Global Assessment of:

Blankfort Inc.

Blankfort 30 & Blankfort 30+

30 Minute Fire Resisting Doorsets

Report No: Chilt/A12151

Valid From: 24 July 2012
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Contents

1 Introduction

This document constitutes a global assessment to collate the fire resistance evidence for Blankfort Inc., Blankfort 30 and Blankfort 30+ fire resisting doorsets. The assessment uses established extrapolation and interpretation techniques in order to extend the scope of application by determining the limits for the design based on the tested constructions and performances obtained. The assessment is an evaluation of the potential fire resistance performance, if the elements were to be tested in accordance with BS 476: Part 22: 1987.

2 General Description of Construction

2.1 Blankfort 30

The primary construction for Blankfort 30 door leaves covered by this assessment comprises the following designs:

Element	Species/type	Dimensions (mm)	Density (kg/m^3)
Core: (lamels of one of the following tested species)	Eastern white pine	Lamel size: max 42 wide x 26-27 thick	450*
	Grey pine	Lamel size: max 42 wide x 26-27 thick	500*
	Spruce	Lamel size: max 42 wide x 26-27 thick	400-500*
Top rail (leaves over 2150mm high)	Same material as core	100 wide	As core
Facings	Chipboard (particleboard)	9 thick	650*
Lippings:	Hardwood	Minimum 6 thick	582

*Stated nominal density

Note: The design may also be produced in 50-54mm thick versions as required, providing adjustment is made to the core thickness.

2.2 Blankfort 30+

The primary construction for Blankfort 30+ door leaves covered by this assessment comprises the following designs:

Element		Species/type	Dimensions (mm)	Density (kg/m^3)
Core: (lamels of one of the following tested species)		Eastern white pine	Lamel size: max 30 wide x 21 thick	450*
		Grey pine	Lamel size: max 30 wide x 21 thick	500*
		Spruce	Lamel size: max 30 wide x 21 thick	400-500*
Top rail (leaves over 2150mm high)		Same material as core	100 wide	As core
Facings	**Outer**	MDF	3 thick	700*
	Inner	Chipboard (particleboard)	9 thick	650*
Lippings:		Hardwood	Minimum 6 thick	582

* Stated nominal density

Note: The design may also be produced in 50-54mm thick versions as required, providing adjustment is made to the core thickness.

3 Leaf Sizes

Assessment for increased leaf dimensions is based on the design's performance and the characteristics exhibited during test. Data sheets specifying the maximum assessed leaf sizes and graphs showing the permitted gradient between maximum height and width are contained in appendix E.

Doorsets containing leaves with smaller dimensions than those stated are deemed to be less onerous and are therefore automatically covered.

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

Door leaves of this design may be altered as follows:

Element	Reduction
Leaf	The manufactured size of the leaf may be reduced in height or width without restriction but reduction in height must be from the bottom edge only with the top rail dimension (where present) remaining unaltered.
Lipping	The dimensions stated in section 10 may be reduced by 20% for fitting purposes. If reductions in leaf width or height are made, lippings must be replaced and bonded correctly to maintain the minimum specified lipping dimensions.

6 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).

If a transom is required to separate the leaf heads from the overpanel, it must be to the same specification as the door frame (see the note under the table in section 9.1).

Door frame joints must utilise one of the following four methods: mortise and tenon joints; half lapped joints; mitre joints; butt joints (see section 9.2).

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:

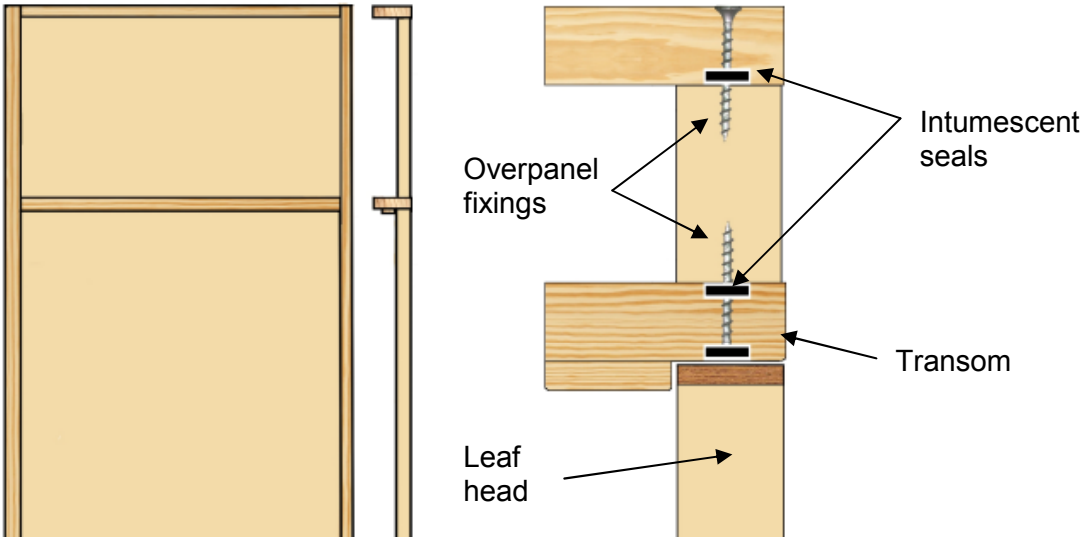
- Screwing through the rear of the frame with steel screws passing at least 30mm into the centre line of the overpanel. Fixings must be no more than 100mm from each corner and a maximum of 250mm centres in between.

Maximum overpanel heights are as follows:

- Single doorsets - 2000mm;
- Double doorsets - 1500mm.

The intumescent seals specified for the jambs in appendix E, must be fitted in the concealed edges of the overpanel or frame reveal. Providing the intumescent seals are fitted to all edges of the overpanel, the frame to overpanel junction is permitted to have a maximum 2mm gap tolerance.

The intumescent seal specification for flush overpanel assemblies (junction between leaf heads and overpanel) must comply with the details given in appendix E.



7 Fanlights and Side Screens

7.1 General

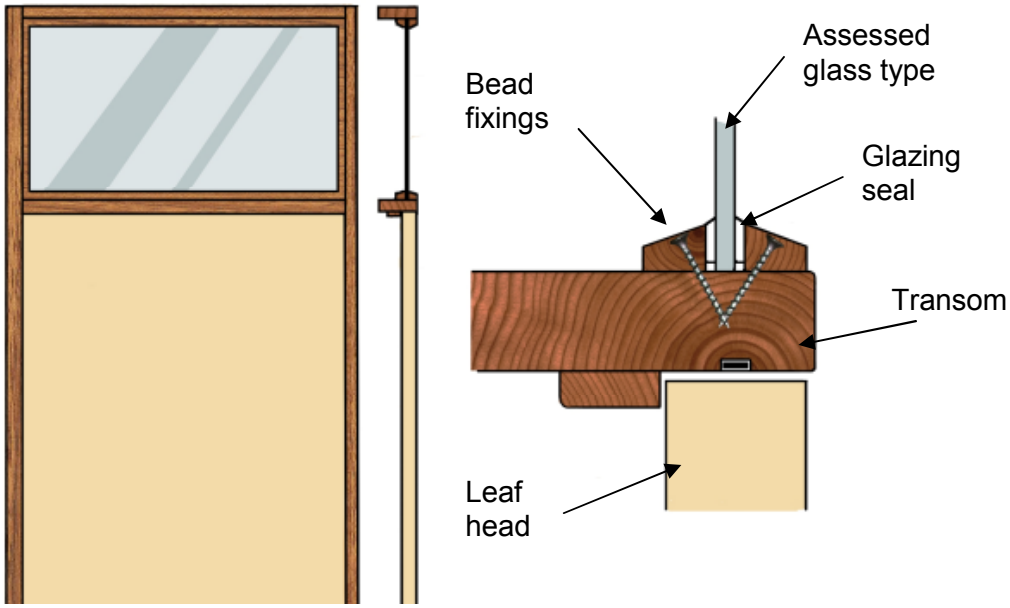
Timber frame doorsets may include glazed fanlights or side screens. The timber frame and glazing beads must be hardwood with a minimum density of 640 kg/m^3, whilst the frame section must be a minimum of 70mm x 44mm. The door frame and screen construction must comply with the specification contained in section 9.

The maximum assessed fanlight and side screen 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: 2000 or 2008, 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

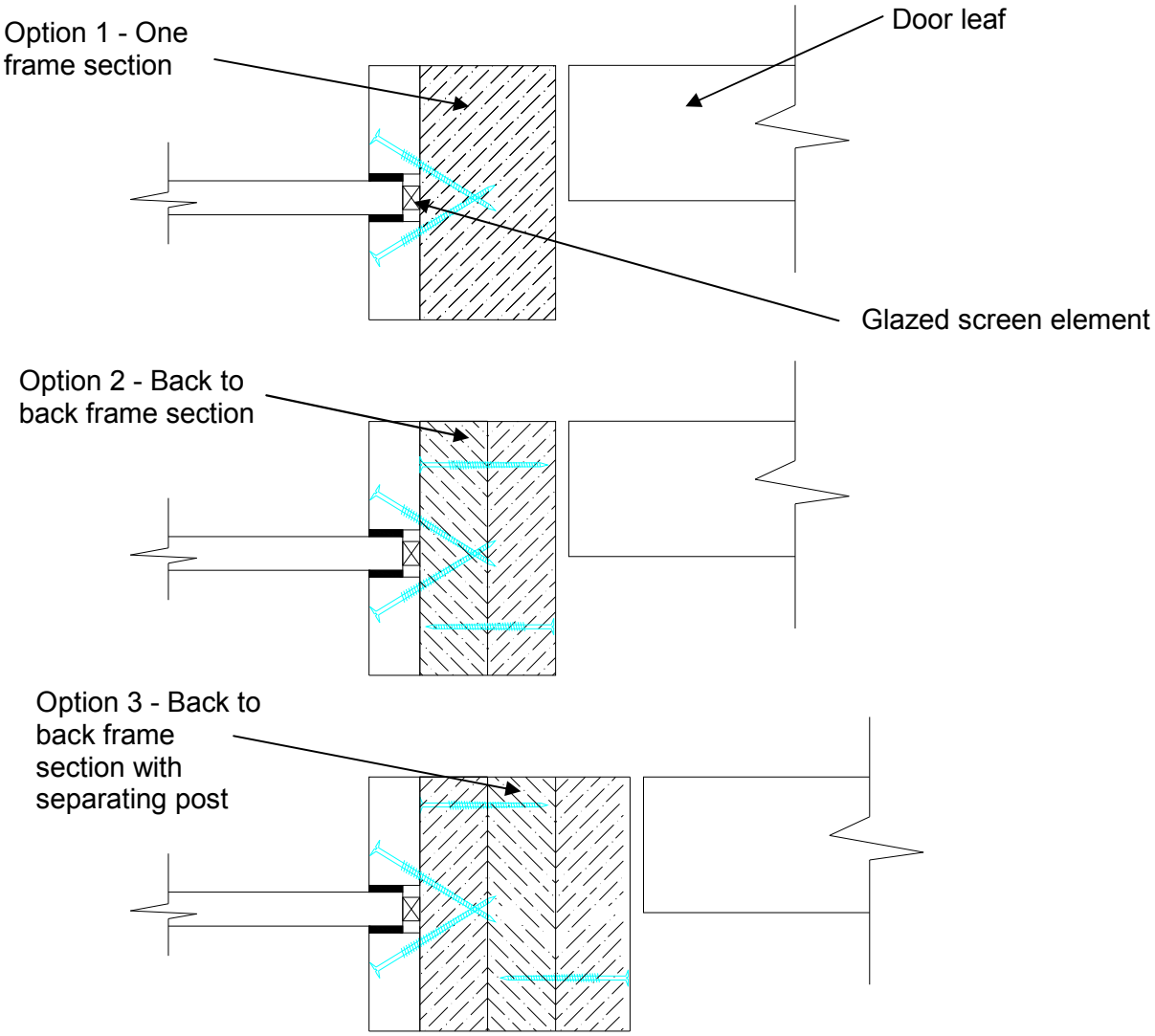
NB: MDF and softwood frame doorsets are not assessed for glazed fanlights or side screens without specific test evidence (see section 7.2 for options).



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

7.2 Common frame sections

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



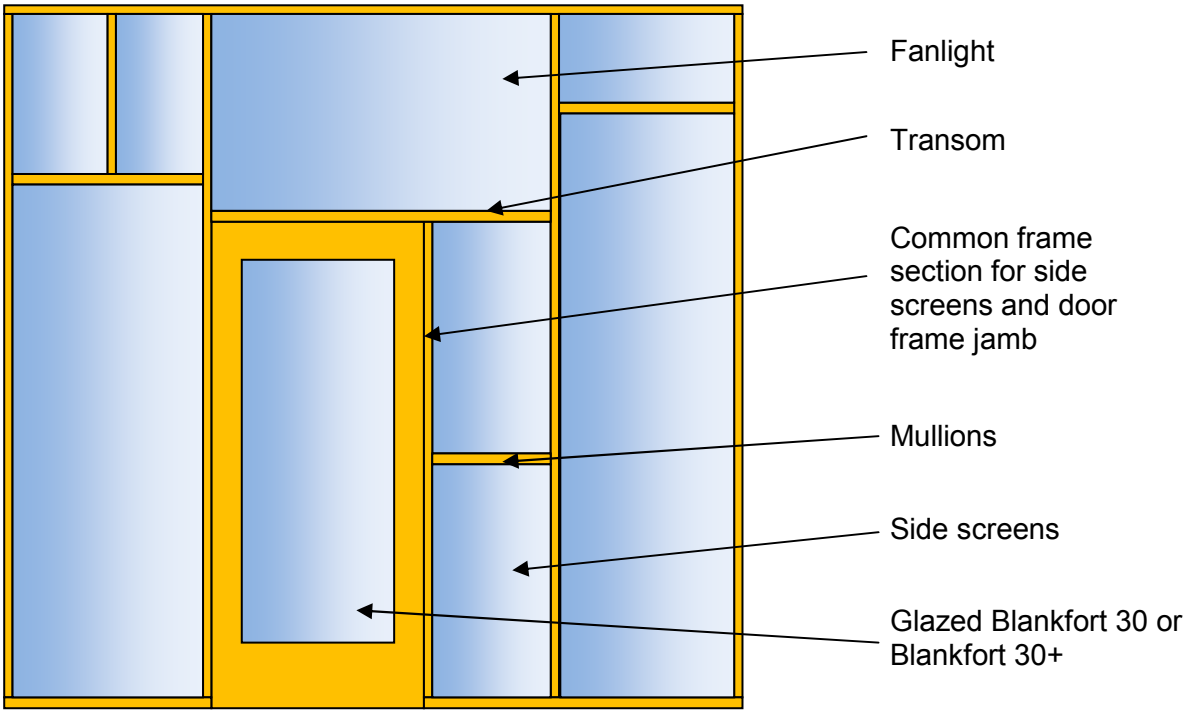
When using separate sections of timber, as shown above (option 2 and 3), each section must be suitably fixed to one another using appropriate steel screw fixings and glued using one of the adhesives approved for the lipping in the adhesive section of this report. Screws must be fixed at 600mm centres 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.

7.3 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.



7.4 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.

7.4.1 EW30 (7mm thick) – CGI Ltd

Transom/mullion details:

- Minimum 75mm deep x 40mm thick softwood or hardwood (min density 510kg/m^3). 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^3). The bead shape may be square or incorporate a 10-15^o chamfer;
- 50mm long size 6-8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30^o 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 1 No. single or double leaf doorset.

7.4.2 EW30 Maxi (11mm thick) – CGI Ltd

Transom/mullion details:

- Minimum 75mm deep x 40mm thick hardwood (min density 640kg/m^3). 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^3). The bead shape may be square or incorporate a 10-15^o chamfer;
- 50mm long size 6-8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30^o 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 1 No. single or double leaf doorset.

7.4.3 EI30 (15mm thick) – CGI Ltd

Transom/mullion details:

- Minimum 80mm deep x 40mm thick hardwood (min density 640kg/m^3). 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^3). The bead shape may be square or incorporate a 10-15^o chamfer;
- 50mm long size 6-8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30^o 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 1 No. single or double leaf doorset.

7.4.4 15mm Pyranova – Schott

Transom/mullion details:

- Minimum 68mm deep x 80mm thick softwood or hardwood (min density 400kg/m^3). This section must be used for door jambs and transom above head of door leaves;
- Minimum 68mm deep x 40mm thick softwood or hardwood (min density 400kg/m^3) can be used 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 23.5mm deep hardwood beads (minimum density 640kg/m^3). The bead shape may be square or incorporate a 10-15^o chamfer;
- 40mm long size 6-8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30^o to the plane of the glass;
- 8mm x 3mm closed cell foam glazing tape located between the glass and the beads;
- 3mm high x 15mm wide x 80mm long hardwood or non-combustible setting blocks.

Maximum single pane dimensions:

Screen Element	**Height** (mm)	**Width** (mm)
Fanlight	425	2280
Side screen	2264	350

- 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 1 no. single or double leaf doorset.

7.4.5 6mm Pyroshield 2 – Pilkington Glass

Transom/mullion details

- Minimum 80mm deep x 44mm thick softwood or hardwood (min density 510kg/m^3). 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/m³) with an 18º 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 1 No. single or double leaf doorset.

7.4.6 7mm Pyrodur 30-104 – Pilkington Glass

Transom/mullion details:

- Minimum 80mm deep x 44mm thick hardwood (min density 640kg/m^3). 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/m³) with an 15º 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 1 No. single or double leaf doorset.

7.4.7 10mm Pyrodur 60-10 – Pilkington Glass

Transom/mullion details:

- Minimum 80mm deep x 44mm thick hardwood (min density 640kg/m^3). 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/m³) with an 15º 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 1 No. single or double leaf doorset.

7.4.8 15mm Pyrostop 30-10 – Pilkington Glass

Transom/mullion details:

- Minimum 95mm deep x 44mm thick hardwood (min density 640kg/m^3). 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/m3). 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 1 No. single or double leaf doorset.

8 Glazing

8.1 General

The doorset design has demonstrated that it is capable of tolerating glazed apertures, whilst providing a margin of over performance. The maximum total assessed glazed area is 1.92m^2, which may be distributed using multiple panes, with a maximum single pane area of 1.32m^2.

Glazing is acceptable within the following parameters.

8.2 Assessed Glazing Systems

The glazing system may be as tested, or alternatively one of the following tested proprietary systems:

Glazing System	Manufacturer
1. Therm-A-Strip 30	Intumescent Seals Ltd.
2. Therm-A-Glaze 45	Intumescent Seals Ltd.
3. Fireglaze 30	Sealmaster Ltd.
4. Firestrip 30	Hodgsons Sealants Ltd.
5. Pyroglaze 30	Mann McGowan Ltd.
6. System 36	Lorient Polyproducts Ltd.
7. FF1	Lorient Polyproducts Ltd.
8. R8913	Pyroplex

8.3 Assessed Glass Products

Assessed glass types are as follows:

Glass Type	Manufacturer	Thickness (mm)	Max Area (m^2)
1. Fivestar (see note 2)	Vetrotech Saint Gobain	5	0.8
2. Pyroshield	Pilkington Group Ltd.	6 & 7	1.32
3. Pyroshield 2	Pilkington Group Ltd.	6 & 7	1.32
4. Pyroswiss 'Classic' (see note 2)	Vetrotech Saint Gobain	6	0.8
5. Pyran S	Schott Glass Ltd.	6	1.32
6. Pyrostem	CGI Ltd.	6	1.32
7. Pyroguard EW 30	CGI Ltd.	7	0.87
8. Pyranova S3.07	Schott UK Ltd.	7	1.26
9. Pyrobelite 7	AGC Flat Glass UK	7	1.32
10. Pyrodur 30-104	Pilkington Group Ltd.	7	1.32
11. Pyrodur 60-10	Pilkington Group Ltd.	10	1.32
12. Pyroguard EW MAXI	CGI Ltd.	11	1.32
13. Pyranova 15-S2.0	Schott UK Ltd.	11	1.32
14. Pyrobelite 12	AGC Flat Glass UK	12	1.32
15. Pyrodur 60-20	Pilkington Group Ltd.	13	1.32
16. Swissflam Lite	Vetrotech Saint Gobain AG	14	1.32
17. Pyroguard EI 30	CGI Ltd.	15	1.32
18. Pyrostop 30-10	Pilkington Group Ltd.	15	1.32
19. Pyrobel 16	AGC Flat Glass UK	16	1.32

Notes:

1. All glass types must be fitted strictly in accordance with the manufacturers' tested details/installation requirements, particularly with reference to suitable tolerances for expansion of the glass pane.
2. 6mm Pyroswiss and Fivestar manufactured by Vetrotech may only be used with glazing system 3 (Firestrip 30) listed in section 8.2.
3. Glass types 12 and 16-18 are fully insulating for 30 minutes in terms of the criteria set out in BS 476: Part 20: 1987.

8.4 Glazing beads and Installation

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

Material	Profile	Min Density (kg/m^3)	Application
Hardwood	Splayed	640	All proprietary systems detailed in section 8.2 and all glass types listed in section 8.3
Hardwood	Square	640	All proprietary systems detailed in section 8.2 with glass types 9-19 listed in section 8.3

An alternative to the proprietary splayed bead systems is a square hardwood bead which may be used either with or without a 3mm high x 3mm deep quirk (see appendix B for diagram of profile). Square beads may only be used with glass types 9-19, and with all proprietary systems listed in section 8.2.

The shape of glazed apertures is not restricted providing the glazing system can accommodate the profile.

Glazed apertures must not be nearer than 100mm to any leaf edge. Multiple apertures are acceptable up to the maximum approved area with a minimum dimension of 80mm separating the apertures.

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

Glazing beads must be retained in position with 40mm long x 2mm diameter steel pins or 40mm long No 8 screws, inserted at 35-40º to the vertical at no more than 50mm from each corner and at 150mm maximum centres.

False timber beads may be applied to glass types 9-11 and 13-19 using one of the following intumescent glazing products:

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

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

Sectional drawings detailing the proprietary glazing systems are contained in appendix C.

9 Door Frames

9.1 Door Frame Construction

Door frames for Blankfort 30 and Blankfort 30+ may be timber or MDF as follows (for steel door frame option see appendix B):

Material	Section Size (mm)	Min Density (kg/m³)	Application	Leaf Size Range (mm)
Softwood/ hardwood*	70 x 32	500	Not permitted with flush overpanel	See appendix E
Hardwood*	70 x 32	640	All	All
MDF	70 x 30	700	All	See appendix E

*If the doorset features a transomed overpanel (i.e. constructed using a section of door blank), the door frame must be softwood or hardwood with a minimum section of 70mm x 32mm and of the minimum densities stated above. Framing for doorsets with side screens and fanlights must meet the relevant specification in section 7.

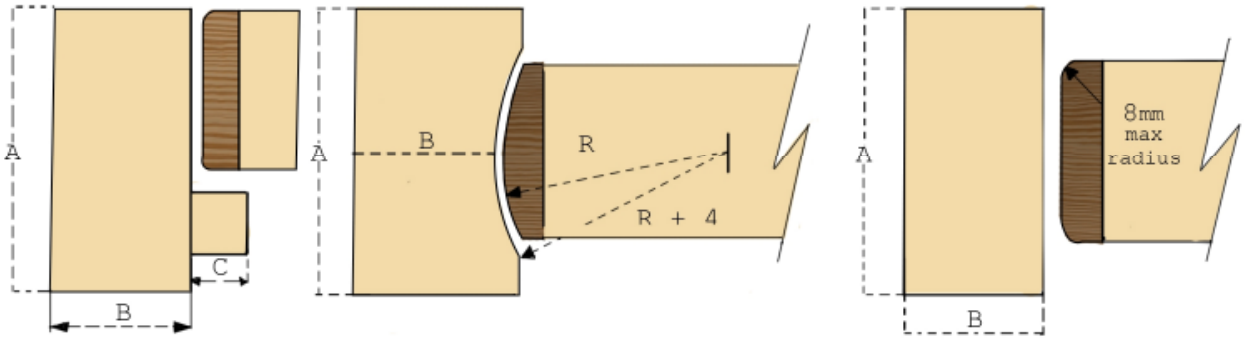
All door frame timber must be to class J30 as specified in BS EN 942: 2007 (see section 16).

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

Frame joints may be mortice and tenoned, mitred, half lapped or butted and with no gaps (see section 9.2). All jointing methods require mechanical fixing with the appropriate size ring shank nails or screws.

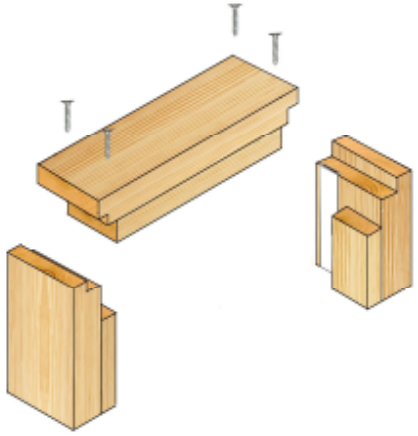
The following diagram depicts the assessed frame profiles and dimensions:

A = min 70mm B = min 30 - 32mm (see table above) C = min 12mm
R = radius from floor spring 8mm max radius to create a maximum 2mm edge profiling

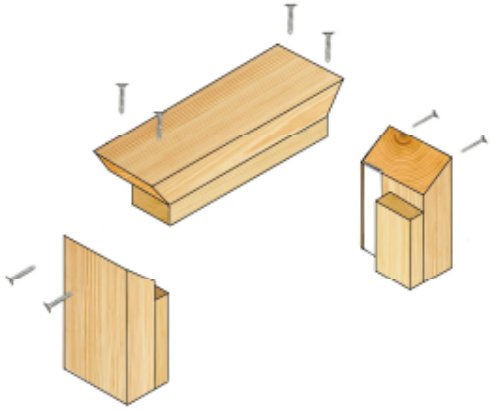


Standard **Scalloped** **Profiled edges**

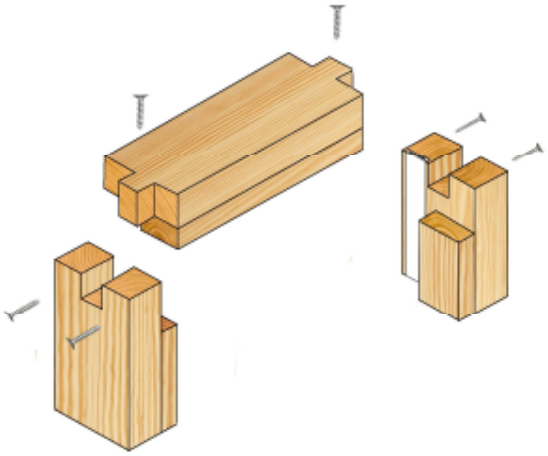
9.2 Door Frame Joints



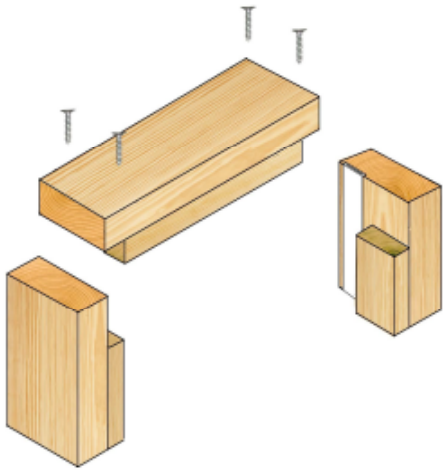
Half Lapped Joint



Mitre Joint



Mortise and Tenon Joint

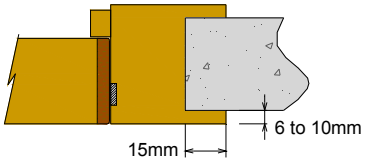


Butt Joint

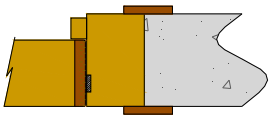
Note: Drawing is representative of each type of door frame joint, actual construction in terms of intumescent seal location and material etc. must be as the text within this document specifies.

9.3 Door frame installations

The following diagrams indicate acceptable and unacceptable door frame installations:



Permitted



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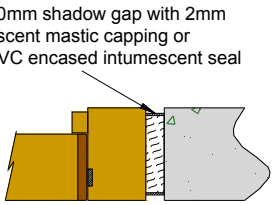

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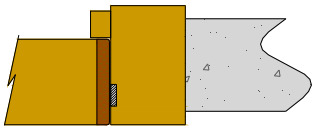
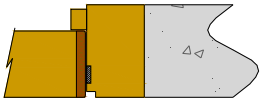
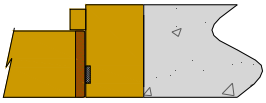


Not Permitted



Not Permitted



Permitted

10 Edging Materials

10.1 Timber Lippings

Blankfort 30 and 30+ designs must be lipped in accordance with the following specification:

Material	Size (mm)	Min Density (kg/m³)
Timber for lippings must be straight grained joinery quality hardwood, free from knots splits or checks	1. Flat = 6mm to 16mm thick with a maximum of 2mm profiling permitted at corners of lipping (see section 9.1)	582
	2. Rounded = 8mm-18mm with a radius matching the distance between leaf edge and floor pivot (see section 9.1)	
	3. Rebated = 18mm to 28mm thick with a 12mm deep rebate (equal or offset)	

Notes:

1. Single doorsets are not permitted with rebated vertical edges;
2. Single & double doorsets without overpanels only require lipping on the vertical edges;
3. Doorsets with flush overpanels (i.e. no transom) must be lipped on the vertical edges and additionally at the bottom edge of the overpanel and top edge of the doors;

4. Doorsets with flush overpanels may have the head junctions and meeting edges rebated concurrently;
5. Lippings for concealed intumescent material must be bonded with urea formaldehyde;
6. If a leaf head junction or meeting edge detail is to incorporate an offset rebate, the specified rebated intumescent detail must be used (see appendix E) with a minimum of 3mm from the edge of the intumescent strip to the leaf edge being maintained. The intumescent may be positioned closer to the upstand in order to achieve this requirement;
7. A 2.5^0 chamfer is permitted to the lipping at the leading edge of leaves providing the door gaps meet the requirements of section 17.

10.2 PVC Edge Protectors

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: 2000 or 2008, 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. Construction Specialities UK Ltd can provide edge protectors with supporting test evidence for this doorset design and must be contacted to confirm exact requirements (www.c-sgroup.co.uk).

11 Leaf Facing Materials

11.1 Structural Facings – Blankfort 30

The primary facing material for this doorset design is minimum 9mm thick chipboard (nominal density 650kg/m³). Other test data has been generated on alternative face materials, which may be used in lieu of the chipboard. See the table below for details:

Material	Minimum Density	Performance Data
9mm MDF	720kg/m^3	Test RF98018 incorporated 10mm thick MDF facings and recorded a 36% over run in performance. This provides confidence in the MDF option for all configurations with a maximum leaf size of 3076mm high x 1017mm wide (see note under table in appendix A)
5mm plywood	640kg/m^3	Tested under CFR0703091 where a good resistance to burn through and high product stability were shown. The medium scale nature of the tested specimen will enable assessment of the use of this face material to be used for single leaf doorsets (latched and unlatched, option for transomed overpanels only) albeit with a maximum leaf size of 2040mm high x 925mm wide. Note that the core needs to be thicker than that used with 9mm face products in order to maintain 44mm minimum leaf thickness

11.2 Structural Facings – Blankfort 30+

The tested facing arrangement for this door design is listed below:

Element		Species/type	Dimensions (mm)	Density (kg/m^3)
Facings	**Inner**	Chipboard	9	650
	Outer	MDF	3	700

The inner facing of chipboard is considered to be of structural importance to the fire resistance of the door design and substitution of alternative materials is therefore not permitted.

The outer MDF facing at 3mm thick is considered to have limited influence on the structural strength of the door in terms of fire resistance and the following materials have been assessed as alternative options:

- 3mm thick plywood (640kg/m^3);
- 3mm thick chipboard (640kg/m^3).

11.3 Decorative and Protective Facings

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

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

Notes

1. Metallic facings are not permitted except for push plates and kick plates;
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 (other than those covered by section 10.2 of this assessment).

12 Intumescent Materials

12.1 General

It is important that the type, size and fitting detail for the intumescent seals remains as tested. These products can often exhibit significantly different characteristics, which could alter the performances obtained during test, and therefore they must not be considered interchangeable, irrespective of whether the product has been tested and the seal dimensions are maintained.

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

Application	Location	Product/Manufacturer
Edge seals	Fitted in the frame jambs or leaf edges	1. PVC encased Palusol 100 – Lorient Polyproducts Ltd or Mann McGowan Ltd. 2. Therm-A-Flex and Therm-A-Seal – Intumescent Seals Ltd. 3. Type 617 – Lorient Polyproducts Ltd. 4. Pyroplex – Pyroplex Ltd.
Hinges	Under both blades (leaves over 2300 (h))	1. 1mm Interdens – Dufaylite Developments Ltd. 2. 1mm MAP paper – Lorient Polyproducts Ltd. 3. 1mm Therm-A-Flex – Intumescent Seals Ltd 4. 1mm Pyrostrip – Mann McGowan Ltd.
Lock/latches	Under forend & keep (forends & keeps over 150mm high)	1. 1mm Interdens – Dufaylite Developments Ltd. 2. 1mm MAP paper – Lorient Polyproducts Ltd. 3. 1mm Therm-A-Flex – Intumescent Seals Ltd 4. 1mm Pyrostrip – Mann McGowan Ltd.
Top pivots & flush bolts	Lining all sides of the mortices	1. 1mm MAP paper - Lorient Polyproducts Ltd. 2. 1mm thick Interdens - Dufaylite Developments Ltd. 3. 1mm G30 – Sealmaster Ltd. 4. 1mm Therm-A-Strip - Intumescent Seals Ltd 5. 1mm Therm-A-Flex - Intumescent Seals Ltd

Concealed intumescent material must be Palusol 100 and is permitted for the vertical edges of single leaf doorsets only and when used with hardwood door frames. Concealed material must be grooved into the rear of the lipping and not into the leaf edges.

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

12.2 Anti-ligature intumescent detail

To help maintain the anti-ligature status of fire resisting doorsets installed within mental health facilities it is necessary to provide for the option of fitting perimeter intumescent seals in short lengths (minimum 200mm).

Investigative testing carried out by CIFL has shown that the fitting of perimeter intumescent seals as short lengths is acceptable subject to the following specification:

Element	Specification
Leaf configuration	LSASD & LSADD
Maximum leaf size	2100mm (h) x 1000mm (w) providing leaf size is covered by relevant data sheet in appendix E for intumescent seal types listed in this table below
Door frame	Softwood (min 510 kg/m^3) Minimum frame section - 70mm (w) x 32mm (t)
Intumescent seal length	Minimum 200mm
Intumescent seal type	1. Type 617 – Lorient Polyproducts Ltd. 2. Therm-A-Seal – ISL
Seal fixing (optional)	20mm long fine gauge steel pins located 25mm from the end of each length of intumescent

Notes:

1. The joint between each section of intumescent strip must be tightly butted to each other with no gaps;
2. It must be ensured that the intumescent material is present for its full length within its PVC casement for each strip section when fitted to the leaf edge or frame reveal;
3. All other details must remain as specified herein.

13 Adhesives

The following adhesives must be used in construction:

Element	Product/Manufacturer
Core lamels	Type 1 x-linked PVA
Facings	Type 1 x-linked PVA, PU
Lipping	Urea formaldehyde (required for lipping concealed intumescents)/PU/MR PVA/x-linked PVA

14 Tested Hardware

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

Element	Make/type	Size (mm)
Hinges	Royde & Tucker H105 lift off hinges	98 x 82 (overall)
Closers	Dorma TS73V face fixed overhead closer	See manufacturers information
	Dorma ITS 96 concealed overhead closer	See manufacturers information
	Dorma BTS75 floor spring assemblies	See manufacturers information
Locks/latches	Standard 63mm and 75mm mortise latches with aluminium lever handles	-
Threshold seals	Lorient Polyproducts Ltd. IS8010 seal	See manufacturers information

15 Additional & Alternative Hardware

15.1 Latches & Locks

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

Maximum forend and strike plate dimensions:	235mm high by 25mm wide by 4mm thick
Maximum body dimensions:	18mm thick by 100mm wide by 165mm high
Intumescent protection:	See section 12
Materials:	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel or brass with a melting point ≥ 800^{o}C

15.2 Hinges

Blankfort 30 and Blankfort 30+ door leaves must be hung on a minimum of 3 hinges. Leaves over 2300mm high must fit 4 hinges. Hinges with the following specification are acceptable:

Blade height:	90 – 120mm
Blade width (excluding knuckle):	30 – 35 mm
Blade thickness:	2.5-4 mm
Fixings:	Minimum of 4 No. 30mm long No. 8 or No.10 steel wood screws per blade
Materials:	Steel, stainless steel, or brass with a melting point ≥ 800^{o}C
Hinge positions (to top of blade):	Top: 150 – 180mm from the head 2nd and 3rd bottom: equispaced between top and bottom Bottom: 280 – 350mm from the foot
Intumescent protection:	See section 12

15.3 Safehinge

It is possible to fit the Safehinge^{TM} product to the Blankfort 30 and 30+ designs. The end user must satisfy themselves that the test evidence supports the proposed end use application. Distributors of the Safehinge^{TM} product can provide supporting test evidence for this doorset design and must be contacted to confirm exact requirements.

15.4 Automatic Closing

Automatic closing devices, must either be as tested or components of equal specification that has demonstrated contribution to the required performance of these types of 30 minute doorset design, when tested to BS476: Part 22: 1987 or BSEN 1634-1: 2000 or 2008.

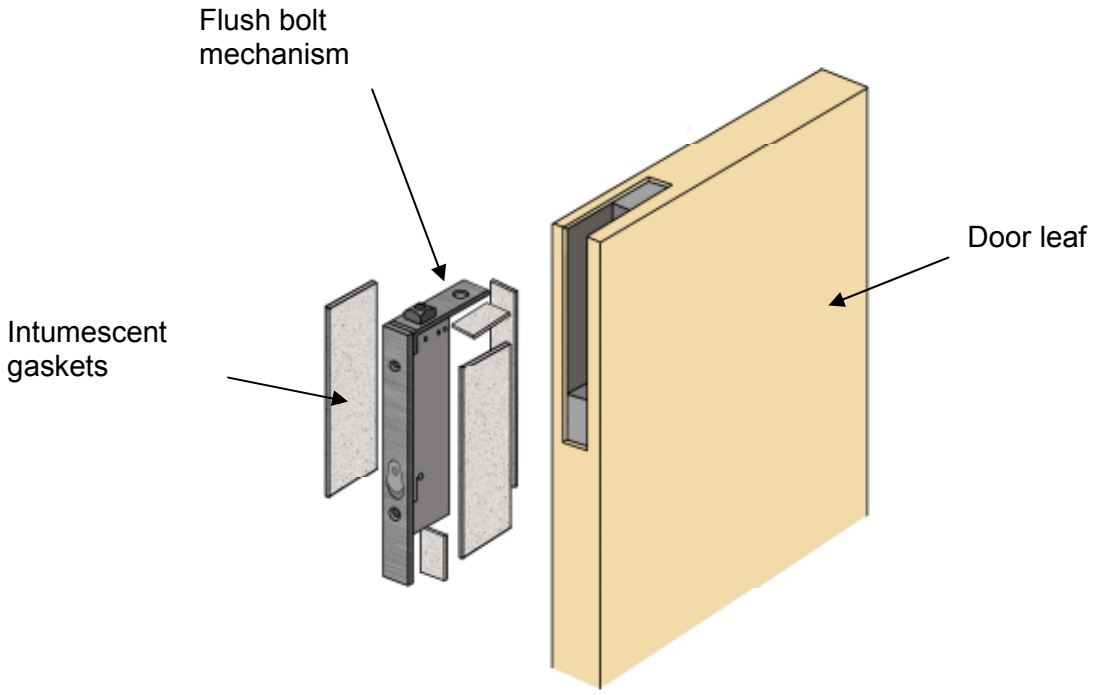
Note: The top pivots to floorspring assemblies must be protected with 1mm thick intumescent gasket (see section 12) or alternatively the manufacturers tested intumescent pack.

15.5 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 12. Alternatively, the hardware manufacturers tested gaskets may be used.



15.6 Pull Handles

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

15.7 Push Plates/Kick Plates

Face-fixed hardware such as push plates and kick plates may be fitted to the doorsets on both sides of the door leaf. These items of hardware are permitted up to a maximum of 20% of the door leaf area if mechanically fixed and a maximum of 30% if bonded with a contact or other thermally softening adhesive. Plates must not return around the door edges.

15.8 Door Selectors

These may be freely applied, provided that they are not invasive in the leaf edges or door frames. Those that are invasive will require fire resistance test/assessment evidence to support their use. No additional intumescent protection is required unless test evidence dictates otherwise.

15.9 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 +1 mm). Lenses must be glass and the item must be bedded in to a tested intumescent mastic.

15.10 Panic Hardware

Panic ironmongery 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.

15.11 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.

15.12 Air Transfer Grilles

Air transfer grilles may be fitted providing the product has suitable test evidence to BS 476: Part 22: 1987 or BS EN 1634-1: 2000 or 2008, 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^2 and must be deducted from the area of glazing, if both elements are fitted.

If it is required to fit air transfer grilles outside of the aforementioned scope, guidance and appropriate test evidence must be sought from the manufacturer of the grille, including permitted numbers of grilles, spacing within the door leaf, additional intumescents, aperture liners and location within the doorset (with respect to pressure regime).

15.13 Acoustic, Weather and Dust Seals

Silicon based flame retardant acoustic, weather and dust seals (e.g. Norseal 710, 720 and Lorient IS1212, IS1511, IS7025, IS7060) may be fitted to this doorset design with out compromising the performance, providing their fitting does not interfere with the activation of the intumescent seals or hinder the self closing function of the leaves.

15.14 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:

Lorient Polyproducts	IS8010si
Pemko	411 – AR
Raven	RP8Si
Athmer	Sound-Ex Duo L-15
Norseal	810

15.15 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: 2000 or 2008, when installed within a timber based doorset of comparable thickness. Margins to the leaf edges must remain as detailed for glazing. The position of the letter box/plate will be dictated by the pressure regime tested in the proving evidence (normally below mid height).

16 Classification of Timber

All timber must meet or exceed class J30 as specified in BS EN 942: 2007, providing any defects are repaired. Refer to relevant section in this report for specific requirements.

17 Door Gaps

Door gaps and alignment tolerances must fall within the following range:

Location	Dimension
Door edge gaps	Representative of those tested but as a guideline, a minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm
Threshold	10mm between bottom of leaf and top of floor covering

18 Structural Opening

The supporting construction must be capable of staying in place and intact for the full period of fire resistance required from the doorset.

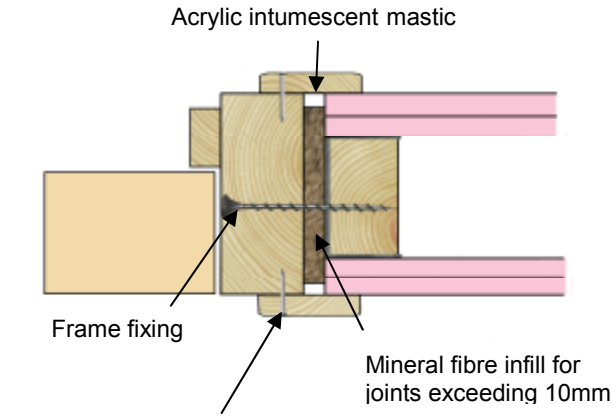
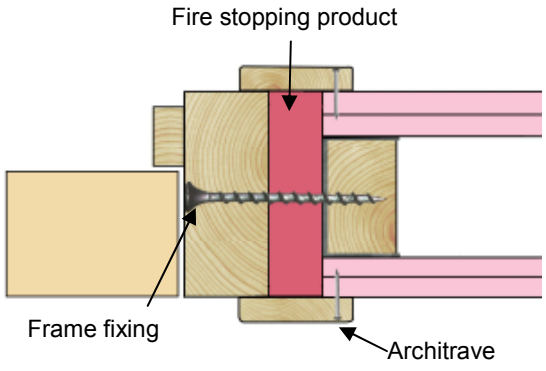
19 Fixings

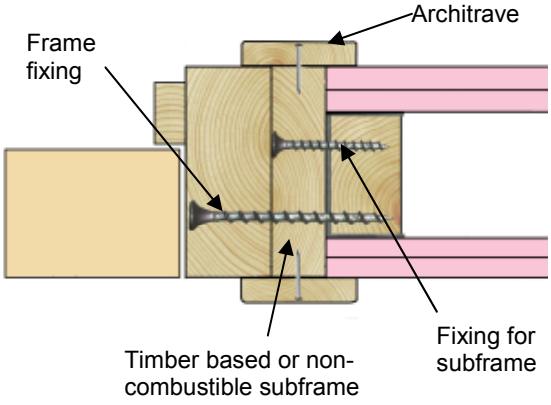
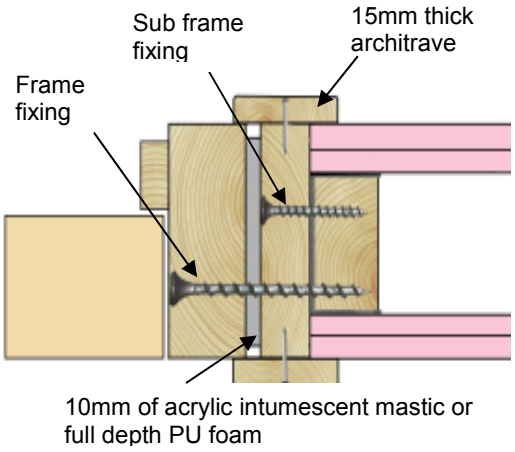
The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm. For doorsets without fanlights or overpanels, it is not necessary to fix the frame head, although packers must be inserted.

Where fanlights or overpanels are fitted it will be necessary to secure the head of the frame using the fixing specification for the jambs as stated above.

20 Sealing to Structural Opening

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

<table>
<tr>
<td>1. Gaps up to 10mm must be sealed on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1: 2000 or 2008. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</td>
<td rowspan="2"> 
</td>
</tr>
<tr>
<td>2. Gaps between 10mm and 20mm must be tightly packed with mineral fibre capped on both sides with a 10mm depth of acrylic intumescent mastic, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1: 2000 or 2008. Architraves are optional.</td>
</tr>
<tr>
<td>3. Gaps up to 20mm filled with proprietary fire stopping product (e.g. expanding PU foam or preformed compressible intumescent foam). Products must be tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1: 2000 or 2008. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</td>
<td> 
</td>
</tr>
</table>

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.	
5. Timber based or non-combustible subframe up to 50mm thick, with gaps up to 10mm between the components filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1: 2000 or 2008. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.	

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

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

21 Insulation

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

Type	Details
Partially insulating	Doorsets with timber frames 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)

22 Smoke Control

If the doorset design is required to provide a smoke control function to comply with Building Regulations, then it must be fitted with a smoke seal or combined intumescent/smoke seal, that has been tested in accordance with BS 476: Part 31: Section 31.1 and demonstrated to maintain the leakage rate below $3m^3/m/h$ when tested at 25Pa.

In order to satisfy the requirements of BS EN 9999-2008 threshold gaps for doorsets intended to control the spread of ambient temperature smoke should be, where practicable, sealed by a (flexible edge) seal either with a leakage rate not exceeding $3m^3/h$ per metre at 25Pa or just contacting the floor, giving an even contact with the floor but not exhibiting significant increased frictional forces that could interfere with the closing action of the door. Where the fitting of a threshold seal is impracticable, and effective smoke sealing is required, the threshold gap should not exceed 3mm at any point.

Providing the smoke seals, any interruptions, door gaps, type/configuration of door is consistent with the tested detail, then the doorset will comply with current smoke control legislation and a suffix 'S' may be added to the designation. Any other installed components 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.

23 Conclusion

If the Blankfort Inc. Blankfort 30 and Blankfort 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 21).

24 Declaration by the Applicant

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

Signed

Name:

For and on behalf of Blankfort Inc.

25 Limitations

The following limitations apply to this assessment:

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

26 Validity

1) The assessment is initially valid for 5 years after which time it must be submitted to Chiltern International Fire Ltd for technical review and re-appraisal.
2) This assessment report is not valid unless it incorporates the declaration given in Section 24 duly signed by the applicant.

Signature:		
Name:	**James Godfrey**	**Peter Barker**
Title:	Product Assessor	Senior Consultant

Appendix A
Performance Data

Primary Data

Report No.	Configuration	Leaf Size (mm)	Test Standard	Performance (mins)
RF95059	ULSASD	2700 915 45	BS 476: Part 22: 1987	45
	ULSASD	2134 915 45	BS 476: Part 22: 1987	40
RF95106	DADD + OP	2403/400 840 45	BS 476: Part 22: 1987	38
RF95111	ULSASD	2700 915 45	BS 476: Part 22: 1987	54
RF96015	ULSADD + OP	2193/394 806 45	BS 476: Part 22: 1987	31 (glass) 43 (perimeter)
RF97104 (steel door frames)	B: LSASD	2740 910 45	BS 476: Part 22: 1987	30
RF98018[1]	ULSASD	2600 860 45	BS 476: Part 22: 1987	A = 41 B = 49 C = 41
RF00004	ULSASD	2600 840 45	BS 476: Part 22: 1987	46

[1] Door A tested in RF098018 has been used to assess 10mm thick MDF faces for use with the Blankfort 30 design, for all configurations, up to the maximum leaf dimensions given in section 11.1. It has been deemed acceptable to permit this variation due to the door having exhibited a comparable degree of stability when compared to the chipboard faced doors in the same test and the door achieving a significant over run (36%) beyond the required 30 minutes fire resistance, when tested at 2600mm high.

Report No.	Configuration	Leaf Size (mm)	Test Standard	Performance (mins)
RF00035	ULSASD	2134 915 46	BS 476: Part 22: 1987	34
	ULSASD	2440 1220 46	BS 476: Part 22: 1987	41
RF01114	ULSASD	2134 915 46	BS 476: Part 22: 1987	38
BTC 10939F	ULSASD	2700 915 45	BS 476: Part 22: 1987	A = 33 B = 56
RF06157	ULSASD	2135 915 45	BS 476: Part 22: 1987	A = 32 B = 34
CFR0703091	ULSASD	1870 1050 45	BS 476: Part 22: 1987	36
RF07031 (Lorient Palusol and Type 617 in softwood frame	ULSADD	2040 827 44 (both doorsets)	BS 476: Part 22: 1987	A = 35 B = 44
A07051 Rev B (Lorient Palusol and Type 617 seals)	Various	Various	BS 476: Part 22: 1987	30 and 60
RF08125 (Chiltern Fire research test for MDF frames)	ULSADD	2442 915 44	BS 476: Part 22: 1987	49

Report No.	Configuration	Leaf Size (mm)	Test Standard	Performance (mins)
RF09061[2] (Blankfort 30+ test – comparison with RF96015)	ULSADD + OP	2193 808/600 45	BS 476: Part 22: 1987	47 (glazing) 55 (perimeter)
RF11007 (Pyroplex perimeter intumescent)	ULSADD	2135 290/890 44	BS 476: Part 22: 1987	40

[2] RF09061 was devised to replicate RF96015 for comparison of the Blankfort 30 design and the Blankfort 30+ design. RF96015 (Blankfort 30) was selected because of its onerous construction (rebated meeting edge, rebated flush over panel, double leaf, unlatched). The criteria for permitting Blankfort 30+ as an additional design within this scope of application was for the doorset to perform at least as well as that originally tested. The Blankfort 30+ design performed for 55 minutes (excluding the glazing) and has therefore been considered as capable of providing at least the same level of fire resistance performance as the Blankfort 30 design. All design options given with this document are therefore applicable to both the Blankfort 30 and Blankfort 30+, unless stated otherwise.

Supplementary Data

Report No.	Configuration	Leaf Size (mm)	Test Standard	Performance (mins)
CFR1010071	ULSASD	2135 925 45	BS EN 1634-1: 2008	40
IF09029 (CIFL test – 200mm lengths of intumescent)	Bespoke test sample	1170 x 1170 test sample	BS 476: Part 20: 1987	43
RF09134 (EW30 Pyroguard)	Doorset/ screen	N/A	BS EN 1634-1: 2008	Doorset: 29 Screen: 34
RF09201 (EW30 Pyroguard)	Doorset/ screen	N/A	BS EN 1634-1: 2008	Doorset: 33 Screen: 33
RF10070 (EW30 Pyroguard)	Doorset/ screen	N/A	BS EN 1634-1: 2008	Doorset: 29 Screen: 32

Report No.	Configuration	Leaf Size (mm)	Test Standard	Performance (mins)
RF10081 (EW30 Pyroguard)	Doorset/ screen	N/A	BS EN 1634-1: 2008	Doorset: 29 Screen: 32
RF10120 (EW30 Pyroguard)	Doorset/ screen	N/A	BS EN 1634-1: 2008	Doorset: 32 Screen: 32
RF10163 (EW30 Maxi Pyroguard)	Doorset/ screen	N/A	BS EN 1634-1: 2008	Doorset: 38 Screen: 38
IFT 27128098 (EI30 Pyroguard)	Doorset/ screen	N/A	BS EN 1634-1: 2008	Doorset: 34 Screen: 34
IFT 27129622 Revision 1 (15mm Pyranova)	Doorset/ screen	N/A	BS EN 1634-1: 2008	Doorset: 35 Screen: 35
WF 197001 (Pyranova S3.07)	LSASD	2055 925 44	BS EN 1634-1: 2008	31
RF00138 (7 Pyrodur)	Doorset/ screen	N/A	BS EN 1634-1: 2000	Doorset: 40 Screen: 32
RF01024 Revision A (10 Pyrodur)	Doorset/ screen	N/A	BS 476: Part 22: 1987	Doorset: 60 Screen: 57
RF03068 (7 Pyrodur)	Doorset/ screen	N/A	BS EN 1634-1: 2000	Doorset: 37 Screen: 37
RF05037 (15 Pyrostop)	Doorset/ screen	N/A	BS EN 1634-1: 2000	Doorset: 43 Screen: 59
RF10028 (Pyroshield 2)	Doorset/ screen	N/A	BS 476: Part 22: 1987	Doorset: 39 Screen: 39

Appendix B

Blankfort 30 and Blankfort 30+ Steel Frames

1. Introduction

This appendix contains information relating to Blankfort 30 and Blankfort 30+ doorsets, incorporating steel door frames. The assessment uses the same extrapolation and interpretation techniques applied for the main assessment, and is conducted in terms of fire resistance performance judged against BS476: Part 22: 1987.

2. General specification of construction

The door leaves for Blankfort 30 and Blankfort 30+ steel framed doorsets are manufactured in accordance with the specification detailed in section 2 of Chilt/A12151. All other aspects of the leaf construction specification are identical to that detailed in the main assessment except where specifically discussed in the following paragraphs.

3. Leaf sizes and configurations

Doorset B tested in RF97036 comprised a latched, single leaf, single acting doorset and achieved 30 minutes performance exactly. It is not therefore possible to offer increase in leaf size beyond that tested. The following are the maximum permitted leaf sizes and configurations:

- LSASD (latched single acting single doorset): - 2740mm high x 910mm wide.

4. Intumescent Materials

The following intumescent materials from Lorient Polyproducts Ltd. must be fitted to the doorsets:

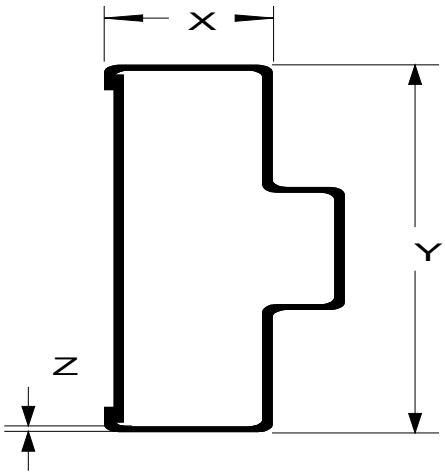
	Head	Jambs
Single Doorsets	20 x 6mm LP2006 in the frame reveal and 10 x 2mm Interdens in the leaf	20 x 6mm LP2006 in the frame reveal

5. Door Frames

The approved frame specification for doorsets to this design is contained in the table below:

	Material	Dimensions (mm)
Head & Jambs	Profiled 1.6 thick (16 SWG) mild steel frame manufactured in two sections and spot welded together along the intumescent seal rebate (it is also permitted for the frame to be constructed as one section)	129 wide x 67 thick (including a 16mm deep x 48mm wide integral stop)
Stops	Integral	16 deep
Architrave	Integral	51 wide x 13 thick

Fixings must be of the appropriate type and length for the structural opening medium and must include a minimum of 5 fixings per jamb and one at the head. The construction of frames may be varied within the following parameters:



X: +/- 50%

Y: +/- 35% (providing the frame reveal dimensions are maintained)

Z: + 100% and – 0%

The frame must be back filled with timber, mortar, concrete, plasterboard or Supalux (Promat) as tested. Rockwool, glass fibre and ceramic wool must not be used.

6. Structural openings

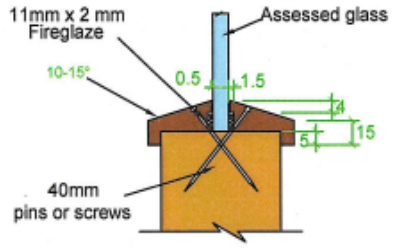
Blankfort 30 and Blankfort 30+ steel framed doorsets may be fitted into the following types of structural opening:

- Cast dense concrete;
- Dense concrete blocks or brickwork;
- Masonry;
- Lightweight concrete;
- Lightweight aerated concrete;
- Timber stud partition;
- Steel stud partition.*

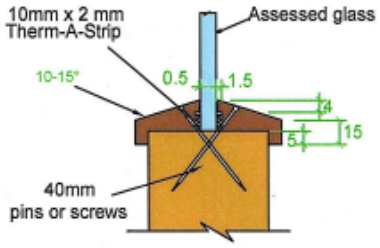
Gaps between doorframes and structural openings must be protected with proprietary materials that have been successfully tested for this application.

*Structural opening must incorporate the additional framework as tested (i.e. boxed studs infilled with softwood).

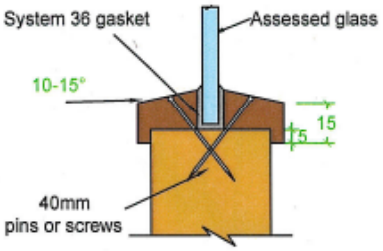
Appendix C
Proprietary 30 Minute Glazing Systems



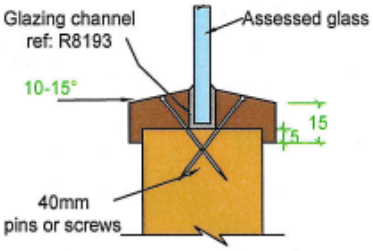
Fireglaze
Sealmaster Ltd



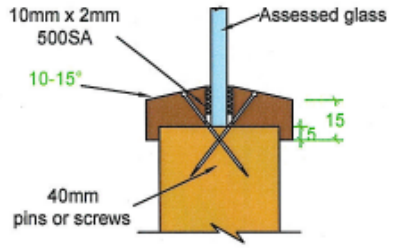
Therm-A-Strip
Intumescent Seals Ltd



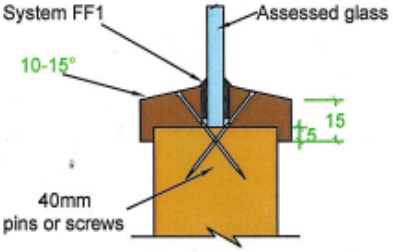
System 36
Lorient Polyproducts Ltd



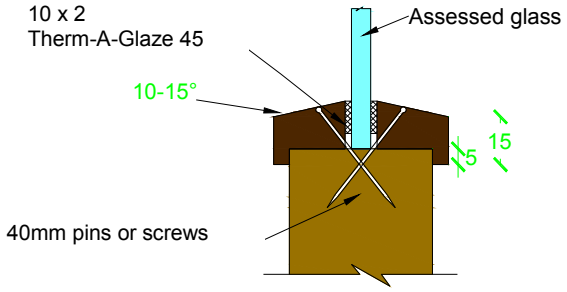
Reddiplex Group Plc



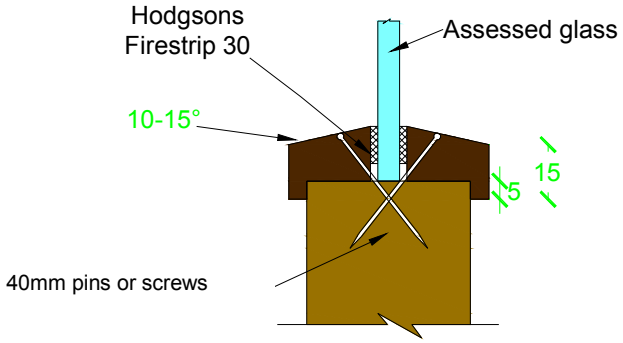
Pyroglaze 30
Mann McGowan Ltd



System FF1
Lorient Polyproducts Ltd



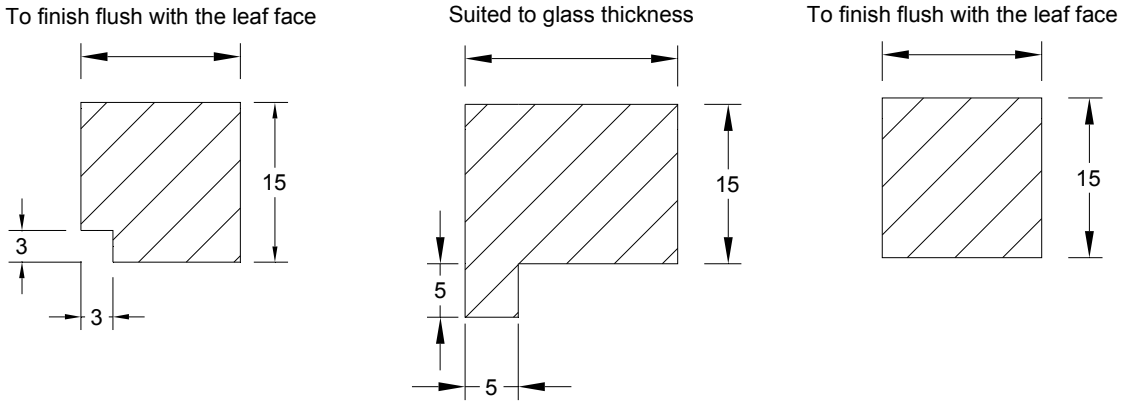
Therm-A-Glaze 45
Intumescent Seals Ltd



Firestrip 30
Hodgsons Sealants Ltd

Assessed Square Glazing Bead Profiles

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



Appendix D

Revisions and Amendments

Revision No	Date	Description

Appendix E

Data Sheets for

Blankfort Inc.

Blankfort 30 & Blankfort 30+ Doorsets

30 Minutes Fire Resistance

Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2040	x	972
		To:	2363	x	827
	ULSASD & DASD	From:	2040	x	947
		To:	2313	x	827
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32	70 x 32	70 x 30
		Material:	Softwood	Hardwood	MDF
		Min. Density (kg/m^3):	500	500	700

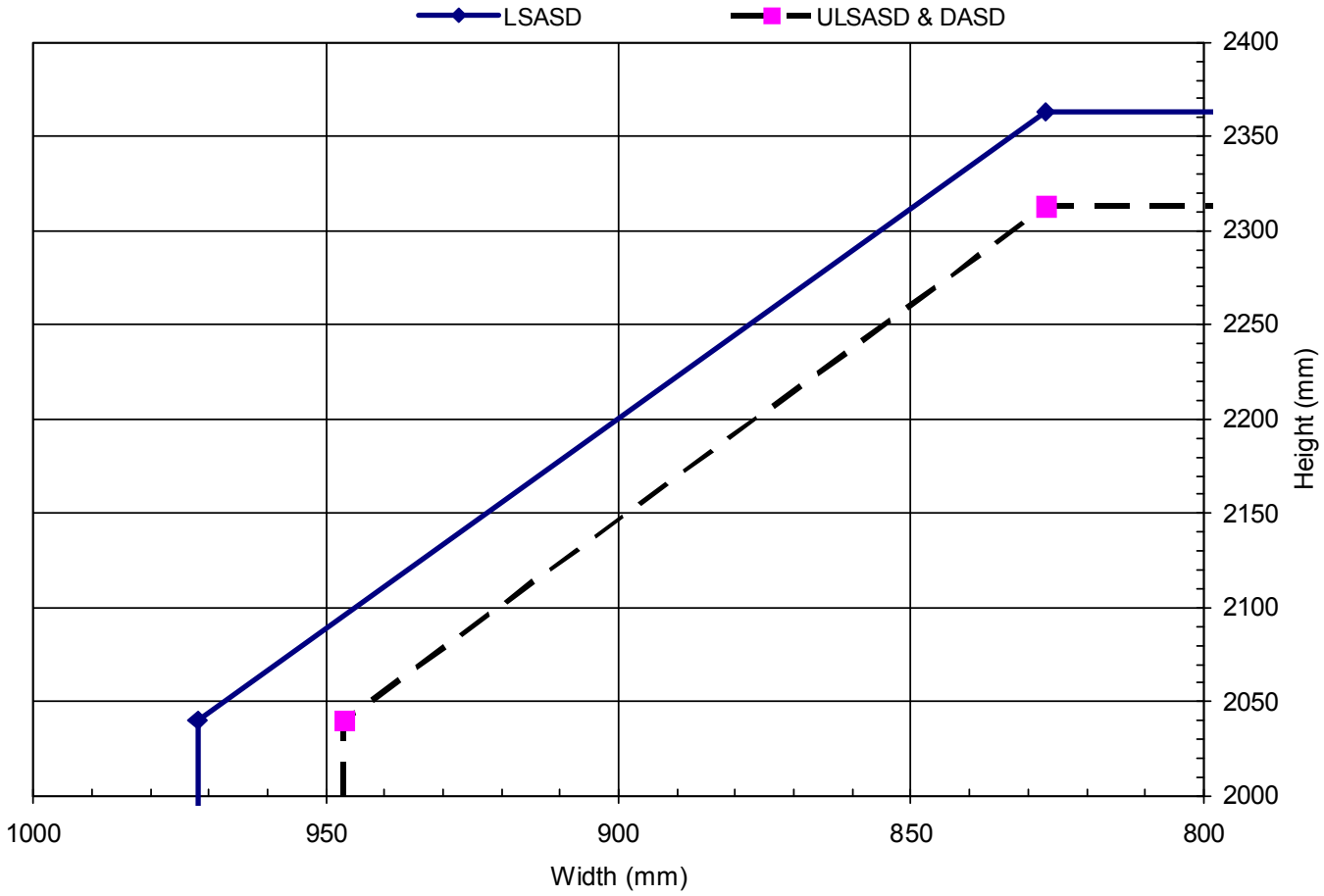
Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan

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

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2040	x	1096
		To:	2669	x	827
	ULSASD & DASD	From:	2040	x	1071
		To:	2619	x	827
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32	70 x 32	70 x 30
		Material:	Softwood	Hardwood	MDF
		Min. Density (kg/m^3):	500	500	700

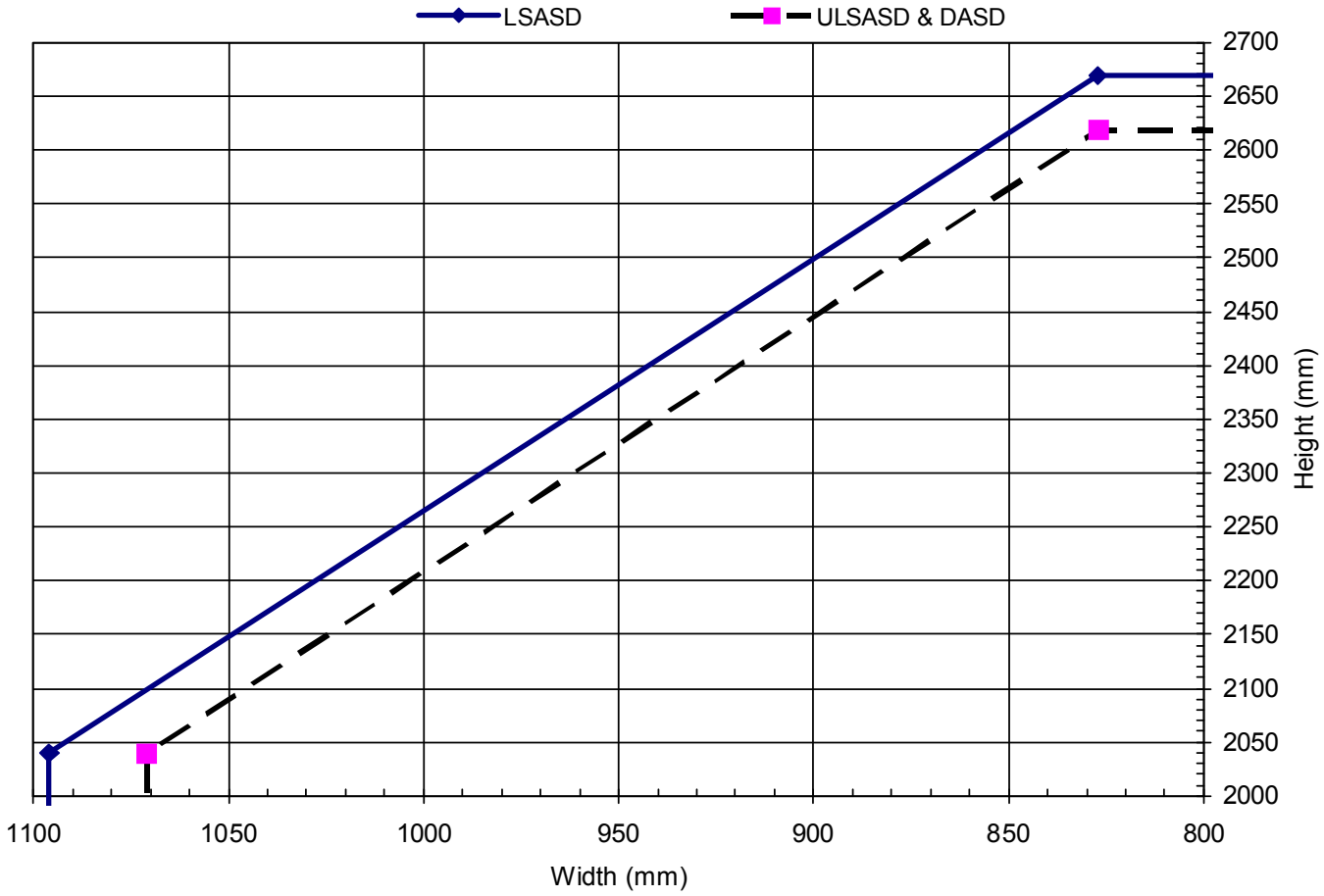
Intumescent Materials: PVC encapsulated Type 617 – Lorient Polyproducts

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

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2134	x	1001
		To:	2327	x	915
	ULSASD & DASD	From:	2134	x	976
		To:	2277	x	915
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32	70 x 32	70 x 30
		Material:	Softwood	Hardwood	MDF
		Min. Density (kg/m^3):	500	500	700

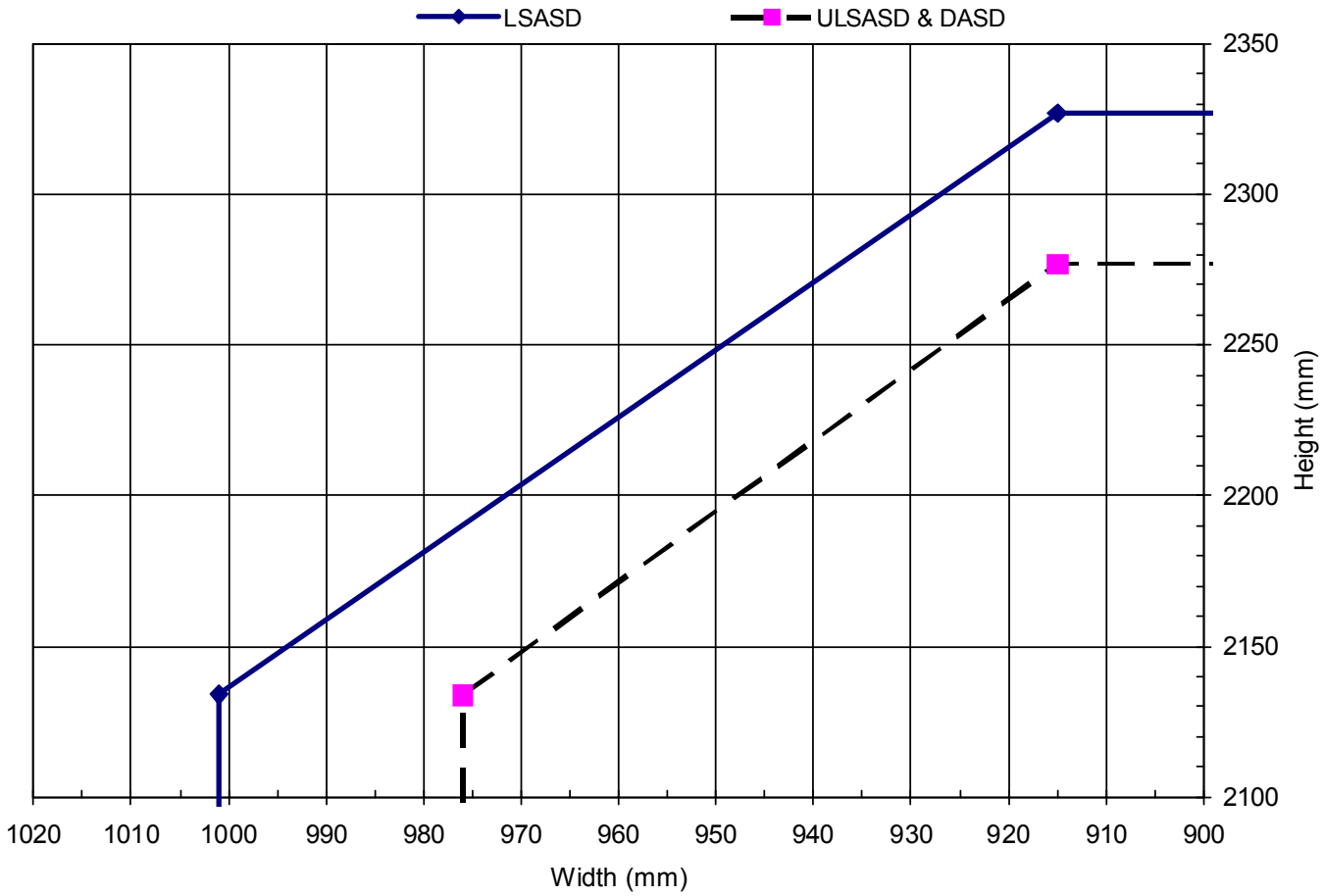
Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan, Therm-A-Seal - ISL

Head: 1 No 15 x 4mm fitted centrally in the leaf edge or frame reveal. Leaves over 2275mm increase to 25 x 4mm

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2135	x	1113
		To:	2640	x	890
	ULSASD & DASD	From:	2135	x	1088
		To:	2590	x	890
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32	70 x 32	70 x 30
		Material:	Softwood	Hardwood	MDF
		Min. Density (kg/m^3):	500	500	700

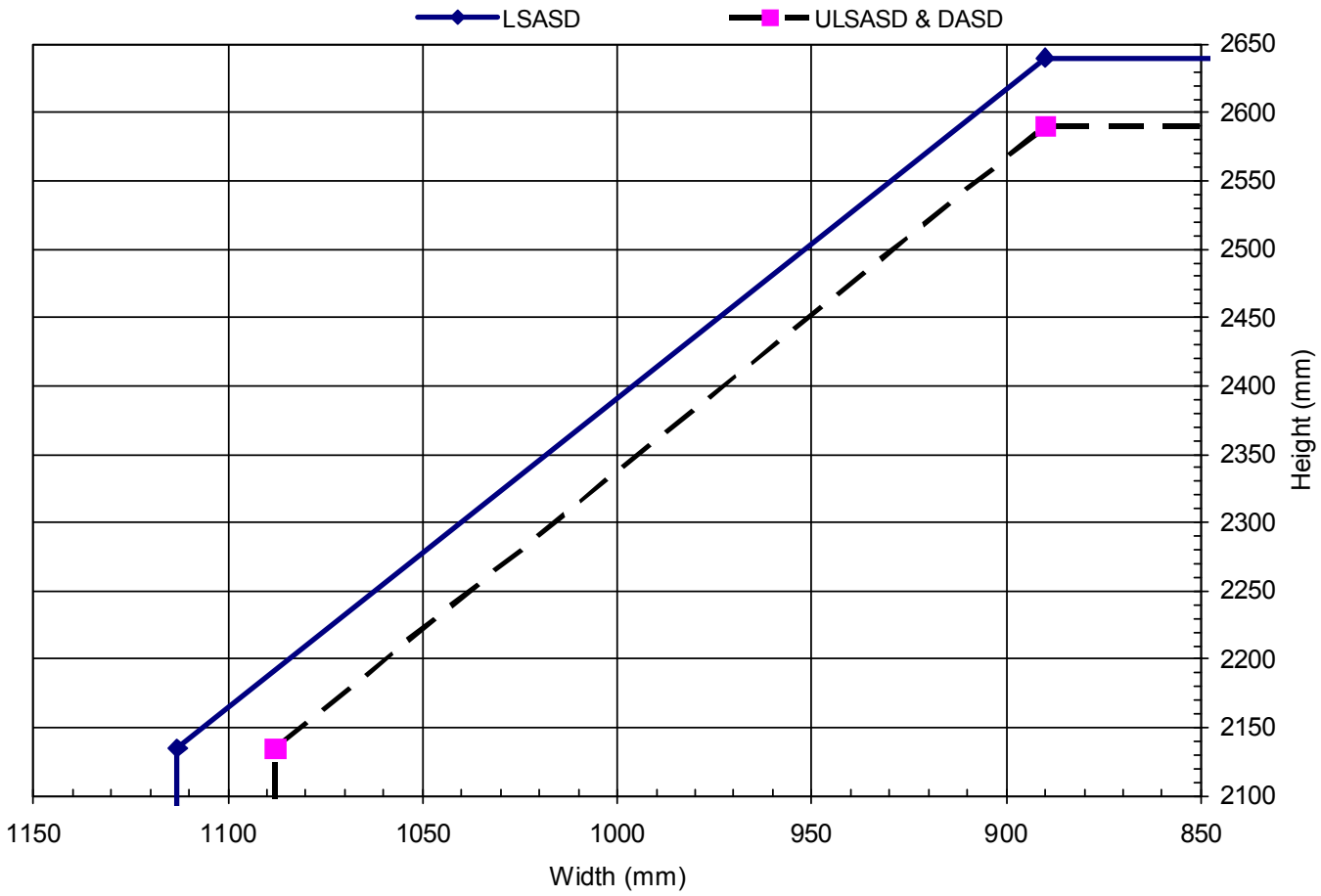
Intumescent Materials: PVC encapsulated Pyroplex – Pyroplex Ltd

Head: 1 No 15 x 4mm fitted centrally in the leaf edge or frame reveal. Leaves over 2440mm (h) increase to 20 x 4mm

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2193	x	1319
		To:	3456	x	808
	ULSASD & DASD	From:	2193	x	1294
		To:	3406	x	808
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm) From:	All		2440 x 1204
		Max leaf dims (mm) To:			3215 x 915

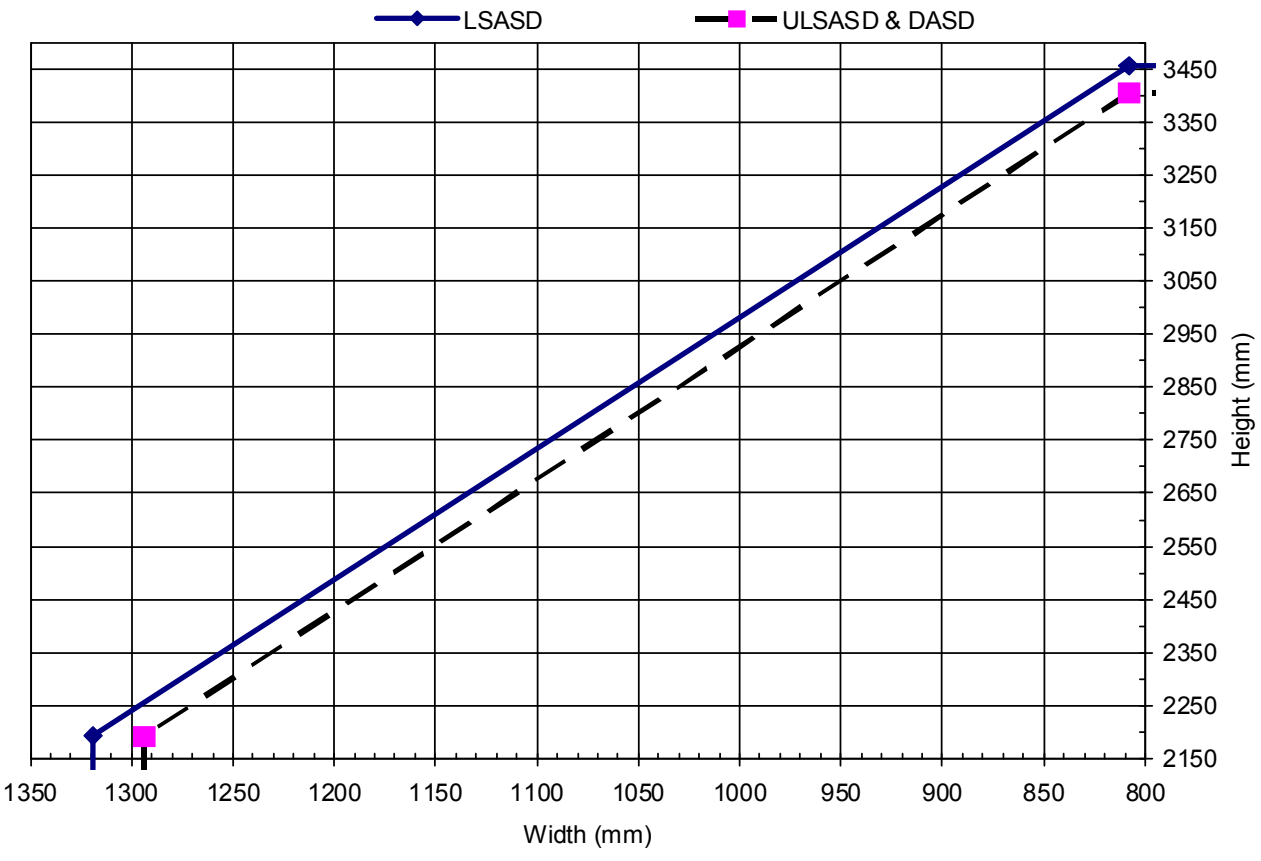
Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan

Head: 1 No 25 x 4mm fitted centrally in the leaf edge or frame reveal. Leaves over 2700 increase to 35 x 4mm

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD & ULSASD & DASD	From:	3050	x	915
		To:	2440	x	1220
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm) From:	All		2440 x 1204
		Max leaf dims (mm) To:			3050 x 915

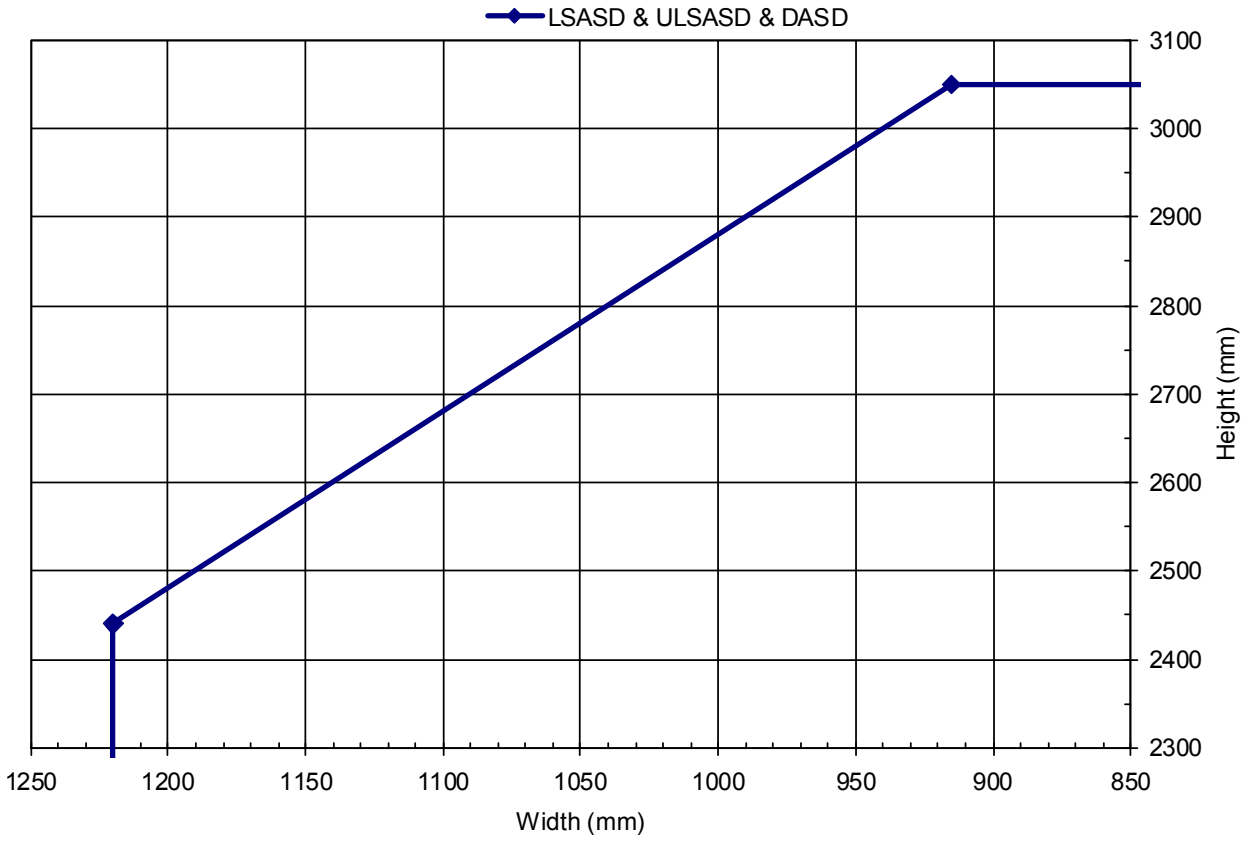
Intumescent Materials: PVC encapsulated Type 617 – Lorient Polyproducts or Therm-A-Seal - ISL

Head: 1 No 15 x 4mm fitted centrally in the leaf edge or frame reveal. Leaves over 2275mm (h) increase to 20 x 4mm

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal. Leaves over 1000mm (w) increase to 20x 4mm

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2440	x	1471
		To:	2937	x	1220
	ULSASD & DASD	From:	2440	x	1444
		To:	2887	x	1220
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm) From:	All		2440 x 1204
		Max leaf dims (mm) To:			2887 x 915

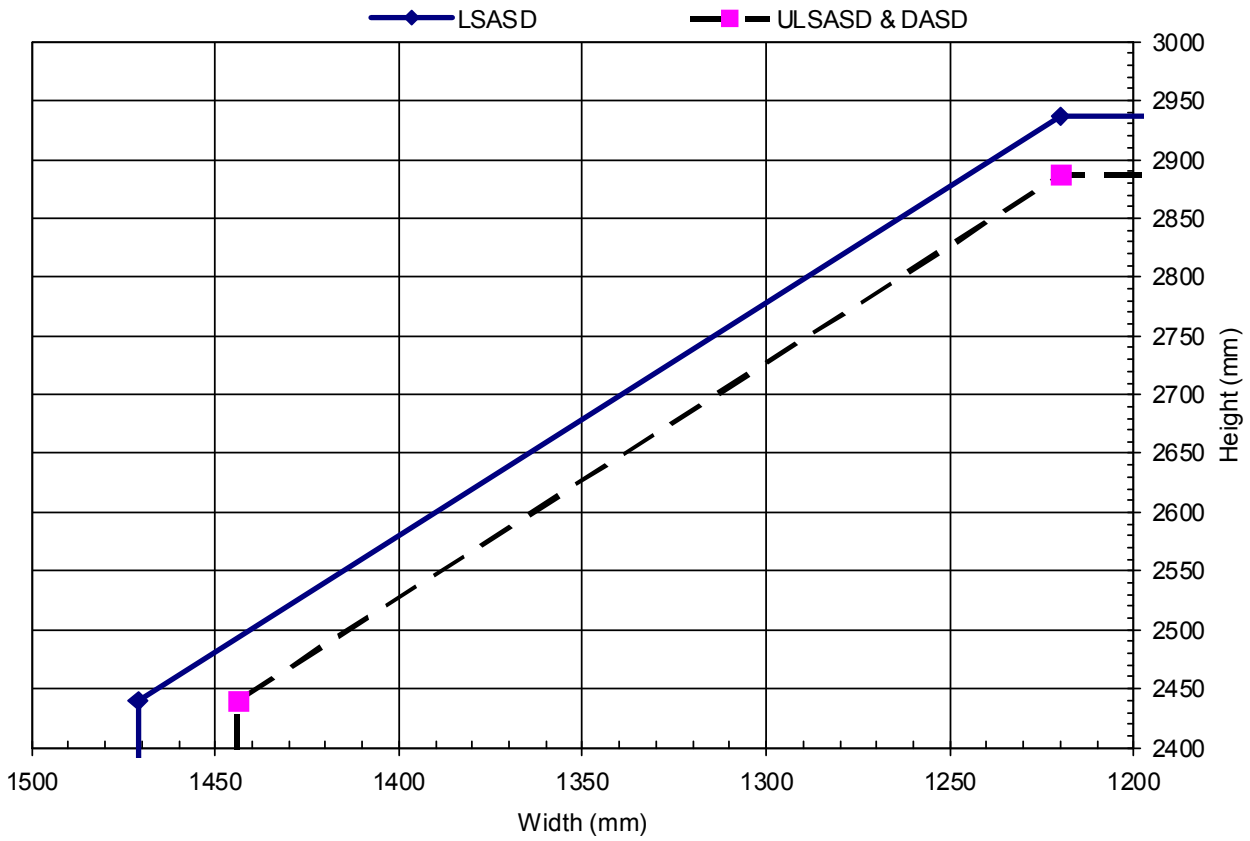
Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan

Head: 1 No 15 x 4mm fitted centrally in the leaf edge or frame reveal. Leaves over 2275mm (h) increase to 20 x 4mm

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal. Leaves over 1000mm (w) increase to 20 x 4mm

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2700	x	1169
		To:	3425	x	915
	ULSASD & DASD	From:	2700	x	1144
		To:	3375	x	915
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm) From:	All		2440 x 1144
		Max leaf dims (mm) To:			3215 x 915

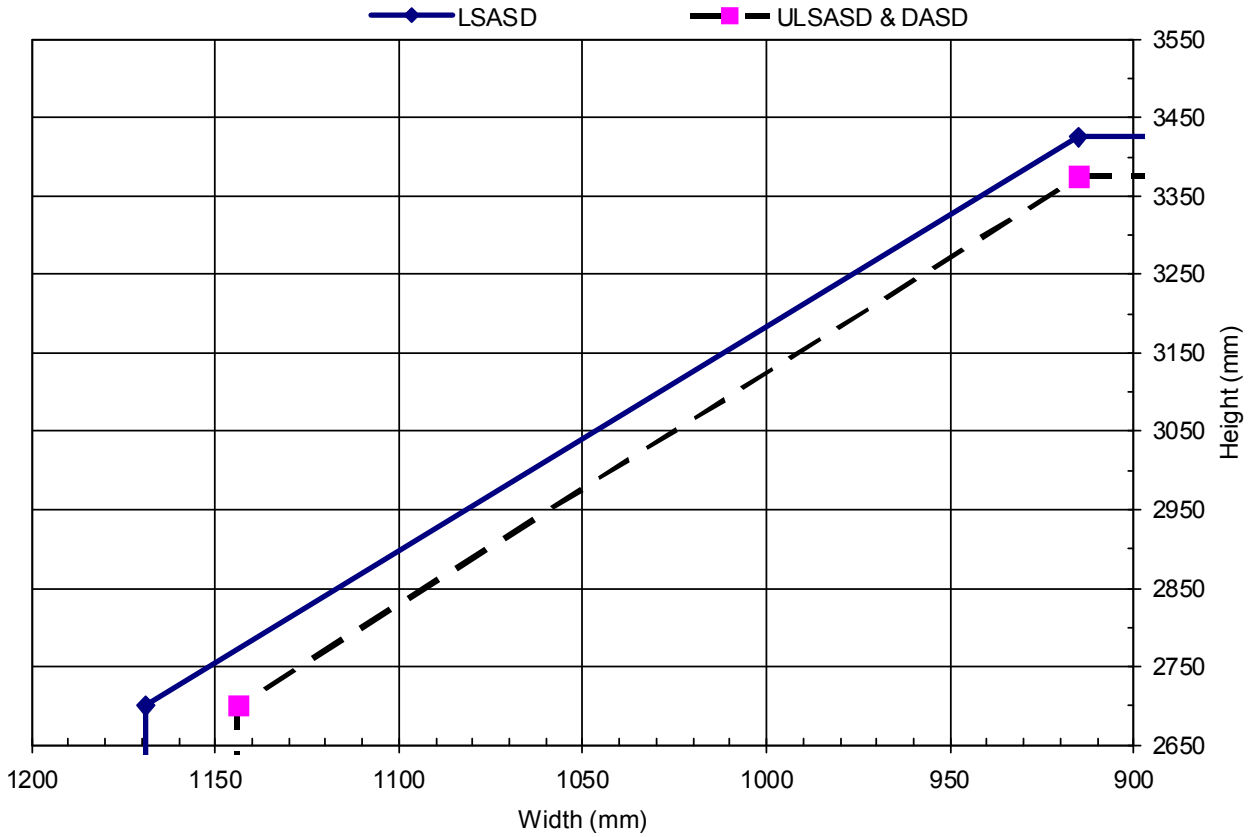
Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan

Head: 1 No 15 x 4mm fitted centrally in the leaf edge or frame reveal. Leaves over 2275mm (h) increase to 20 x 4mm. Leaves over 3100mm increase to 35 x 4mm

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal. Leaves over 1000mm (w) increase to 20 x 4mm

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets – concealed intumescent

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2700	x	1153
		To:	3380	x	915
	ULSASD & DASD	From:	2700	x	1128
		To:	3330	x	915
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		
		Material:	Hardwood		
		Min. Density (kg/m^3):	640		

Intumescent Materials:
Exposed (head only) = PVC encapsulated Palusol – Lorient Polyproducts or Mann McGowan
Concealed = Epoxy coated Palusol – Lorient Polyproducts or Mann McGowan

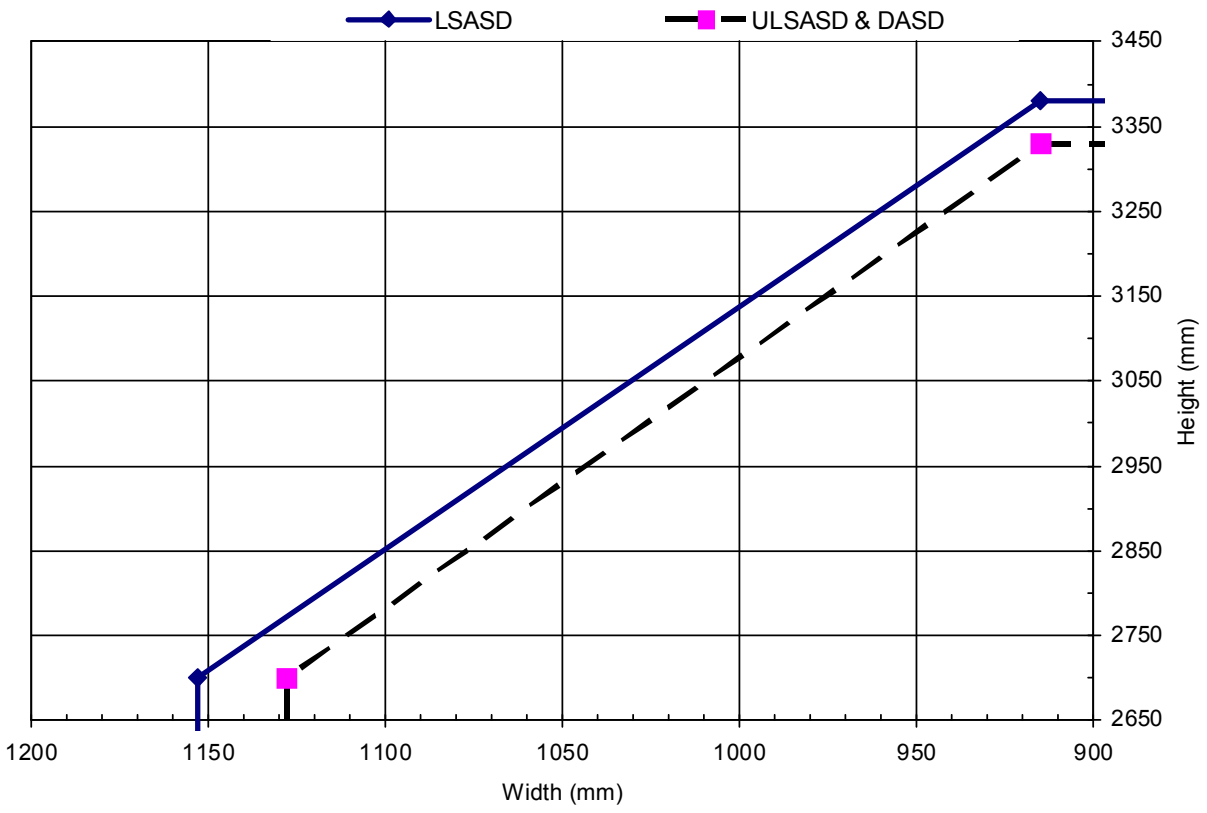
Head: 1 No 20 x 4mm fitted centrally in the leaf edge or frame reveal.

Jambs: 1 No 30 x 2mm centrally fitted and concealed in the rear of the lipping.

Overpanel: 1 No. 15 x 4mm strip centrally fitted in either the panel edge or frame reveal

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets + Overpanel

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD + OP	From:	2193	x	1269
		To:	3356	x	808
	ULSASD + OP & DASD + OP	From:	2193	x	1244
		To:	3306	x	808
Maximum Overpanel height (mm)			2000		
Glazing		Maximum Glazed Area:	$1.92m^2$ ($1.32m^2$ for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm) From:	All		2440 x 1140
		Max leaf dims (mm) To:			3215 x 840

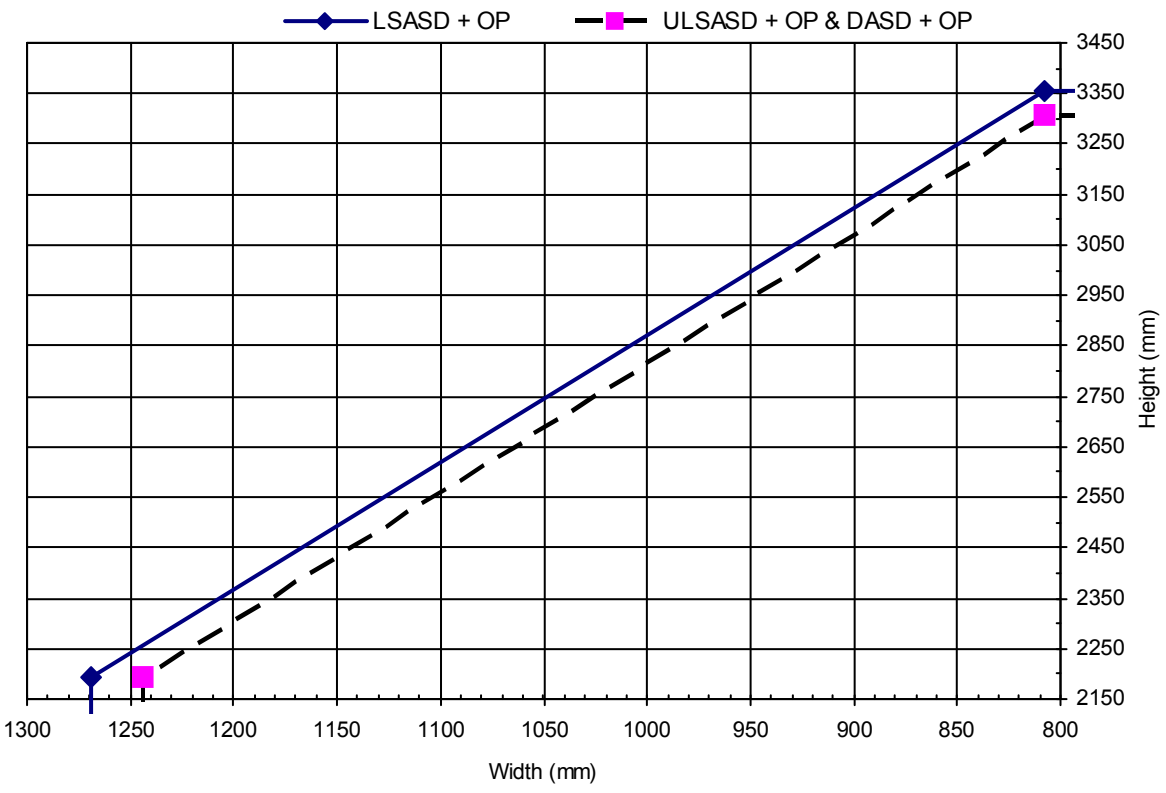
Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan

Head:
Square: 1 No 25 x 4mm fitted centrally in the bottom of the overpanel or leaf head. Leaves over 2700mm (h) increase to 35 x 4mm.
Rebated: 1 No 15 x 4mm fitted centrally in the rebate of the leaf and in the rebate of the overpanel

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets + Overpanel

Leaf Sizes	Configuration		Height (mm)		Width (mm)	
	LSASD + OP ULSASD + OP & DASD + OP	From:	3050	x	915	
		To:	2440	x	1220	
Maximum Overpanel height (mm)			2000			
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details			
		Approved systems:	See section 8 and appendix C			
Frame specification		Min. Section (mm):	70 x 32		70 x 30	
		Material:	Hardwood		MDF	
		Min. Density (kg/m^3):	640		700	
		Max leaf dims (mm) From:	All		2440 x 1204	
		Max leaf dims (mm) To:			3040 x 915	

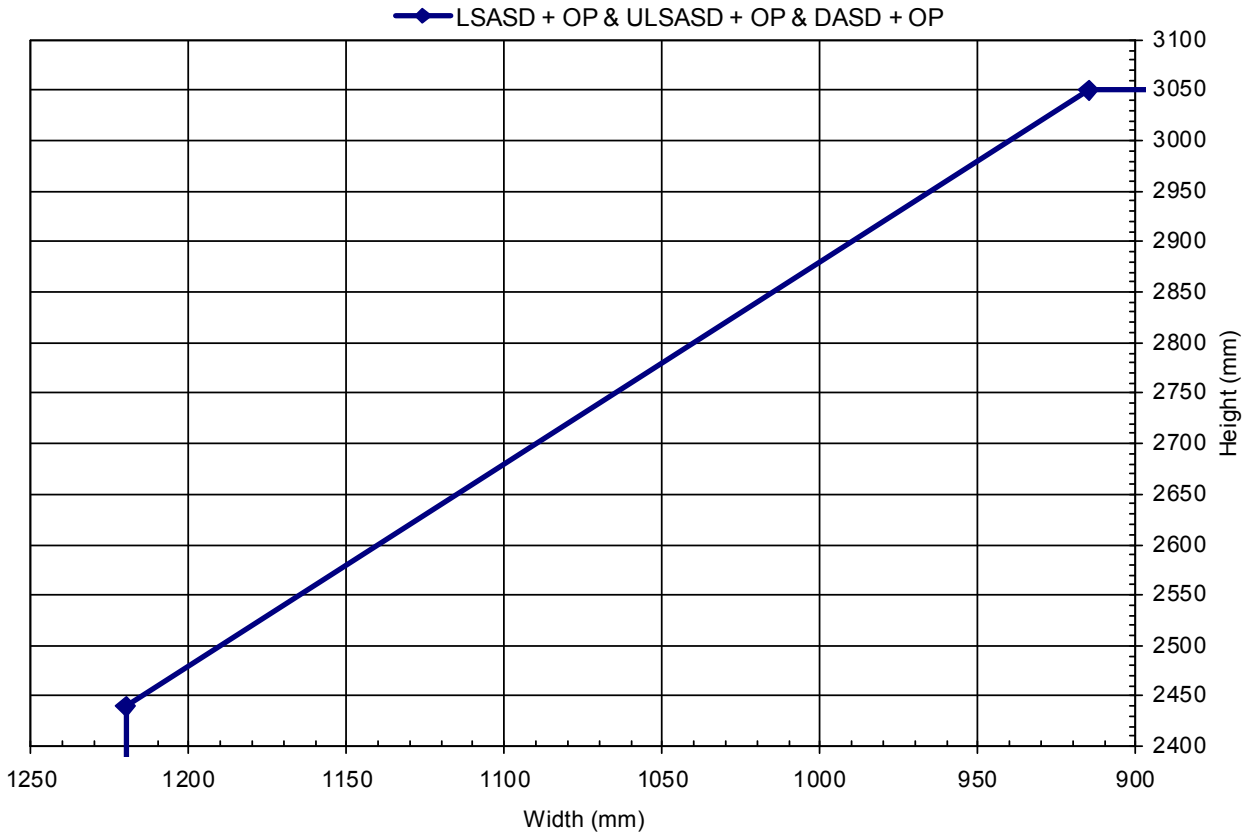
Intumescent Materials: PVC encapsulated Type 617 – Lorient Polyproducts or Therm-A-Seal - ISL

Head:
Square: 1 No 25 x 4mm fitted centrally in the bottom of the overpanel. Leaves over 2700mm (h) increase to 35 x 4mm.
Rebated: 1 No 15 x 4mm fitted centrally in the rebate of the leaf and in the rebate of the overpanel

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Single Doorsets + Overpanel

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD + OP	From:	2403	x	1074
		To:	2965	x	840
	ULSASD + OP & DASD + OP	From:	2403	x	1049
		To:	2915	x	840
Maximum Overpanel height (mm)			2000		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm) From:	All		2440 x 1030
		Max leaf dims (mm) To:			2720 x 915

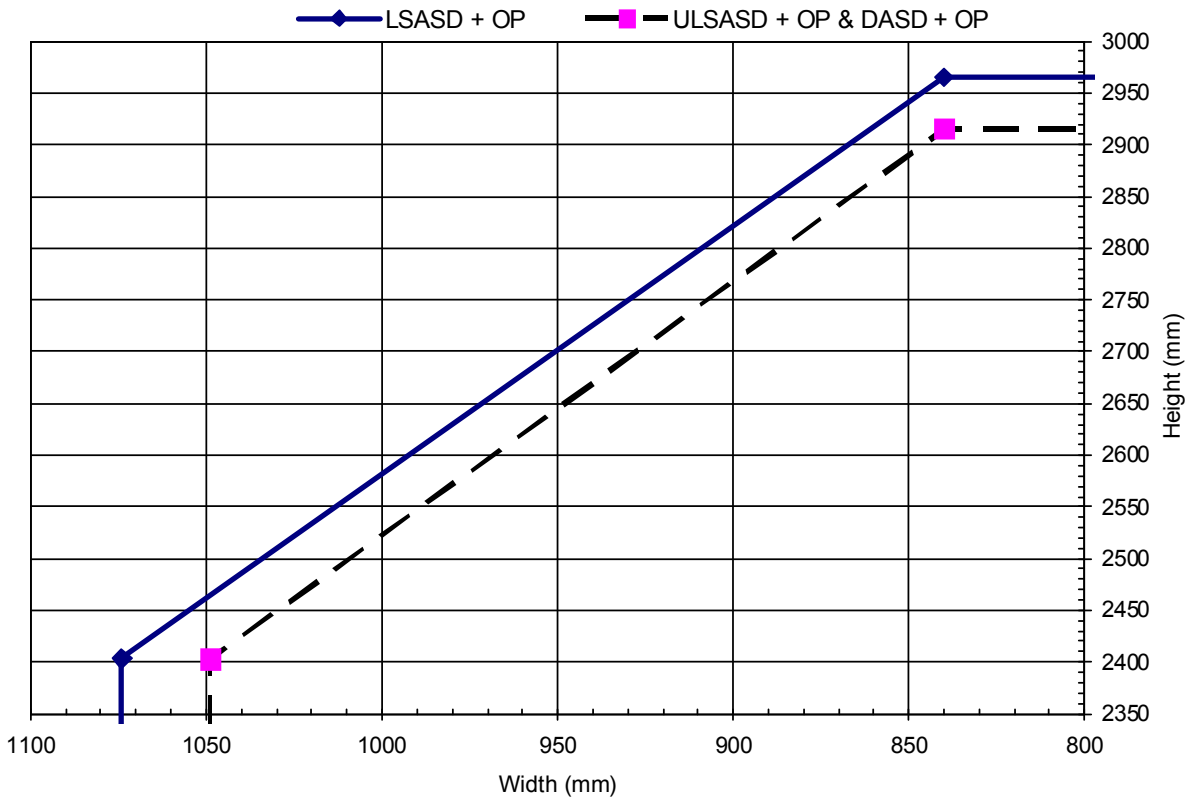
Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan

Head:
Square: 1 No 25 x 4mm fitted centrally in the bottom of the overpanel. Leaves over 2700mm (h) increase to 35 x 4mm.
Rebated: 1 No 15 x 4mm fitted centrally in the rebate of the leaf and in the rebate of the overpanel

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2040	x	922
		To:	2263	x	827
	ULSADD & DADD	From:	2040	x	897
		To:	2213	x	827
Maximum Overpanel height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32	70 x 32	70 x 30
		Material:	Softwood	Hardwood	MDF
		Min. Density (kg/m^3):	500	500	700

Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan,

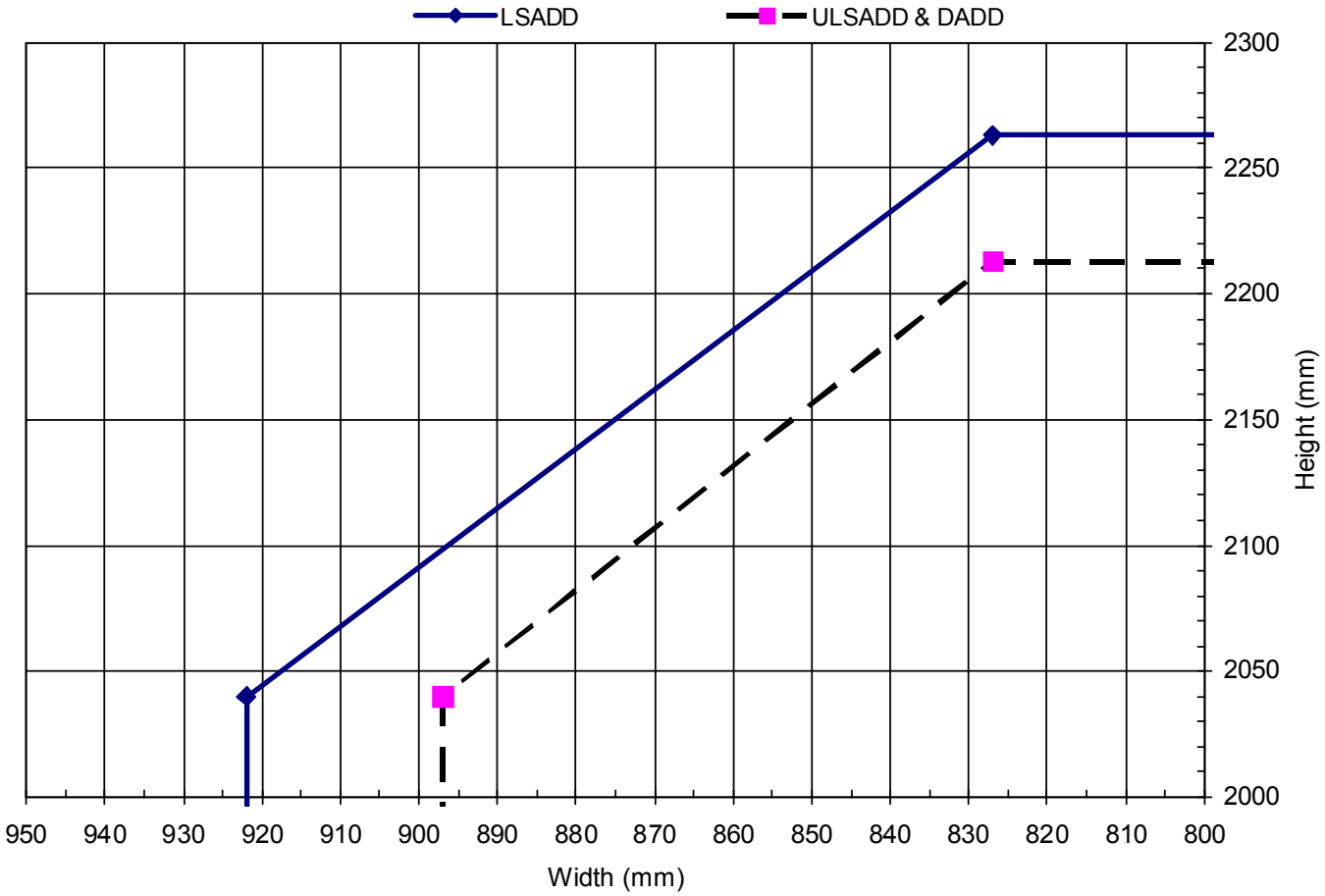
Head: 1 No 15 x 4mm fitted centrally in the leaf edge or frame reveal.

Meeting edges: 1 No 15 x 4mm fitted centrally in the meeting edge of one leaf

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2040	x	1046
		To:	2569	x	827
	ULSADD & DADD	From:	2040	x	1021
		To:	2519	x	827
Maximum Overpanel height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32	70 x 32	70 x 30
		Material:	Softwood	Hardwood	MDF
		Min. Density (kg/m^3):	500	500	700

Intumescent Materials: PVC encapsulated Type 617 – Lorient Polyproducts

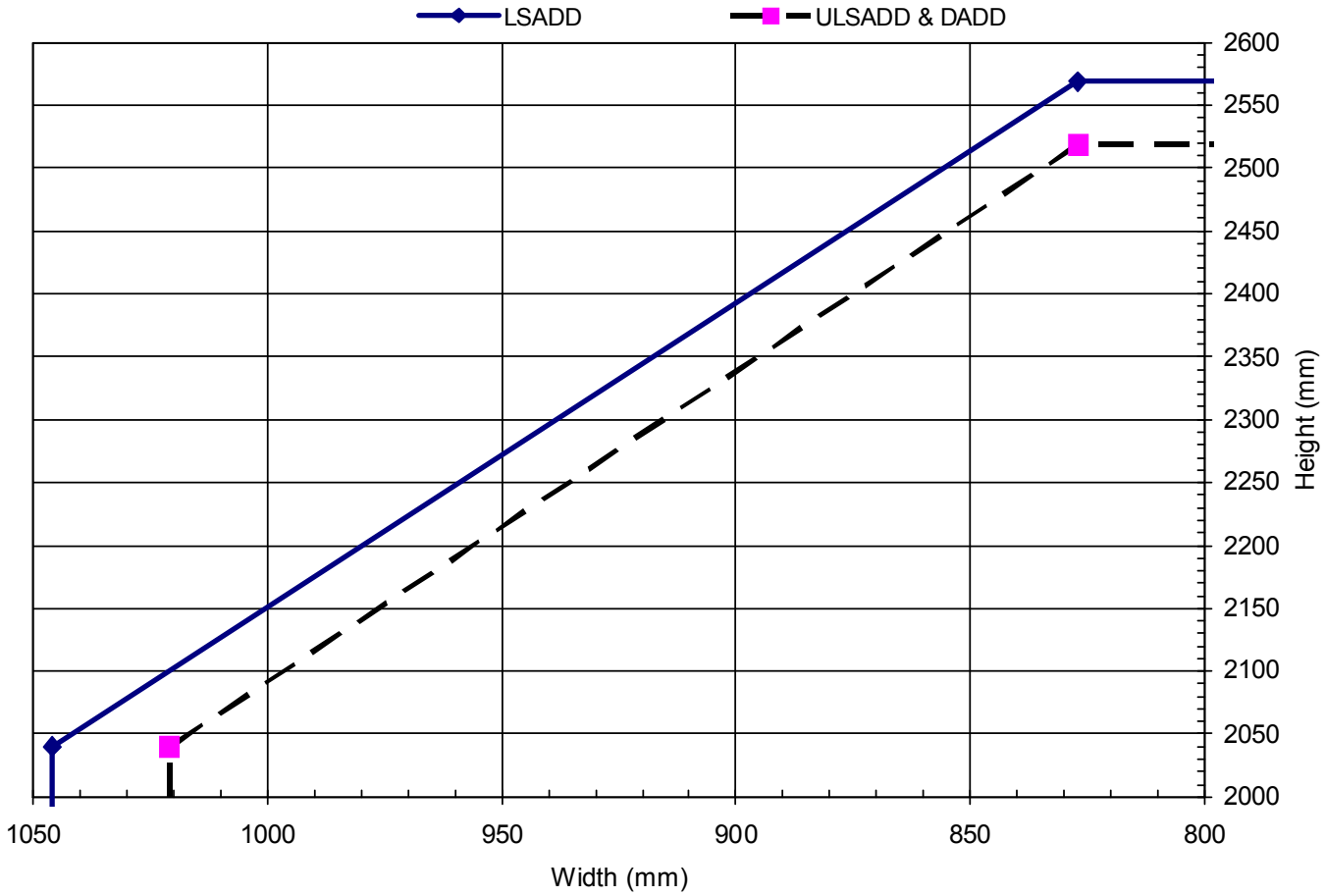
Head: 1 No 15 x 4mm fitted centrally in the leaf edge or frame reveal.

Meeting edges: 1 No 15 x 4mm fitted centrally in the meeting edge of one leaf

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2135	x	1063
		To:	2540	x	890
	ULSADD & DADD	From:	2135	x	1038
		To:	2490	x	890
Maximum Overpanel height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32	70 x 32	70 x 30
		Material:	Softwood	Hardwood	MDF
		Min. Density (kg/m^3):	500	500	700

Intumescent Materials: PVC encapsulated Pyroplex – Pyroplex Ltd

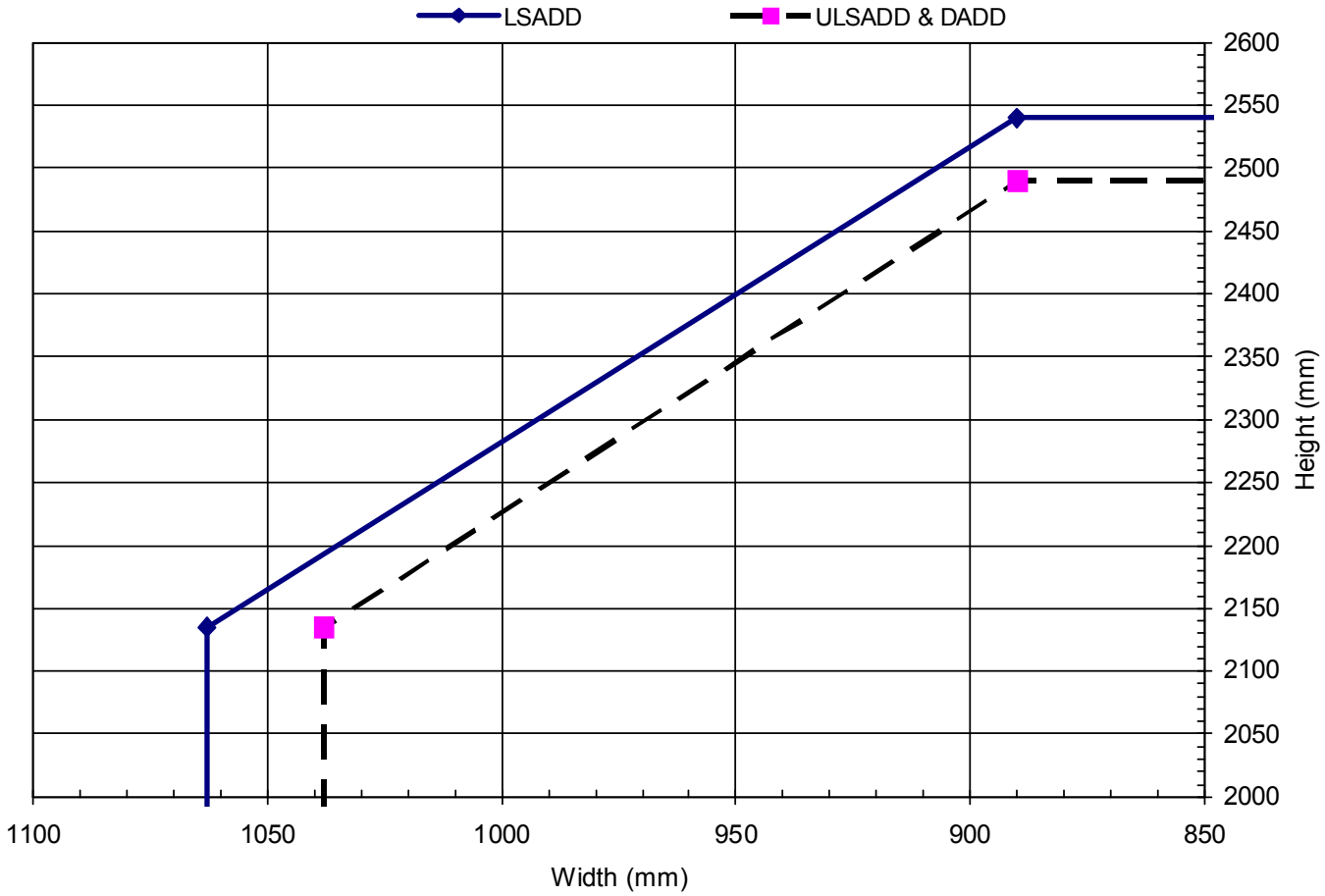
Head: 1 No 15 x 4mm fitted centrally in the leaf edge or frame reveal.

Meeting edges: 1 No 15 x 4mm fitted centrally in the meeting edge of one leaf

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2193	x	1219
		To:	3256	x	808
	ULSADD & DADD	From:	2193	x	1194
		To:	3206	x	808
Maximum Overpanel height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm) From:	All		2440 x 1100
		Max leaf dims (mm) To:			2900 x 915

Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan

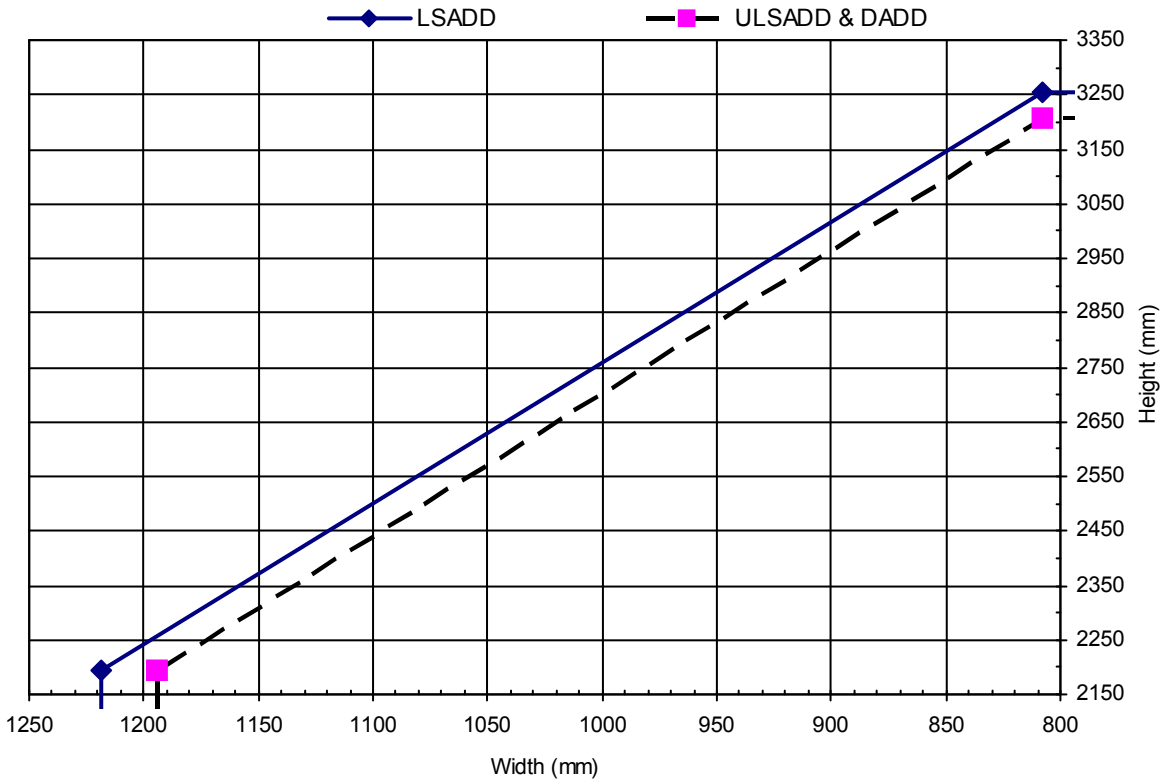
Head: 1 No 25 x 4mm strip fitted centrally in the frame reveal or leaf edge. Leaves over 2700mm (h) increase to 35 x 4mm

Meeting edges:
Square: 1 No 25 x 4mm fitted centrally in the meeting edge of one leaf only
Rebated: 1 No 15 x 4mm fitted centrally in the rebates of both leaf edges

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)	Width (mm)
	LSADD & ULSADD & DADD	From:	2440 x	915
		To:	2440 x	915
Maximum Overpanel height (mm)		Transomed	1500	
Glazing		Maximum Glazed Area:	1.92m^2 (1.32m^2 for single panes) see section 8 for details	
		Approved systems:	See section 8 and appendix C	
Frame specification		Min. Section (mm):	70 x 32	70 x 30
		Material:	Hardwood	MDF
		Min. Density (kg/m^3):	640	700
		Max leaf dims (mm)	All	All

Intumescent Materials: PVC encapsulated Type 617 – Lorient Polyproducts or Therm-A-Seal - ISL

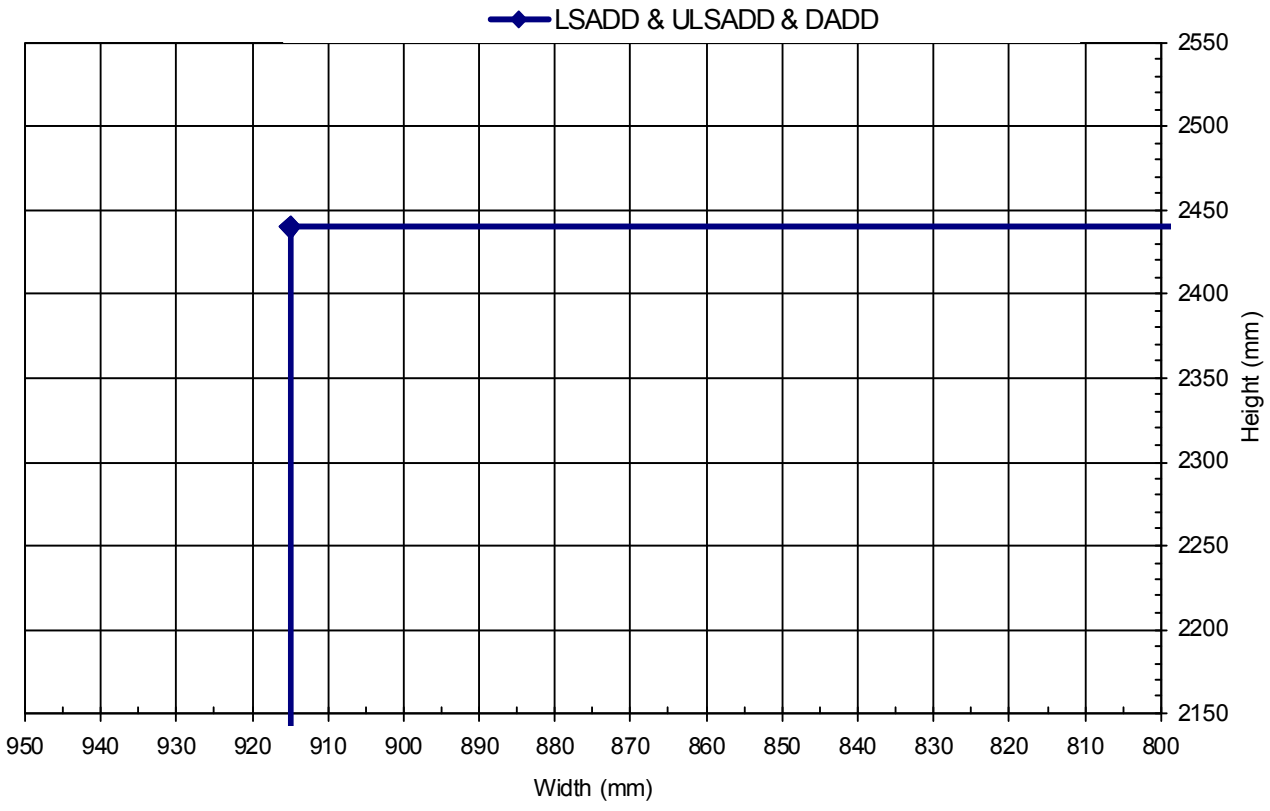
Head: 1 No 15 x 4mm strip fitted centrally in the frame reveal or leaf edge. Leaves over 2275mm (h) increase to 20 x 4mm

Meeting edges:
Square: 1 No 15 x 4mm fitted centrally in the meeting edge of one leaf only
Rebated: 1 No 15 x 4mm fitted centrally in the rebates of both leaf edges

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2403	x	1024
		To:	2865	x	840
	ULSADD & DADD	From:	2403	x	999
		To:	2815	x	840
Maximum Overpanel height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area:	$1.92m^2$ ($1.32m^2$ for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm) From:	All		2440 x 980
		Max leaf dims (mm) To:			2600 x 915

Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan

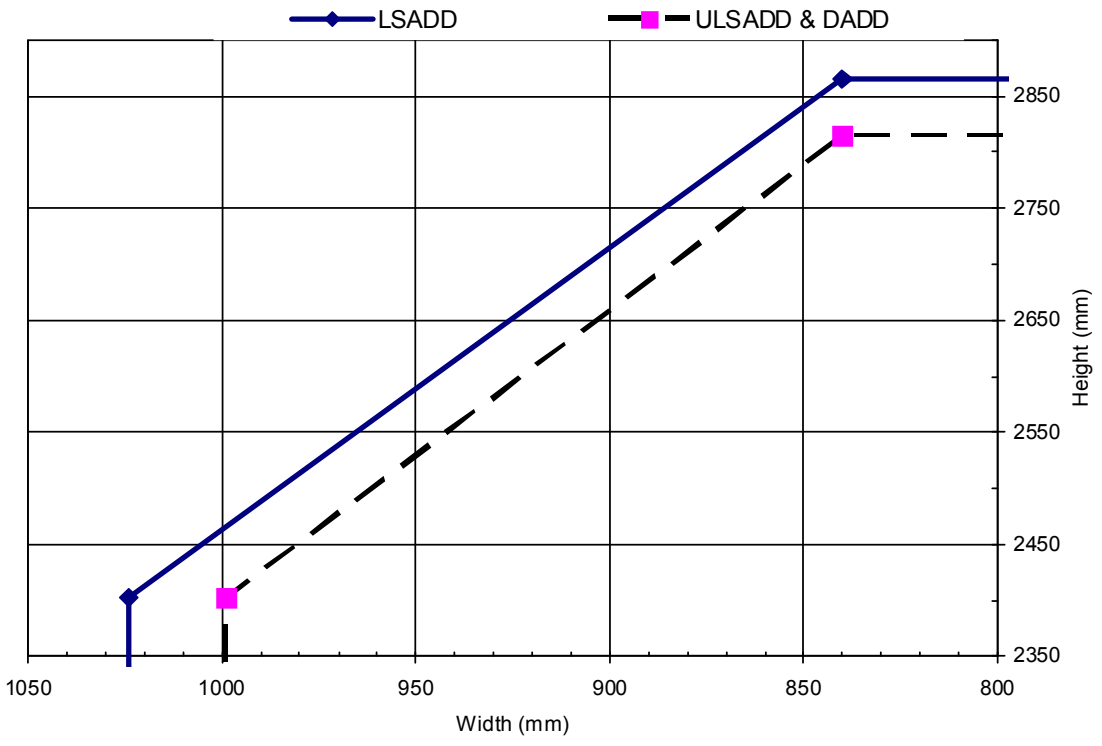
Head: 1 No 15 x 4mm strip fitted centrally in the frame reveal or leaf edge. Leaves over 2275mm (h) increase to 20 x 4mm. Leaves over 2700mm (h) increase to 30 x 4mm

Meeting edges:
Square: 1 No 15 x 4mm fitted centrally in the meeting edge of one leaf only
Rebated: 1 No 15 x 4mm fitted centrally in the rebates of both leaf edges

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Double Doorsets + Overpanel

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD + OP	From:	2193	x	1169
		To:	3156	x	808
	ULSADD + OP & DADD + OP	From:	2193	x	1144
		To:	3106	x	808
Maximum Overpanel height (mm)			1500		
Glazing		Maximum Glazed Area:	$1.92m^2$ ($1.32m^2$ for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm) From:	All		2440 x 1050
		Max leaf dims (mm) To:			2820 x 915

Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan

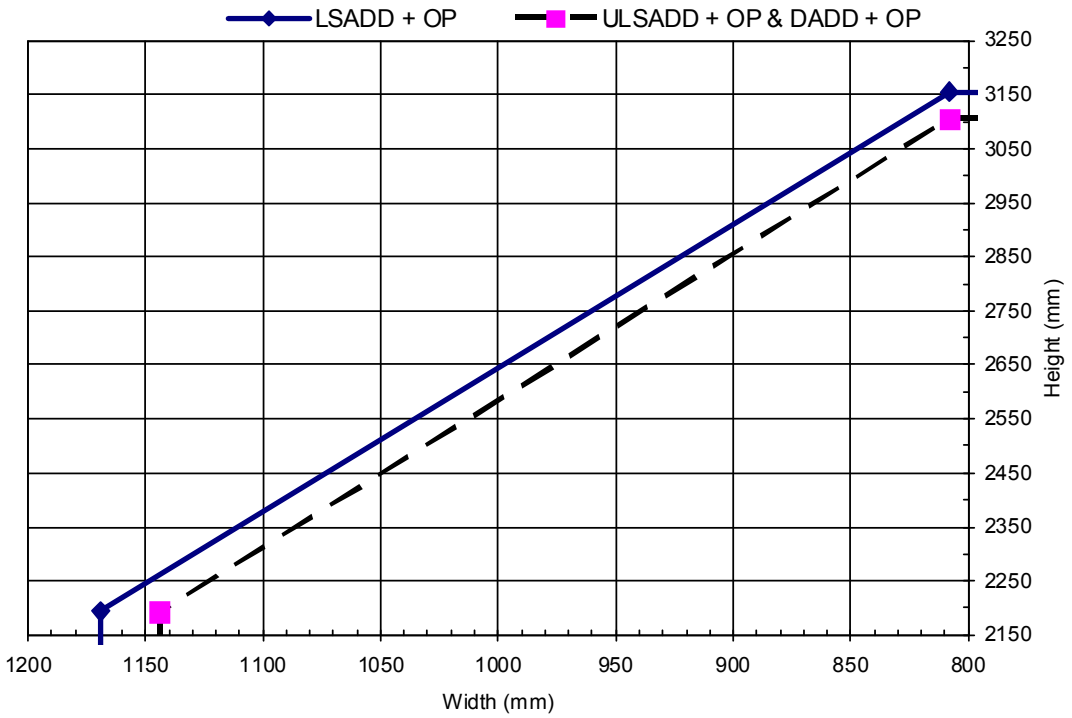
Head:
Square:1 No 25 x 4mm strip fitted centrally in the bottom of the overpanel. Leaves over 2700mm (h) increase to 35 x 4mm.
Rebated: 1 No 15 x 4mm centrally fitted in the bottom of the rebates of the leaf heads and rebate of the overpanel

Meeting edges:
Square: 1 No 25 x 4mm fitted centrally in the meeting edge of one leaf only
Rebated: 1 No 15 x 4mm fitted centrally in the rebates of both leaf edges

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Double Doorsets + Overpanel

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD + OP ULSADD + OP & DADD + OP	From: To:	2440 2440	x x	915 915
Maximum Overpanel height (mm)			1500		
Glazing		Maximum Glazed Area:	$1.92m^2$ ($1.32m^2$ for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm)	All		All

Intumescent Materials: PVC encapsulated Type 617 – Lorient Polyproducts or Therm-A-Seal - ISL

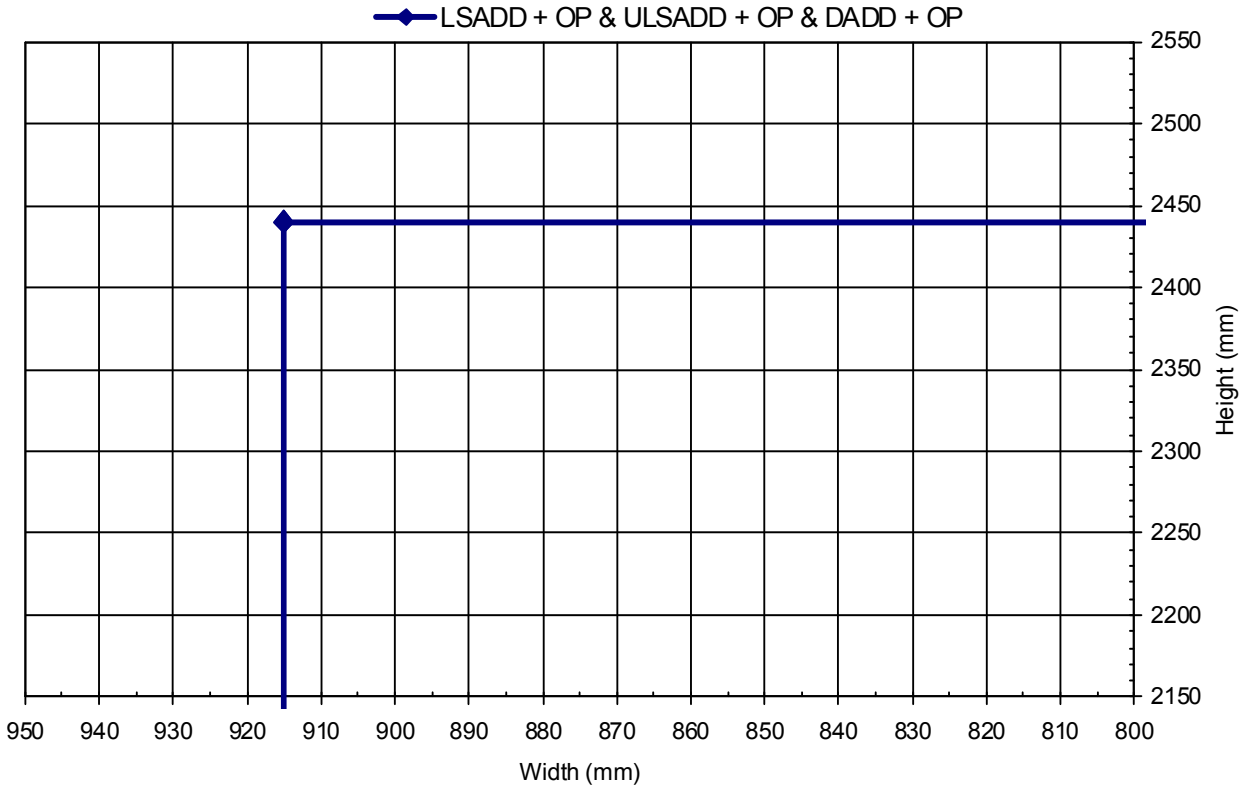
Head:
Square: 1 No 25 x 4mm strip fitted centrally in the bottom of the overpanel.
Rebated: 1 No 15 x 4mm fitted centrally in the rebates of the leaf heads and rebate of the overpanel

Meeting edges:
Square: 1 No 15 x 4mm fitted centrally in the meeting edge of one leaf only
Rebated: 1 No 15 x 4mm fitted centrally in the rebates of both leaf edges

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size



Blankfort 30 and Blankfort 30+

Latched & Unlatched Single Acting & Double Acting Double Doorsets + Overpanel

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD + OP	From:	2403	x	974
		To:	2765	x	840
	ULSADD + OP & DADD + OP	From:	2403	x	949
		To:	2715	x	840
Maximum Overpanel height (mm)			1500		
Glazing		Maximum Glazed Area:	$1.92m^2$ ($1.32m^2$ for single panes) see section 8 for details		
		Approved systems:	See section 8 and appendix C		
Frame specification		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		700
		Max leaf dims (mm) From:	All		2440 x 930
		Max leaf dims (mm) To:			2510 x 915

Intumescent Materials: PVC encapsulated Palusol, Type 617 – Lorient Polyproducts, Palusol – Mann McGowan

Head:
Square:1 No 25 x 4mm strip fitted centrally in the bottom of the overpanel. Leaves over 2700mm (h) increase to 35 x 4mm.
Rebated: 1 No 15 x 4mm centrally fitted in the bottom of the rebates of the leaf heads and rebate of the overpanel

Meeting edges:
Square: 1 No 25 x 4mm fitted centrally in the meeting edge of one leaf only
Rebated: 1 No 15 x 4mm fitted centrally in the rebates of both leaf edges

Jambs & overpanels: 1 No 15 x 4mm centrally in the leaf edge or frame reveal.

Hardware Protection: see section 12

Maximum Door Leaf Size