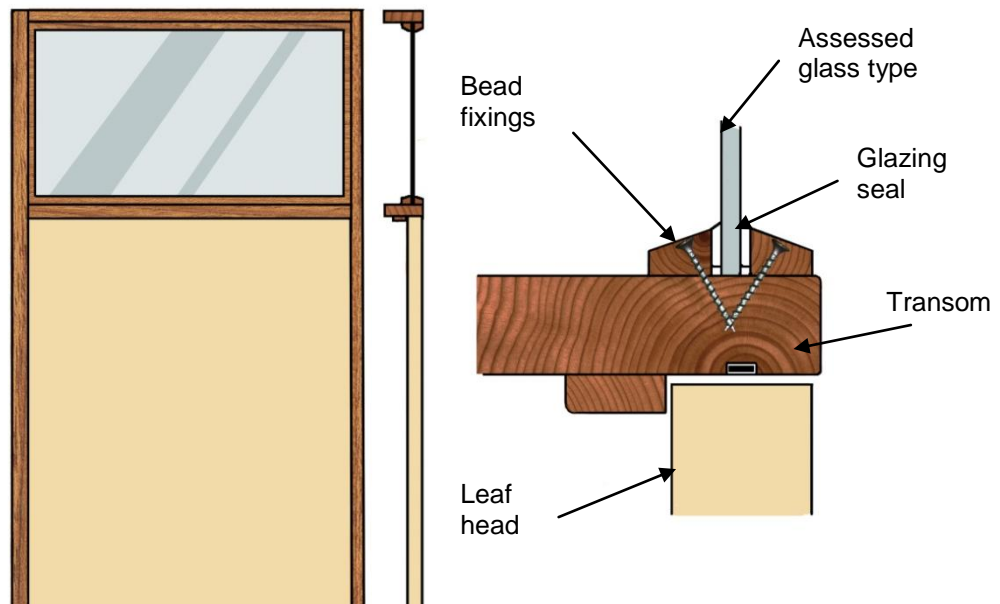
It is our opinion that Safeguard 30 doorsets may include glazed fanlights or side screens. The timber frame and glazing beads must be hardwood with a minimum density of 640kg/m<sup>3</sup>, whilst the frame section must be a minimum of 70mm x 44mm. Timber door frame and transom construction must comply with the specification contained in section 8.

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
Side Screen	Single & double doorsets	Overall door height	≤600

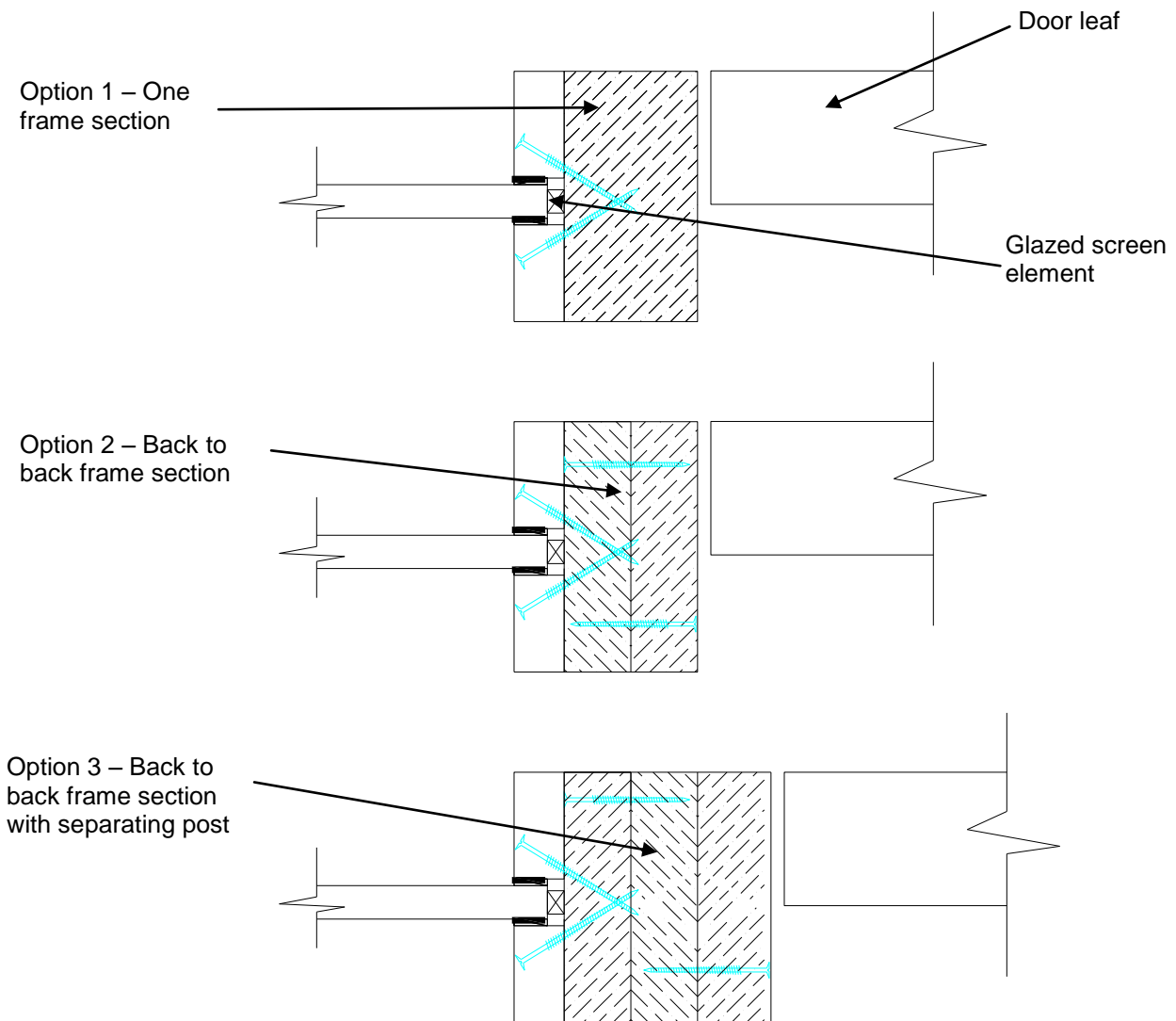
MDF and softwood frame doorsets are not assessed for glazed fanlights or side screens.



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

**6.3 Common Frame Sections – Glazed Screens**

The following drawings depict possible constructions of common frame sections for the screens and door frame jambs:



When using separate sections of timber, as shown above (option 2 and 3), each section must be suitably fixed to one another using appropriate steel screw fixings and glued using one of the adhesives approved for the lipping in the adhesive section of this report. Screws must be fixed at 600mm centres and locate to approx 2/3 depth of the adjacent timber section. The overall frame section and material must match that given in this assessment for each glass type and glazing specification. Joints must be tight with no gaps.

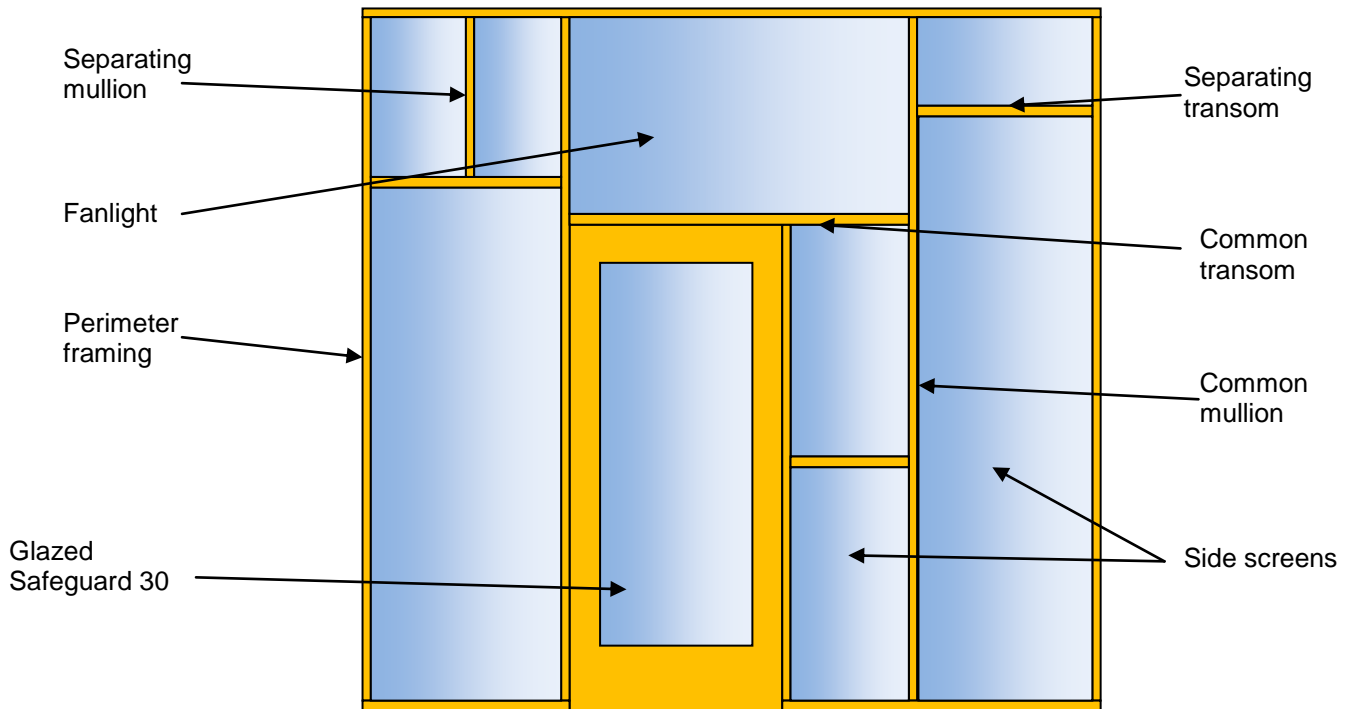
It is permitted to include maximum 3mm (w) x 3mm (d) quirks at the junction of each timber section for option 2 and 3.

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



## 6.4 Screen Elevations

The following drawing depicts a possible door and glazed screen configuration. The diagram is for information only. All details to remain as specified herein.



## 6.5 Specific Glass Types

The following sections provide a scope of approval for different glass types when used for glazing fanlights or side screens. Fanlights may be used in conjunction with side screens subject to the specification given for each of the glass types.

Unless stated in the following sections, all construction details for the doorset must remain as specified in the main assessment.

### 6.5.1 Pyroguard EW30 (7mm thick) – CGI Ltd.

Transom/mullion details:

- Minimum 75mm deep x 40mm thick softwood or hardwood (minimum density 510kg/m<sup>3</sup>). This timber section can be used for both door jambs and transoms above doors included within screens, and for the perimeter framing of the screen, and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 15mm high x 32mm deep hardwood beads (minimum density 640kg/m<sup>3</sup>). The bead shape may be square or incorporate a 10 - 15° chamfer.
- 50mm long size 6 - 8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30° to the plane of the glass.
- 10mm x 2mm Interdens located between the glass and the beads.
- 5mm high x 7mm wide x 40mm long hardwood or non-combustible setting blocks with 5mm expansion allowance to all edges.

Maximum single pane dimensions:

Screen Element		Height (mm)	Width (mm)
Fanlight	From	1074	808
	To	808	2600
Side Screen		2500	1000

- The pane dimensions given above represent the maximum permitted width against maximum permitted height. Panes with smaller dimensions are acceptable.
- Transoms supporting single panes above 900mm wide must be centrally supported by at least one vertical mullion.

Multiple panes:

- The fanlights and side screens may comprise multiple panes of glass providing the total doorset and screen assembly does not exceed 2950mm high and the transom/mullion restrictions above are complied with.

Leaf configurations and screen dimensions:

- The total width of the screen assembly is unlimited.
- The screen assembly may only contain 1No. single or double leaf doorset.

### 6.5.2 Pyroguard EW30 MAXI (11mm thick) – CGI Ltd.

Transom/mullion details:

- Minimum 75mm deep x 40mm thick hardwood (minimum density 640kg/m<sup>3</sup>). This timber section can be used for both door jambs and transoms above doors included within screens, and for the perimeter framing of the screen, and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 30mm deep hardwood beads (minimum density 640kg/m<sup>3</sup>). The bead shape may be square or incorporate a 10 - 15° chamfer.
- 50mm long size 6 - 8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30° to the plane of the glass.
- 10mm x 2mm Interdens located between the glass and the beads.
- 5mm high x 11mm wide x 40mm long hardwood or non-combustible setting blocks with 5mm expansion allowance to all edges.

Maximum single pane dimensions:

Screen Element		Height (mm)	Width (mm)
Fanlight	From	967	2525
	To	808	3000
Side Screen		2700	1500

- The pane dimensions given above represent the maximum width against maximum height. Panes with smaller dimensions are acceptable.

Multiple panes:

- The fanlights and side screens may comprise multiple panes of glass providing the total doorset and screen assembly does not exceed 2950mm high and the transom/mullion restrictions above are complied with.

Leaf configurations and screen dimensions:

- The total width of the screen assembly is unlimited.
- The screen assembly may only contain 1No. single or double leaf doorset.

### 6.5.3 Pyroguard EI30 (15mm thick) – CGI Ltd.

Transom/mullion details:

- Minimum 80mm deep x 40mm thick hardwood (minimum density 640kg/m<sup>3</sup>). This timber section can be used for both door jambs and transoms above doors included within screens, and for the perimeter framing of the screen, and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 23mm deep hardwood beads (minimum density 640kg/m<sup>3</sup>). The bead shape may be square or incorporate a 10 - 15° chamfer.
- 50mm long size 6 - 8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30° to the plane of the glass.
- 7mm x 2mm Egopren glazing tape located between the glass and the beads.
- 15mm x 2mm Kerafix Pan 200 edge seal fitted around edge of glass.
- 3mm high x 15mm wide x 80mm long hardwood or non-combustible setting blocks with 5mm expansion allowance to all edges.

Maximum single pane dimensions:

Screen Element		Height (mm)	Width (mm)
Fanlight		350	2890
Side Screen	From	2520	225
	To	1141	1100

- The pane dimensions given above represent the maximum width against maximum height. Panes with smaller dimensions are acceptable.
- Transoms supporting single panes above 1100mm wide must be centrally supported by at least one vertical mullion.

Multiple panes:

- The fanlights and side screens may comprise multiple panes of glass providing the total doorset and screen assembly does not exceed 2950mm high and the transom/mullion restrictions above are complied with.

Leaf configurations and screen dimensions:

- The total width of the screen assembly is unlimited.
- The screen assembly may only contain 1No. single or double leaf doorset.

**6.5.4 Pyroshield 2 (6mm thick) – Pilkington Group Ltd.**

Transom/mullion details:

- Minimum 80mm deep x 44mm thick softwood or hardwood (minimum density 510kg/m<sup>3</sup>). This timber section can be used for both door jambs and transoms above doors included within screens, and for the perimeter framing of the screen, and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 15mm high x 20mm deep hardwood beads (minimum density 640kg/m<sup>3</sup>) with an 18° chamfer.
- 40mm long size 6 - 8 steel wood screws at maximum of 50mm from corners and 150mm centres inserted at 45° to the glass.
- 10mm x 2mm Interdens located between the glass and the beads.
- 3mm high x 6mm wide x 40mm long hardwood or non-combustible setting blocks fitted at 300mm centres along bottom edge of glass with 3mm expansion allowance to all edges.

Maximum single pane dimensions:

Screen Element	Height (mm)	Width (mm)
Fanlight	810	1830
Side Screen	2040	485

- The pane dimensions given above represent the maximum permitted width against maximum permitted height. Panes with smaller dimensions are acceptable.

Multiple panes:

- The fanlights and side screens may comprise multiple panes of glass providing the total doorset and screen assembly does not exceed 2950mm high and the transom/mullion restrictions above are complied with.

Leaf configurations and screen dimensions:

- The total width of the screen assembly is unlimited.
- The screen assembly may only contain 1No. single or double leaf doorset.

**6.5.5 Pyrodur 30-104 (7mm thick) – Pilkington Group Ltd.**

Transom/mullion details:

- Minimum 80mm deep x 44mm thick hardwood (minimum density 640kg/m<sup>3</sup>). This timber section can be used for both door jambs and transoms above doors included within screens, and for the perimeter framing of the screen, and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 20mm deep hardwood beads (minimum density 640kg/m<sup>3</sup>) with a 15° chamfer.
- 40mm long size 6 - 8 steel wood screws at maximum of 50mm from corners and 150mm centres inserted at 30° to the glass.
- 20mm x 2mm Interdens located between the glass and the beads.

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- 3mm high x 6mm wide x 40mm long hardwood or non-combustible setting blocks fitted at 300mm centres along bottom edge of glass with 3mm expansion allowance to all edges.

Maximum single pane dimensions:

Screen Element	Height (mm)	Width (mm)
Fanlight	810	1670
Side Screen	2057	956

- The pane dimensions given above represent the maximum permitted width against maximum permitted height. Panes with smaller dimensions are acceptable.

Multiple panes:

- The fanlights and side screens may comprise multiple panes of glass providing the total doorset and screen assembly does not exceed 2950mm high and the transom/mullion restrictions above are complied with.

Leaf configurations and screen dimensions:

- The total width of the screen assembly is unlimited.
- The screen assembly may only contain 1No. single or double leaf doorset.

## 6.5.6 Pyrodur 60-10 (10mm thick) – Pilkington Group Ltd.

Transom/mullion details:

- Minimum 80mm deep x 44mm thick hardwood (minimum density 640kg/m<sup>3</sup>). This timber section can be used for both door jambs and transoms above doors included within screens, and for the perimeter framing of the screen, and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 20mm deep hardwood beads (minimum density 640kg/m<sup>3</sup>) with a 15° chamfer.
- 40mm long size 6 - 8 steel wood screws at maximum of 50mm from corners and 150mm centres inserted at 30° to the glass.
- 20mm x 2mm Interdens located between the glass and the beads.
- 3mm high x 6mm wide x 40mm long hardwood or non-combustible setting blocks fitted at 300mm centres along bottom edge of glass with 3mm expansion allowance to all edges.

Maximum single pane dimensions:

Screen Element	Height (mm)	Width (mm)
Fanlight	810	1670
Side Screen	2057	956

- The pane dimensions given above represent the maximum permitted width against maximum permitted height. Panes with smaller dimensions are acceptable.

Multiple panes:

- The fanlights and side screens may comprise multiple panes of glass providing the total doorset and screen assembly does not exceed 2950mm high and the transom/mullion restrictions above are complied with.

Leaf configurations and screen dimensions:

- The total width of the screen assembly is unlimited.
- The screen assembly may only contain 1No. single or double leaf doorset.

**6.5.7 Pyrostop 30-10 (15mm thick) – Pilkington Group Ltd.**

Transom/mullion details:

- Minimum 95mm deep x 44mm thick hardwood (minimum density 640kg/m<sup>3</sup>). This timber section can be used for both door jambs and transoms above doors included within screens, and for the perimeter framing of the screen, and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 37mm deep hardwood beads (minimum density 640kg/m<sup>3</sup>). Can be square or chamfered.
- 60mm long size 6 - 8 steel wood screws at maximum of 50mm from corners and 150mm centres inserted at 45° to the glass.
- 12mm x 3mm Hodgsons Sealants Firestrip 30 located between the glass and the beads.
- 5mm high x 15mm wide x 40mm long hardwood or non-combustible setting blocks fitted at 300mm centres along bottom edge of glass with 5mm expansion allowance to all edges.

Maximum single pane dimensions:

Screen Element	Height (mm)	Width (mm)
Fanlight	733	1001
Side Screen	2870	1366

- The pane dimensions given above represent the maximum permitted width against maximum permitted height. Panes with smaller dimensions are acceptable.

Multiple panes:

- The fanlights and side screens may comprise multiple panes of glass providing the total doorset and screen assembly does not exceed 2950mm high and the transom/mullion restrictions above are complied with.

Leaf configurations and screen dimensions:

- The total width of the screen assembly is unlimited.
- The screen assembly may only contain 1No. single or double leaf doorset.



**6.6 Norsound Vision Glazing Systems – Fanlights & Side Screens**

**6.6.1 General**

Timber framed doorsets may include glazed fanlights and/or side screens.

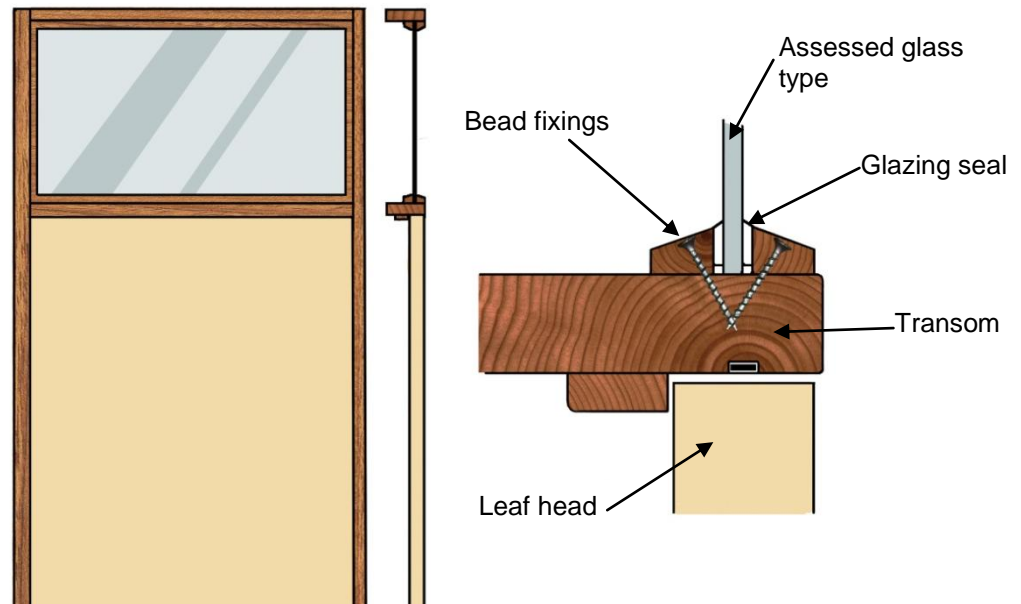
The glazing system and beads must meet the specification shown in sections 6.6.4 – 6.6.6.

The door frame and screen framing construction must comply with the specification shown in section 6.6.7.

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

- The 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
Side Screen	Single & double doorsets	Overall door height	≤600

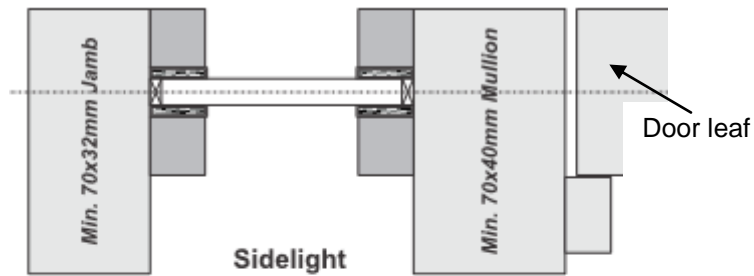


**Note:** Drawing is representative of doorset construction only; actual construction must be as the text within this document specifies.

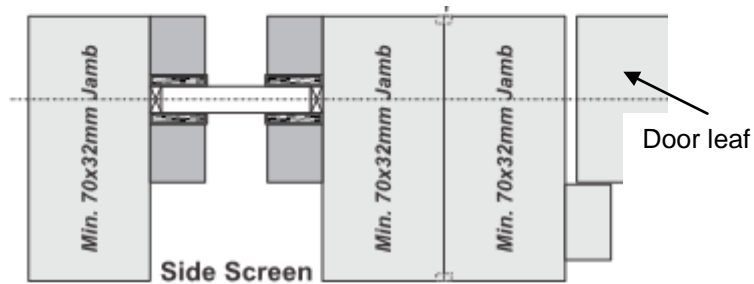
**6.6.2 Common Frame Sections – Norsound Vision Glazing System**

The following drawings depict possible constructions of common frame sections for screens and door frame jambs:

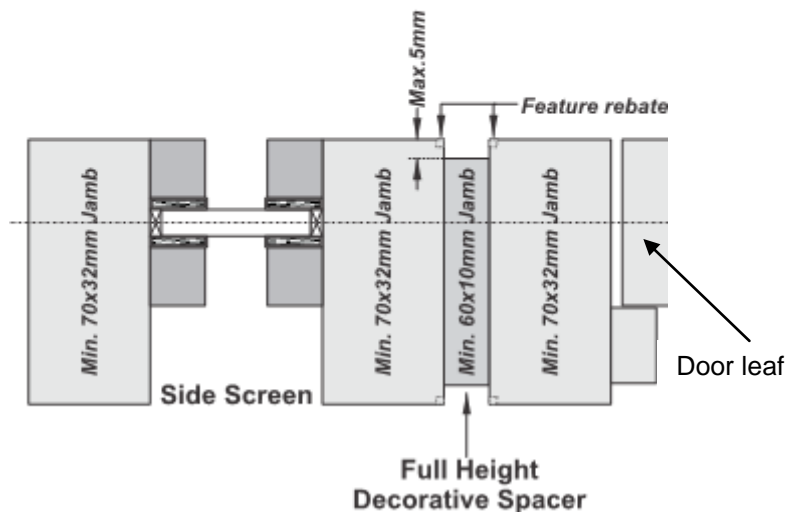
Option 1 – One frame section



Option 2 – Back to back frame section



Option 3 – Back to back frame section with separating post, which may be rebated by a maximum of 5mm, as shown



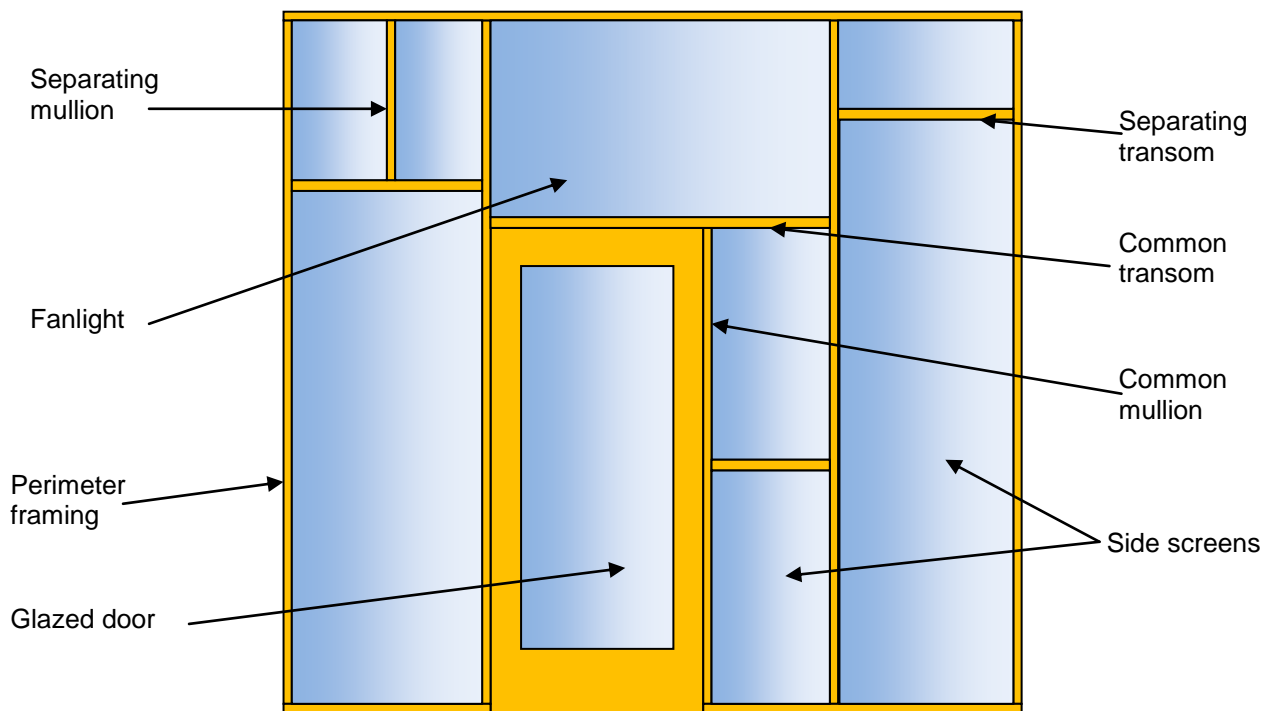
When using separate sections of timber, as shown above (options 2 and 3), each section must be suitably fixed to one-another using appropriate steel screw fixings and glued using Urea Formaldehyde or polyurethane. Screws must be fixed at 600mm centres and locate to approx 2/3 depth of the adjacent timber section. The overall frame section and material must match that given in this assessment for each glass type and glazing specification. Joints must be tight with no gaps.

It is permitted to include maximum 3mm (w) x 3mm (d) quirks/pencil rounds at the junction of each timber section for options 2 and 3.

Drawings are representative of each type of common frame section makeup; actual construction in terms of intumescent seal location and material, etc. must be as the text within this document specifies.

### 6.6.3 Screen Elevation – Norsound Vision Glazing System

The following drawing depicts a possible door and glazed screen configuration. The diagram is for information only. All construction details to remain as specified herein.



## 6.6.4 Glazing Beads & Installation – Norsound Vision Glazing System

Glazing beads and intumescent materials must be installed in line with the following sections:

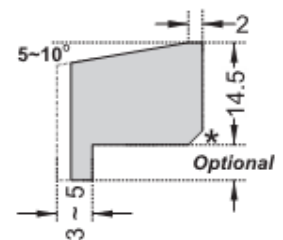
System Name		Norsound Vision 30B	Norsound Vision 30T
Typical Installation		<p>Glass &amp; Beading system to align with centre thickness of the door leaf</p> <p>TRANSOM</p> <p>DOOR LEAF</p> <p>Min. 70mm</p> <p>Min. 32mm (40mm for Mullions)</p> <p>Nom. 0.5mm</p>	<p>Glass &amp; Beading system to align with centre thickness of the door leaf</p> <p>TRANSOM</p> <p>DOOR LEAF</p> <p>Min. 70mm</p> <p>Min. 32mm (40mm for Mullions)</p> <p>Nom. 0.5mm</p>
Dimensions	Bead height (mm)	Nominally 14.5	Nominally 14.5
	Intumescent Seals	15 high x 3 thick	15 high x 3 thick + 'plug'
Aperture Liner		Not required	Not required

## 6.6.5 Norsound Vision 30B & 30T Applications

The following bead designs have been assessed as acceptable for Norsound Vision 30B:

### Norsound Vision 30B Flush Bead Types

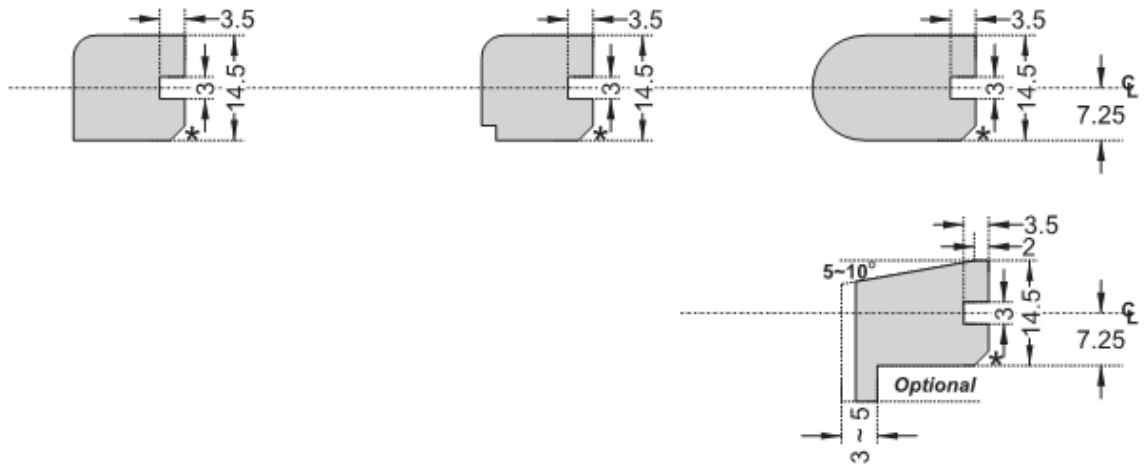
**NOTE 1:** \* = 2mm Splay applies to all bead profile types.



The following bead designs have been assessed as acceptable for Norsound Vision 30T:

**NOTE 1:** \* = 2mm Splay applies to all bead profile types.

**Norsound Vision 30T Flush Bead Types**



**Notes:**

1. Bead height must be nominally 14.5mm.
2. The intumescent seal component of Norsound Vision 30B and 30T is 15mm high and is required to project 0.5mm above the sightline of the bead.
3. The position of the groove in the rear of the bead is therefore critical for installation of Norsound Vision 30T.
4. Glazing beads must be retained in position with minimum 40mm long x 1.5mm diameter steel pins or minimum 40mm long No. 6 - 8 screws, inserted at 35 - 40° to the vertical, at no more than 40mm from each corner and at 150mm maximum centres.
5. Pneumatically fired pins are acceptable providing the pins meet the specification given above.

**6.6.6 Glazing Bead Material – Norsound Vision Glazing System**

All timber for glazing beads must be straight grained, joinery quality (MDF, softwood or hardwood as specified in the table below), free from knots, splits and checks.

Integrity Performance	Bead Profile	Material	Min. Density (kg/m <sup>3</sup> )
30	All in section 6.6.5	Softwood	450
		Hardwood	
		MDF	700

**6.6.7 Timber Screen Framing – Norsound Vision Glazing System**

Timber used for constructing framing elements comprising screen assemblies as illustrated in section 6.6.3 must meet the following specification:

<b>Element</b>	<b>Material</b>	<b>Min. Section Size (mm)</b>	<b>Min. Density (kg/m<sup>3</sup>)</b>
Perimeter screen framing	Hardwood	70 x 32	640
Mullions & transoms separating glass panes with side screens & fanlights	Hardwood	70 x 32	640
Back to back mullions separating side screens & doorsets (options 2 & 3)	Hardwood	70 x 32	640
Transoms common to doorsets & fanlights	Hardwood	70 x 40	640
Mullions common to doorset jambs & side screens	Hardwood	70 x 40	640

**Notes:**

1. Timber for side screens must meet or exceed class J30 as specified in BS EN 942: 2007 (subject to adequate repair of any defects).
2. The fanlights and side screens may comprise multiple panes of glass providing the total doorset and screen assembly does not exceed 2950mm high and the transom/mullion restrictions above are complied with.
3. Gaps between glass and framing to permit expansion should be set according to the glass manufacturer’s information, using non-combustible or hardwood setting blocks at the bottom edge.

**7 Glazing**

**7.1 General**

Assessment of the Safeguard 30 design permits the inclusion of glazed apertures. Glazing is therefore acceptable within the following parameters:

The maximum assessed glazed area for all configurations is 1.15m<sup>2</sup>. The glazing system must be one of the following assessed proprietary systems:



## 7.2 Assessed Glazing Systems

Glazing System	Manufacturer	Max. Area (m <sup>2</sup> )
1. Fireglaze 30	Sealmaster Ltd.	1.15
2. Firestrip 30	Hodgsons Sealants Ltd.	1.15
3. Therm-A-Strip 30	Intumescent Seals Ltd.	1.15
4. Pyroglaze 30	Mann McGowan Ltd.	0.72
5. Norsound Vision 30 <sup>1</sup>	Norsound Ltd.	1.15
6. Norsound Universal 30 <sup>2</sup>	Norsound Ltd.	1.15
7. 8193	Pyroplex Ltd.	0.72
8. 30049	Pyroplex Ltd.	0.72
9. 30054	Pyroplex Ltd.	0.72
10. System 36/6	Lorient Polyproducts Ltd.	0.72
11. System 36/6 Plus	Lorient Polyproducts Ltd.	0.72
12. Flexible Figure 1	Lorient Polyproducts Ltd.	0.72

### Notes:

1. See section 7.7 below for additional scope.
2. See section 7.8 below for additional scope.

## 7.3 Assessed Glass Products

Glass Type	Manufacturer	Thickness (mm)	Max. Area (m <sup>2</sup> )
1. Pyroshield	Pilkington Group Ltd.	6 & 7	1.15
2. Pyroshield 2	Pilkington Group Ltd.	6 & 7	1.15
3. Pyran S	Schott Glass Ltd.	6	1.15
4. Pyrostem	CGI Ltd.	6	1.15
5. Pyroclear 30-001 <sup>1</sup>	Pilkington Group Ltd.	6	0.43
6. Pyroguard EW30	CGI Ltd.	7	0.87
7. Pyrobelite 7	AGC Flat Glass UK	7	1.15
8. Pyrodur 30-104	Pilkington Group Ltd.	7	1.15
9. Pyrodur 60-10	Pilkington Group Ltd.	10	1.15
10. Pyroguard EW MAXI	CGI Ltd.	11	0.52
11. Pyranova 15-S2.0	Schott UK Ltd.	11	1.15
12. Pyrobelite 12	AGC Flat Glass UK	12	1.15
13. Pyrostop 30-10	Pilkington Group Ltd.	15	1.15
14. Pyrobel 16	AGC Flat Glass UK	16	1.15

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**Notes:**

1. Pilkington Pyroclear is limited to 0.43m<sup>2</sup> and may only be utilised with the tested glazing system as described in section 7.5 below.
2. All glass types must be fitted strictly in accordance with the manufacturer's tested details/installation requirements.
3. Glass types 10 - 14 are fully insulating in terms of the criteria set out in BS 476: Part 20: 1987.

**7.4 Glazing Beads & Installation**

Glazing beads must be from hardwood as specified in the following table:

Material	Profile	Min. Density (kg/m <sup>3</sup> )	Application
Hardwood	Splayed	640	All proprietary systems detailed in 7.2 and appendix B
Hardwood	Square	640	Proprietary systems 1, 2 & 3 as specified in 7.2 and glass types 6 - 14 as specified in 7.3

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/m<sup>3</sup> and glued in position using an adhesive type specified for the lippings (see section 12).

It is permitted to use a flush bead (i.e. a bead with no bolection return) with a chamfer providing all other details meet the specification given for the square bead option in the table above.

Glazing beads must be retained in position with 50mm long x 2mm diameter steel pins or 40mm long No. 6 - 8 screws, inserted at 35 - 40° to the vertical, at no more than 50mm from each corner and at 150mm maximum centres. Pneumatically fired pins are acceptable providing they meet the specification given above.

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 between apertures. Aperture shape is not restricted, providing the glazing system and beads are compatible with that shape.

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 5 - 13.

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

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

**7.5 Pyroclear 30-001 (6mm thick) – Pilkington Group Ltd.**

The following limitations will apply to Pilkington Pyroclear 30-001 glass type listed in section 7.3 above:

1. Hardwood (min. density 640kg/m<sup>3</sup>) glazing beads, 25mm high x 22mm deep with a 22° chamfer and a 5mm x 5mm bolection return.
2. Beads must be retained in position with 50mm long x 2mm diameter steel pins or 50mm long No. 6 - 8 steel screws, inserted at 45° to the vertical, at no more

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than 50mm from each corner and at 150mm maximum centres. Pneumatically fired pins are acceptable providing the pins meet the specification given above.

3. The glazing system is limited to systems 4, 8, 10 or 12 from section 7.2 above.
4. The glass must be fitted with maximum 10mm edge cover and allowing for 10mm expansion on all edges.
5. Aperture shape is not restricted, providing the glazing system and beads are compatible with that shape.
6. Timber for glazing beads must be hardwood, straight grained, joinery quality, free from knots, splits and checks.
7. Glazed openings must not be less than 100mm from any edge, with a minimum dimension of 80mm between apertures.
8. Multiple apertures are permitted, subject to point 7 above.

## 7.6 Improved Security Bead

A combined bead and lining can be used to deny access to fixings from one side of the door leaf to improve security.

All glazing details are to meet the specification given in section 7.1 - 7.5 unless otherwise stated below.

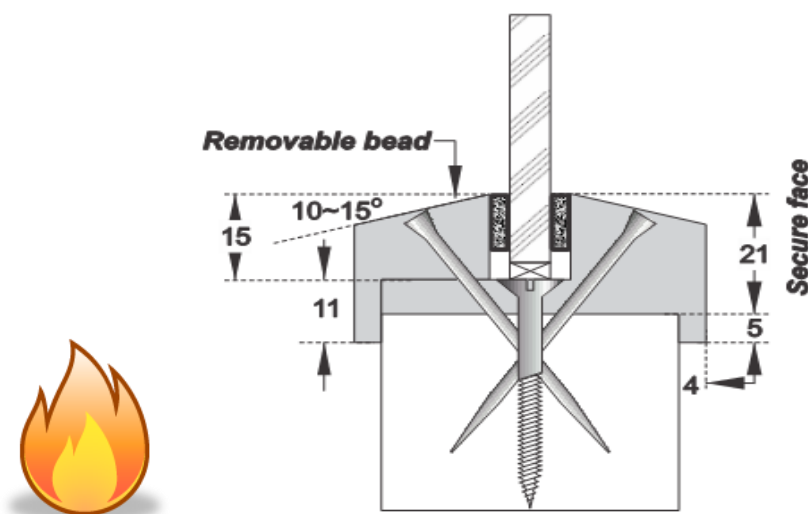
The aperture in the door must be lined using minimum 26mm thickness combined bead and lining in hardwood of minimum density 640kg/m<sup>3</sup>.

The combined bead and lining is bonded to the aperture in the door using the adhesive types approved for lippings (see section 12) and reinforced using No. 6 - 8 50mm long screw fixings located centre thickness of the door at 200mm centres.

The bead to the non-secure face must be retained in position with 50mm long x 2mm diameter steel pins or 50mm 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.

The bead profile must be appropriate for the glazing system selected.

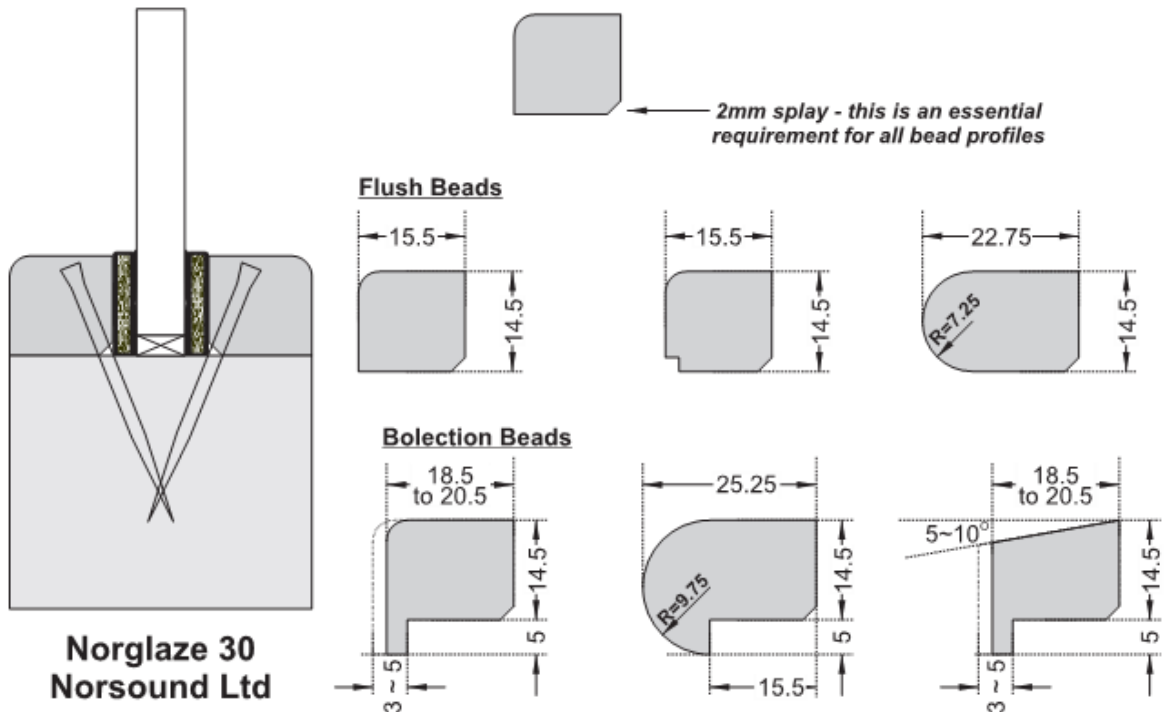
See diagram below for details:



## 7.7 Norsound Ltd. – Norsound Vision 30B & 30T

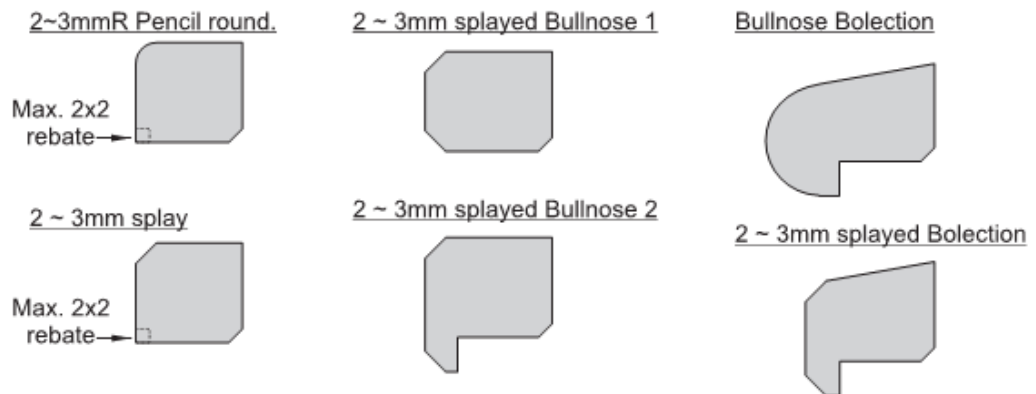
The Norsound Ltd. glazing system tested in IF12011 has the following scope of application in addition to that described in sections 7.2 – 7.5.

The Norsound Vision 30B is illustrated below:



### Alternative Bead Profiles

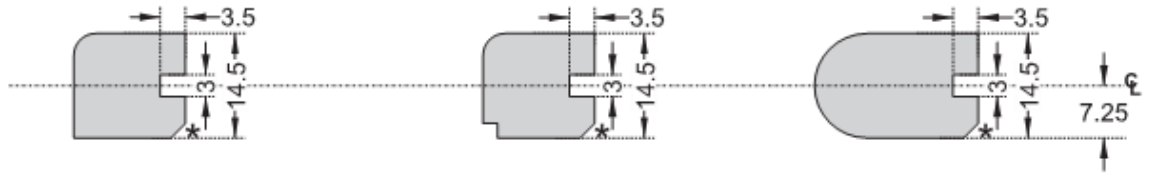
Note: When used with flush beads the maximum approved glass thickness for use in 44mm thickness doors is 8mm.



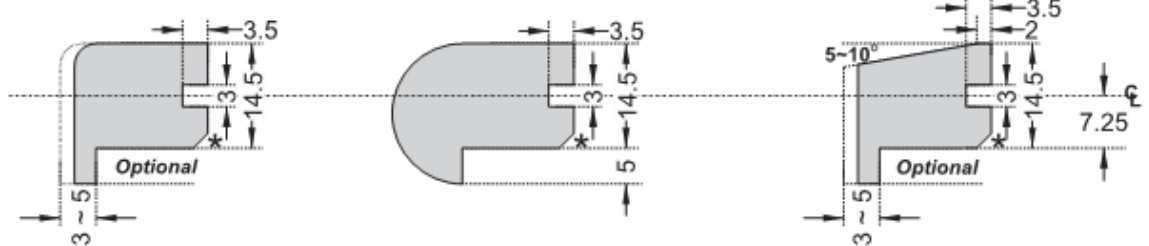
The Norsound Vision 30T glazing system may utilise the same range of bead shapes, as illustrated below:

**NOTE 1: \* = 2mm Splay applies to all bead profile types.**

**Typical Flush Bead Types:**



**Typical Bolection Bead Types:**



**Notes:**

1. Bead height must be nominally 14.5mm.
2. The intumescent seal component of Norsound Vision 30B and 30T is 15mm high and is required to project 0.5mm above the sightline of the bead.
3. The position of the groove in the rear of the bead is therefore critical for installation of Norsound Vision 30T.
4. Bolection returns should be a minimum of 5mm high, and a minimum of 3mm thick (projecting from the leaf face).
5. Glazing beads must be retained in position with minimum 40mm long x 1.5mm diameter steel pins, or minimum 40mm long No. 6 – 8 screws, inserted at 35 - 40° to the vertical, at no more than 40mm from each corner and at maximum 150mm centres.
6. Pneumatically fired pins are acceptable providing the pins meet specification given above.

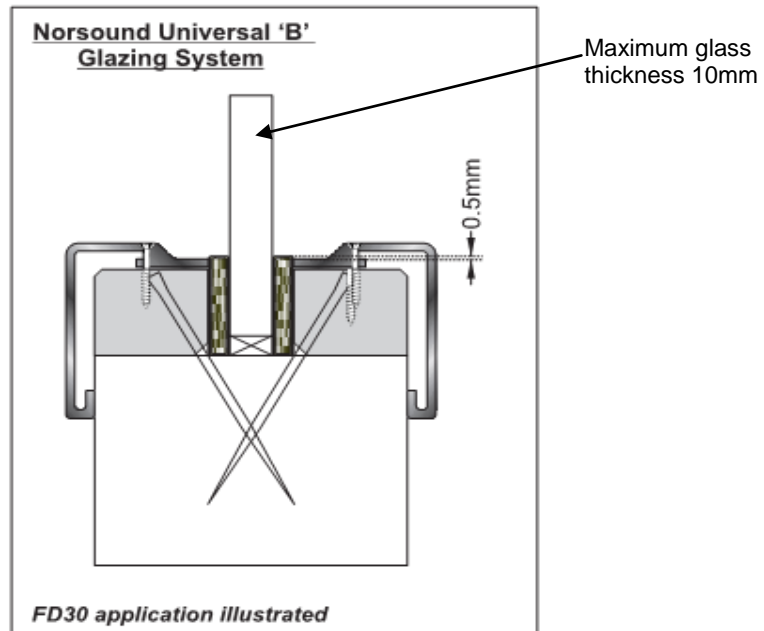
The bead type and permitted glass types must meet the following specification:

Bead Shape	Material	Min. Density (kg/m <sup>3</sup> )	Permitted Glass Types
Square flush	Straight grained, joinery quality softwood or hardwood, free from knots, splits and checks	450	1 – 8 excluding 5 (see section 7.3)
	MDF	700	
Bolection	Straight grained, joinery quality softwood or hardwood, free from knots, splits and checks	450	1 – 12 excluding 5 (see section 7.3)
	MDF	700	

**7.8 Norsound Ltd. – Norsound Universal 30B & 30T**

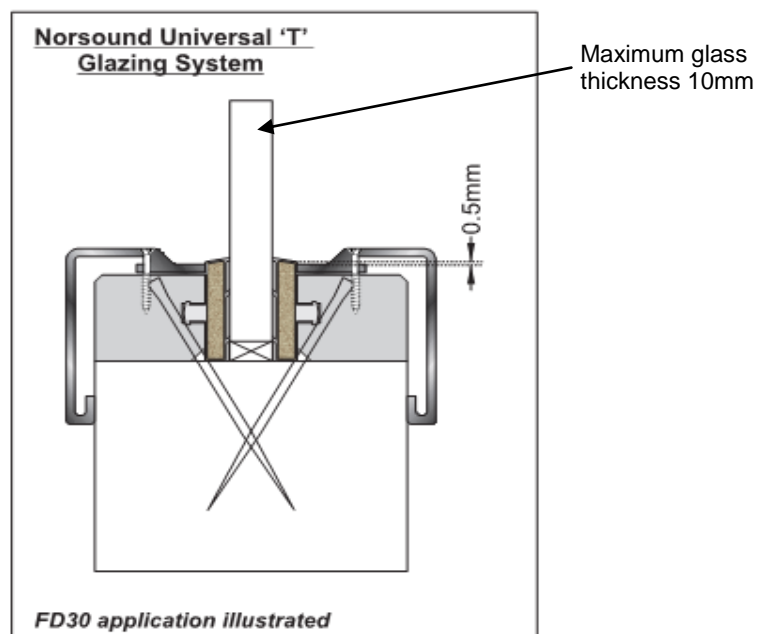
The Norsound Ltd. Universal glazing system has the following scope of application in addition to that described in sections 7.2 – 7.5.

The Norsound Universal 30B is illustrated below:



The Norsound Universal 30T glazing system has the following scope of application in addition to that described in sections 7.2 – 7.5.

The Norsound Universal 30T is illustrated below:





**Notes:**

1. Bead height must be nominally 13mm.
2. The intumescent seal component of Norsound Universal 30B & 30T is 15mm high and is required to project 0.5mm above the sightline of the bead.
3. The position of the groove in the rear of the bead is therefore critical for installation of Norsound Universal 30T.
4. Glazing beads must be retained in position with minimum 40mm long x 1.5mm diameter steel pins, or minimum 40mm long No. 6 – 8 screws, inserted at 35 - 40° to the vertical, at no more than 40mm from each corner and at 150mm maximum centres.
5. Pneumatically fired pins are acceptable providing the pins meet the specification given above.
6. The Norsound Universal aluminium section cladding the timber bead must be secured to the core bead by using 3No. 10 – 12mm No. 4 grub screws per length.
7. The intumescent seal must project nominally 0.5mm above the sight line of the beading.

The bead material and permitted glass types must meet the following specification:

Material	Min. Density (kg/m <sup>3</sup> )	Permitted Glass Types
Straight grained, joinery quality softwood or hardwood, free from knots, splits and checks	450	1 – 9 excluding 5 (see section 7.3)
MDF	700	1 – 9 excluding 5 (see section 7.3)

## 8 Door Frames

### 8.1 Door Frame Construction

Door frames for Safeguard 30 may be timber or MDF as follows:

Material	Min. Section (mm)	Min. Density (kg/m <sup>3</sup> )	Application	Leaf Size Range (mm)
Softwood or hardwood*	70 x 32	450	All configurations	All
MDF	70 x 30	700	All configurations	All

\*If the doorset features a transomed overpanel, the door frame must be softwood or hardwood (not MDF) with a minimum section of 70mm x 32mm and of the minimum densities stated above.

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. If frames are square, the maximum radius to the corners of the leaf is 8mm.

Frame joints may be mortice and tenoned, mitred, half lapped or butted and with no gaps (see section 8.2). All jointing methods require mechanical fixing with the appropriate size ring shank nails or screws.

All methods require joints to be tight, with no gaps, and nailed or screwed.

The following diagram depicts the assessed frame profiles and dimensions:

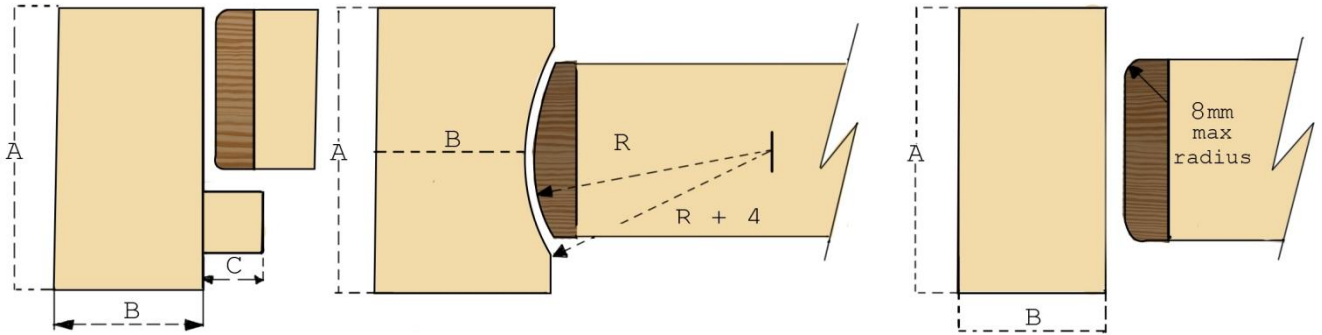
A = min 70mm

B = min 30 - 32mm (see table above)

C = min 12mm

R = radius from floor spring

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

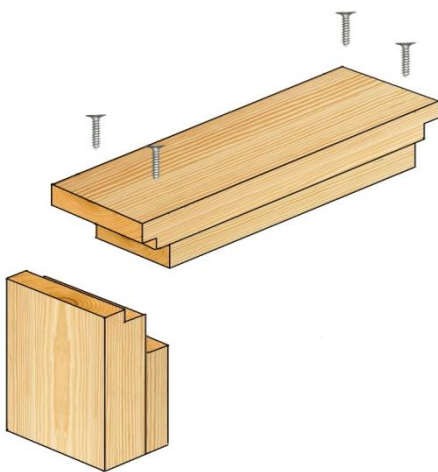


**Standard**

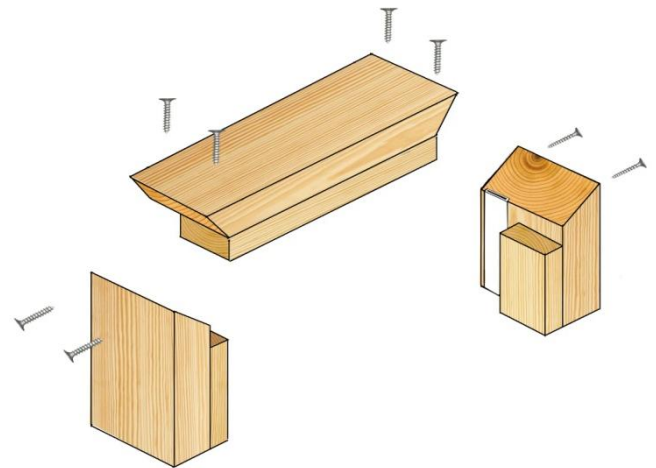
**Scalloped**

**Profiled edges**

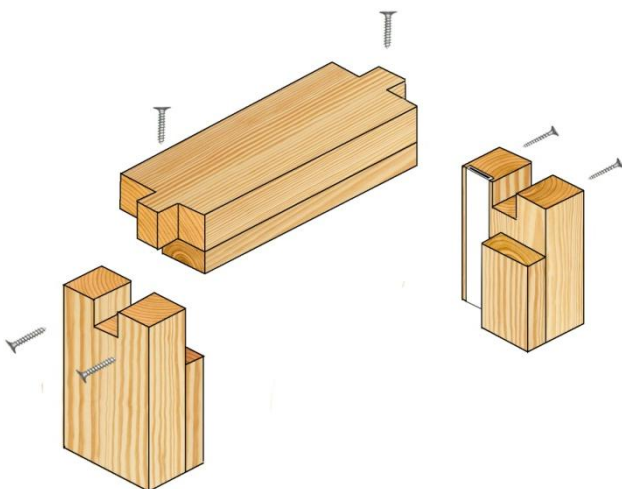
## 8.2 Door Frame Joints



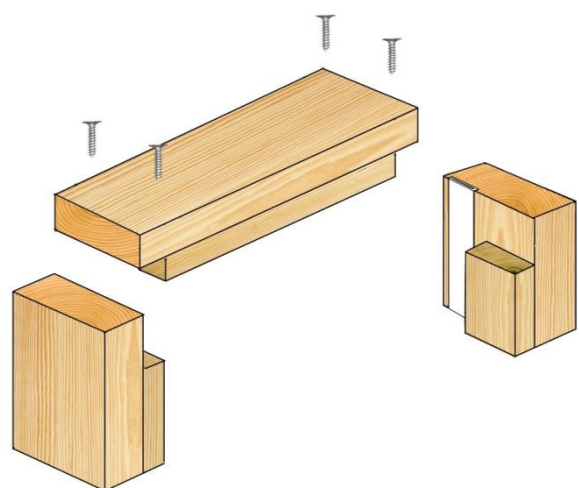
**Half Lapped Joint**



**Mitre Joint**



**Mortise & Tenon Joint**

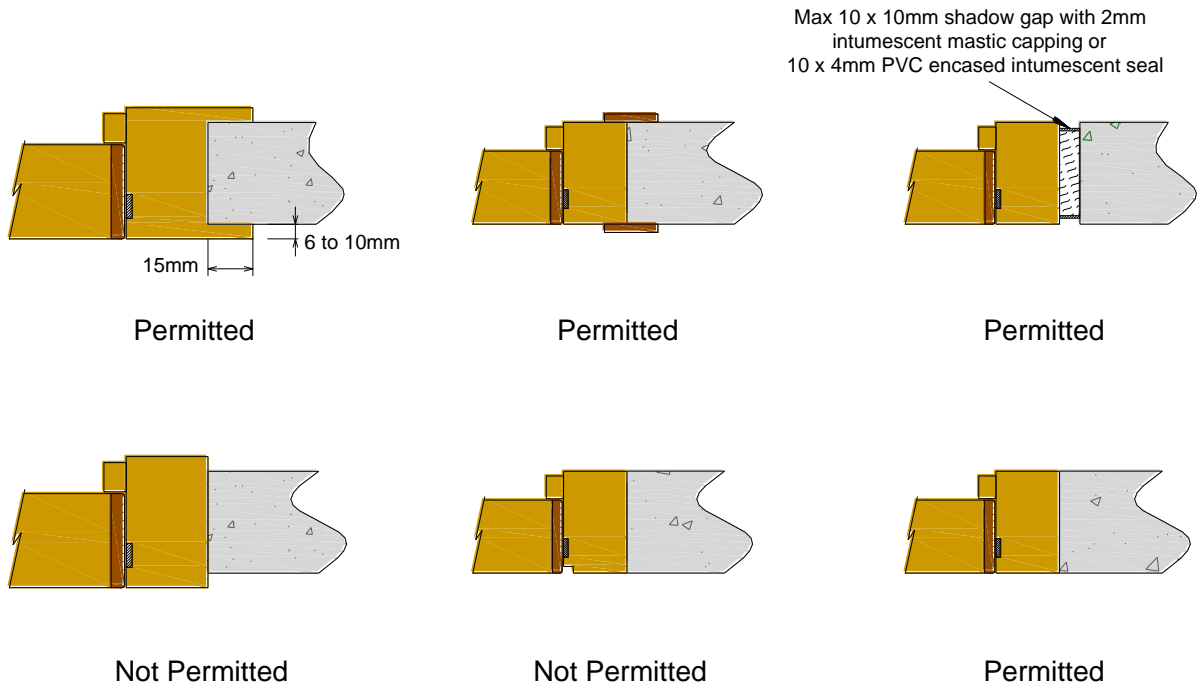


**Butt Joint**

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

**8.3 Door Frame Construction**

The following diagram depicts acceptable and unacceptable door frame installations:



**Notes:**

1. Drawing is representative of each type of door frame installation only; actual installation must be as the text within this document specifies. See section 18 for sealing to structural opening specification.
2. For the shadow detail depicted above (top right), the sub-frame material must be the same material as approved for the door frame, or a non-combustible board, tightly fitted and with no gaps.

**9 Edging Materials**

**9.1 Timber Lippings**

Safeguard 30 must be lipped in accordance with the following specification:

Material	Size (mm)	Min. Density (kg/m <sup>3</sup> )
Hardwood which is straight grained, joinery quality, free from knots, splits and checks.	1. Flat = 6 – 18 thick with a maximum of 2 profiling permitted at corners of lipping (see section 8.1)	640
	2. Rounded = 8 – 20 thick with a radius matching the distance between leaf edge and floor pivot (see section 8.1)	
	3. Rebated = 20 - 30 thick with a 12 deep equal rebate (meeting edges of double doors & flush overpanel junction only – see notes below)	

**Notes:**

- Single & double doorsets must be lipped on the vertical edges, but may also be lipped on the horizontal edges if required.
- If no lipping is fitted to the head of the door, the integral head rail may only be trimmed by a maximum of 3mm for fitting purposes.
- Doorsets with flush overpanels must be lipped on the vertical edges and additionally at the bottom edge of the overpanel and top edge of the doors.
- Where applied, lippings along the vertical edges must over-run the lippings along the horizontal edges.
- Double doorsets without flush overpanels are permitted with square or rebated meeting edges.
- Single leaf doorsets with flush overpanels may use a rebated overpanel junction.
- Double doorsets with flush overpanels may use a rebated overpanel junction or rebated meeting edges, but must not use both concurrently.

**9.2 PVC Edge Protectors & Post-Formed CS Group Acrovyn****9.2.1 General**

It is possible to fit proprietary edge protectors to this doorset design providing they have suitable supporting test evidence to BS 476: Part 22: 1987 or BS EN 1634-1, when fitted to timber doorsets of similar construction to this design. The end user must satisfy themselves that the test evidence supports the proposed end use application.

**9.2.2 CS Group Edge Protectors**

The Pacific Rim Wood Safeguard 30 design has been assessed for use with the CS Group edge protectors. CS Group edge protectors are supplied pre-formed with the approved intumescent material. The CS Group edge protectors must be used as part of a complete intumescent system and the required intumescent specification and leaf sizes are given in the relevant data sheets in appendix D. CS Group must be contacted for precise installation and fixing details ([www.c-sgroup.co.uk](http://www.c-sgroup.co.uk)).

The Safeguard design with 3.6mm plywood facings can be fitted with the CS Group edge protectors up to the maximum dimensions stated in the CS Group headed data sheets in appendix D. All other alternatively faced Safeguard designs (see section 10.1) can be fitted with the CS Group edge protectors within the dimensions stated in the CS Group headed data sheets in appendix D, but cannot exceed the maximum leaf dimensions stated in appendix D for the particular Safeguard design intended for use.

**9.2.3 Post-Formed CS Group Acrovyn**

It is possible to encapsulate the Safeguard 30 doorset design by post-forming the leaf in CS Group Acrovyn, based on the supporting test evidence in Chilt/RF11059 and the following specification:

1. CS Group Acrovyn must be wrapped around the vertical edges of the leaf only, i.e. the top and bottom of the leaf must remain exposed.
2. The vertical edge detail prior to post-forming must be either lipped with 8mm thick PVC, or hardwood as detailed in this assessment (see section 9.1).
3. The maximum radius of the lipping at the corners of the vertical edges before post-forming must be 9mm, which provides for 11mm external radius after the CS Group Acrovyn has been applied.
4. The intumescent detail as specified in section 11 and the relevant (CS Group headed) data sheets contained in appendix D of this assessment must be replicated.

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5. CS Group Acrovyn must be bonded to the leaf using 3M Scotch-Grip cement 10 contact adhesive, or equivalent.
6. See relevant (CS Group headed) data sheets in appendix D of this assessment for maximum permitted leaf sizes.
7. The maximum thickness of CS Group Acrovyn used must be 2mm, as per test evidence.
8. The CS Group Acrovyn can be provided as pre-formed trays with dimensions to suit the proposed leaf sizes, as well as sheets for post-forming by the door manufacturer.

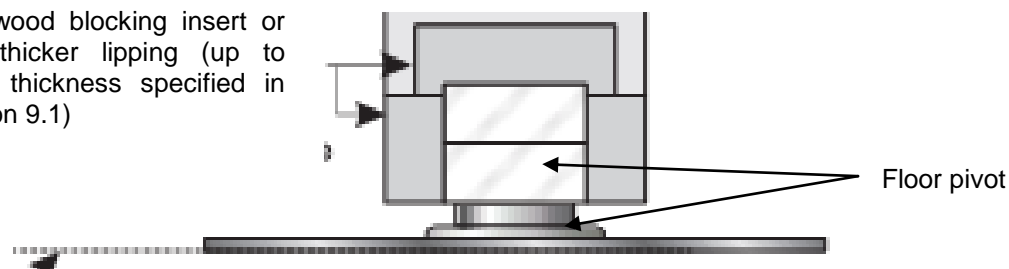
### 9.3 Hardwood Blocking for Pivots

The following option is permitted for lipping the bottom of doors that are to receive pivot fixings and are to be used in severe duty locations (diagram below). It is not necessary to introduce additional blocking at the head of the door because of the presence of the integral top rail.

The hardwood insert may be a maximum of 15mm high by a length suitable for the hardware to be installed plus a maximum of 50mm (not full door width). The hardwood insert must be a maximum of 28mm wide and fitted centrally in the leaf leaving 8mm of leaf material on either face. The inserted block must be bonded on all contact faces using adhesives approved for the application of lippings (see section 12). Alternatively, lippings in accordance with details shown in section 9.1 may be used.

#### Cross Section through Bottom of Leaf fitted onto Floor Spring and Pivot

Hardwood blocking insert or use thicker lipping (up to max. thickness specified in section 9.1)



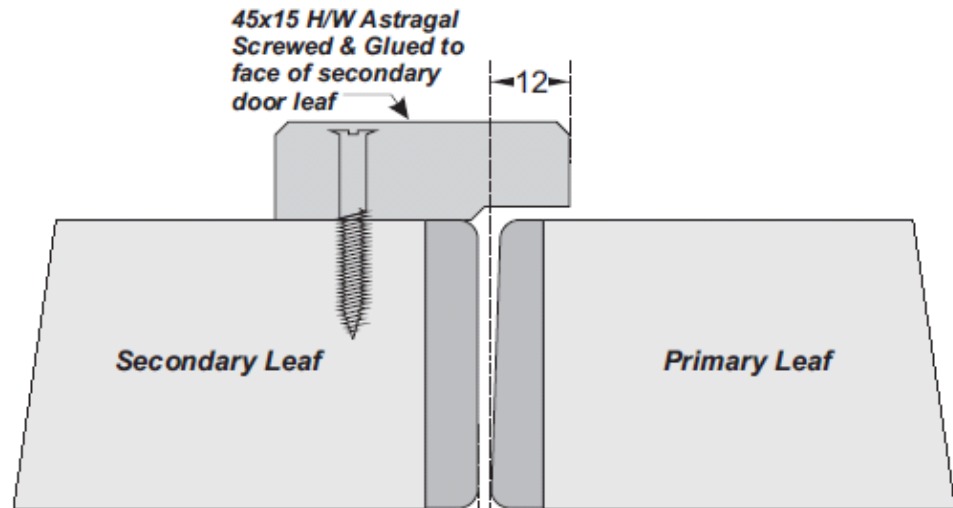
### 9.4 Meeting Stile Astragals

Generally, fire doors should be able to open simultaneously. However, where additional performances are required (e.g. acoustic performances) it may be necessary to provide for sequential opening.

The astragal detail may be used where these conditions apply, without adverse influence on existing fire test/assessment data.

Astragals can be applied to both door leaves and may be profiled for aesthetic effect providing they meet the minimum specification given below.

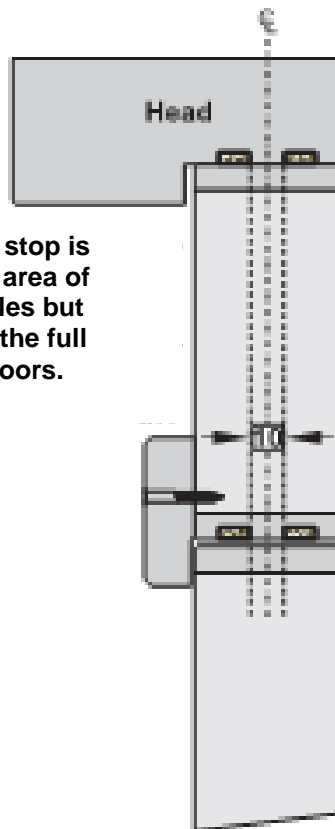
The hardwood for the astragal must be of the same minimum density being used for the lipping material. See following diagram:



**9.5 Planted Stop for Flush Overpanels**

For single acting doorsets with flush overpanels it may be necessary to provide for a planted stop detail at the junction between the overpanel and the leaf heads. The planted stop is to have the same specification as that given for the meeting edge astragal in section 9.4. See following diagram for recommended installation detail:

**NOTE:** Planted stop is required in the area of the meeting stiles but need not be to the full widths of the doors.



**10 Leaf Facing Materials**

**10.1 Structural Facings**

The primary facing material for the Safeguard 30 doorset design is 3.6mm or 6mm thick plywood or 6mm thick MDF. Facings at this thickness are deemed as being structural and hence substitutions for alternative facings are limited. However, further testing has also demonstrated adequate performance with alternative materials. The tested and assessed alternative facings are summarised as follows:

Facing Materials	Thickness (mm)	Min. Density (kg/m <sup>3</sup> )
Plywood	3.6, 6, 9	520 - 610
Chipboard	3.6, 6, 9	500 - 650
MDF	3.6, 6, 9	710 – 760

In each case, the overall leaf thickness must remain a minimum of 44mm; therefore the core thickness will be increased or decreased proportionally (26 – 36.8mm thick) in relation to the facing thickness.

**10.2 Decorative & Protective Facings**

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

Facing Material	Maximum Permitted Thickness (mm)
Paint	0.5
Timber veneers	2
PVC/plastic laminates	2
Decorative paper/non-metallic foil	0.4

**Notes:**

1. Metallic facings are not permitted except for push plates and kick plates (see section 14.8).
2. The door leaf thickness may be reduced by a total maximum of 0.5mm for calibration purposes in order to accommodate the chosen finish.
3. Materials must not conceal intumescent strips.
4. PVC/plastic laminates must not be applied to the edges of leaves, unless approved herein (section 9.2).

**10.3 Grooves**

For doorsets with 6 - 9mm facings, 3mm deep x 3mm wide feature grooves may be machined either horizontally or vertically in the facing, meeting the following specification:

- Grooves may run to the leaf edge.
- Horizontal grooves must be no closer than 100mm to the top and bottom of the door leaf.
- Vertical grooves must be no closer than 100mm to the sides of the door leaf.
- A maximum of 4No. vertical and 4No. horizontal grooves are permitted perpendicular to one another (permitted to intersect) providing all other details meet the specification given above.

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- Feature grooves are not permitted with flush overpanel configurations.

## 11 Intumescent Materials

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

Application	Location	Product/Manufacturer
Edge seals	Fitted in the frame jambs or leaf edges	<ol style="list-style-type: none"> <li>1. PVC encapsulated Palusol 100 – Mann McGowan Ltd.</li> <li>2. Pyroplex – Pyroplex Ltd.</li> <li>3. Type 617 – Lorient Polyproducts Ltd.</li> </ol>
Hinges	Under both blades (for leaves over 2400mm high)	<ol style="list-style-type: none"> <li>1. 1mm Interdens – Dufaylite Developments Ltd.</li> <li>2. 1mm MAP paper – Lorient Polyproducts Ltd.</li> <li>3. 1mm Pyrostrip 300 – Mann McGowan Ltd.</li> <li>4. 1mm Therm-A-Strip – Intumescent Seals Ltd.</li> <li>5. 1mm G30 – Sealmaster Ltd.</li> <li>6. 1mm NOR910 – Norsound Ltd.</li> </ol>
Lock/latches	Under forend & keep for double doorsets or if the forend or keep > 150mm (h) up to the maximum assessed dimension	<ol style="list-style-type: none"> <li>1. 1mm Interdens – Dufaylite Developments Ltd.</li> <li>2. 1mm MAP paper – Lorient Polyproducts Ltd.</li> <li>3. 1mm Pyrostrip 300 – Mann McGowan Ltd.</li> <li>4. 1mm Therm-A-Strip – Intumescent Seals Ltd.</li> <li>5. 1mm G30 – Sealmaster Ltd.</li> <li>6. 1mm NOR910 – Norsound Ltd.</li> </ol>
Top pivots	Lining all sides of the mortices	<ol style="list-style-type: none"> <li>1. 2mm MAP paper - Lorient Polyproducts Ltd.</li> <li>2. 2mm Interdens - Dufaylite Developments Ltd.</li> <li>3. 2mm G30 – Sealmaster Ltd.</li> <li>4. 2mm Therm-A-Strip - Intumescent Seals Ltd.</li> <li>5. 2mm Therm-A-Flex - Intumescent Seals Ltd.</li> <li>6. 2mm NOR920 – Norsound Ltd.</li> </ol>
Flush bolts	Lining all sides of the mortices	<ol style="list-style-type: none"> <li>1. 2mm MAP paper – Lorient Polyproducts Ltd.</li> <li>2. 2mm Interdens – Dufaylite Developments Ltd.</li> <li>3. 2mm G30 – Sealmaster Ltd.</li> <li>4. 2mm Therm-A-Strip – Intumescent Seals Ltd.</li> <li>5. 2mm Therm-A-Flex – Intumescent Seals Ltd.</li> <li>6. 1mm NOR910 – Norsound Ltd.</li> </ol>
Cableways	Lining the base of the groove (see section 14.15)	<ol style="list-style-type: none"> <li>1. 2mm MAP paper - Lorient Polyproducts Ltd.</li> <li>2. 2mm Interdens - Dufaylite Developments Ltd.</li> <li>3. 2mm G30 – Sealmaster Ltd.</li> <li>4. 2mm Therm-A-Strip - Intumescent Seals Ltd.</li> <li>5. 2mm Therm-A-Flex - Intumescent Seals Ltd.</li> <li>6. 2mm NOR920 – Norsound Ltd.</li> </ol>

The seal specification for each configuration is shown in appendix D.

## 12 Adhesives

The following adhesives must be used in construction:

Element	Product
Facings	Melamine or PVA
Lipping	Urea formaldehyde, resorcinol formaldehyde, PU
Core	PVA



**13 Tested Hardware**

**13.1 General**

The following section details the tested hardware for this doorset design. However, the following items of hardware must also bear the CE Mark:

- Locks & latches: Test Standard EN 12209
- Single axis hinges: Test Standard EN 1935
- Controlled door closing devices: Test Standard EN 1154.

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

Element	Manufacturer & Product Reference
Hinges	Royde & Tucker H101 steel butt type hinges
Closers	Dorma TS71 overhead type door closer
Locks/latches	E*S Hardware tubular mortice latch
Furniture	Aluminium lever type handle

**14 Additional & Alternative Hardware**

**14.1 General**

The following sections detail the permitted scope and constraints for fitting additional and alternative hardware to the door design. The following items of hardware must also bear the CE Mark:

- Locks & latches: Test Standard EN 12209
- Electro mechanically operated locks: Test Standard EN 14846
- Single axis hinges: Test Standard EN 1935
- Controlled door closing devices: Test Standard EN 1154
- Electrically powered hold-open devices: Test Standard EN 1155
- Door co-ordinators: Test Standard EN 1158
- Emergency exit hardware: Test Standard EN 179
- Panic exit hardware: Test Standard EN 1125.

**14.2 Locks & Latches**

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

Element	Dimensions (mm)
<b>Maximum forend and strike plate dimensions</b>	235 high by 24 wide by 4 thick
<b>Maximum body dimensions</b>	165 high by 100 wide by 18 thick
<b>Intumescent protection</b>	See section 11
<b>Materials</b>	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel or brass (with melting point $\geq 800^{\circ}\text{C}$ )
<b>Location</b>	1000 – 1200 from the threshold

**14.3 Identification Plates**

Plastic or metal fire safety signs may be glued or screwed to the face of the door leaves. The signage must comply with BS 5499-5: 2002 according to whether the door is:

- a) To be kept closed when not in use (Fire Door Keep Shut).
- b) To be kept locked shut when not in use (Fire Door Keep Locked Shut).
- c) Held open by an automatic release mechanism or free swing device (Automatic Fire Door Keep Clear).

It is also permitted to fit aluminium (max. thickness 2mm) or PVC (max. thickness 3mm) identification plates, complying with HTM 58 – Internal Doorsets, HTM Building Component Series, NHS Estates. The signage must not exceed 45mm diameter and can be fitted flush with the leaf face, a minimum of 50mm from any edge.

**14.4 Hinges**

Safeguard 30 leaves must be hung on a minimum of 3 hinges. Leaves over 2400mm high must fit 4 hinges. Leaves over 3000mm must fit 5 hinges (for this detail use the location of the top and bottom hinges in the table below and space the remainder equally between the top and bottom). 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 4No. 30 long No. 8 or No. 10 steel wood screws per blade	
Materials		Steel or stainless steel or brass (melting point = or >800°C)	
Hinge positions	Leaf dimensions <2400mm	Top	200 - 220mm from the head of the leaf to the centreline of the hinge
		2 <sup>nd</sup>	Minimum 200mm from centreline of top hinge to centreline of second hinge OR equally spaced between top and bottom hinge
		Bottom	220 - 300mm from the foot of the leaf to the centreline of the hinge
	Leaf dimensions >2400mm	Top	200 - 220mm from the head of the leaf to the centreline of the hinge
		2 <sup>nd</sup>	Minimum 200mm from centreline of top hinge to centreline of second hinge
		3 <sup>rd</sup>	Equally spaced between 2 <sup>nd</sup> hinge and bottom hinge
		Bottom	220 - 300mm from the foot of the leaf to the centreline of the hinge
	Intumescent protection		See section 11

**14.5 Automatic Closing**

Automatic closing devices must either be as tested or components of equal specification that have demonstrated contribution to the required performance of these types of 30 minute doorset designs, when tested to BS 476: Part 22: 1987 or BS EN 1634-1.

**Note:** The top pivots to floorspring assemblies must be protected with 2mm thick intumescent gasket (see section 11) or alternatively the manufacturers tested intumescent gaskets.

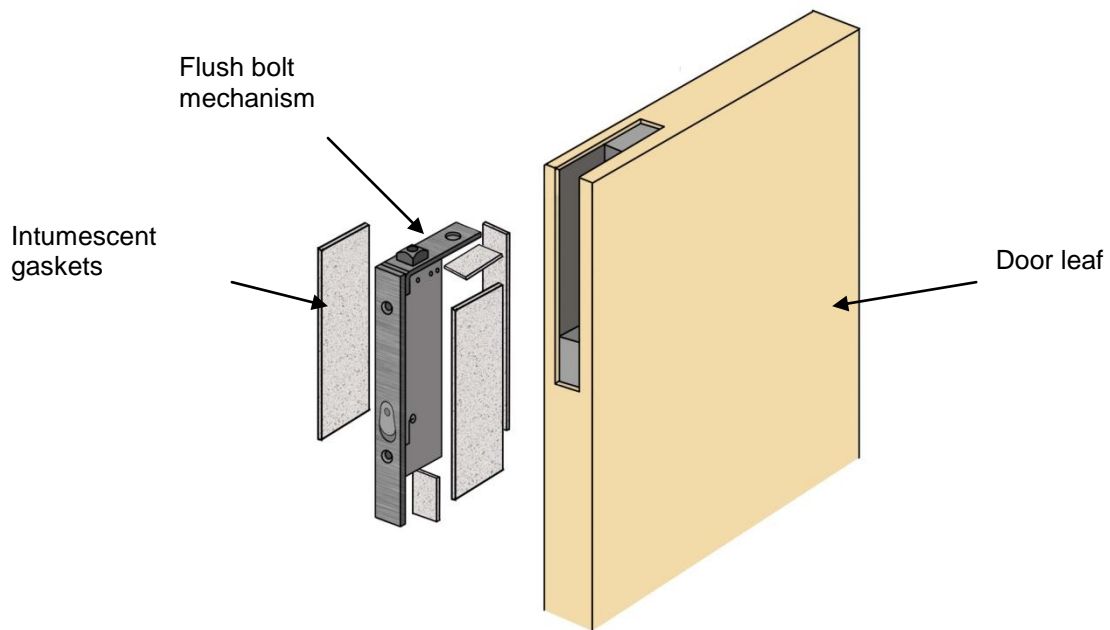
It is not permitted to fit concealed overhead closers with flush overpanel configurations.

**14.6 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 strips:

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

Flush bolts must be steel or brass 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 11. Alternatively the hardware manufacturers tested gaskets may be used. See diagram below for example of intumescent protection to flush bolt:



**14.7 Surface-Fixed Barrel Bolts**

It is permitted to fit a surface-fixed barrel bolt to the top closing corner of a double leaf providing the item does not require removal of material from the leaf or door frame and does not interfere with the perimeter intumescent seals. The item must be no longer than 450mm.

**14.8 Pull Handles**

These may be surface-fixed to the door leaf provided that they are steel or brass and the length is limited to 1200mm between the fixing points. No additional intumescent protection is required provided that the hole for the bolt through the leaf is tight.

**14.9 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 must not amount to more than 20% of the door leaf area if mechanically fixed and a maximum of 30% if bonded with a contact or other thermally softening adhesive. Plates must not return around the door edges.

**14.10 Door Selectors**

These may be freely applied, provided that they are not invasive in the leaf edges or door frames and they do not interfere with the self-closing action of the door leaf. Products that are invasive will require fire resistance test/assessment evidence to support their use.

**14.11 Door 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 +1mm). Lenses must be glass and the item must be bedded in to a tested intumescent mastic.

**14.12 Panic Hardware**

Panic hardware may be fitted, provided that its installation does not require the removal of any timber from the leaf, stop or frame reveal and it in no way interferes with the self-closing action of the door leaf.

**14.13 Air Transfer Grilles**

**14.13.1 General**

Air transfer grilles may be fitted providing the product has suitable test evidence to BS 476: Part 22: 1987 or BS EN 1634-1 that demonstrates a minimum 30 minutes integrity performance when installed within a timber based doorset of comparable thickness. Margins to the leaf edges will remain as detailed for glazing and the position of the unit will be dictated by the pressure regime tested in the proving evidence (normally below mid-height). The area occupied by the air transfer grille must not exceed 0.2m<sup>2</sup> and must be deducted from the percentage of glazing, if both elements are fitted.

**14.13.2 Pyroplex Air Transfer Grilles**

The following Pyroplex air transfer grilles have been assessed as acceptable for use with the Safeguard 30 design.

The grilles must be fitted a minimum of 100mm from the edge of the door leaf and a minimum of 80mm apart if more than one grille is to be fitted. The area occupied by the air transfer grille(s) must be deducted from the percentage of glazing, if both elements are fitted. The grilles may be fitted up to a maximum height of 2200mm from the threshold.

Part No.	Dimensions (mm)	Air Flow (sq. cm)	Compatible Faceplates
ATG 1500	150 x 150	153	FP1500
ATG 1503	150 x 300	307	FP1503
ATG 1300	300 x 300	614	FP1300
ATG 2251	112 x 225	161	FP2251
ATG 2250	225 x 225	323	FP2250

The Pyroplex air transfer grilles must be installed in accordance with the manufacturer's installation details, which include a 6mm thick hardwood aperture liner and Pyroplex intumescent mastic applied around the perimeter of the grille. Full details can be obtained from Pyroplex Ltd.

**14.14 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.

**14.15 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:

<b>Manufacturer</b>	<b>Product</b>
Lorient Polyproducts Ltd.	IS8010si
Pemko	411 - AR
Raven	RP8Si
Athmer	Sound-Ex Duo L-15
Norsound Ltd.	NOR810, NOR810S, NOR810dB+

**14.16 Cable-Way**

Based on the integrity performance of the doorset construction, with no burn through of the core material, we consider it acceptable to allow the provision for a concealed cable-way to facilitate electro-magnetic closing/latching mechanisms. The cable-way must be concealed in the following way:

1. A hole drilled centrally through the leaf of maximum 10mm diameter.
2. The cable for the electronic closing/latching mechanisms must be no more than 2mm smaller in diameter than the hole through the leaf.
3. The cable for the electronic closing/latching mechanism must be PVC encased.
4. Cable ways are only permitted for use with latched, single leaf, single acting doorsets with maximum leaf dimensions of 2100mm (h) x 900mm (w).
5. The hole must be located below 1500mm from the threshold and must be spaced a minimum of 90mm from any apertures within the leaf, e.g. glazing, air transfer grilles or letter plates, etc.

This approval is subject to the hardware manufacturer having the appropriate test evidence for the product for use with this type of 30 minute construction. Test evidence generated in steel doorsets is not acceptable. Any tested intumescent gaskets for the lockset, closing mechanism, receiver plate, cable loops, etc. must be replicated.

**14.17 Letter Boxes/Plates**

Letter boxes/plates may be fitted providing the product can demonstrate contribution to the required performance of this type of 30 minute doorset design, when tested to BS 476: Part 22: 1987 or BS EN 1634-1 and installed at the proposed location, within a timber based doorset of comparable thickness. Margins to the leaf edges must remain as specified for glazing.

**15 Door Gaps**

For fire resistance performance, door edge gaps, threshold gaps, and alignment tolerances must fall within the range shown in the following table:

Location	Dimensions
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

**16 Structural Opening**

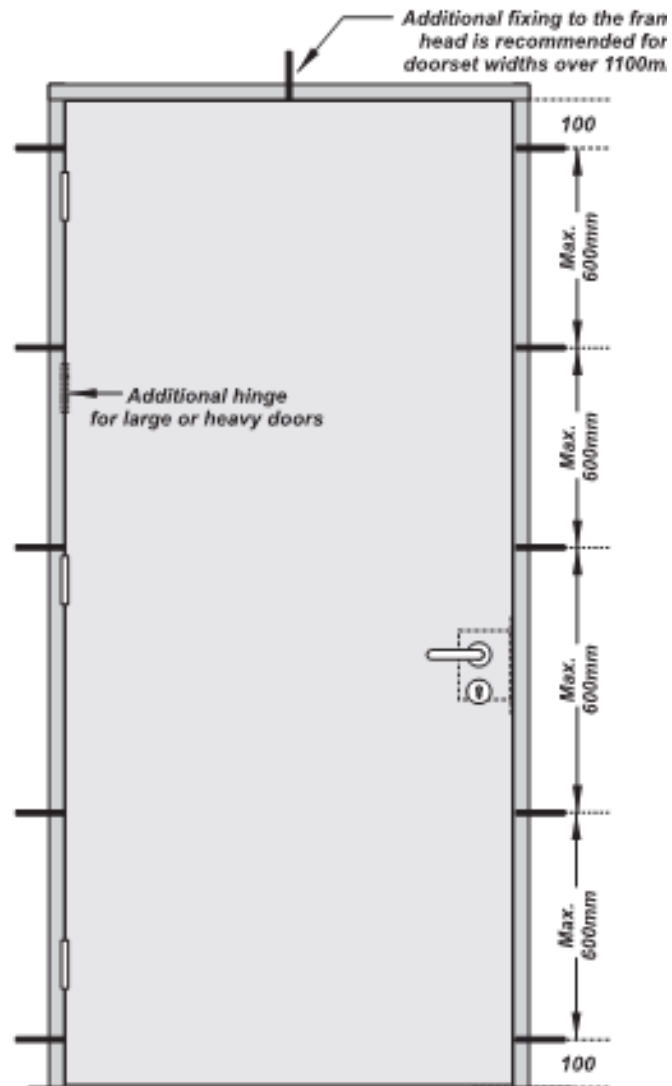
The supporting construction must provide the required level of fire resistance designated for the doorset design and be a suitable medium to permit adequate fixity.

**17 Fixings**

The positioning of installation fixings in height should be planned to avoid conflicts with hardware, sealing systems and other building elements.

- A top fixing must be located within 100mm from the underside of the head.
- A bottom fixing must be located 100mm from the bottom of the jamb.
- Intermediate fixings must be located at centres of not more than 600mm.
- The minimum number of fixings in height must be:
  1. Doorset height up to 2000mm = 4No.
  2. Doorset height 2000 - 2500mm = 5No.
  3. Add 1No. fixing for each further 500mm increase in door height.
- The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm.
- For storey height doorsets a top fixing must be provided within a 100mm from the underside of the frame head with a further top fixing positioned 100mm from the underside of the transom rail (or bottom edge of the over panel if a flush overpanel design is used).
- It is not necessary to fix the frame head, although packers must be inserted. However, for doorset widths in excess of 1100mm the use of an additional fixing centre width of the doorset at the head position is recommended.
- MDF frames are more flexible than timber frames. To reduce the risk of frame distortion during fixing it is strongly recommended that the dimension for fixing centres between intermediate fixings is reduced from 600mm to a maximum of 500mm.

See following diagram for illustration on fixings for a typical timber door frame doorset installation:

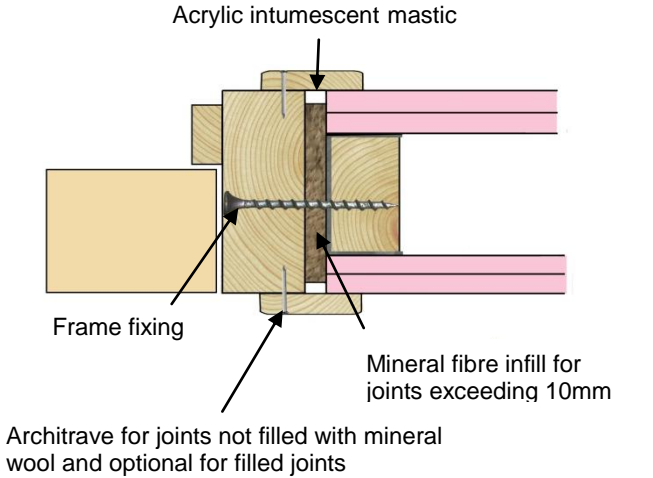
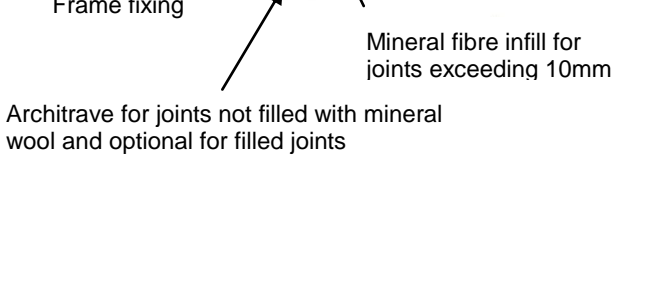
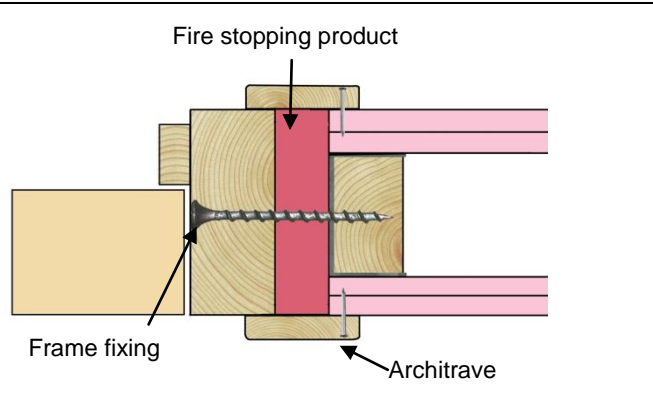
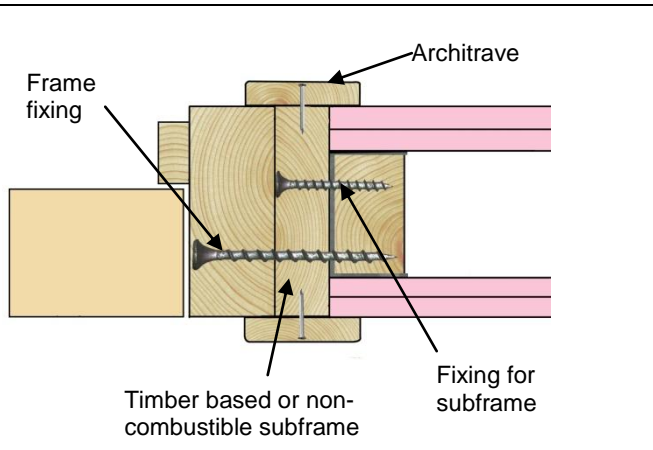


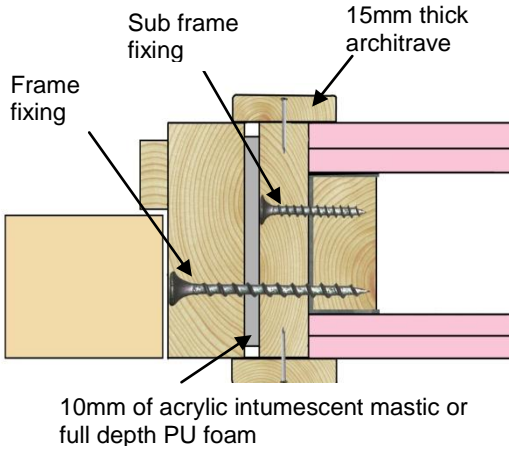
**Timber frame fixing locations illustrated.**



**18 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. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</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. Architraves are optional.</p>	
<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. 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. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</p>	 <p>The diagram shows a cross-section of a door frame assembly. It features a central timber subframe with a vertical slot. A horizontal timber frame fixing is secured to the subframe with a screw. On either side of the subframe, there is a 10mm gap filled with acrylic intumescent mastic or full depth PU foam. The subframe is finished with 15mm thick architraves that overlap each other by at least 15mm.</p>
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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.

**19 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	Doorsets unglazed or including 30 minute insulating glazing (e.g. 15mm Pyrostop or 16mm Pyrobel)

## **20 Smoke Control**

### **20.1 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 (unless pressurization techniques complying with BS EN 1201-6 are used):

- (a) have a leakage rate not exceeding 3m<sup>3</sup>/m/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.

### **20.2 Further Considerations**

Other guidance is 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. It is the responsibility of the relevant parties to stipulate the precise smoke control specification, prior to commencing manufacture and/or installation.

## **21 Conclusion**

If Safeguard 30 doorsets, 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 and insulation (subject to section 19).

**22 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:



The signature is written in black ink and is enclosed within an oval stamp. The stamp contains the text "PACIFIC RIM WOOD" at the top and "LIMITED" at the bottom. The signature itself is "Shaun Hannan".

Name:

SHAUN HANNAN

For and on behalf of: **Pacific Rim Wood Ltd.**



**23 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, BM TRADA 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.

**24 Validity**

1. The assessment is initially valid for five years after which time it must be submitted to BM TRADA for technical review.
2. This assessment report is not valid unless it incorporates the declaration given in Section 22 duly signed by the applicant.

<b>Signature:</b>		
<b>Name:</b>	<b>J Godfrey</b>	<b>P N Barker</b>
<b>Title:</b>	Product Assessor	Senior Consultant

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

## Appendix A Performance Data

### Primary Data

Test Reference	Configuration	Leaf Size (mm)	Test Standard	Integrity (mins)
RF09166	ULSADD+OP	2400 x 1000 x 44 OP: 410 high	BS 476: Part 22: 1987	38*

\* Initial failure was at the latch position; leaf integrity was maintained for 44 minutes.

### Assessment of Safeguard Design

The essential difference between Pacific Rim Wood's Safeguard 30 and Flamebreak 30 fire resisting doorset designs is the composition of the core. Test RF09166 of the Safeguard 30 design incorporated Anisoptera, Palaium, Calophyllum and Tarrietia Javanica hardwoods in the makeup of the core, as opposed to: Parasoriantes falcatera or Albisia falcate, which are tested and approved for the Flamebreak 30 design. The results of RF09166 show that substituting the core material has actually given rise to an increase in performance in terms of integrity and leaf distortion (compared to test RF08118 which comprised a similarly sized pair of double doors with overpanel). It is therefore reasonable to utilise the test and assessment data relating to Flamebreak 30 designs listed in the table below to justify the scope of application in this document relating to the Safeguard 30 design, including the data sheets in appendix D.

### Supplementary Data

Test Reference	Configuration	Leaf Size (mm)	Test Standard	Integrity (mins)
RF09105 (A: 20 x 4mm & B: 15 x 4mm Pyroplex with MDF facings)	A & B: ULSASD	Both: 2145 x 927 x 44	BS EN 1634-1	35
A07051 Rev. B (assessment of Lorient Type 617 seals)	Various	Various	BS 476: Part 22: 1987	30 & 60
WF137714 (Pyroplex glazing system 30054)	Indicative	990 x 900 x 44	BS 476: Part 20: 1987	41
WF139878 (Pyroplex glazing system 30049)	Indicative	990 x 990 x 44	BS 476: Part 20: 1987	29 (failure attributed to glass not glazing system)
A11129 Rev. A (CS Group acrovyn & door edge protectors)	Various	Various	BS 476: Part 22: 1987	30
IF12011 (Norsound Vision 30)	Indicative	1052 x 1020 x 44	BS 476: Part 20/22: 1987	39
IF13061 (Norsound Universal 30)	Indicative	1052 x 900 x 64	BS 476: Part 20/22: 1987	96

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



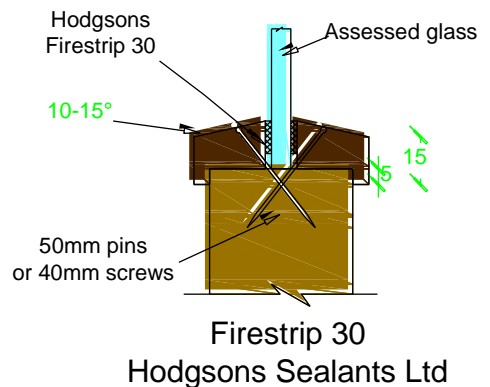
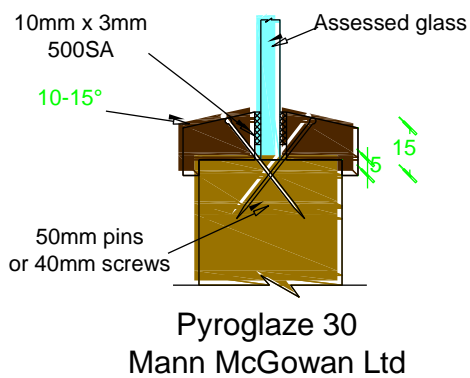
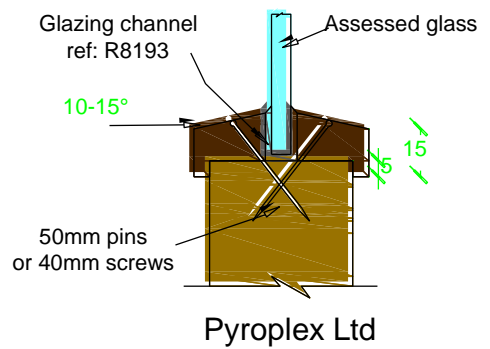
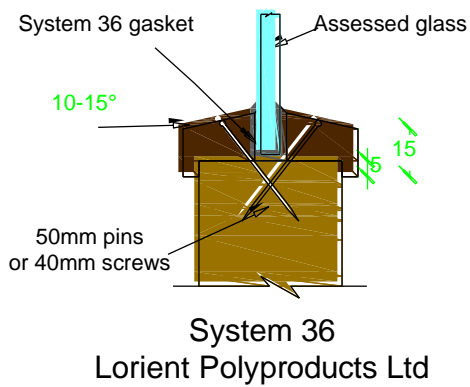
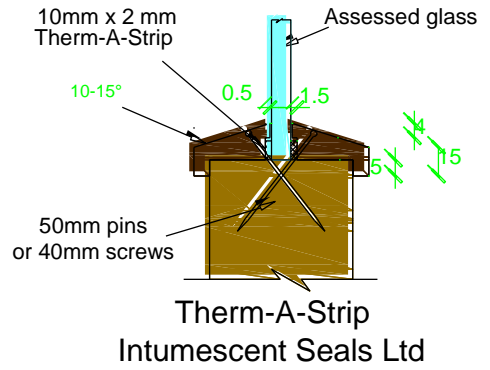
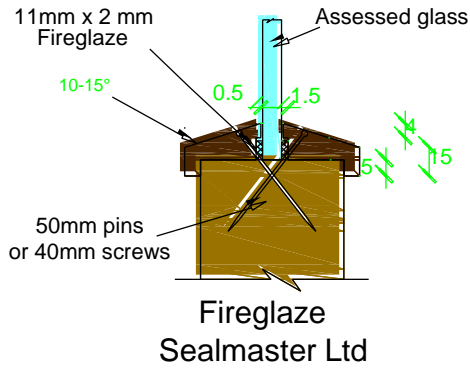
Test Reference	Configuration	Leaf Size (mm)	Test Standard	Integrity (mins)
A12161 (Norsound Vision fanlights & side screens)	Various	Various	BS 476: Part 22: 1987	30 & 60
IF13014 (Norsound NOR910 & NOR920 hardware protection)	Indicative	A: 1268 x 279 x 44 B: 1262 x 279 x 54	BS 476: Part 20/22: 1987	A: 48 B: 74
RF98033	ULSADD	2135 x 915 x 45	BS 476: Part 22: 1987	35
RF98075	A & B: ULSASD	A: 2055 x 865 x 44 B: 2135 x 916 x 44	BS 476: Part 22: 1987	A: 31 B: 33
RF00044 (Stiles & rails, no lippings)	A: ULSASD	2080 x 915 x 44	BS 476: Part 22: 1987	A: 31
RF00046 (Stile removed, lippings vertical edges only)	ULSADD	2135 x 835 x 44	BS 476: Part 22: 1987	32
RF00098	A & B: ULSASD	A: 2080 x 916 x 44 B: 2080 x 860 x 44	BS 476: Part 22: 1987	A: 32 B: 33
RF00166 (Lipped & unlipped)	A & B: ULSASD	A: 2440 x 1220 x 44 B: 2390 x 1154 x 44	BS 476: Part 22: 1987	A: 37 B: 41
RF04011	LSASD	1976 x 758 x 44	BS 476: Part 22: 1987	31
Warres 138803	ULSASD	2034 x 926 x 44	BS 476: Part 22: 1987	36
RF05041 (Stiles removed & lipped vertical edges only with rebated meeting edge)	ULSADD	2041 x 825 x 44	BS 476: Part 22: 1987	39
RF08100 (P.U gluelines for lipping, large glazed apertures – ply & MDF faces)	A: ULSADD B: ULSASD	A: 2100 x 900/350 x 44 B: 2100 x 900 x 44	BS 476: Part 22: 1987	A: 39 B: 51
RF08116 (10 x 4mm Pyroplex with ply & MDF faces)	A & B: ULSASD	Both: 2040 x 826 x 44	BS 476: Part 22: 1987	A: 45 B: 35
RF08118 (Large ply faced doorsets with OP, rebated head junction & Pyroplex seals)	ULSADD+OP	2400 x 1000 x 44 OP: 400 high	BS 476: Part 22: 1987	41
Warres 147140 (Pyranova glass)	LSASD	2042 x 940 x 44	BS EN 1634-1	Integrity: 39 Insulation: 30

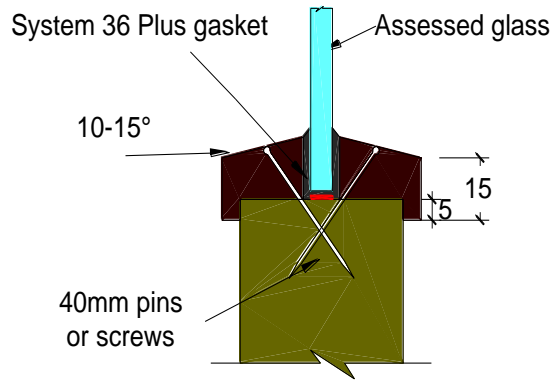
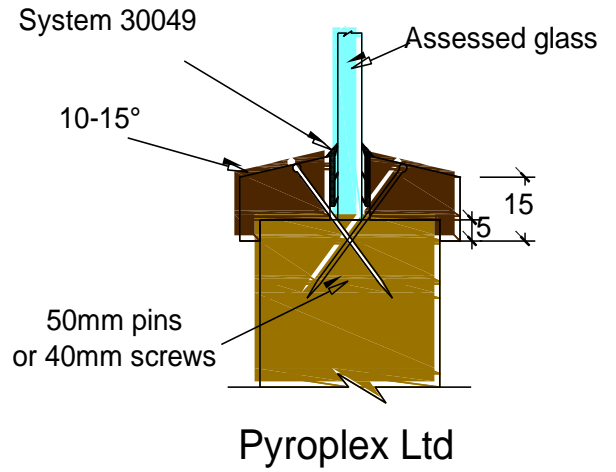
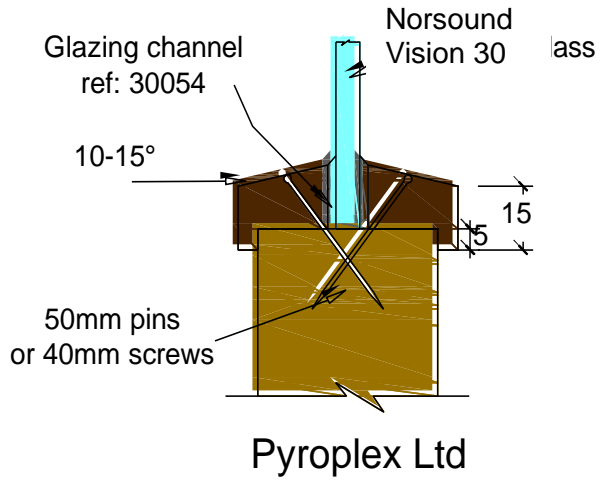
*The legal validity of this report can only be claimed on presentation of the complete report.*

<b>Test Reference</b>	<b>Configuration</b>	<b>Leaf Size (mm)</b>	<b>Test Standard</b>	<b>Integrity (mins)</b>
Warres 316266 (Lorient System 36/6 Plus)	LSASD	1490 x 1490 x 44	BS 476: Part 20: 1987	33
RF10128 (Norsound NOR810S threshold drop seal)	A: ULSASD	A: 2100 x 1000 x 44	BS 476: Part 22: 1987	A: 44

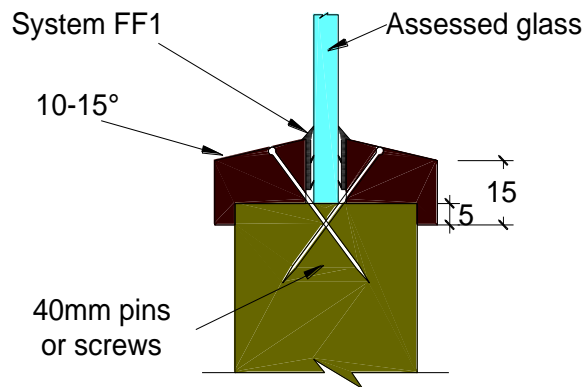


**Appendix B**  
**Proprietary 30 Minute Glazing Systems**





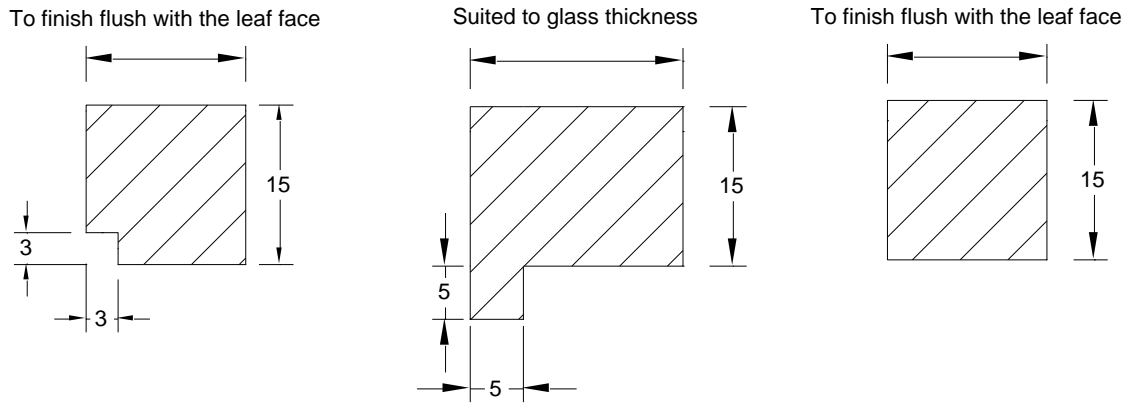
**System 36 Plus**  
**Lorient Polyproducts Ltd**



**System FF1**  
**Lorient Polyproducts Ltd**

### Assessed Square Glazing Bead Profiles

(The following square bead profiles may be used as an alternative to the splayed beads detailed above - refer to section 7 for glazing system and glass restrictions.)



**Appendix C**  
**Revisions & Amendments**

<b>Revision</b>	<b>BM TRADA Reference</b>	<b>Date</b>	<b>Description</b>
A	A09243	22.07.10	Edit to intumescent gaskets required for flush bolts & top pivots.
B	A13249	29.04.14	Technical review and update of assessment, with a further five year's validity. Inclusion of CS Group acrovyn & edge protectors, Lorient System 36/6 Plus, Pilkington Pyroclear 30-001 glass, Norsound Vision & Universal 30 glazing systems, Norsound Vision fanlights & side screens, CGI Pyroguard EW30, EW MAXI & EI30 glass for side screens and fanlights, Pilkington Pyroshield 2, Pyrodur 30-104, Pyrodur 60-10 and Pyrostop 30-10 glass for side screens and fanlights, Norsound intumescent edge seals, Norsound threshold seals, identification plates & an alternative perimeter intumescent seal specification using Pyroplex with double leaf doorsets.

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**Appendix D**

**Data Sheets for:**

**Pacific Rim Wood Ltd.**

**Safeguard 30 Doorsets**

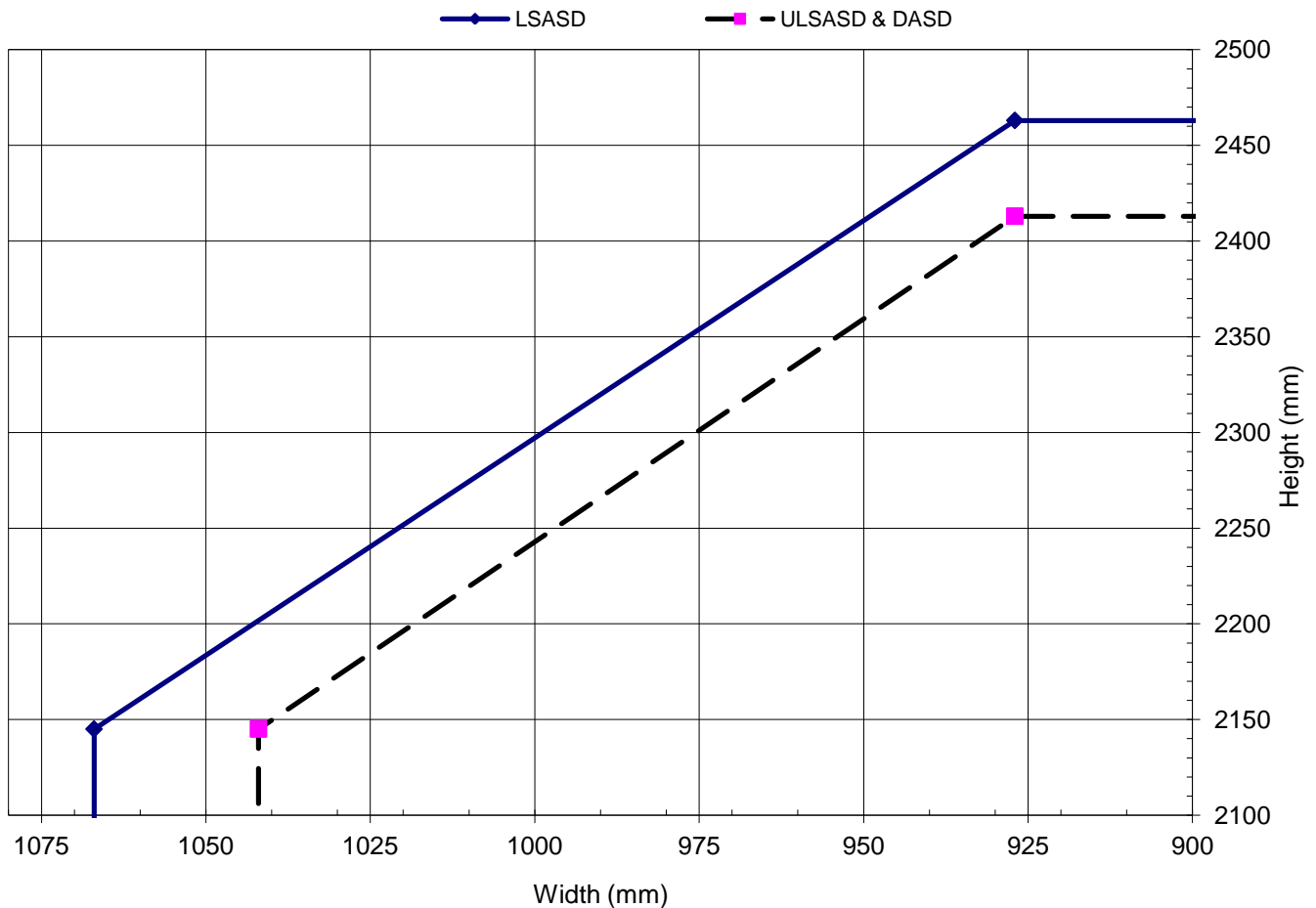
**30 Minutes Fire Resistance**

## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets

### Latched & Unlatched, Single & Double Acting, Single Doorsets – Pyroplex Rigid Box Seals

All assessed facing types					
Leaf Sizes	Configuration	Height (mm)		Width (mm)	
	LSASD	From:	2145	x	1067
		To:	2463	x	927
ULSASD & DASD	From:	2145	x	1042	
	To:	2413	x	927	
Maximum Overpanel Height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)		
		Approved Systems	See section 7 and appendix B		
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	
		Material	Softwood	Hardwood	
		Min. Density (kg/m <sup>3</sup> )	510	510	700
<p><b>Intumescent Materials: PVC encapsulated Pyroplex Rigid Box Seal</b></p> <p><b>Head:</b> 1No. 15 x 4mm PVC encapsulated Pyroplex fitted centrally in the leaf edge or frame reveal. Increase to 20 x 4mm for leaves that use 9mm thick MDF facings.</p> <p><b>Jamb:</b> 1No. 15 x 4mm PVC encapsulated Pyroplex fitted centrally in the leaf edge or frame reveal. Increase to 20 x 4mm for leaves that use 9mm thick MDF facings.</p> <p><b>Hardware Protection:</b> See section 11.</p>					

### Maximum Door Leaf Size



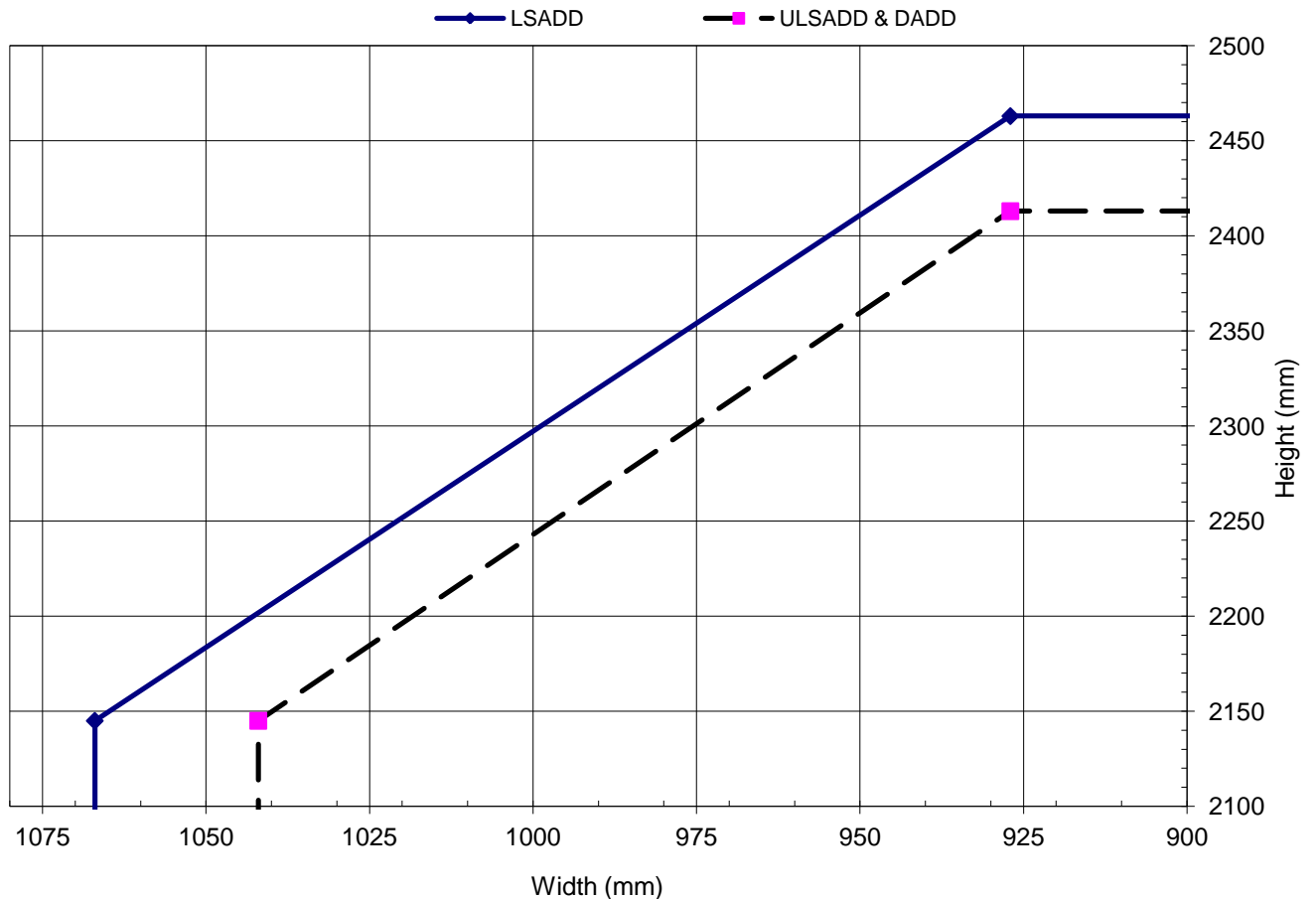
*The legal validity of this report can only be claimed on presentation of the complete report.*

## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets

### Latched & Unlatched, Single & Double Acting, Double Doorsets – Pyroplex Rigid Box Seals

All assessed facing types					
Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2145	x	1067
		To:	2463	x	927
ULSADD & DADD	From:	2145	x	1042	
	To:	2413	x	927	
Maximum Overpanel Height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)		
		Approved Systems	See section 7 and appendix B		
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30
		Material	Softwood	Hardwood	MDF
		Min. Density (kg/m <sup>3</sup> )	450	450	700
<b>Intumescent Materials: PVC encapsulated Pyroplex Rigid Box Seal</b>					
<b>Head:</b> 1No. 15 x 4mm PVC encapsulated Pyroplex fitted centrally in the leaf edge or frame reveal.					
<b>Jamb:</b> 1No. 15 x 4mm PVC encapsulated Pyroplex fitted centrally in the leaf edge or frame reveal.					
<b>Meeting Edges:</b> 2No. 10 x 4mm PVC encapsulated Pyroplex fitted centrally 10mm apart in one leaf edge only.					
<b>Hardware Protection:</b> See section 11.					

### Maximum Door Leaf Size

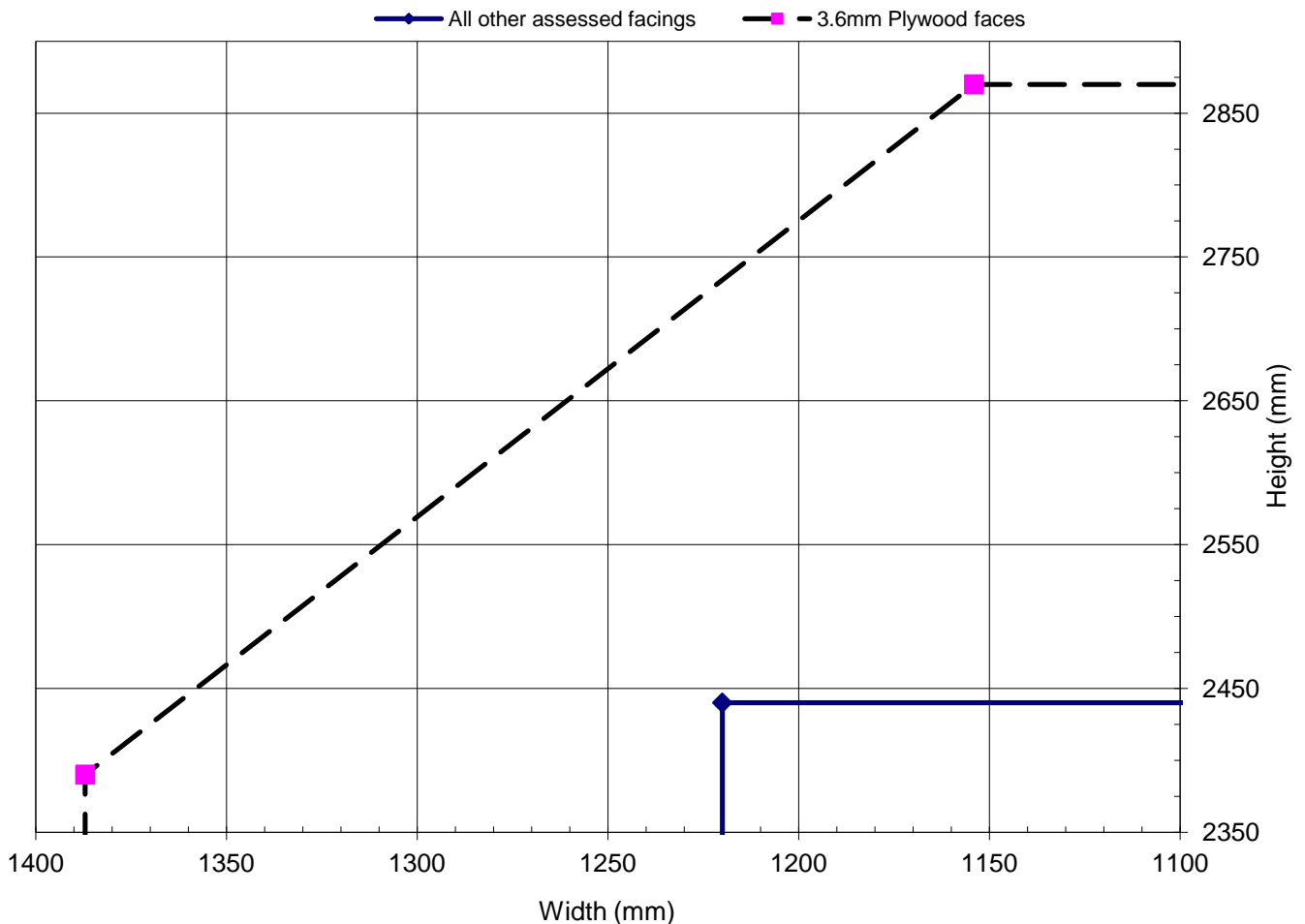


The legal validity of this report can only be claimed on presentation of the complete report.

## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets Latched, Single Acting, Single Doorsets – Palusol or Type 617

Leaf Sizes	Facing Type	Height (mm)		Width (mm)	
	3.6mm thick Plywood	From:	2390	x	1387
		To:	2870	x	1154
	All other assessed facing types	Max:	2440	x	1220
Maximum Overpanel Height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)		
		Approved Systems	See section 7 and appendix B		
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30
		Material	Softwood	Hardwood	MDF
		Min. Density (kg/m <sup>3</sup> )	510	510	700
<b>Intumescent Materials: PVC encapsulated Palusol 100 or Type 617</b>					
<b>Head:</b> 1No. 15 x 4mm seal fitted centrally in the leaf edge or frame reveal. Increase to 20 x 4mm for leaves that use 9mm thick MDF facings. Leaves over 2390mm high increase to 25 x 4mm.					
<b>Jamb:</b> 1No. 15 x 4mm seal fitted centrally in the leaf edge or frame reveal. Increase to 20 x 4mm for leaves that use 9mm thick MDF facings. Leaves over 1100mm wide increase to 25 x 4mm.					
<b>Hardware Protection:</b> See section 11.					

### Maximum Door Leaf Size



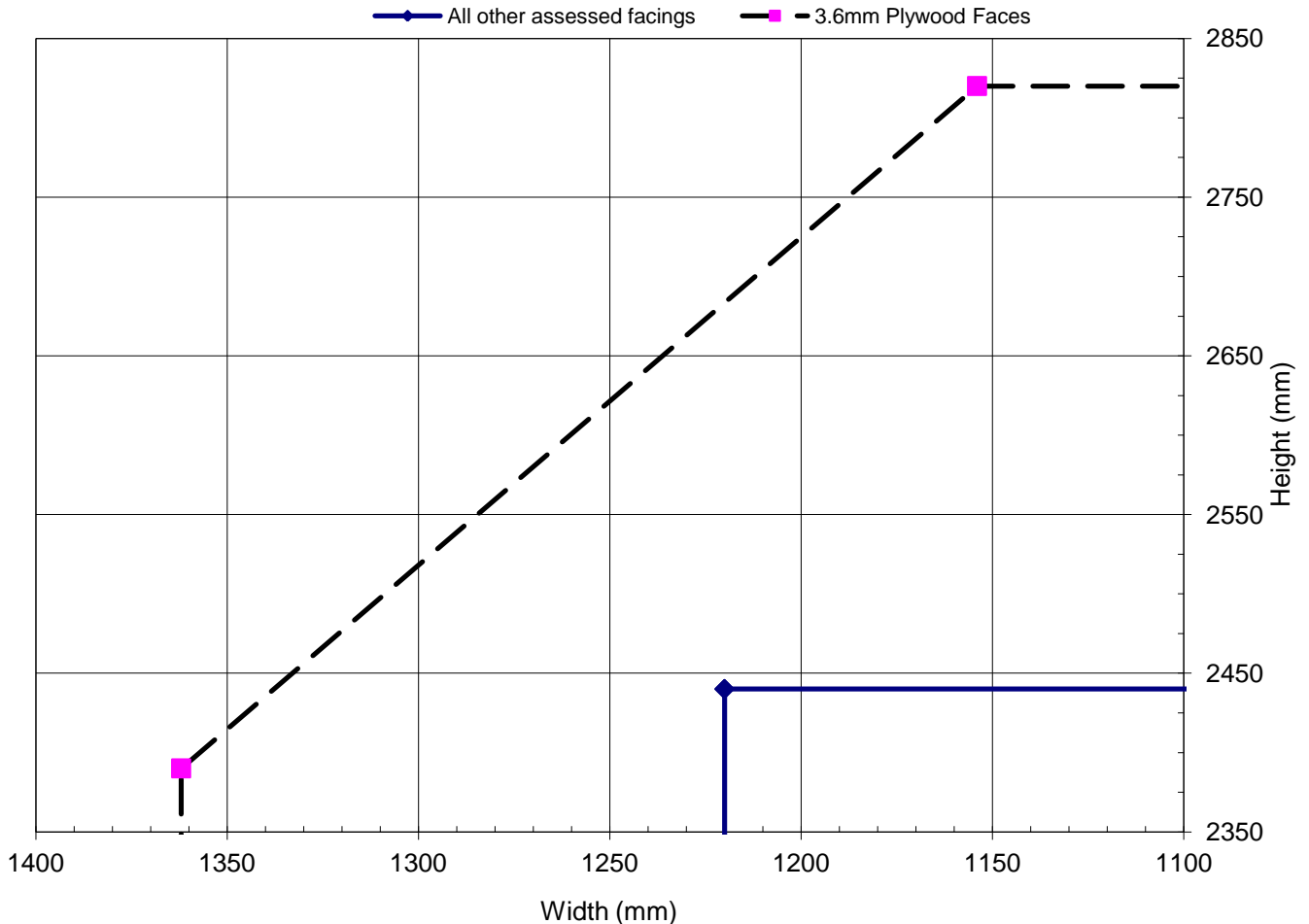
*The legal validity of this report can only be claimed on presentation of the complete report.*



## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets Unlatched, Single & Double Acting, Single Doorsets – Palusol or Type 617

Leaf Sizes	<b>Facing Type</b>		Height (mm)	Width (mm)	
	3.6mm thick Plywood	From: To:	2390 2820	x x	1362 1154
	All other assessed facing types	Max:	2440	x	1220
Maximum Overpanel Height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)		
		Approved Systems	See section 7 and appendix B		
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30
		Material	Softwood	Hardwood	MDF
		Min. Density (kg/m <sup>3</sup> )	510	510	700
<p><b>Intumescent Materials: PVC encapsulated Palusol 100 or Type 617</b></p> <p><b>Head:</b> 1No. 15 x 4mm seal fitted centrally in the leaf edge or frame reveal. Increase to 20 x 4mm for leaves that use 9mm thick MDF facings. Leaves over 2390mm high increase to 25 x 4mm.</p> <p><b>Jambs:</b> 1No. 15 x 4mm seal fitted centrally in the leaf edge or frame reveal. Increase to 20 x 4mm for leaves that use 9mm thick MDF facings. Leaves over 1100mm wide increase to 25 x 4mm.</p> <p><b>Hardware Protection:</b> See section 11.</p>					

### Maximum Door Leaf Size



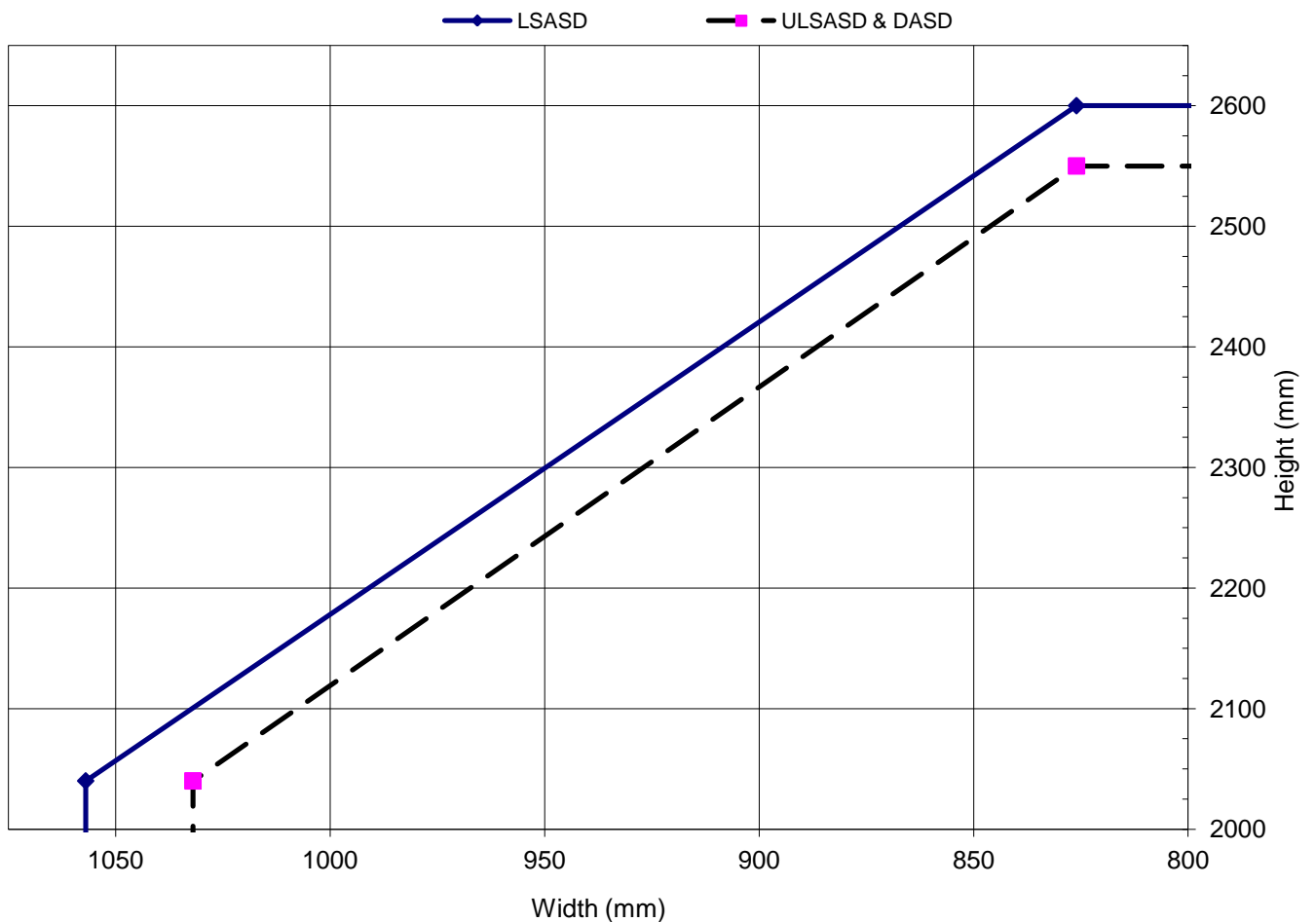
*The legal validity of this report can only be claimed on presentation of the complete report.*

## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets

### Latched & Unlatched, Single & Double Acting, Single Doorsets – Pyroplex Rigid Box Seal

Facing Type: 6mm MDF						
Leaf Sizes	Configuration		Height (mm)		Width (mm)	
	LSASD	From:	2040	x	1057	
		To:	2600	x	826	
ULSASD & DASD	From:	2040	x	1032		
	To:	2550	x	826		
Maximum Overpanel Height (mm)		Transomed	2000			
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)			
		Approved Systems	See section 7 and appendix B			
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30	
		Material	Softwood	Hardwood	MDF	
		Min. Density (kg/m <sup>3</sup> )	510	510	700	
<b>Intumescent Materials: PVC encapsulated Pyroplex Rigid Box Seal</b>						
<p><b>Head:</b> 1No. 10 x 4mm fitted centrally in the leaf edge or frame reveal. Leaves over 2300mm high increase to 15 x 4mm.</p> <p><b>Jamb:</b> 1No. 10 x 4mm fitted centrally in the leaf edge or frame reveal. Leaves over 2300mm high increase to 15 x 4mm.</p> <p><b>Hardware Protection:</b> See section 11.</p>						

### Maximum Door Leaf Size



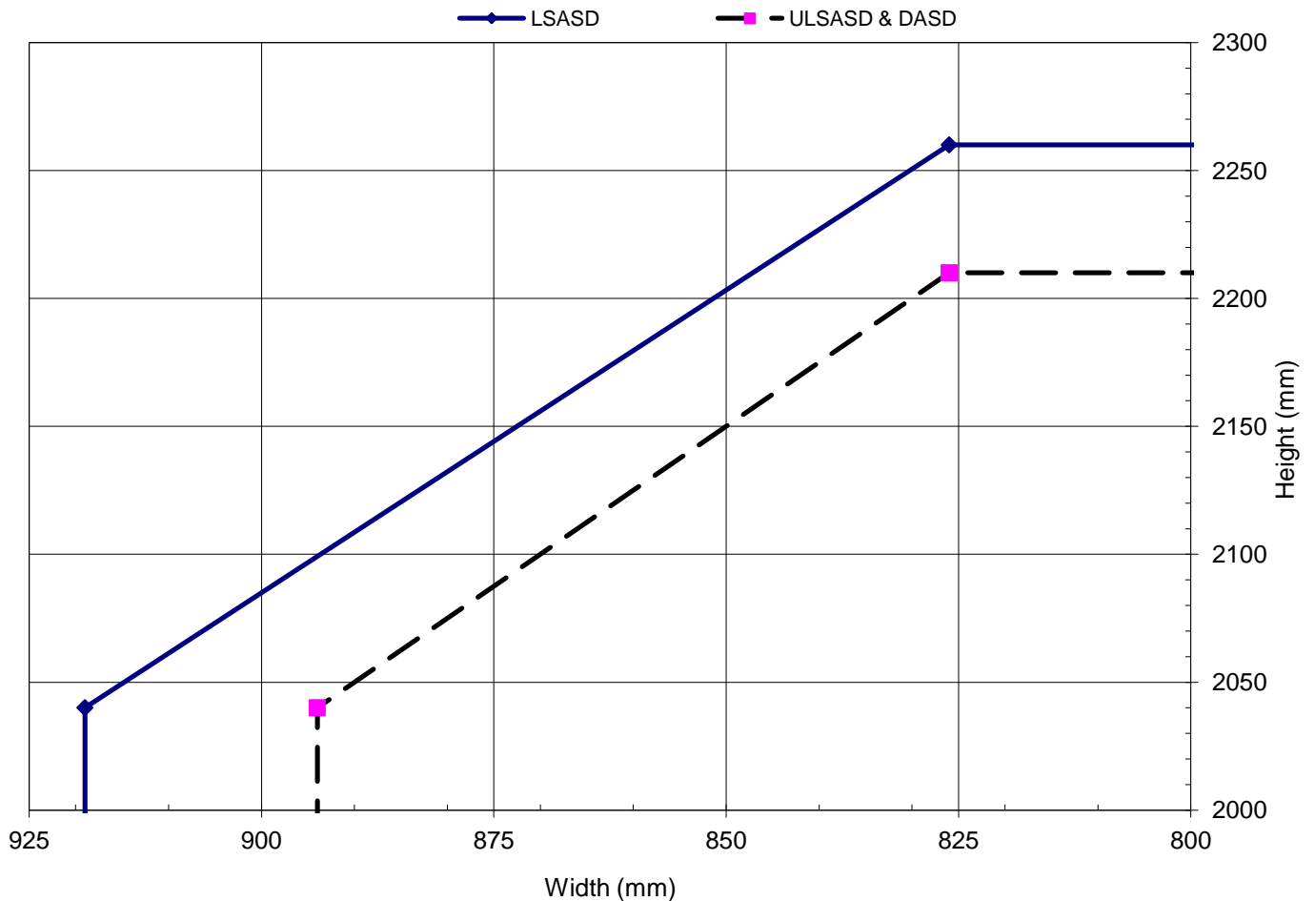
*The legal validity of this report can only be claimed on presentation of the complete report.*

## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets

### Latched & Unlatched, Single & Double Acting, Single Doorsets – Pyroplex Rigid Box Seal

Facing Type: 3.6mm Plywood					
Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2040	x	919
		To:	2260	x	826
ULSASD & DASD	From:	2040	x	894	
	To:	2210	x	826	
Maximum Overpanel Height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)		
		Approved Systems	See section 7 and appendix B		
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30
		Material	Softwood	Hardwood	MDF
		Min. Density (kg/m <sup>3</sup> )	510	510	700
<b>Intumescent Materials: PVC encapsulated Pyroplex Rigid Box Seal</b>					
<b>Head:</b> 1No. 10 x 4mm fitted centrally in the leaf edge or frame reveal.					
<b>Jamb:</b> 1No. 10 x 4mm fitted centrally in the leaf edge or frame reveal.					
<b>Hardware Protection:</b> See section 11.					

### Maximum Door Leaf Size



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

## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets

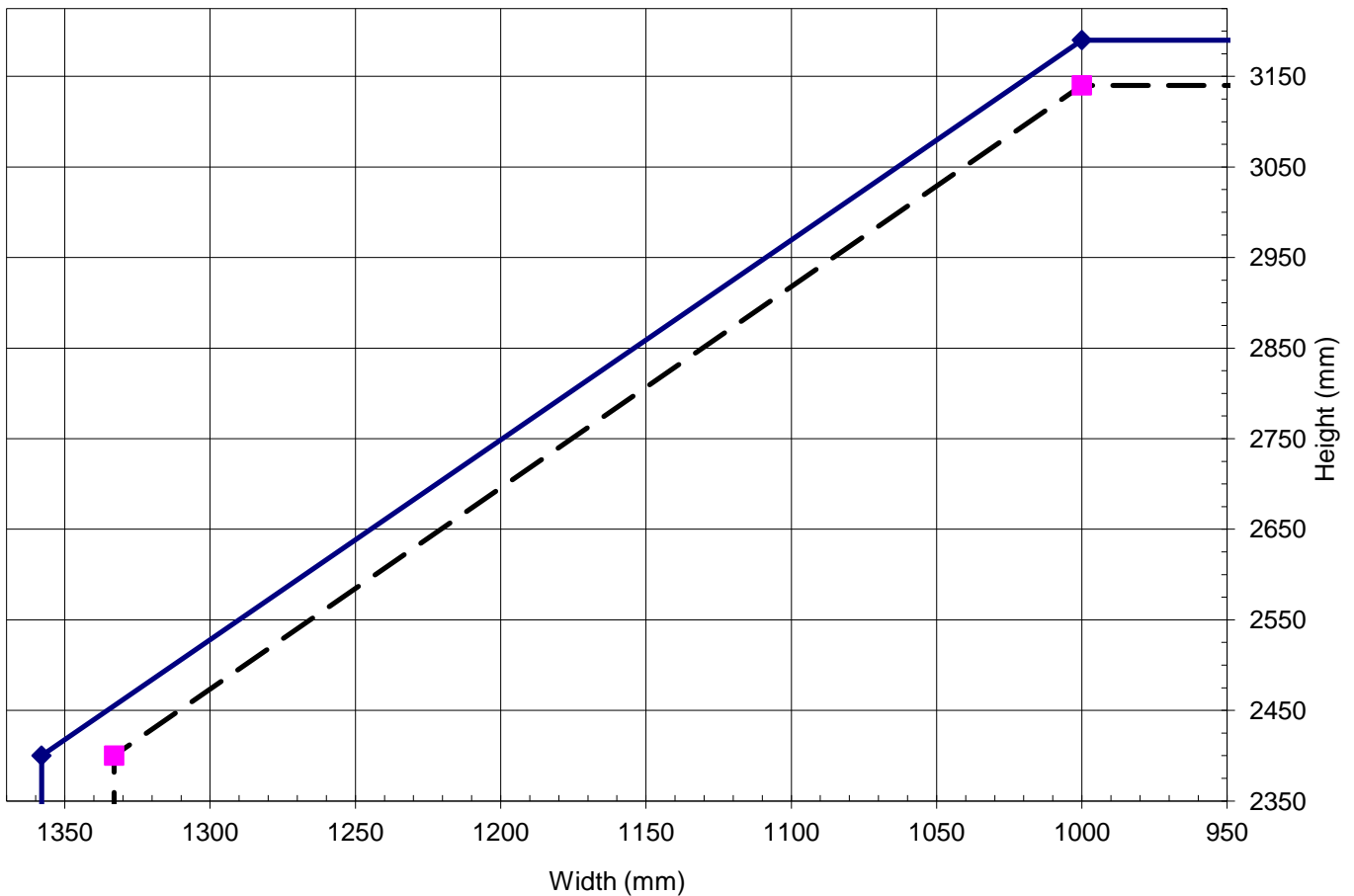
**Latched & Unlatched, Single & Double Acting, Single Doorsets – Pyroplex Rigid Box Seal**

**Facing Types: 3.6mm Plywood, 6mm Plywood, 6mm MDF**

Leaf Sizes	Configuration	Height (mm)		Width (mm)	
	LSASD	From:	2400	x	1358
To:		3190	x	1000	
ULSASD & DASD	From:	2400	x	1333	
	To:	3140	x	1000	
Maximum Overpanel Height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)		
		Approved Systems	See section 7 and appendix B		
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30
		Material	Softwood	Hardwood	MDF
		Min. Density (kg/m <sup>3</sup> )	510	510	700
<b>Intumescent Materials: PVC encapsulated Pyroplex Rigid Box Seal</b>					
<b>Head:</b> 2No. 10 x 4mm fitted centrally 10mm apart in the leaf edge or frame reveal.					
<b>Jamb:</b> 2No. 10 x 4mm fitted centrally 10mm apart in the leaf edge or frame reveal.					
<b>Hardware Protection:</b> See section 11.					

### Maximum Door Leaf Size

—◆— LSASD     
 -■- ULSASD & DASD



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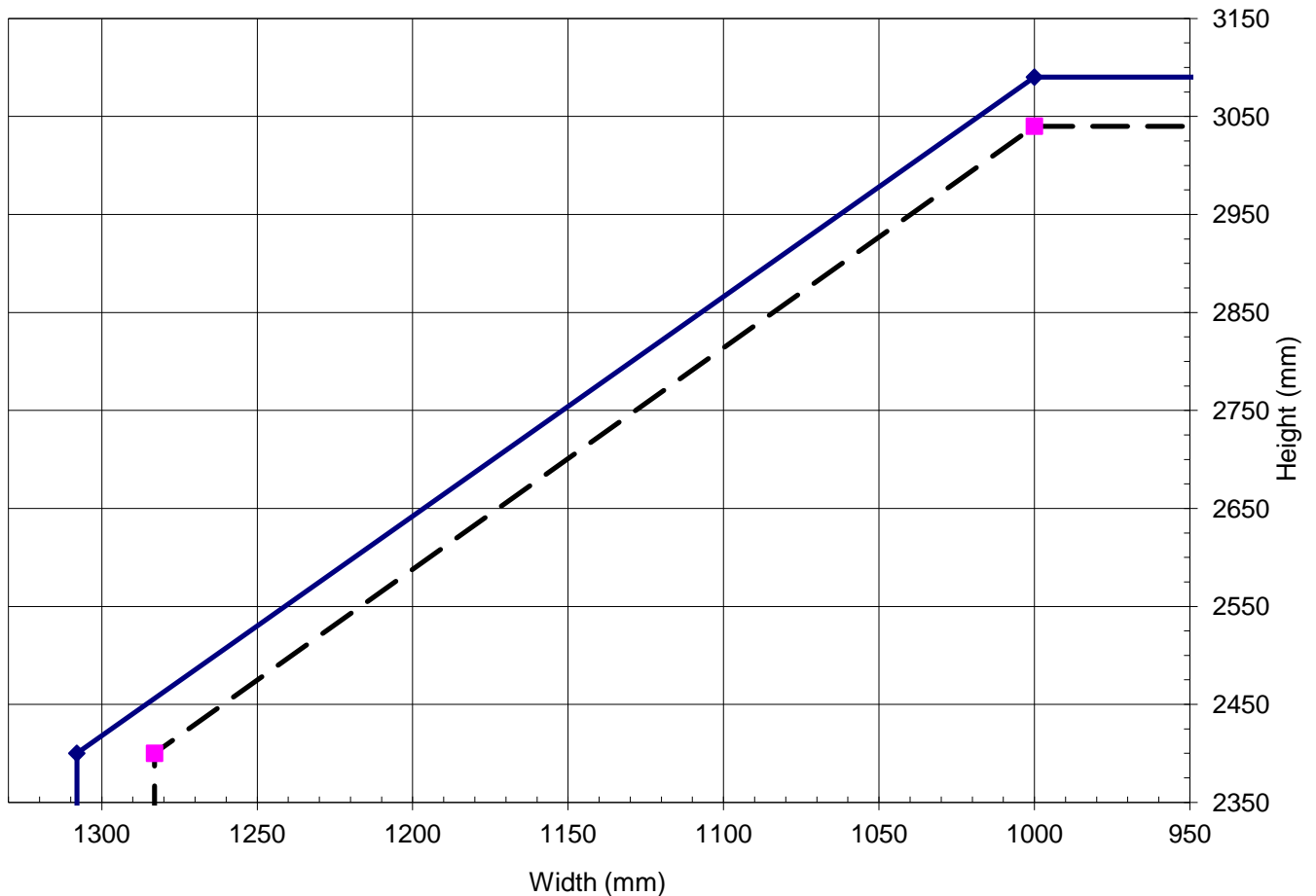
## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets

**Latched & Unlatched, Single & Double Acting, Single Doorsets + Overpanel – Pyroplex Rigid Box Seal**

Facing Type: 3.6mm Plywood						
Leaf Sizes	Configuration	From:	Height (mm)		Width (mm)	
	LSASD+OP		To:	2400	x	1308
				3090	x	1000
ULSASD+OP & DASD+OP		To:	2400	x	1283	
			3040	x	1000	
Maximum Overpanel Height (mm)		2000				
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)			
		Approved Systems	See section 7 and appendix B			
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30	
		Material	Softwood	Hardwood	MDF	
		Min. Density (kg/m <sup>3</sup> )	510	510	700	
<p><b>Intumescent Materials: PVC encapsulated Pyroplex Rigid Box Seal</b></p> <p><b>Head:</b> 2No. 10 x 4mm PVC encapsulated Pyroplex fitted centrally in the leaf edge or frame reveal.</p> <p><b>Jamb:</b> 2No. 10 x 4mm fitted centrally in the leaf edge or frame reveal.</p> <p><b>Hardware Protection:</b> See section 11.</p>						

**Maximum Door Leaf Size**

—◆— LSASD+OP     
 -■- ULSASD+OP & DASD+OP

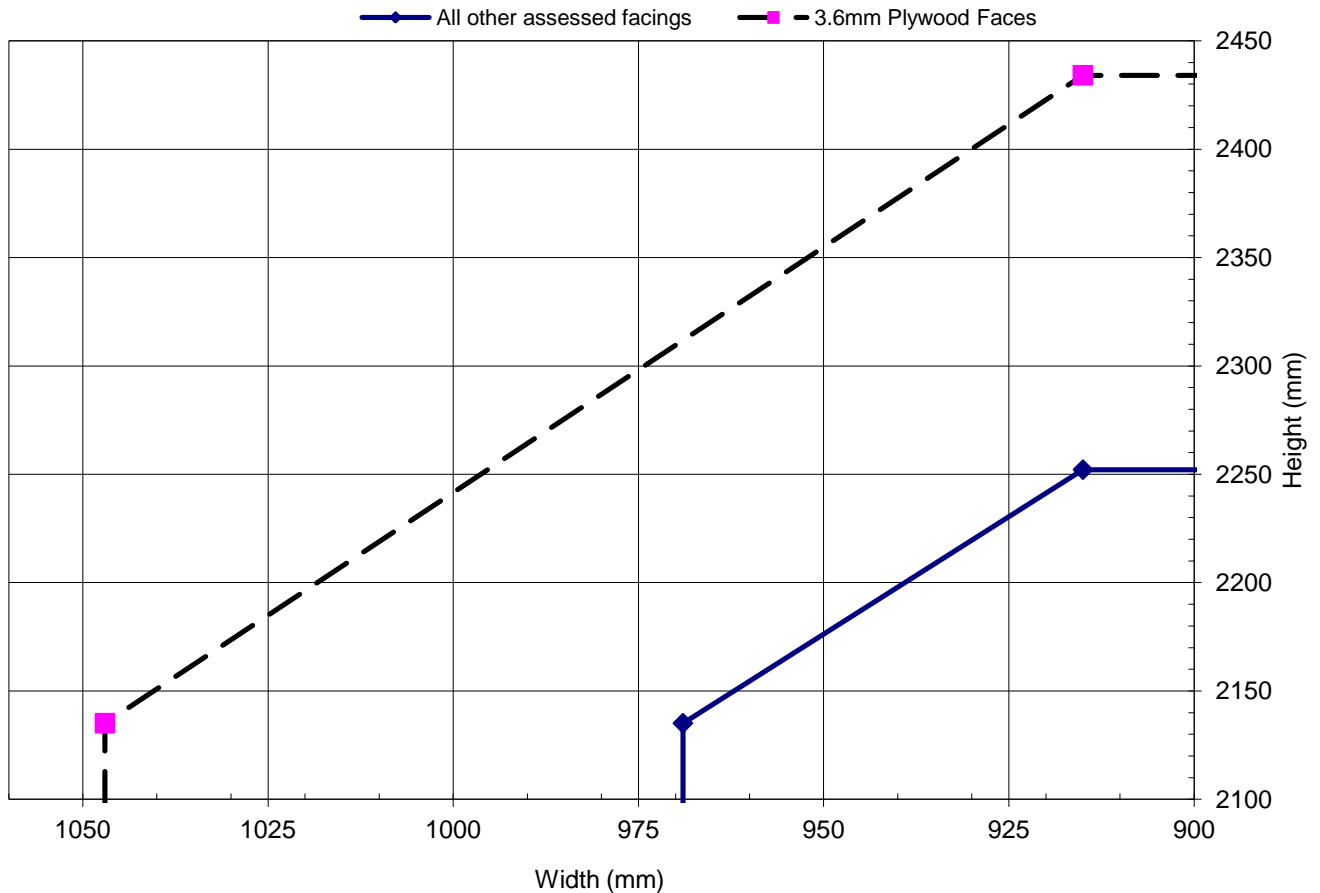


*The legal validity of this report can only be claimed on presentation of the complete report.*

## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets Latched, Single Acting, Double Doorsets – Palusol or Type 617

Leaf Sizes	Facing Type	Height (mm)		Width (mm)		
	3.6mm thick Plywood	From:	2135	x	1047	
		To:	2434	x	915	
All other assessed facing types	From:	2135	x	969		
	To:	2252	x	915		
Maximum Overpanel Height (mm)		Transomed	1500			
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)			
		Approved Systems	See section 7 and appendix B			
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30	
		Material	Softwood	Hardwood	MDF	
		Min. Density (kg/m <sup>3</sup> )	510	510	700	
<b>Intumescent Materials: PVC encapsulated Palusol 100 or Type 617</b>						
<b>Head:</b> 1No. 20 x 4mm seal fitted centrally in the leaf edge or frame reveal.						
<b>Jamb:</b> 1No. 20 x 4mm seal fitted centrally in the leaf edge or frame reveal.						
<b>Meeting Edges:</b>						
<b>Square:</b> 1No. 20 x 4mm seal fitted centrally in one meeting edge.						
<b>Rebated:</b> 1No. 10 x 4mm seal fitted centrally in the rebate of both leaf edges.						
<b>Hardware Protection:</b> See section 11.						

### Maximum Door Leaf Size



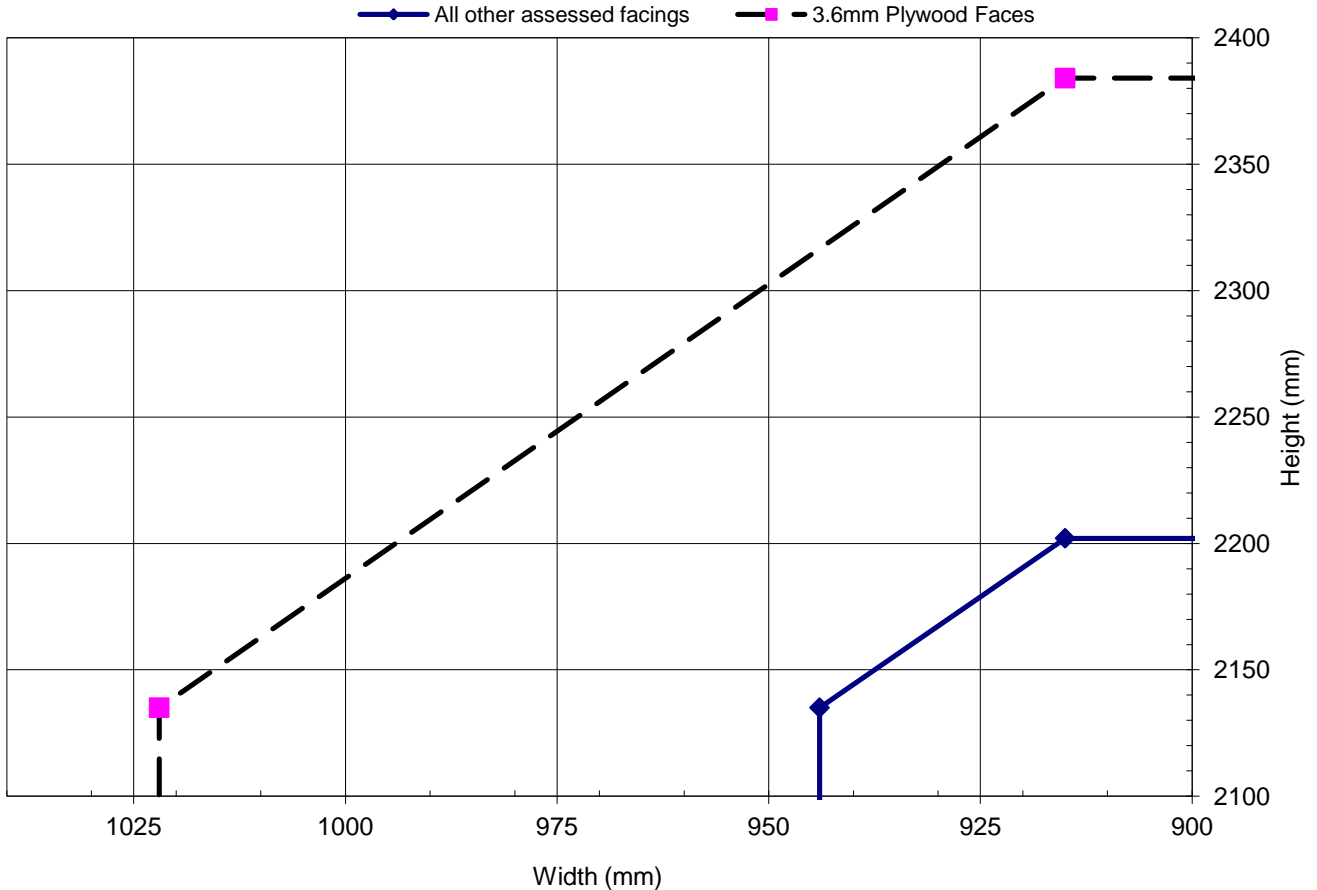
The legal validity of this report can only be claimed on presentation of the complete report.

## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets

### Unlatched, Single & Double Acting, Double Doorsets – Palusol or Type 617

Leaf Sizes	Facing Type	Height (mm)		Width (mm)		
	3.6mm thick Plywood	From:	2135	x	1022	
		To:	2384	x	915	
All other assessed facing types	From:	2135	x	944		
	To:	2202	x	915		
Maximum Overpanel Height (mm)		Transomed	1500			
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)			
		Approved Systems	See section 7 and appendix B			
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30	
		Material	Softwood	Hardwood	MDF	
		Min. Density (kg/m <sup>3</sup> )	510	510	700	
<b>Intumescent Materials: PVC encapsulated Palusol 100 or Type 617</b>						
<b>Head:</b> 1No. 20 x 4mm seal fitted centrally in the leaf edges or frame reveal.						
<b>Jambs:</b> 1No. 20 x 4mm seal fitted centrally in the leaf edges or frame reveal.						
<b>Meeting Edges:</b>						
<b>Square:</b> 1No. 20 x 4mm seal fitted centrally in one meeting edge.						
<b>Rebated:</b> 1No. 10 x 4mm seal fitted centrally in the rebate of both leaf edges.						
<b>Hardware Protection:</b> See section 11.						

### Maximum Door Leaf Size

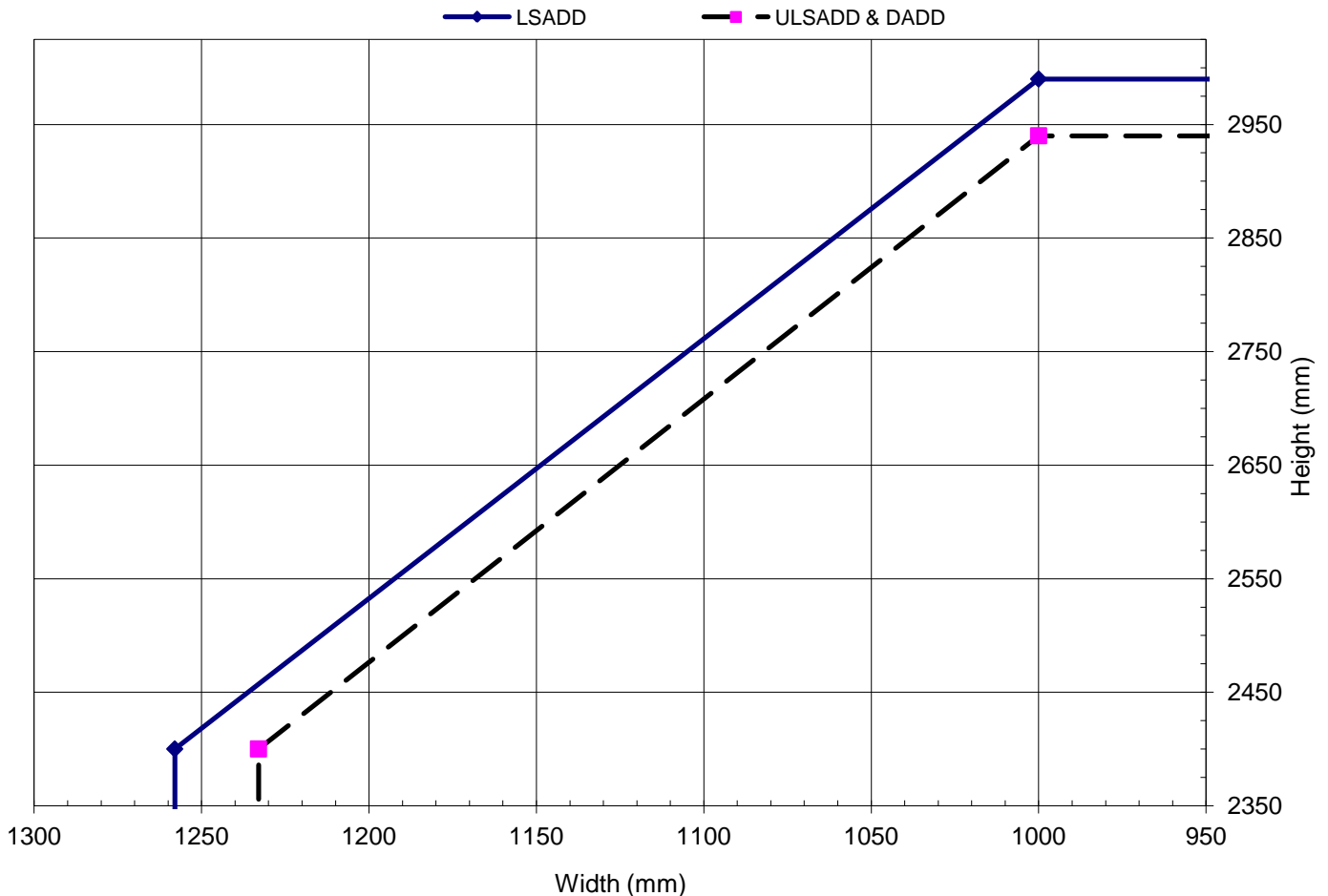


*The legal validity of this report can only be claimed on presentation of the complete report.*

## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets Latched & Unlatched, Single & Double Acting, Double Doorsets – Pyroplex Rigid Box Seal

Facing Types: 3.6mm Plywood, 6mm Plywood, 6mm MDF							
Leaf Sizes	Configuration			Height (mm)	Width (mm)		
	LSADD	From:			2400	x	1258
		To:			2990	x	1000
ULSADD & DADD	From:			2400	x	1233	
	To:			2940	x	1000	
Maximum Overpanel Height (mm)		Transomed	1500				
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)				
		Approved Systems	See section 7 and appendix B				
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30		
		Material	Softwood	Hardwood	MDF		
		Min. Density (kg/m <sup>3</sup> )	510	510	700		
<p><b>Intumescent Materials: PVC encapsulated Pyroplex Rigid Box Seal</b></p> <p><b>Head:</b> 2No. 10 x 4mm PVC encapsulated Pyroplex fitted centrally 10mm apart in the leaf edge or frame head.</p> <p><b>Jambs:</b> 2No. 10 x 4mm PVC encapsulated Pyroplex fitted centrally 10mm apart in each leaf edge or frame reveal.</p> <p><b>Meeting Edges:</b> 2No. 10 x 4mm PVC encapsulated Pyroplex fitted centrally 10mm apart in one leaf edge only.</p> <p><b>Hardware Protection:</b> See section 11.</p>							

### Maximum Door Leaf Size



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



## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets

Latched & Unlatched, Single & Double Acting, Double Doorsets + Overpanels – Pyroplex Rigid Box Seal

Facing Types: 3.6mm Plywood					
Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD+OP	From:	2400	x	1208
		To:	2890	x	1000
ULSADD+OP & DADD+OP	From:	2400	x	1183	
	To:	2840	x	1000	
Maximum Overpanel Height (mm)		1500			
Glazing	Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)			
	Approved Systems	See section 7 and appendix B			
Frame Specification	Min. Section (mm)	70 x 32	70 x 32	70 x 30	
	Material	Softwood	Hardwood	MDF	
	Min. Density (kg/m <sup>3</sup> )	510	510	700	

### Intumescent Materials: PVC encapsulated Pyroplex Rigid Box Seal

#### Head:

**Square:** 2No. 10 x 4mm PVC encapsulated Pyroplex fitted centrally 10mm apart in the leaf edge or bottom of overpanel.

#### Rebated:

**Leaves:** 2No. 10 x 4mm with one strip centrally fitted on the top of the upstand of the rebate and one centrally in the bottom of the rebate.

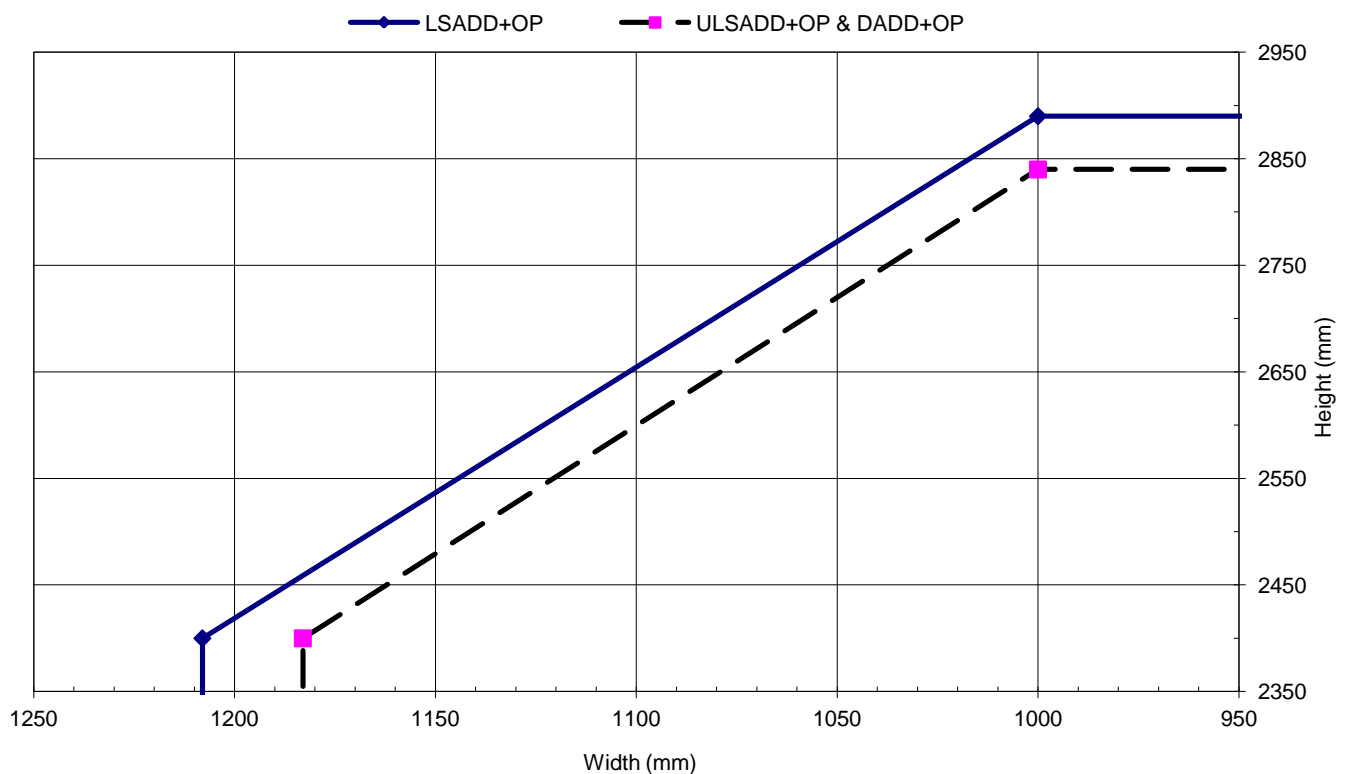
**Transom:** 1No. 10 x 4mm strip centrally fitted in the bottom of the overpanel rebate.

**Jamb:** 2No. 10 x 4mm PVC encapsulated Pyroplex fitted centrally 10mm apart in each leaf edge or frame reveal.

**Meeting Edges:** 2No. 10 x 4mm PVC encapsulated Pyroplex fitted centrally 10mm apart in one leaf edge only.

**Hardware Protection:** See section 11.

Maximum Door Leaf Size



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

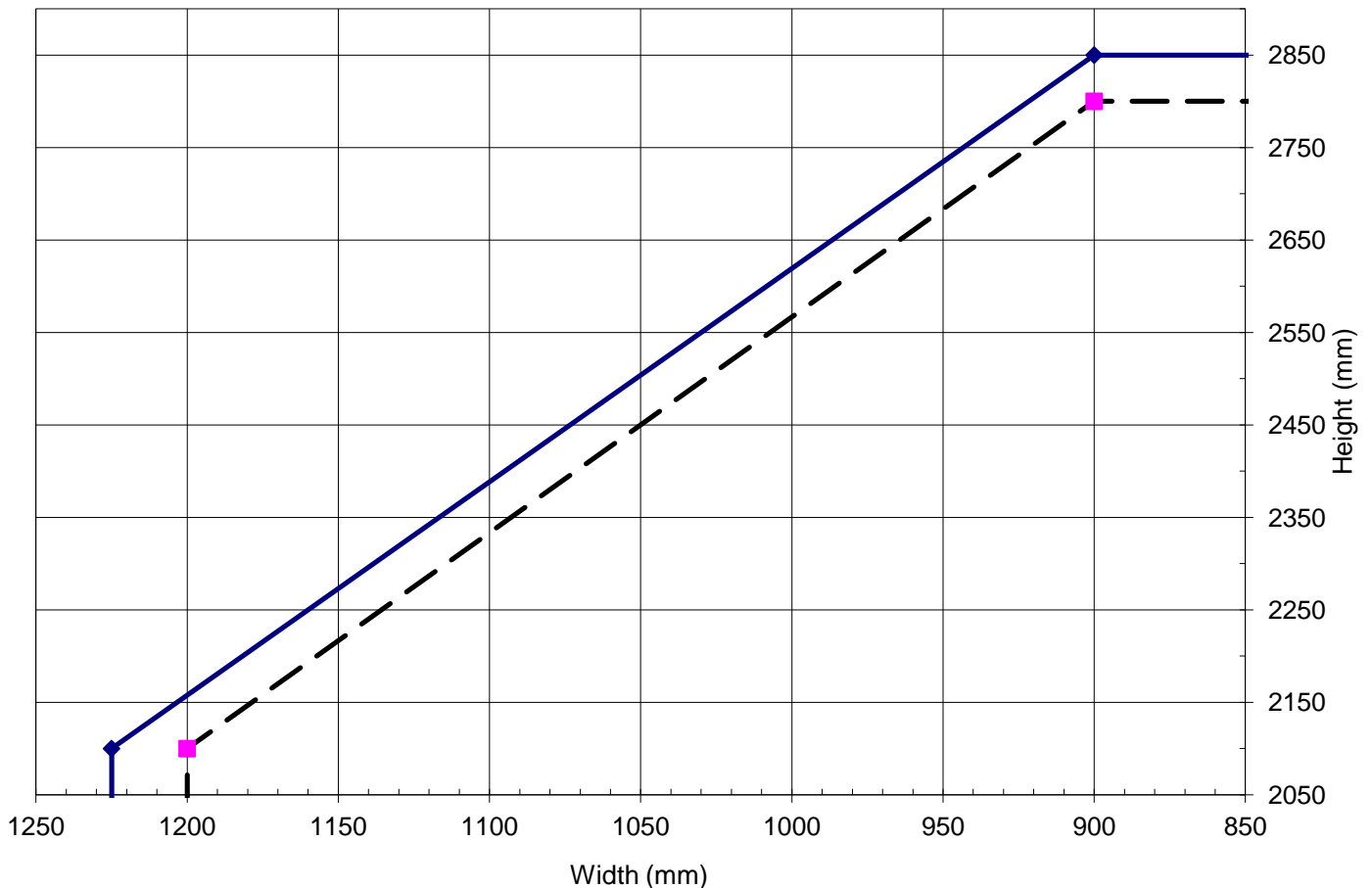
## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets

### Latched & Unlatched, Single & Double Acting, Single Doorsets – CS Edge Protectors/Acrovyn Wrap

Leaf Sizes	Configuration	Height (mm)		Width (mm)	
	LSASD	From: To:	2100 2850	x x	1225 900
Ulsasd & Dasd	From: To:	2100 2800	x x	1200 900	
	Maximum Overpanel Height (mm)	Transomed	2000		
Glazing	Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)			
	Approved Systems	See section 7 and appendix B			
Frame Specification	Min. Section (mm)	70 x 32	70 x 32	70 x 30	
	Material	Softwood	Hardwood	MDF	
	Min. Density (kg/m <sup>3</sup> )	450	450	700	
<b>Intumescent Materials: Type 617 – Lorient Polyproducts Ltd.</b>					
<b>Head:</b> 1No. 15 x 4mm fitted centrally in the leaf head or frame reveal.					
<b>Jams &amp; Overpanels:</b> 1No. 15 x 4mm fitted centrally in the leaf edge.					
<b>Hardware Protection:</b> See section 11.					

### Maximum Door Leaf Size

—◆— LSASD      -■- ULSASD & DASD



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

## Pacific Rim Wood Ltd. – Safeguard 30 Doorsets

### Latched & Unlatched, Single & Double Acting, Double Doorsets – CS Edge Protectors/Acrovyn Wrap

Leaf Sizes	Configuration		Height (mm)		Width (mm)	
	LSADD	From:		2100	x	1200
To:			2800	x	900	
ULSADD & DADD	From:		2100	x	1175	
	To:		2750	x	900	
Maximum Overpanel Height (mm)		Transomed	1500			
Glazing		Maximum Glazed Area	1.15m <sup>2</sup> (see section 7 for details)			
		Approved Systems	See section 7 and appendix B			
Frame Specification		Min. Section (mm)	70 x 32	70 x 32	70 x 30	
		Material	Softwood	Hardwood	MDF	
		Min. Density (kg/m <sup>3</sup> )	450	450	700	

**Intumescent Materials: Type 617 – Lorient Polyproducts Ltd.**

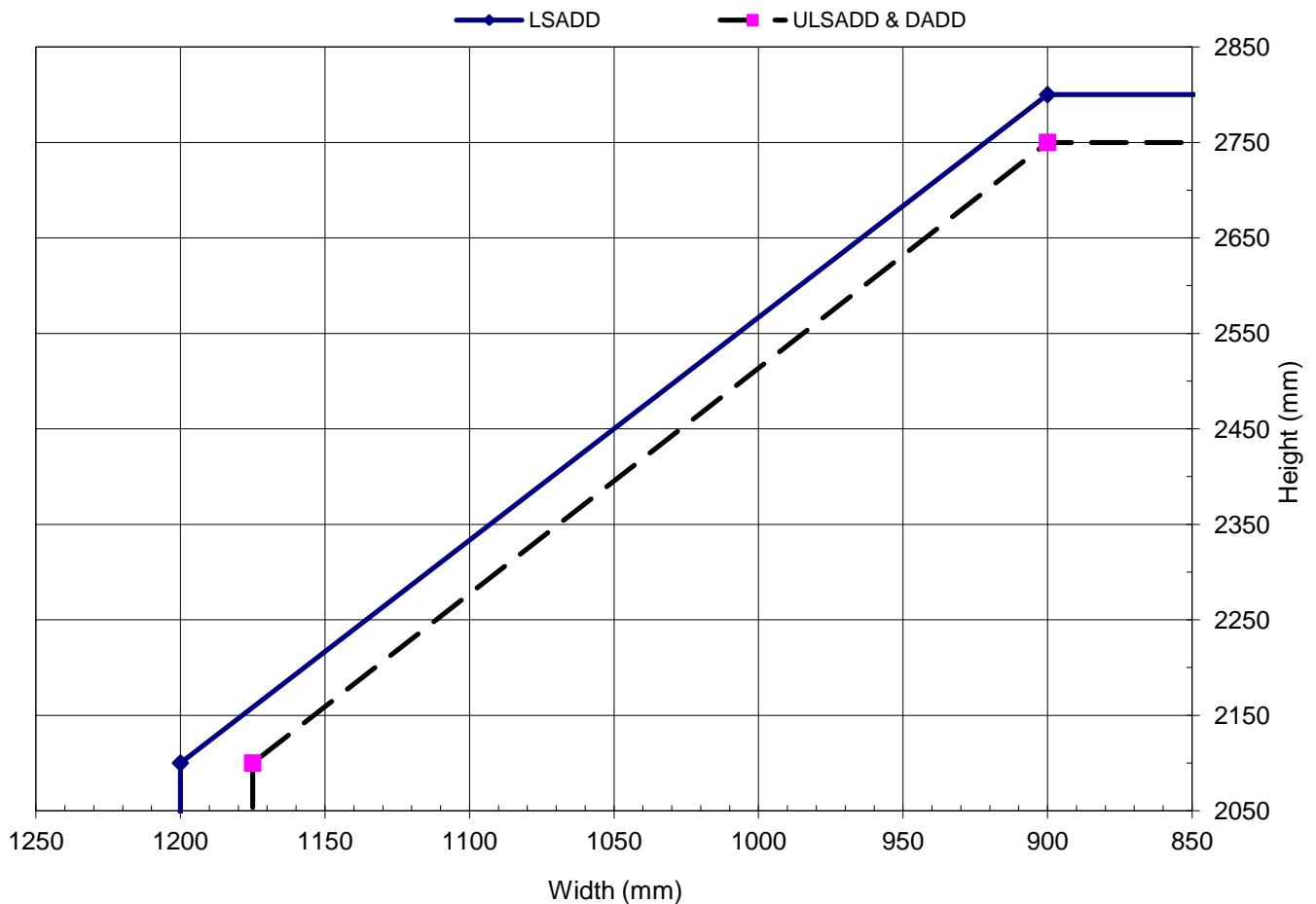
**Head:** 1No. 15 x 4mm fitted centrally in the leaf head or frame reveal.

**Jams & Overpanels:** 1No. 15 x 4mm fitted centrally in the leaf edge.

**Meeting Edges:** 1No. 15 x 4mm fitted centrally in the meeting edges of both leaves.

**Hardware Protection:** See section 11.

**Maximum Door Leaf Size**



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

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