Chiltern INTERNATIONAL FIRE

Chiltern DYNAMICS

Global Assessment of:

Blankfort Inc.

Blankfort 60 & Blankfort 60+

60 Minute Fire Resisting Doorsets

Report No: Chilt/A12152

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Contents

		Page No
1	Introduction	3
2	General Description of Construction	3
3	Leaf Sizes	4
4	Configurations	5
5	Leaf Size Adjustment	5
6	Glazing	5
7	Overpanels	11
8	Fanlights and Side Screens	12
9	Door Frames	16
10	Leaf Facing Materials	18
11	Intumescent Materials	19
12	Edging Materials	21
13	Adhesives	23
14	Tested Hardware	23
15	Additional & Alternative Hardware	23
16	Door Gaps	28
17	Classification of Timber	28
18	Structural Opening	28
19	Fixings	28
20	Sealing to Structural Opening	28
21	Insulation	30
22	Smoke Control	30
23	Conclusion	31
24	Declaration by the Applicant	32
25	Limitations	33
26	Validity	33
Appendix A - Test Data		34
Appendix B - Glazing Systems		37
Appendix C - Revisions		39
Appendix D - Data Sheets		40

1 Introduction

This document constitutes a global assessment relating to Blankfort Inc., Blankfort 60 and Blankfort 60+, 60-minute 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 designs, based on the tested constructions and performances obtained. The assessment is an evaluation of the potential fire resistance performance, if the element/s were to be tested in accordance with BS 476: Part 22: 1987.

2 General Description of Construction

The following sections describe the basic construction of the various 60 minute fire rated Blankfort designs. Unless specifically stated, the scope of application discussed herein relates equally to all designs listed in this section.

2.1 Blankfort 60

Element	Species/type	Dimensions (mm)	Density (kg/m^3)
Core: (lamels of one of the following tested species)	Eastern white pine	Lamel size: max 20 - 36 wide x 36 thick	450*
	Grey pine	Lamel size: max 20 – 36 wide x 36 thick	500*
	Spruce	Lamel size: max 20 – 36 wide x 36 thick	400-500*
Top rail	Same material as core	100 wide	As core
Facings	Chipboard (particleboard)	9 thick	650*
	MDF	9 thick	720*
Lippings:	Hardwood	Minimum 6 thick	582

*Stated nominal density

2.2 Blankfort 60+

Element		Species/type	Dimensions (mm)	Density (kg/m^3)
Core: (lamels of one of the following tested species)		Eastern white pine	Lamel size: max 20 - 36 wide x 30 thick	450*
		Grey pine	Lamel size: max 20 – 36 wide x 30 thick	500*
		Spruce	Lamel size: max 20 – 36 wide x 30 thick	400-500*
Top rail		Same material as core	100 wide	As core
Facings	**Sub-face**	Chipboard (particleboard)	9 thick	650*
	Outer face	MDF	3 thick	720*
Lippings:		Hardwood	Minimum 6 thick	582

*Stated nominal density

2.3 Blankfort 60+ Top and Bottom Rail

Further to the primary construction of the Blankfort 60+ design, the use of a 200mm wide top and bottom rail has been evaluated by test and the additional scope of application is discussed herein. Unless otherwise stated, report sections applying to the Blankfort 60+ construction will also apply to Blankfort 60+ Top and Bottom Rail.

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 D.

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

Test RF96073, conducted on a double leaf, double acting doorset, with leaf dimensions of 2138mm x 916mm, achieved 64 minutes integrity and is used to calculate the leaf size parameters for Blankfort 60.

Test RF01052/A, conducted on an unlatched, double leaf, single acting doorset including overpanel, with leaf dimensions of 2396mm x 850mm, achieved 63 minutes integrity and is used to calculate the leaf size parameters for Blankfort 60+.

Test RF08080, conducted on an unlatched, double leaf, single acting doorset, with leaf dimensions of 2750mm x 915mm, achieved 65 minutes integrity and is used to calculate the leaf size parameters for Blankfort 60+ when fitted with a top and bottom rail.

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

5.1 Blankfort 60 and Blankfort 60+ (top rail only)

Leaves may be reduced in width without restriction. Reduction in height must be primarily from the bottom edge, but if reduction is made from the top edge, a top rail dimension of 100mm must be maintained.

Lipping reduction may be made to facilitate site fitting, providing the minimum dimensions specified in section 12 are maintained.

5.2 Blankfort 60+ (200mm wide top and bottom rail fitted)

Leaves may be reduced in width without restriction. Reduction in height can be made from the top or bottom edge to a maximum of 100mm. This is to ensure that a minimum of 100mm top and bottom rail is maintained.

Lipping reduction may be made to facilitate site fitting, providing the minimum dimensions specified in section 12 are maintained.

6 Glazing

The testing conducted on Blankfort 60 and Blankfort 60+ has demonstrated that the designs are capable of tolerating relatively large glazed apertures, whilst providing a margin of over performance. Glazing is therefore acceptable within the following parameters.

The maximum assessed glazed area for all configurations is 0.72m²; however, it is possible to increase the glazed aperture to 1.1m^2 providing 10mm Pyrodur (60-10) glass is used in conjunction with system 2 listed in section 6.1.

6.1 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-Glaze 60	Intumescent Seals Ltd.
2. Fireglaze 60	Sealmaster Ltd.
3. System 90+	Lorient Polyproducts Ltd.
4. Pyroglaze 60	Mann McGowan Ltd.
5. System 36/15	Lorient Polyproducts Ltd.
6. System 63 (circular apertures only)	Lorient Polyproducts Ltd.

6.2 Assessed Glass Products

Assessed glass types are as follows:

Glass Type	Manufacturer	Thickness (mm)	Max Area (m^2)
1. Pyroshield	Pilkington Group Ltd.	6 & 7	0.72
2. Pyroshield 2 (see section 6.5)	Pilkington Group Ltd.	6 & 7	0.71
3. Pyran S	Schott Glass Ltd.	6	0.72
4. Pyrostem	CGI Ltd.	6	0.72
5. Pyrodur 60-10 (see note 5)	Pilkington Group Ltd.	10	1.1
6. Pyroguard EW MAXI	CGI Ltd.	11	0.72
7. Pyranova 15-S2.0	Schott UK Ltd.	11	0.72
8. Pyrobelite 12	AGC Flat Glass UK	12	0.72
9. Pyrodur 60-20	Pilkington Group Ltd.	13	0.72
10. Swissflam Lite (see note 4)	Vetrotech Saint Gobain AG	14	0.72
11. Pyroguard EI 30	CGI Ltd.	15	0.72
12. Pyrostop 30-10	Pilkington Group Ltd.	15	0.72
13. Pyrobel 16	AGC Flat Glass UK	16	0.72
14. Pyrobel 25 (see section 6.4)	AGC Flat Glass UK	25	0.72
15. Pyrostop 60-101 (see section 6.4)	Pilkington Group Ltd.	23	0.72

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. Glass types 6 and 10-13 are fully insulating for 30 minutes in terms of the criteria set out in BS 476: Part 20: 1987;
3. Glass types 14 and 15 are fully insulating for 60 minutes in terms of the criteria set out in BS 476: Part 20: 1987;
4. May only be used with the Vetrotech glazing system depicted in appendix B;
5. The 10mm Pyrodur (60-10) glass type may be used with all appropriate glazing systems listed in section 6.1. However, for aperture sizes in excess of 0.72 to maximum 1.1m^2, the glass must be installed using glazing system 2 as listed in section 6.1.

6.3 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 6.1 and appendix B
Hardwood	Square	640	Proprietary systems 1 and 2 as specified in 6.1 and glass types 6 & 10-15 as specified in 6.2

A square bead profile may be used as an alternative to the splayed beads subject to the restricted glass types and glazing systems specified in the table above. See appendix B for square bead options.

Glazing beads must be retained in position with 60mm long x 2mm diameter steel pins or 60mm long No 8 screws, inserted at 35-40º to the vertical at no more than 50mm from each corner and at 150mm maximum centres. Pneumatically fired pins are acceptable providing the pins meet the specification given above.

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

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

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

6.4 60 Minute Insulating Glass

The following sections are specific for the installation of the 60 minute insulating glass types; the sections below take precedence over the details given for all other glass types in sections 6.1 and 6.3.

6.4.1 Pyrobel 25 – AGC Flat Glass

Glazing beads must be retained in position with 60mm long No 6-8 screws, inserted at 30º to the vertical at no more than 50mm from each corner and at 150mm maximum centres.

Glazing beads are to be made from hardwood of minimum density 640kg/m^3, which is to be straight grained joinery quality, free from knots, splits and checks.

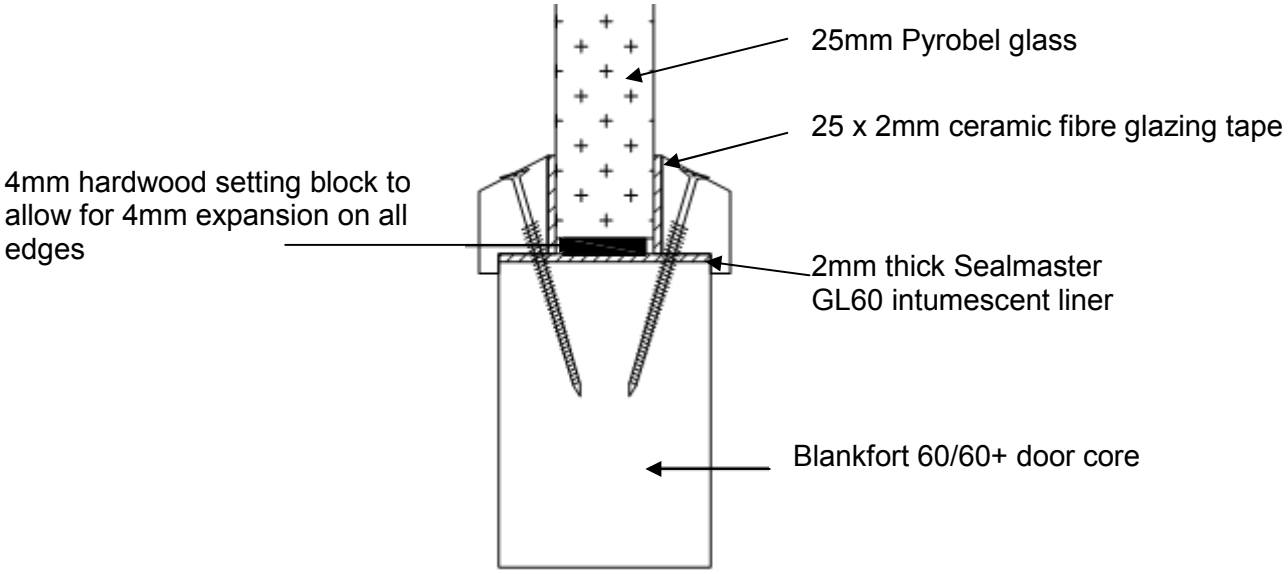
Glazed openings must not be less than 100mm from any door edge. Multiple apertures are acceptable within the permitted glazed area, with a minimum dimension of 80mm of core between apertures.

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

Chamfered glazing beads are to be 30mm (h) x 17.5mm (w) including a 5mm x 5mm bolection return and 20º chamfer.

Square glazing beads are to be 20mm (h) x 17.5mm (w) including a 5mm x 5mm bolection return.

The glazing system is depicted below:



6.4.2 Pyrostop 60-101

Glazing beads must be retained in position with 60mm long No 6-8 screws, inserted at 30º to the vertical at no more than 50mm from each corner and at 150mm maximum centres.

Glazing beads are to be made from hardwood of minimum density 640kg/m^3, which is to be straight grained joinery quality, free from knots, splits and checks.

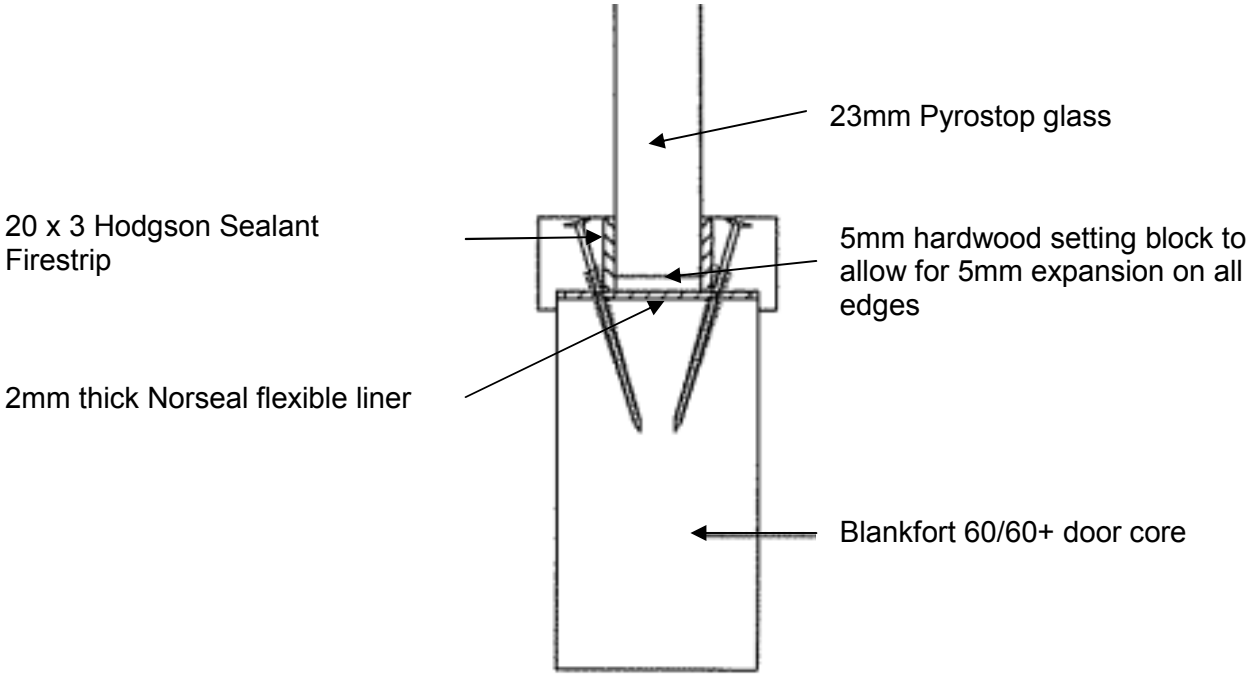
Glazed openings must not be less than 100mm from any door edge. Multiple apertures are acceptable within the permitted glazed area, with a minimum dimension of 80mm of core between apertures.

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

Chamfered glazing beads are to be 30mm (h) x 17.5mm (w) including a 5mm x 5mm bolection return and 20^o chamfer.

Square glazing beads are to be 20mm (h) x 17.5mm (w) including a 5mm x 5mm bolection return.

The glazing system is depicted below:



6.5 Pyroshield 2

The following table details the maximum pane sizes and approved glazing systems permitted for Pyroshield 2 in the Blankfort 60/60+ doorset design.

Glass Type	Glazing System (section 6.1)	Maximum Pane Size* (height x width – mm)	Maximum Area (m^2)
Pyroshield 2	1	1300 x 550	0.715
	3	1300 x 310	0.4

*The heights and widths listed are the maximum single dimensions allowable for an individual pane utilising the relevant glazing system; maximum dimensions may not be increased even if the other dimension for the pane is reduced.

Glazed openings must not be less than 100mm from any door edge. Multiple apertures are acceptable up to the maximum approved area, with a minimum dimension of 80mm between apertures. The aperture shape is not restricted, providing the intumescent material and beads are proven to be compatible with that shape.

Glazing bead fixings must be retained in position with 60mm long x 2mm diameter steel pins or 60mm long No 6-8 screws, inserted at 35-40º to the vertical at no more than 50mm from each corner and at 150mm maximum centres. Pneumatically fired pins are acceptable providing they meet the specification given above.

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

False timber beads must not be applied across the glass face without specific test evidence to justify the system used.

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

7 Overpanels

7.1 Blankfort 60

Overpanels of the same construction as the door leaves may be used with Blankfort 60, provided that a transom is fitted between the leaf head and overpanel. The transom must be to the same specification as the door frame (see the note under the table in section 9.1) and the overpanel must be fully contained within the door frame (see following diagram).

7.2 Blankfort 60+

Overpanels of the same construction as the door leaves may be used with Blankfort 60+ either with a transom or with a flush junction, where the bottom lipping of the overpanel and head lipping of leaves are either rebated together or square to provide a flush junction. 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).

7.3 General

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.

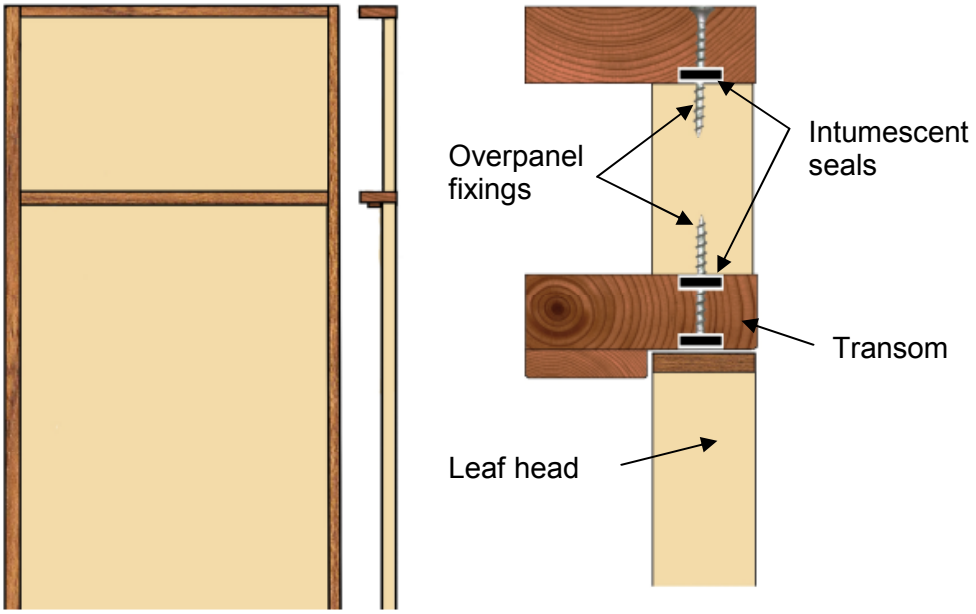
All overpanels must be fixed by screwing through the rear of the frame with steel screws passing at least 30mm into the centre line of the overpanel. Fixings must be no more than 100mm from each corner and a maximum of 250mm centres in between.

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

Maximum overpanel heights are as follows:

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



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

8 Fanlights and Side Screens

8.1 General

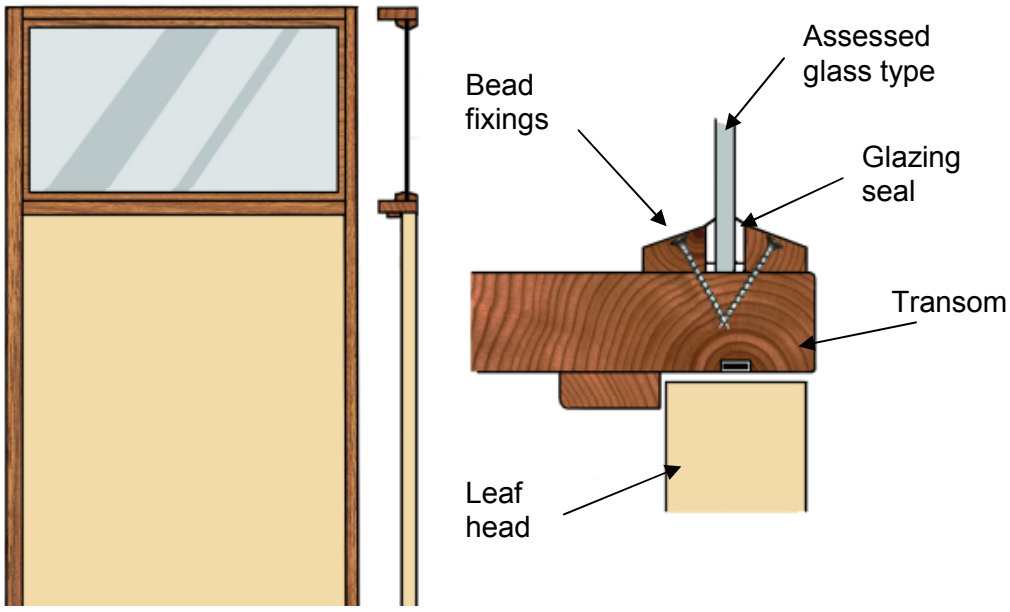
It is our assessment that Blankfort 60 and Blankfort 60+ may include glazed fanlights or side screens. The timber frame and glazing beads must be hardwood with a minimum density of 640 kg/m^3, whilst the frame section must be a minimum of 70mm x 44mm. Other details of the door frame and screen construction 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

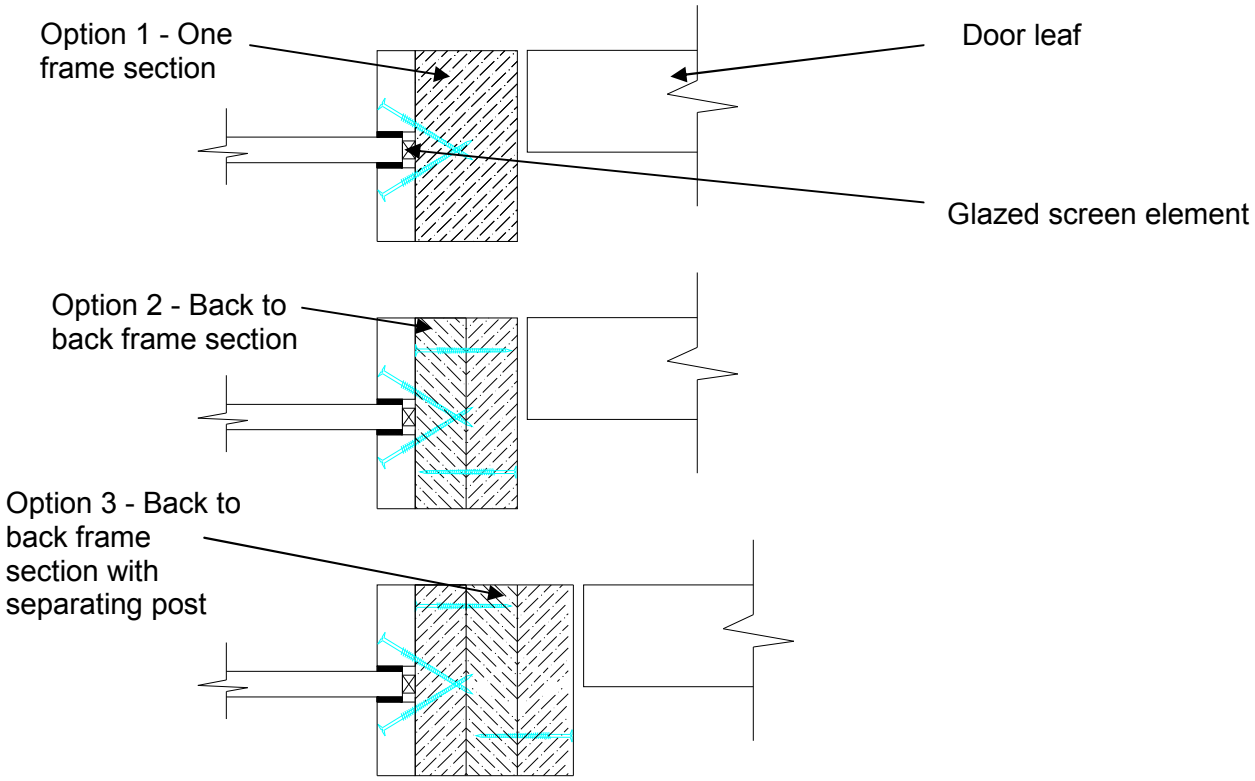
NB: MDF frame doorsets are not assessed for glazed fanlights or side screens without specific test evidence (see section 9.1).



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

8.2 Common frame sections

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



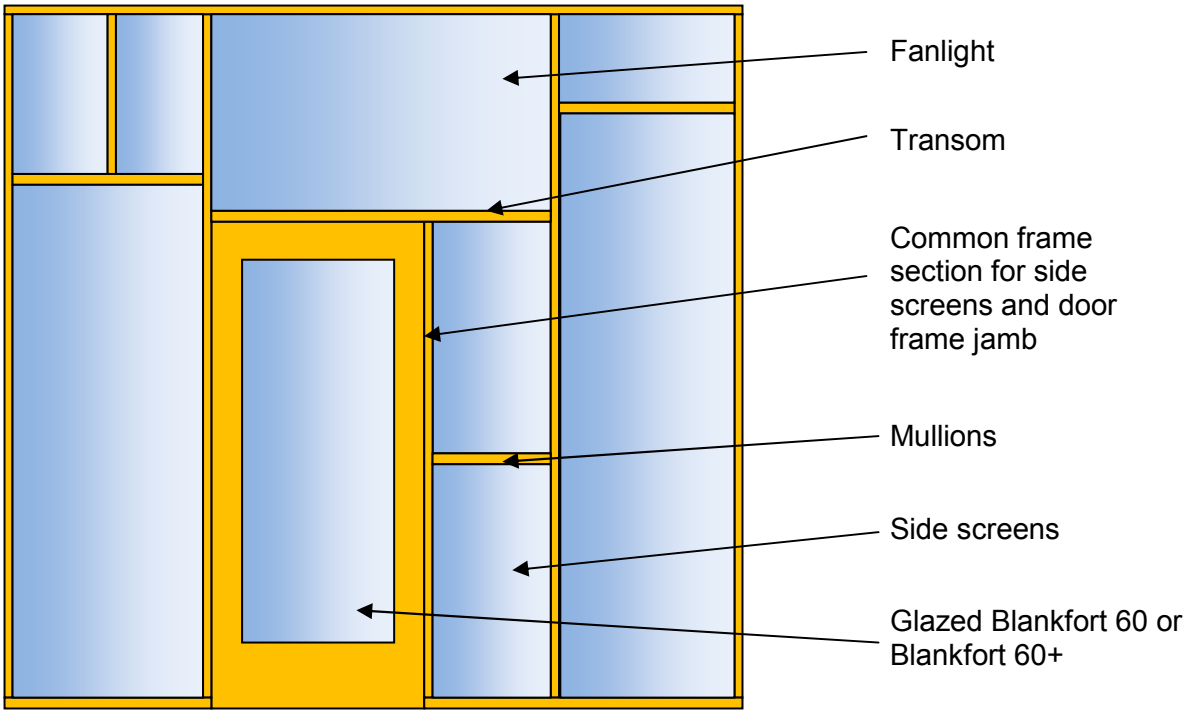
When using separate sections of timber, as shown above (option 2 and 3), each section must be suitably fixed to one another using appropriate steel screw fixings and glued using one of the adhesives approved for the lipping in the adhesive section of this report. Screws must be fixed at 600mm centres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

8.3 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.



8.4 Specific Glass Types

The following section provides a scope of approval for a particular glass type when used for glazing fanlights or side screens. Fanlights may be used in conjunction with side screens subject to the specification contained in the following section.

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

8.4.1 10mm Pyrodur (60-10) – Pilkington Glass Ltd

Transom/mullion details:

- Minimum 95mm deep x 45mm thick hardwood (min density 640kg/m^3). This timber section can be used for both door frame 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 40mm deep hardwood beads (minimum density 640kg/m^3). The bead shape may be square or incorporate a 10-15^o chamfer;
- 60mm long size 6-8 steel wood screws at maximum of 50mm from corners and 150mm centres inserted at 45^o to the plane of the glass;
- 20mm x 3mm Hodgsons Sealants Firestrip located between the glass and the beads;
- 5mm high x 10mm 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:	735	1000
	To:	815	850
Side screen		1970	850

- 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 1000mm 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.

9 Door Frames

9.1 Door Frame Construction

Door frames for Blankfort 60 and Blankfort 60+ must be as follows:

Material	Section Size (mm)	Min Density (kg/m^3)	Application	Leaf Size Range (mm)
Hardwood*	70 x 32	640	All configurations	All
Hardwood*	70 x 32	615	Only for single leaf doorsets when used in conjunction with 500P intumescent strips	Maximum 2150 x 930
MDF*	70 x 30	720	All configurations	All

*If the doorset features a transomed overpanel (constructed using a section of door blank), the door frame must be hardwood with a minimum section of 70mm x 32mm and of the minimum density stated above.

All timber must meet class J30 as specified in BS EN 942: 2007 (see section 17).

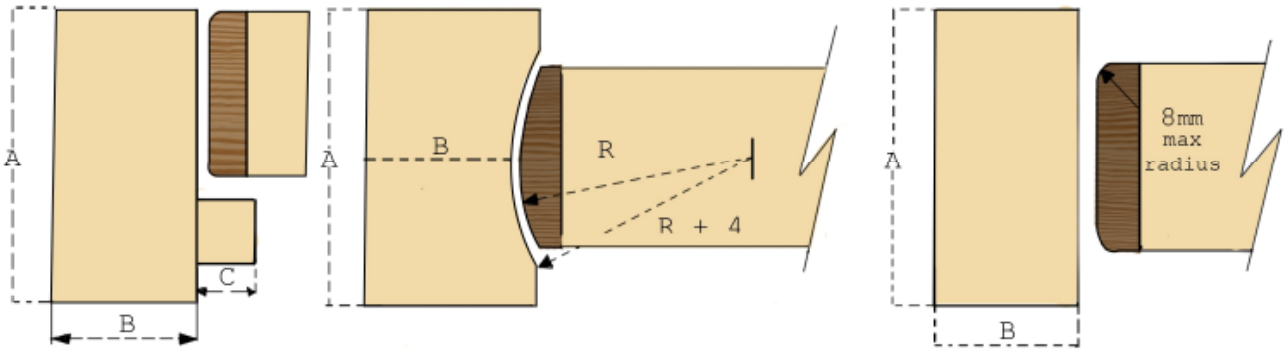
See appendix D for details of intumescent size and spacing.

A 12mm deep planted stop is adequate for single acting frames whilst double acting frames may be scalloped or square. If frames are square, the maximum radius to the corners of the leaf is 8mm.

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

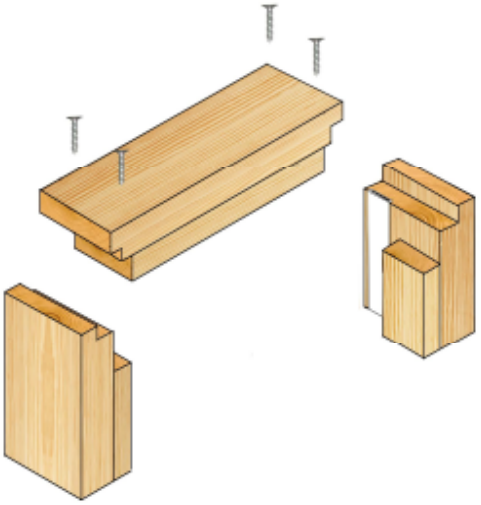
The following diagram depicts the assessed frame profiles and dimensions:

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

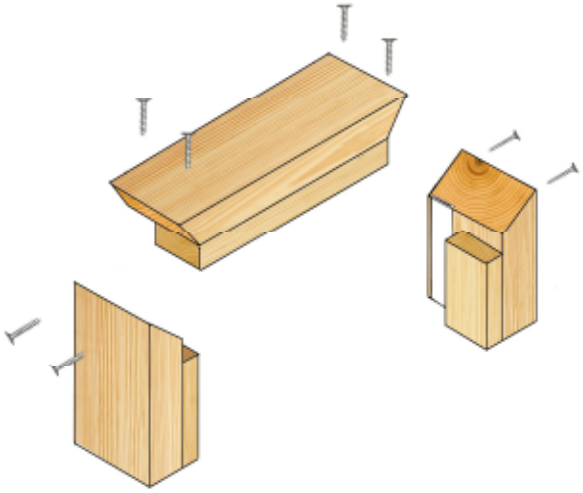


Standard **Scalloped** **Profiled edges**

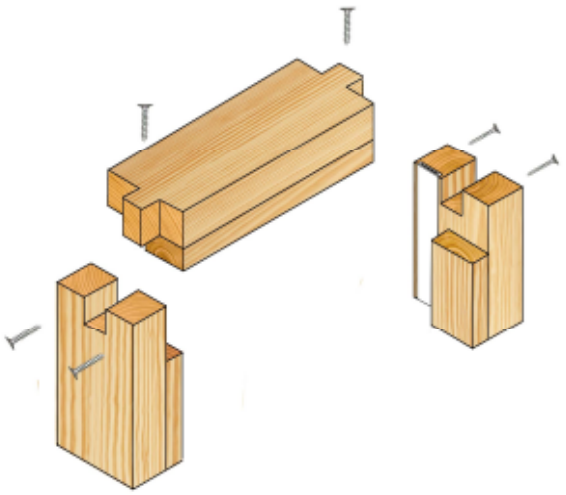
9.2 Door Frame Joints



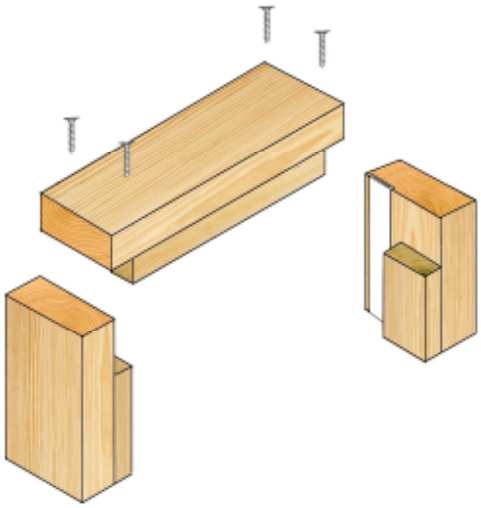
Half Lapped Joint



Mitre Joint



Mortice and Tenon Joint

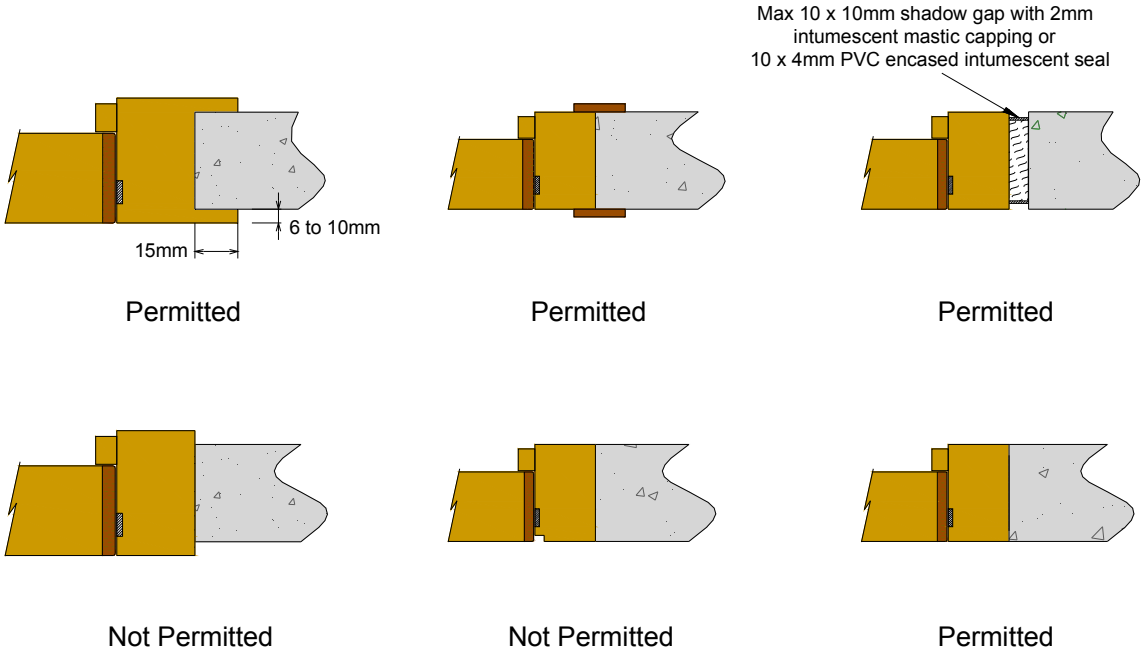


Butt Joint

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

9.3 Door frame installation

The following diagrams indicate acceptable and unacceptable door frame installations:



NB: See section 20 for required sealing to structural opening detail.

10 Leaf Facing Materials

10.1 Structural Facings

10.1.1 Blankfort 60

At the thickness tested facings are considered to have structural influence; therefore only the following facing materials have been approved for use with the Blankfort 60 design:

Facing Material	**Thickness** (mm)	**Min. Density** (kg/m^3)	**Maximum Leaf Size** (mm)	**Permitted Configurations**
Chipboard	9	650	All	All
MDF	9	720	Pyroplex seals only – see appendix D for details	LSASD & ULSASD & DASD

10.1.2 Blankfort 60+

The following outer facing materials have been approved for use with the Blankfort 60+ design in conjunction with the 9mm chipboard sub face (min density 650 kg/m^3):

Outer face material	**Thickness** (mm)	**Min. Density** (kg/m^3)	**Maximum Leaf Size** (mm)	**Permitted Configurations**
MDF	3	720	All	All
Eucatex	3	800	All	All
Birch plywood	3	640	All	All

10.2 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.

11 Intumescent Materials

11.1 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 encapsulated Palusol 100 – Mann McGowan Fabrications Ltd. or Lorient Polyproducts Ltd. 2. 500P – Mann McGowan 3. Type 617 – Lorient Polyproducts Ltd. 4. Pyroplex – Pyroplex Ltd.
Hinges	Under all hinge blades	1. 1mm Interdens – Dufaylite Developments Ltd. 2. 1mm MAP paper – Lorient Polyproducts Ltd. 3. 1mm Pyrostrip 300 – Mann McGowan Fabrications Ltd. 4. 1mm Therm-A-Strip – Intumescent Seals Ltd.
Lock/latches	Under forend & keep	1. 1mm Interdens – Dufaylite Developments Ltd. 2. 1mm MAP paper – Lorient Polyproducts Ltd. 3. 1mm Pyrostrip 300 – Mann McGowan 4. 1mm Therm-A-Strip – Intumescent Seals Ltd.
Top pivots & flush bolts	Lining all sides of the mortices	1. 2mm Interdens – Dufaylite Developments Ltd. 2. 2mm MAP paper – Lorient Polyproducts Ltd. 3. 2mm Therm-A-Strip – Intumescent Seals Ltd. 4. 2mm Therm-A-Flex – Intumescent Seals Ltd.

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

11.2 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 D for intumescent seal types listed in this table below
Door frame	Hardwood (min 640 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. Pyroplex – Pyroplex Ltd. 3. 500P – Mann McGowan Ltd.
Seal fixing (optional)	20mm long fine gauge steel pins located 25mm from the end of each length of intumescent

Notes:

1. Each section of intumescent strip must be tightly butted to the next 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.

12 Edging Materials

12.1 Blankfort 60

The minimum lipping specifications for this design of door leaf are as follows:

Material	Size (mm)	Minimum Density (kg/m³)
Timber for lippings must be hardwood, straight grained, joinery quality, free from knots splits and checks.	1. SQUARE = 6 -18 thick with a maximum of 2mm profiling permitted at corners of lipping (see section 9.1)	640*
	2. ROUNDED = 8 -18 thick with a radius matching the distance between leaf edge and floor pivot (see section 9.1) –vertical lippings only	
	3. REBATED = **Not permitted**	

***** May be reduced to 615kg/m³ for chipboard faced, single leaf doorsets, only when used in conjunction with 500P intumescent strips and to a maximum leaf size of 2150mm x 930mm.

Notes:

1. All edges of the leaves must be lipped;
2. 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 16.

12.2 Blankfort 60+

The minimum lipping specifications for this design of door leaf are as follows:

Material	Size (mm)	Minimum Density (kg/m³)
Timber for lippings must be hardwood, straight grained, joinery quality, free from knots splits and checks.	1. SQUARE = 6 -18 with a maximum of 2mm profiling permitted at corners of lipping (see section 9.1)	640*
	2. ROUNDED = 8 -18 thick with a radius matching the distance between leaf edge and floor pivot (see section 9.1) vertical lippings only	
	3. REBATED = 19 – 29 thick with 26 wide x 12 deep rebate	

***** May be reduced to 615kg/m³ for chipboard faced, single leaf doorsets, only when used in conjunction with 500P intumescent strips and to a maximum leaf size of 2150mm x 930mm.

Notes:

1. All edges of the leaves must be lipped;
2. Single doorsets are not permitted with rebated vertical edges;
3. Only head to overpanel junctions may be rebated;
4. 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 16.

12.3 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).

13 Adhesives

The following adhesives must be used in construction for Blankfort 60 and Blankfort 60+:

Element	Product
Core lamels	X-linked PVA
Facings	X-linked PVA
Lipping	Urea formaldehyde or polyurethane

14 Tested Hardware

The following hardware has been successfully incorporated in the tests referred to in this assessment:

1. Royde & Tucker H105 lift off hinges;
2. Dorma TS83V face fixed overhead closers;
3. Geze TS500 floor springs – ref 17632U;
4. Geze type B upper pivot – ref 52477U;
5. Geze type C bottom strap – ref 07432U;
6. Geze stainless steel cover plate – 52477U;
7. Standard 75mm mortise latches with aluminium lever handles.

15 Additional & Alternative Hardware

15.1 Automatic Closing

15.1.1 General

Automatic closing devices, must either be as tested or components of equal specification that have demonstrated contribution to the required performance of these types of 60 minute doorset design, when tested to BS 476: Part 22: 1987 or BS EN 1634-1: 2000 or 2008.

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

15.1.2 Concealed over head closer

The testing conducted in WF 140704 demonstrated that a 54mm thick door design similar to the Blankfort 60 and 60+ construction can be fitted with the Dorma ITS 96 concealed over head closer and provide a minimum of 60 minutes fire resistance.

The closer must have a minimum of 10 x 4mm perimeter intumescent seal running past both sides of the slide arm in the frame reveal, for the full width of the leaf, and the closer must be fitted with the tested proprietary intumescent pack provided by Dorma referenced: Lorient Polyproducts Ltd. ITS Graphite D/A cover strip.

The closer must be installed in accordance with the manufacturer's instructions and the head of the door frame must incorporate a minimum of 1 No. 20 x 4mm seal centrally fitted in the frame reveal, where the perimeter is not interrupted by the slide channel.

15.2 Hinges

Leaves <2400mm (h) must be hung on 3 hinges. Leaves >2400mm (h) must be hung on 4 hinges. Hinges with the following specification are acceptable:

Element		Specification	
Blade height:		90 - 120mm	
Blade width (excluding knuckle):		30 - 35mm	
Blade thickness		2.5 - 4mm	
Fixings:		Minimum of 4 No. 30mm long No. 8 or No.10 steel wood screws per blade	
Materials:		Steel or stainless steel	
Hinge positions:	If 3 hinges are required:	Top	100 –180mm from the head to top of hinge
		2nd	Minimum 200mm from top hinge or centrally fitted between top and bottom hinge
		Bottom	150 - 250mm from the foot of leaf to bottom of hinge
	If 4 hinges are required:	Top	100-180mm from the head to top of hinge
		2nd & 3rd	Equispaced between top and bottom or 2nd hinge 200mm from top hinge and 3rd hinge equally spaced between 2nd and bottom hinge
		Bottom	150 - 250mm from the foot of leaf to bottom of hinge
Intumescent protection:		See section 11	

15.3 Safehinge

It is possible to fit the Safehinge™ product to the Blankfort 60 and 60+ designs. The end user must satisfy themselves that the test evidence supports the proposed end use application. Distributors of Safehinge™ can provide supporting test evidence for this doorset design and must be contacted to confirm exact requirements.

15.4 Latches & Locks

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

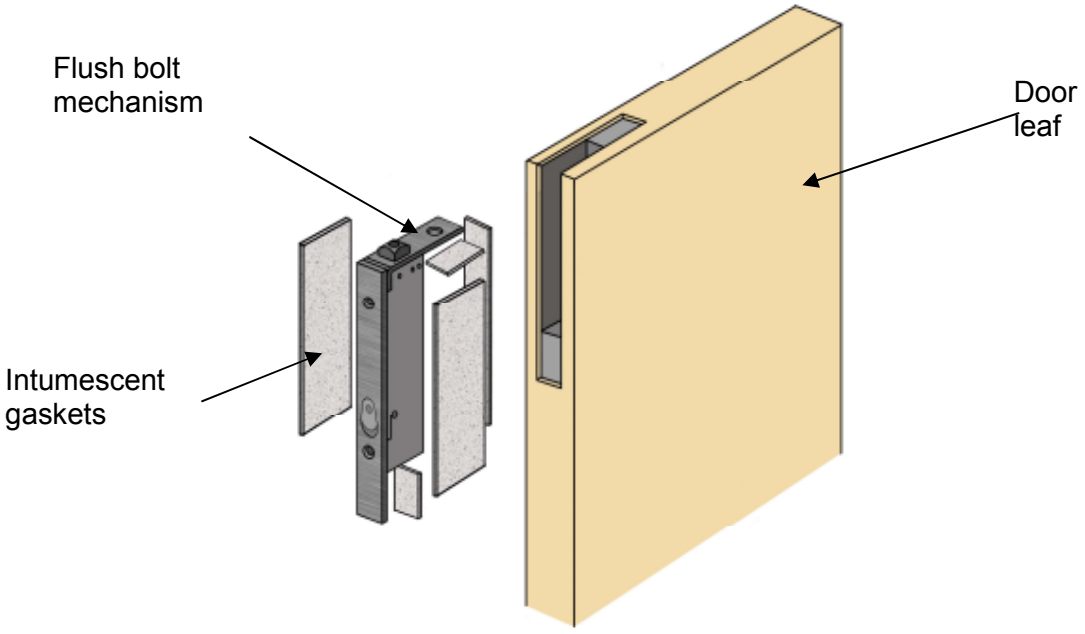
Maximum forend and strike plate dimensions:	235mm high by 25mm wide by 4mm thick
Maximum body dimensions:	18mm thick by 100mm wide by 165mm high
Intumescent protection:	See section 11
Materials:	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel or stainless steel

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 and the mortice must be as tight to the mechanism as is compatible with its operation. All edges of the mortice must be protected with intumescent gaskets as specified in section 11. Alternatively, the hardware manufacturers tested gaskets may be used.



15.6 Pull Handles

These may be surface-fixed or bolted through 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 protected with a tested acrylic intumescent mastic.

15.10 Panic Hardware

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

15.11 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 60 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).

15.12 Acoustic, Weather and Dust Seals

Silicon based flame retardant acoustic, weather and dust seals (e.g. Lorient IS1212, IS1511, IS7025, IS7060) may be fitted to this doorset design without compromising the performance, providing their fitting does not interfere with the activation of the intumescent seals or hinder the self closing function of the leaves.

15.13 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
- Raven RP8Si
- Athmer Schall-Ex Duo L-15
- Norseal 810

15.14 Letter Boxes/Plates

Letter boxes/plates may be fitted providing the product can demonstrate contribution to the required performance of this type of 60 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).

15.15 Wireways

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 60 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.

16 Door Gaps

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

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

17 Classification of Timber

All timber used for door frames (hardwood as applicable) must meet or exceed class J30 as specified in BS EN 942: 2007, providing any defects are adequately repaired.

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

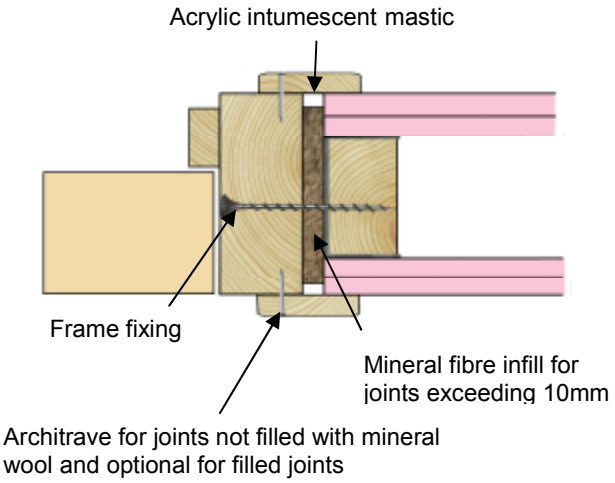
The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 40mm. It is not necessary to fix the frame head, although packers must be inserted.

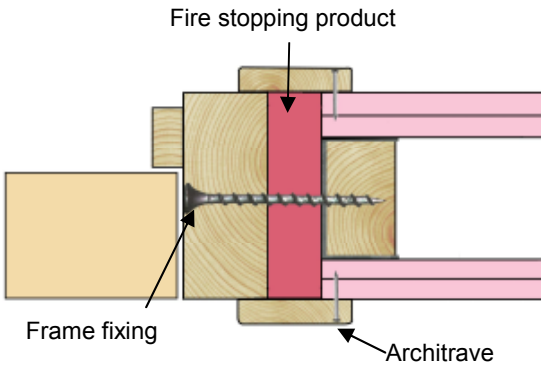
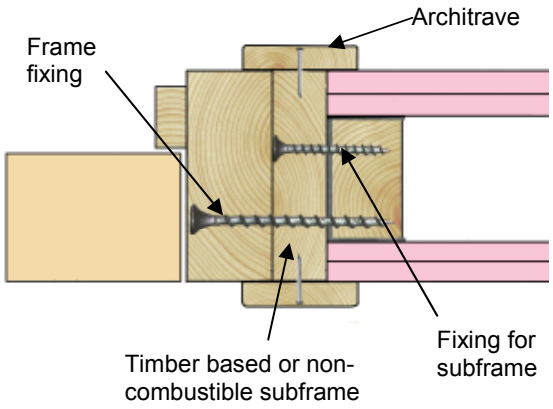
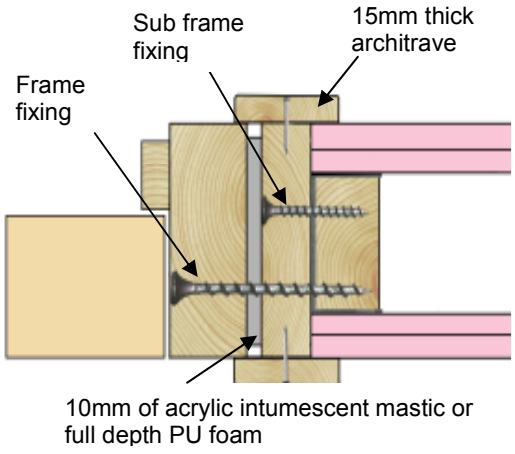
20 Sealing to Structural Opening

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

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.

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.



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.	
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 these designs meeting the following:

Type	Details
Partially insulating	Doorsets incorporating up to 20% of non-insulating glazing
Fully insulating	Unglazed doorsets with timber frames or doors fitted with 60 minute fully insulating glass (i.e. 25mm Pyrobel and 23mm Pyrostop – see section 6)

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

Blankfort 60

It is our opinion that, if the Blankfort 60 doorset design constructed in accordance with the specification documented in this global assessment, were to be tested in the appropriate configuration in accordance with BS 476: Part 22: 1987, it would provide a minimum of 60 minutes integrity and insulation (subject to section 21). The doorsets would therefore be designated as FD60 in terms of the current Building Regulations Approved Document B.

Blankfort 60+

Blankfort 60+ With Top and Bottom Rail

It is our opinion that, if the Blankfort 60+ doorset design constructed in accordance with the specification documented in this global assessment, were to be tested in the appropriate configuration in accordance with BS 476: Part 22: 1987, it would provide a minimum of 60 minutes integrity and insulation (subject to section 21). The doorsets would therefore be designated as FD60 in terms of the current Building Regulations Approved Document B.

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

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

Appendix A
Performance Data

Blankfort 60 Primary Data

Report No.	Configuration	Leaf Size (mm)	Standard	Performance (mins)
RF95119	ULSASD	A: 2440/915 B: 2135/915 54	BS476: Part 22	A: 73 B: 69
BTC 10971F	ULSASD	2440 915 54	BS476: Part 22	64
RF00005	ULSASD	2135 915 54	BS476: Part 22	64
RF00117	ULSASD	2044 886 54	BS476: Part 22	66
RF96073	DADD	2138 916 54	BS476: Part 22	64
CFR1010081	A: ULSASD	2151 924 54	BS EN 1634-1: 2000	65
	B: ULSASD	2443 923 54		63

Blankfort 60+ Primary Data

Report No.	Configuration	Leaf Size (mm)	Standard	Performance (mins)
RF00122	ULSASD	A:2440/915 B:2135/915 54	BS476: Part 22	A:63 B:66 (glazing) 70
RF01052/A	ULSADD+OP	2396 850 54	BS476: Part 22	63

Report No.	Configuration	Leaf Size (mm)	Standard	Performance (mins)
RF08080 (top and bottom rail 60+ design)	ULSADD	2750 915 54	BS476: Part 22	65
RF08081 (glazing)	A: ULSASD	2135 917 54	BSEN 1634-1: 2000	A: 56* (perimeter failure)
	B: ULSASD	2440 1220 54		B: 51
RF11007	ULSADD	2135 890/290 54	BS476: Part 22	65

* The data generated by doorset A in test RF08081 has been used to justify larger glazed apertures when using Pilkington's 10mm Pyrodur fitted with Sealmaster's Fireglaze system. The failure occurred at the top closing corner of the doorset with no indication of any failures of the glass or glazing system upon termination of the test. The 7% shortfall in performance has been attributed to the known severity of the BSEN 1634-1 test standard.

Supplementary data

Report No.	Configuration	Leaf Size (mm)	Standard	Performance (mins)
A07051 Rev B (Lorient Palusol and Type 617 seals)	Various	Various	BS 476: Part 22: 1987	30 and 60
IF09029 (CIFL test – 200mm lengths of intumescent)	Bespoke test sample	1170 x 1170 test sample	BS 476: Part 22 :1987	43**

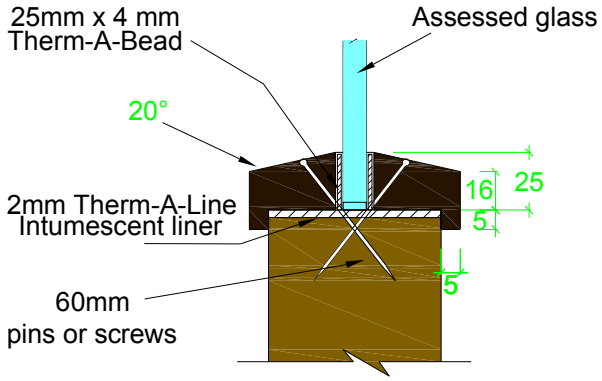
** Test IF09029 was carried out to compare the performance of short lengths of intumescent seals with continuous lengths. The junction tested was between a hardwood and softwood interface and as such would not be expected to provide 60 minutes fire resistance. However, the results of the test did adequately demonstrate that short lengths of intumescent seals can be used in place of continuous lengths subject to the constraints specified within this global assessment.

Report No.	Configuration	Leaf Size (mm)	Standard	Performance (mins)
RF05035 (23mm Pyrostop)	A: ULSASD	2135 1040 54	BSEN 1634-1: 2000	66
RF05036 (60-10 Pyrodur in doorset and screen assembly)	A: ULSASD with glazed screen assembly	2133 1037 54	BSEN 1634-1: 2000	64
RF05126 (25mm Pyrobel)	A: ULSASD	2135 915 54	BSEN 1634-1: 2000	59*
WF140704 (small scale test on Dorma ITS96)	DASD	994 998 54	BS 476: Part 22 :1987	58**

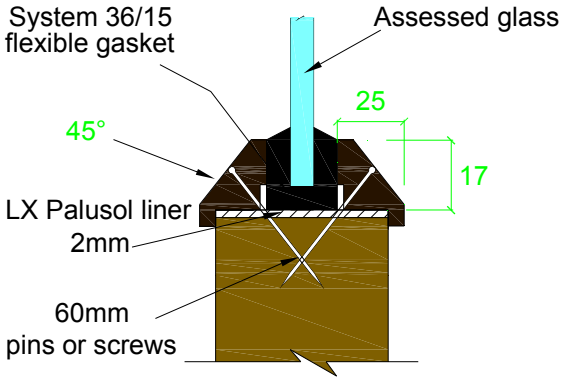
*The failure at 59 minutes was attributable to the leaf to frame junction. No failure directly attributable to the glass prior to test termination at 66 minutes.

**The failure at 58 minutes was attributable to insufficient perimeter intumescent material at the head of the leaf. The failure was remote from the closer and the closer did not fail integrity until 62 minutes. It is requirement of this assessment when using the Dorma ITS96 that a minimum of 1 No. 20x4mm seal is used centrally in the frame reveal in conjunction with 2 No. 10x4mm seals running continuously past the slide arm in the frame reveal for the full width of the leaf, in conjunction with the proprietary intumescent pack supplied by the manufacturer (see section 15.1.2).

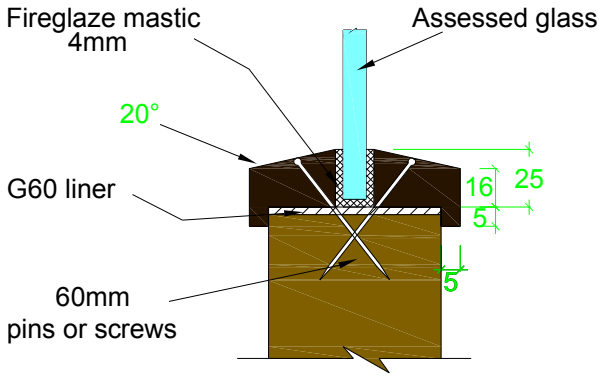
Appendix B
Proprietary 60 Minute Glazing Systems



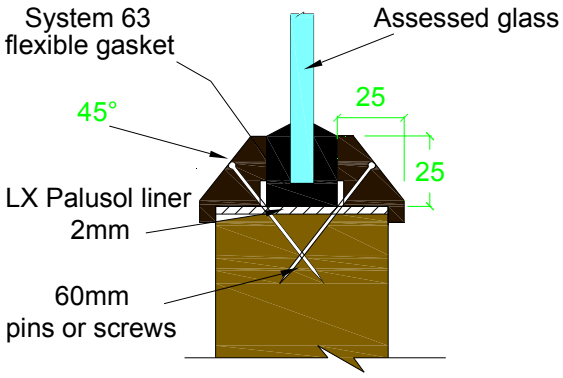
Therm-A-Glaze 60
Intumescent Seals Ltd



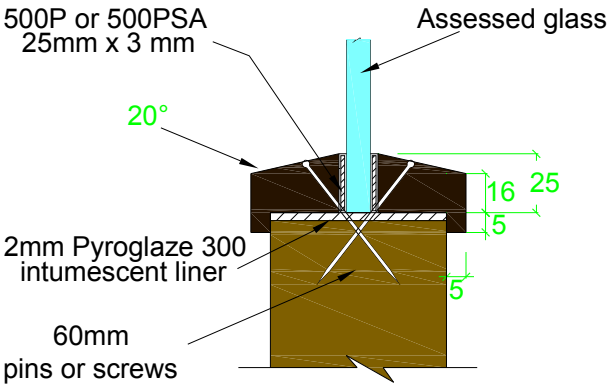
System 36/15
Lorient Polyproducts Ltd



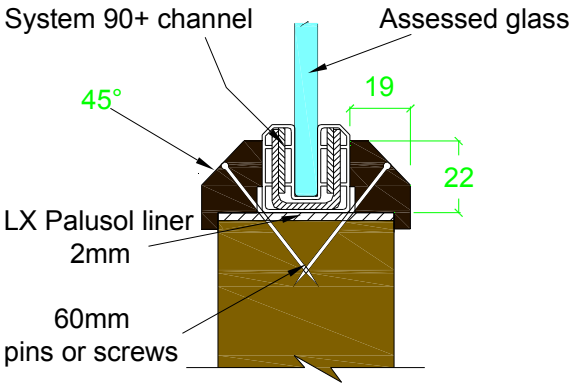
Fireglaze Mastic
Sealmaster Ltd



System 63
Lorient Polyproducts Ltd

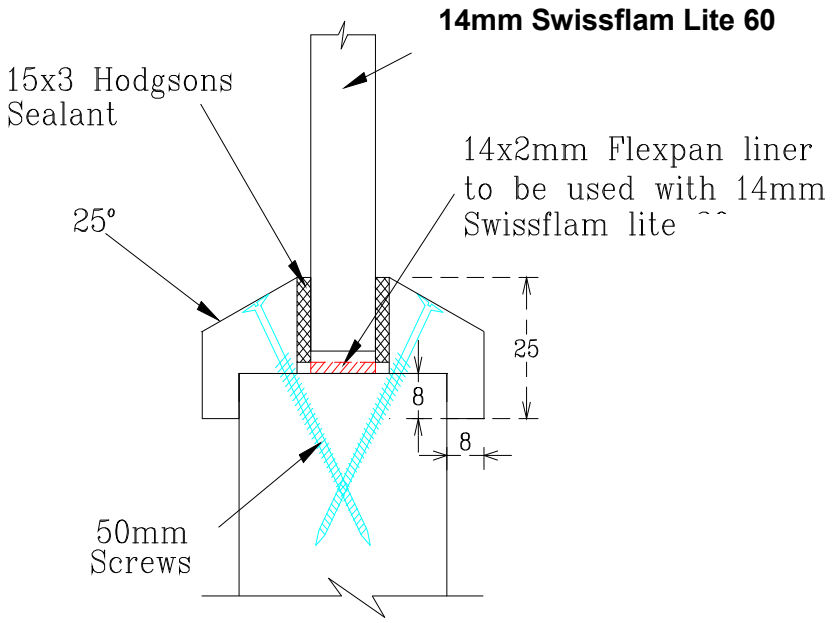


Pyroglaze 60
Mann McGowan Ltd



System 90+
Lorient Polyproducts Ltd

Appendix B (cont`)
Vetrotech Glazing System

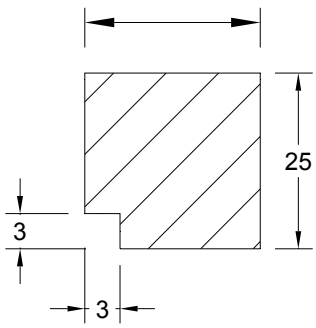


Vetrotech 60 Minute Glazing System

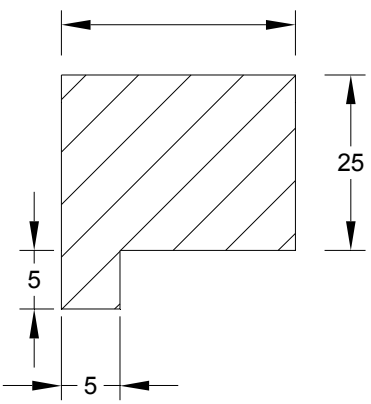
Assessed Square Glazing Bead Profiles

(the following square bead profiled may be used as an alternative to the splayed beads detailed above - refer to section 6 for glazing system and glass restrictions)

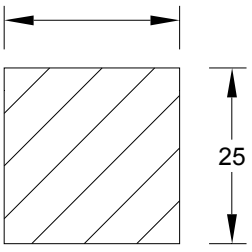
To finish flush with the leaf face



Suited to glass thickness



To finish flush with the leaf face



Appendix C

Revisions and amendments

Revision No.	Date	Description

Appendix D

Data Sheets for:
Blankfort Inc.

Blankfort 60 & Blankfort 60+ Doorsets

60 Minutes Fire Resistance

Blankfort 60 – chipboard faces – reduced intumescent

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)	Width (mm)
	LSASD & ULSASD & DASD	From:	2135 x	915
		To:	2135 x	915
Maximum Overpanel height (mm)		Transomed	2000	
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)	
		Approved systems:	See section 6 and appendix B	
Frame specification (see section 9)		Min. Section (mm):	70 x 32	70 x 30
		Material:	Hardwood	MDF
		Min. Density (kg/m^3):	640	720

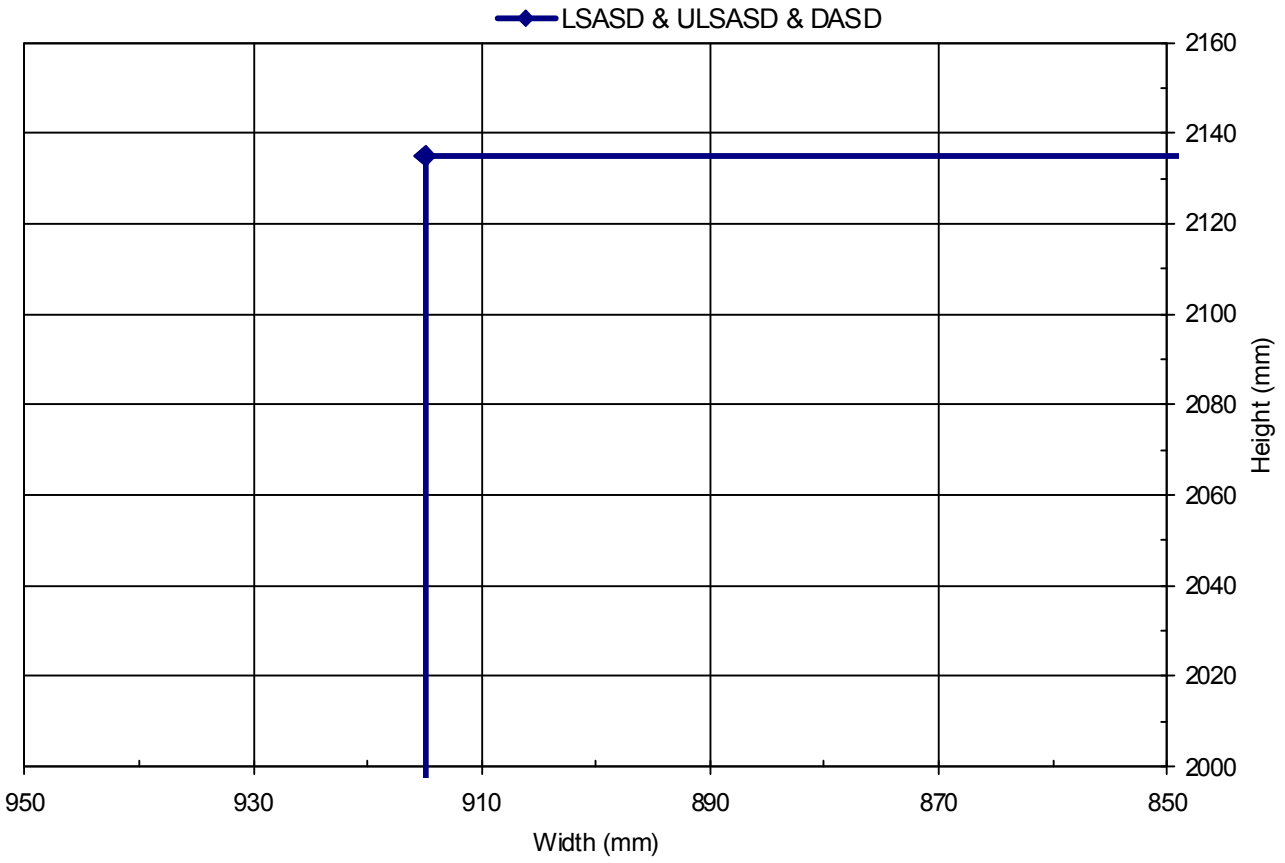
Intumescent Materials: PVC encapsulated Palusol, Type 617, 500P, Pyroplex

Head: 1 No 25 x 4mm fitted centrally in the leaf edge or frame reveal. Alternatively 2 No. 15 x 4mm can be used 5mm either side of the centre line

Jambs & overpanels: 1 No 25 x 4mm fitted centrally in the leaf edge or frame reveal. Alternatively 2 No. 15 x 4mm can be used 5mm either side of the centre line

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60 – chipboard faces

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2440	x	945
		To:	2571	x	915
	ULSASD & DASD	From:	2440	x	970
		To:	2521	x	915
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

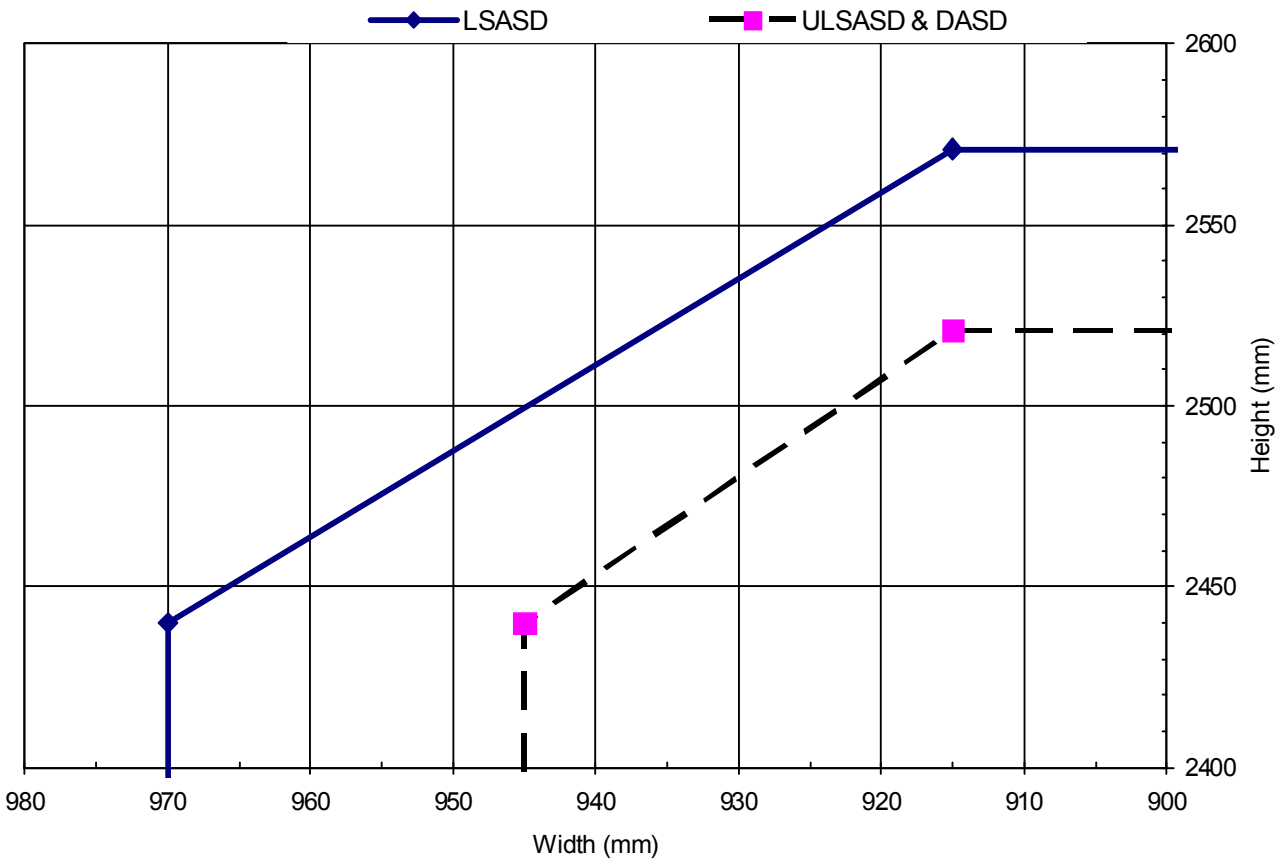
Intumescent Materials: PVC encapsulated Palusol, Type 617, 500P, Pyroplex

Head: 1 No 38 x 4mm fitted centrally in the leaf edge or frame reveal.

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60 – MDF faces

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2135	x	970
		To:	2225	x	915
	ULSASD & DASD	From:	2135	x	945
		To:	2205	x	915
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

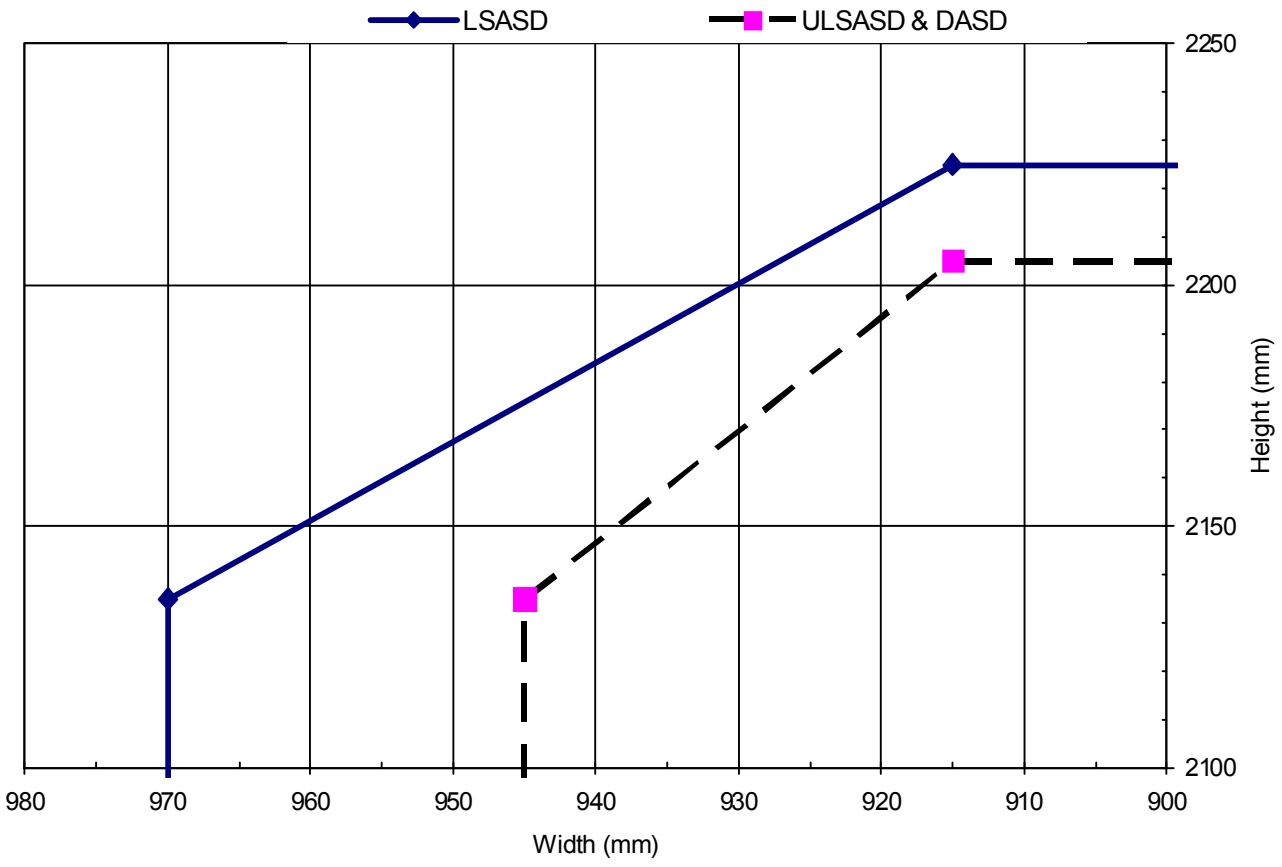
Intumescent Materials: PVC encapsulated Pyroplex

Head: 1 No 38 x 4mm fitted centrally in the leaf edge or frame reveal.

Jambs & overpanels: 1 No 38 x 4mm fitted centrally in the leaf edge or frame reveal.

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60 – chipboard faces

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2138	x	971
		To:	2259	x	916
	ULSADD & DADD	From:	2138	x	946
		To:	2209	x	916
Maximum Overpanel height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

Intumescent Materials: PVC encapsulated Palusol, Type 617, 500P, Pyroplex

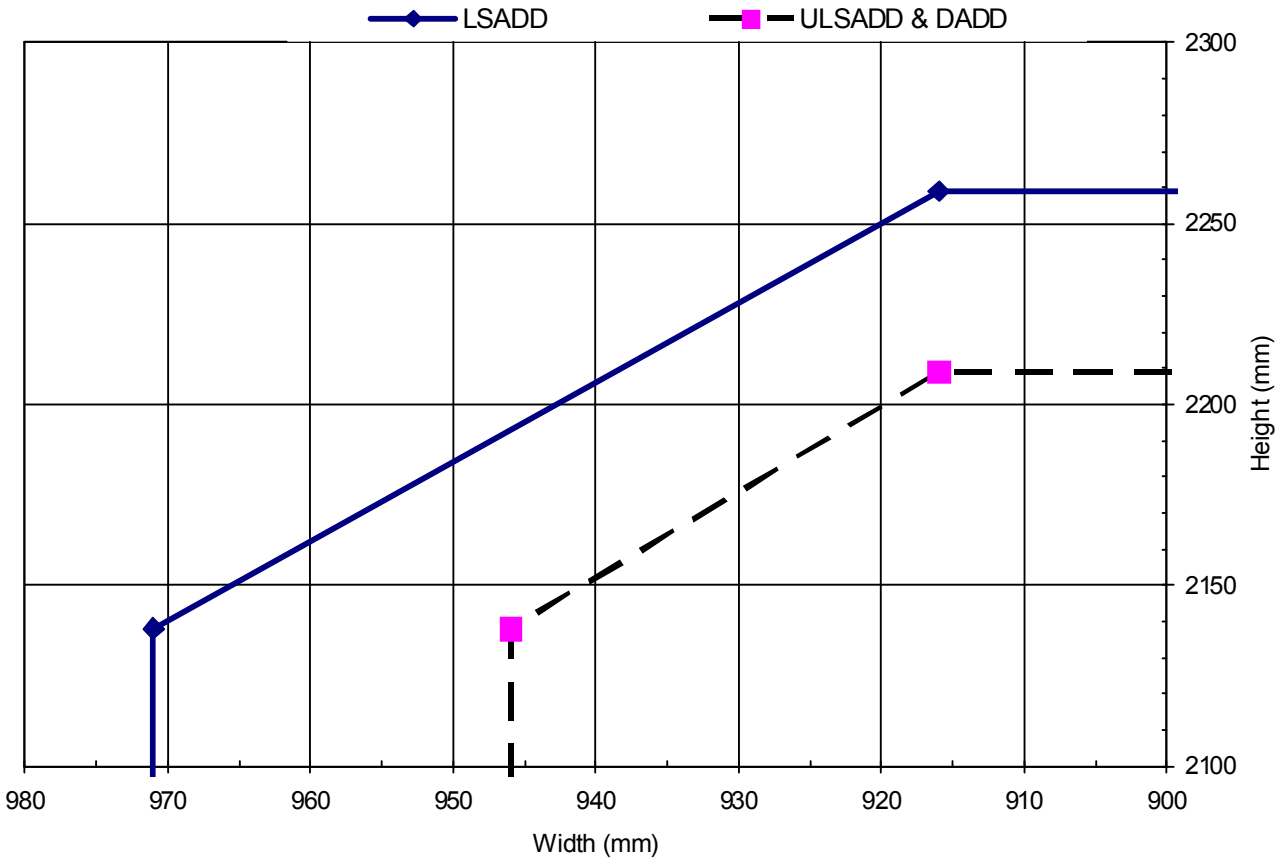
Head: 1 No 38 x 4mm fitted centrally in the leaf edge or frame reveal.

Meeting Edges:
Square: 2 No. 15 x 4mm strips spaced 5mm each side of the centre line in one edge only

Jambs & overpanels: 1 No 38 x 4mm fitted centrally in the leaf edge or frame reveal.

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60+ – reduced intumescent

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2135	x	1016
		To:	2363	x	915
	ULSASD & DASD	From:	2135	x	991
		To:	2313	x	915
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

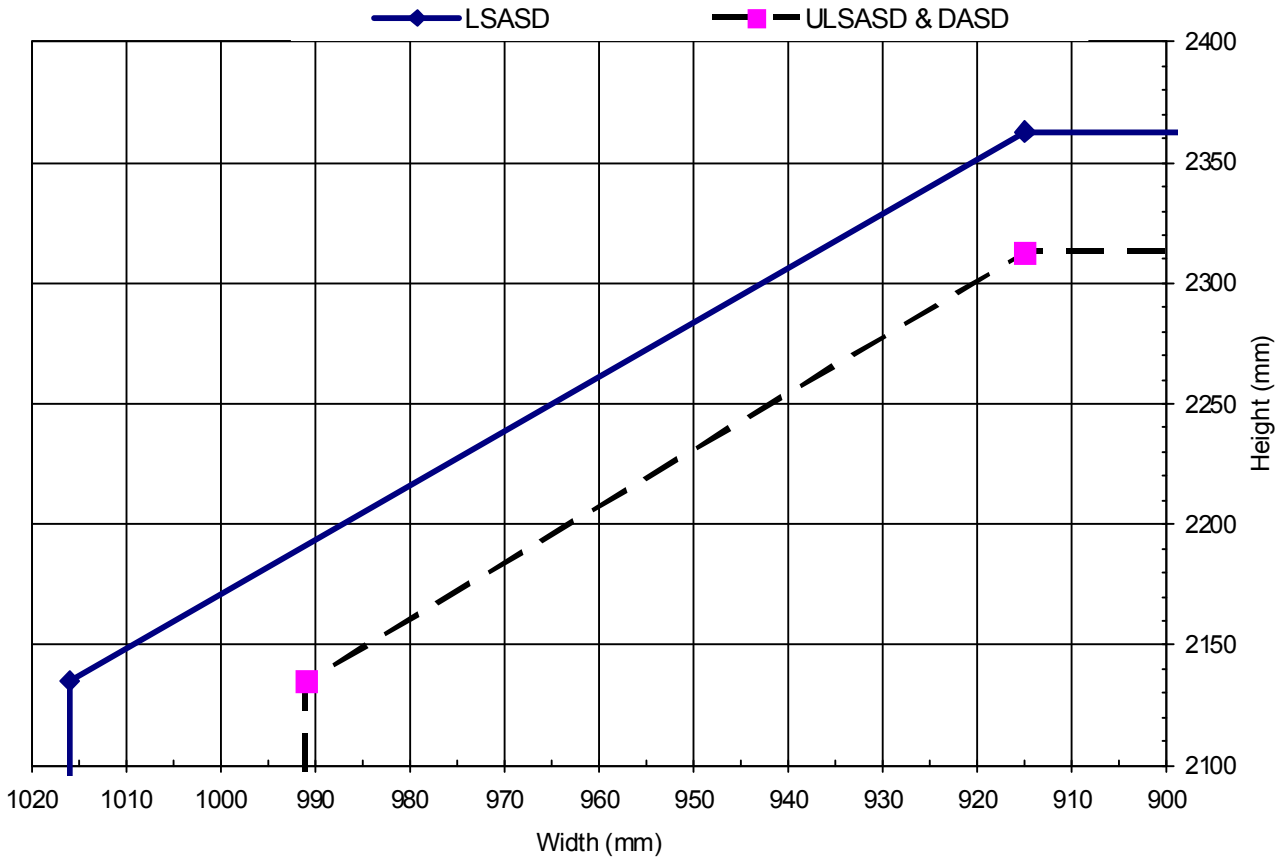
Intumescent Materials: PVC encapsulated 500P

Head: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60+

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2396	x	1046
		To:	2806	x	850
	ULSASD & DASD	From:	2396	x	1021
		To:	2756	x	850
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

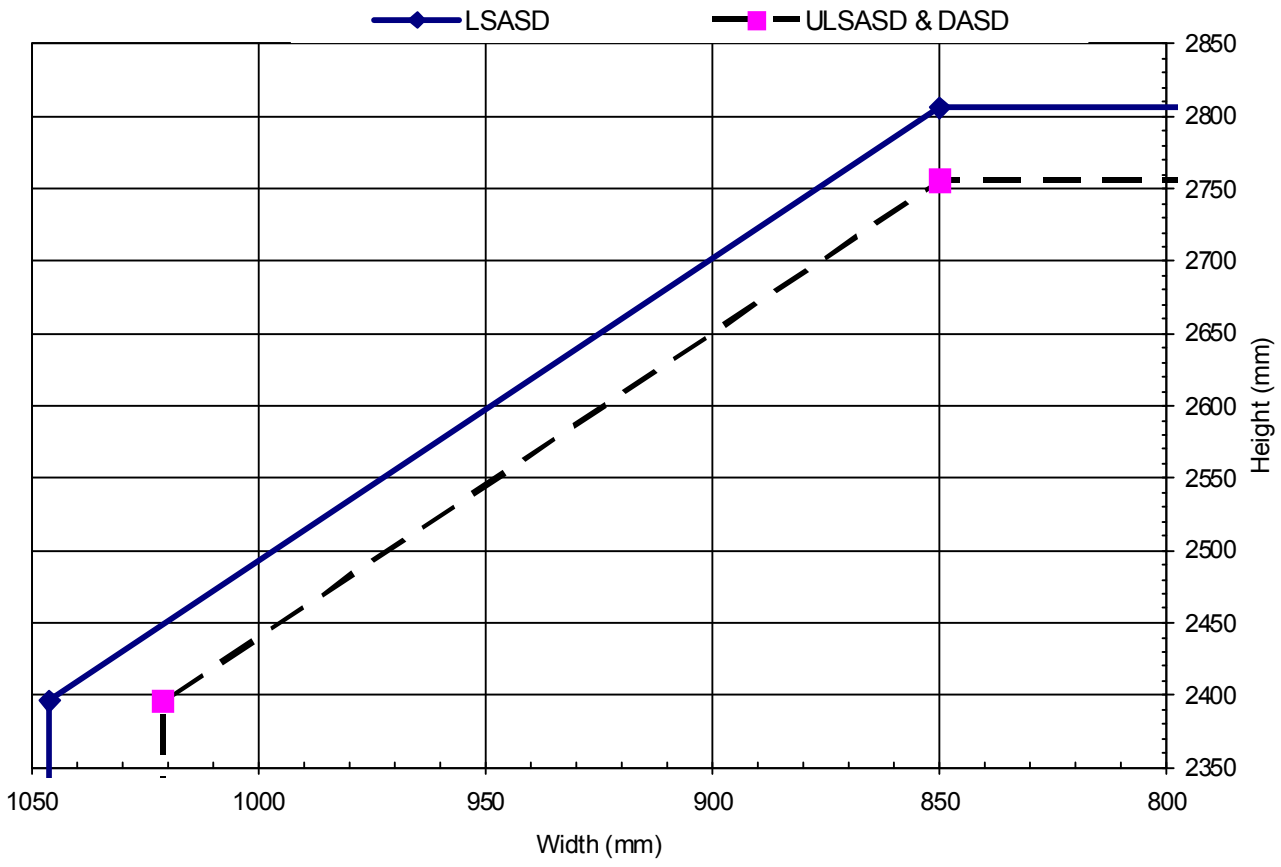
Intumescent Materials: PVC encapsulated 500P

Head: 1 No 38 x 4mm fitted centrally in the leaf edge or frame reveal.

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60+

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

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD + OP	From:	2396	x	996
		To:	2706	x	850
	ULSASD + OP & DASD + OP	From:	2396	x	971
		To:	2656	x	850
Maximum Overpanel height (mm)			2000		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

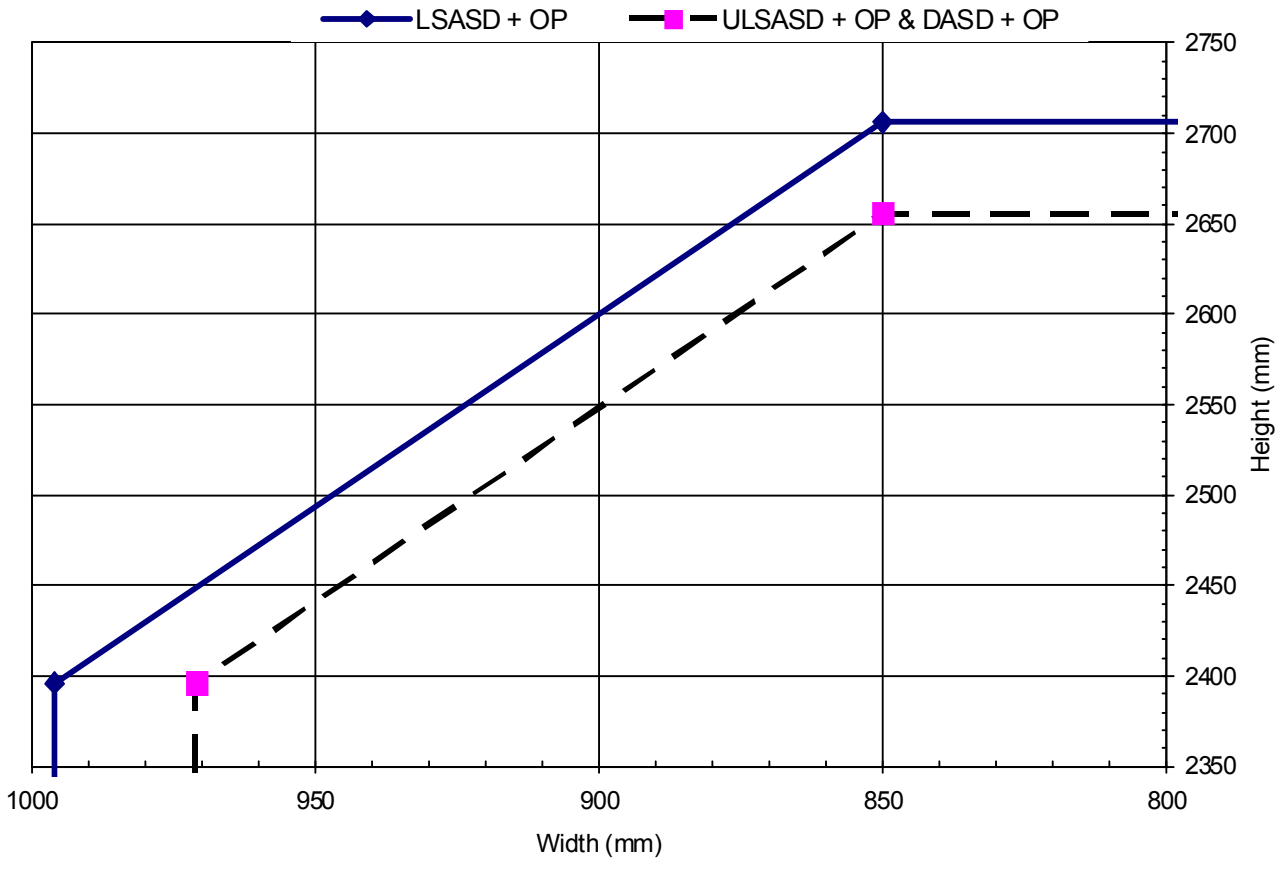
Intumescent Materials: PVC encapsulated 500P

Head:
Rebated: 1 No 20 x 4mm fitted centrally in the rebate of the leaf head and 1 No 20 x 4mm fitted centrally in bottom edge of the overpanel
Square: 1 No. 38 x 4mm fitted centrally in the leaf head or bottom of the overpanel

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60+

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2396	x	946
		To:	2606	x	850
	ULSADD & DADD	From:	2396	x	921
		To:	2556	x	850
Maximum Overpanel height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

Intumescent Materials: PVC encapsulated 500P

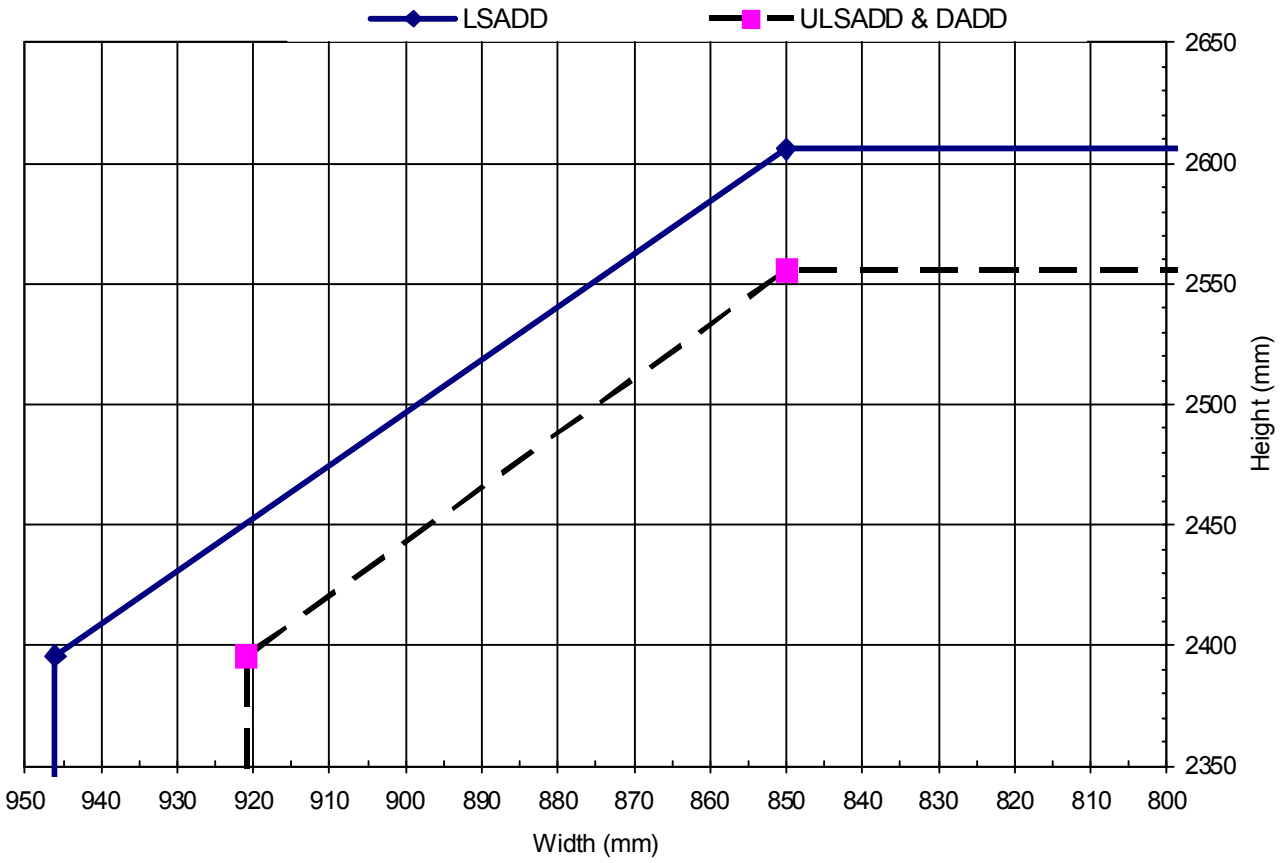
Head: 1 No 38 x 4mm fitted centrally in the leaf edge or frame reveal.

Meeting Edges:
Square: 2 No. 15 x 4mm strips spaced 5mm each side of the centre line in one edge only

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60+

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

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD + OP	From:	2396	x	896
		To:	2506	x	850
	ULSADD + OP & DADD + OP	From:	2396	x	871
		To:	2456	x	850
Maximum Overpanel height (mm)			1500		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

Intumescent Materials: PVC encapsulated 500P

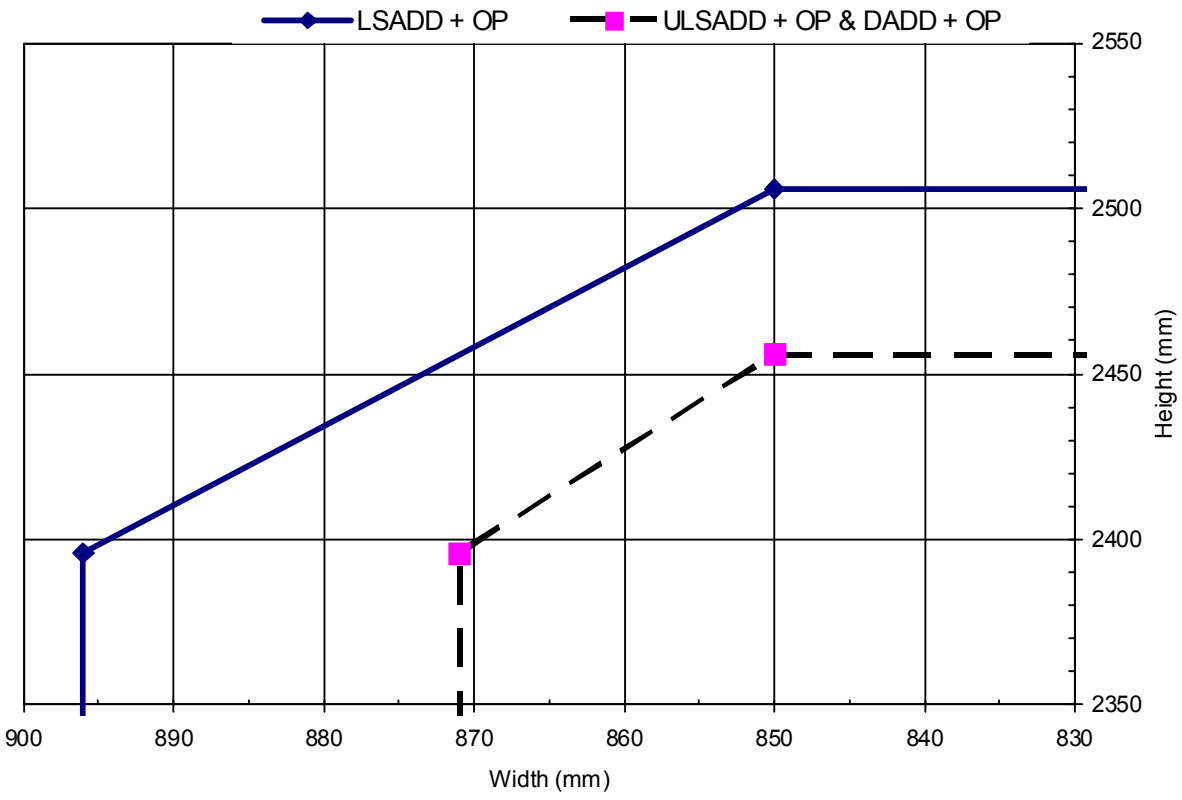
Head:
Square: 1 No 38 x 4mm fitted centrally in the leaf edge or bottom of overpanel.
Rebated: 1 No 20 x 4mm fitted centrally in the rebate of the leaf head and 1 No 20 x 4mm fitted centrally in bottom edge of the overpanel

Meeting Edges:
Square: 2 No. 15 x 4mm strips spaced 5mm each side of the centre line in one edge only

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60+ - fitted with a top and bottom rail

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2750	x	1028
		To:	3015	x	915
	ULSASD & DASD	From:	2750	x	1003
		To:	2965	x	915
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

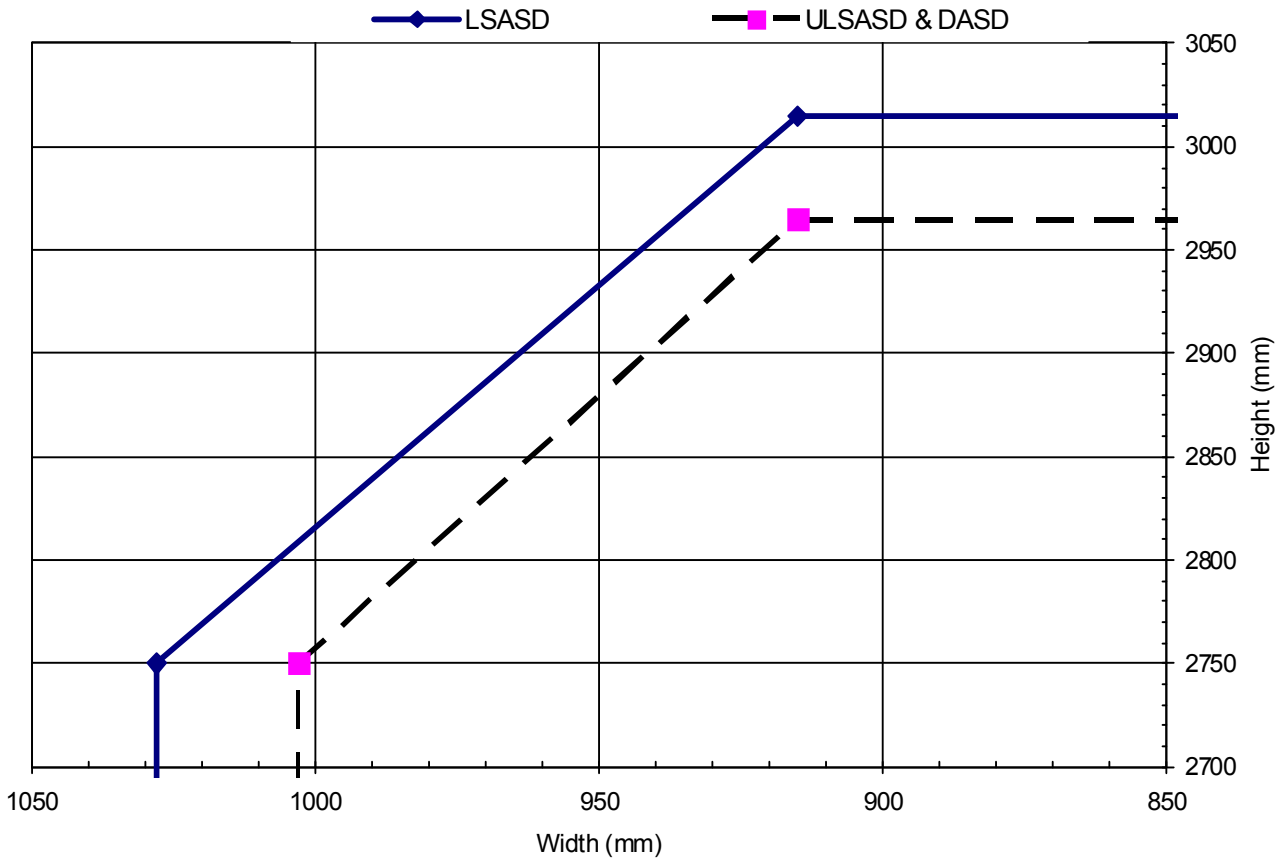
Intumescent Materials: PVC encapsulated Type 617

Head: 1 No 15 x 4mm fitted centrally in the leaf head and 2 No 15 x 4mm strips spaced 5mm each side of the centreline in the frame reveal

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60+ - fitted with a top and bottom rail

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2750	x	978
		To:	2915	x	915
	ULSADD & DADD	From:	2750	x	953
		To:	2865	x	915
Maximum Overpanel height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

Intumescent Materials: PVC encapsulated Type 617

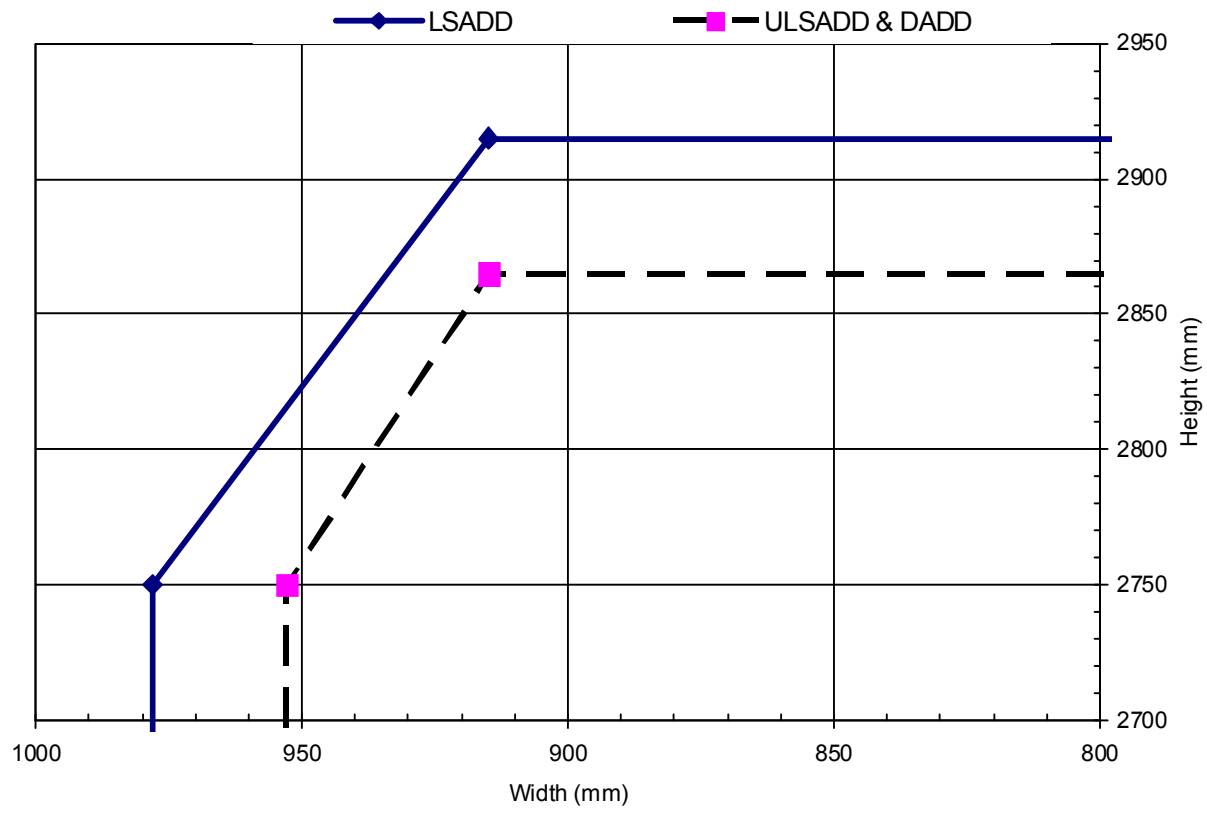
Head: 1 No 15 x 4mm fitted centrally in the leaf head and 2 No 15 x 4mm strips spaced 5mm each side of the centreline in the frame reveal

Meeting edges:
Square: 2 No. 15 x 4mm strips spaced 5mm either side of the centreline in one leaf edge opposing a centrally fitted 1 No. 15 x 4mm strip in the opposite leaf edge

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60 and Blankfort 60+ – Type 617

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2120	x	1026
		To:	2300	x	915
	ULSASD & DASD	From:	2120	x	1026
		To:	2300	x	915
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

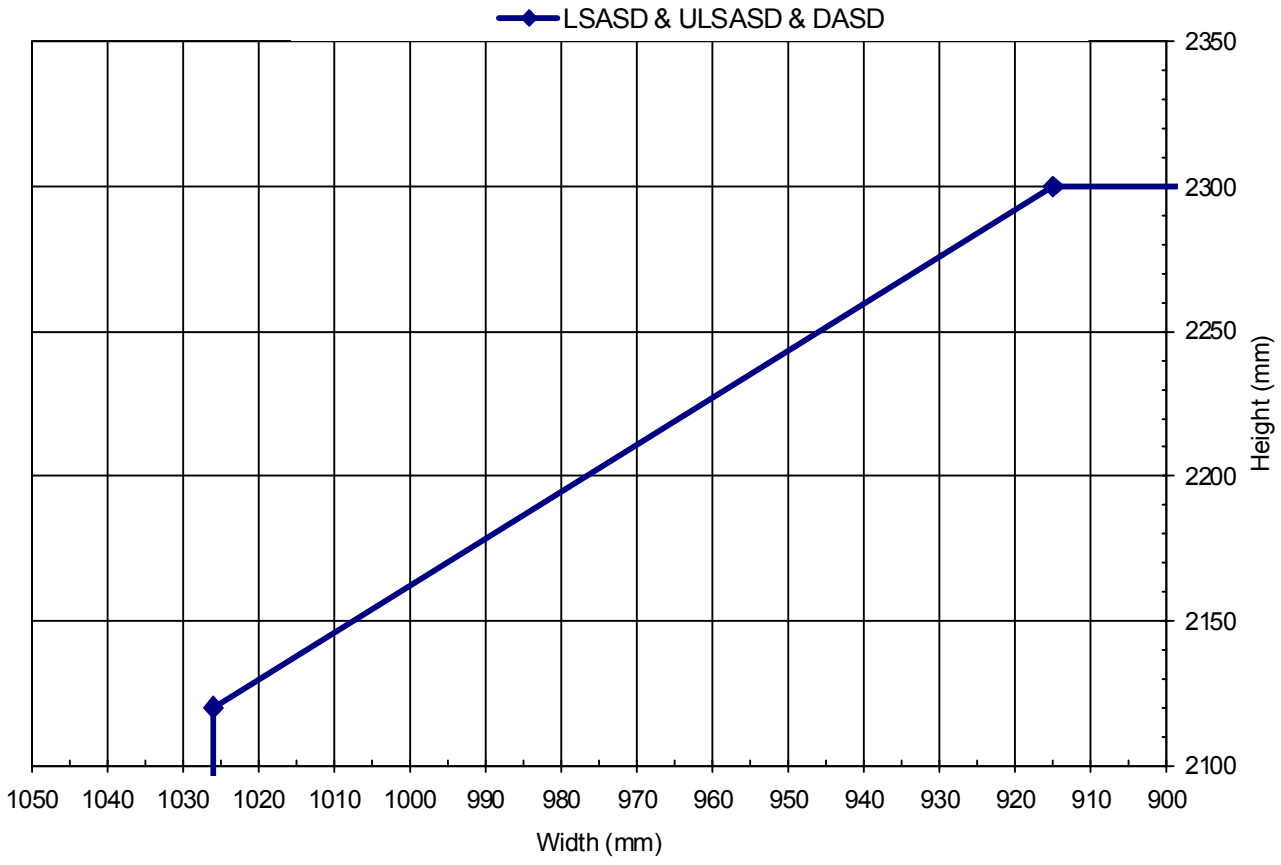
Intumescent Materials: PVC encapsulated Type 617

Head: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60 and Blankfort 60+ - Type 617

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2120	x	926
		To:	2300	x	915
	ULSADD & DADD	From:	2120	x	926
		To:	2255	x	915
Maximum Overpanel height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

Intumescent Materials: PVC encapsulated Type 617

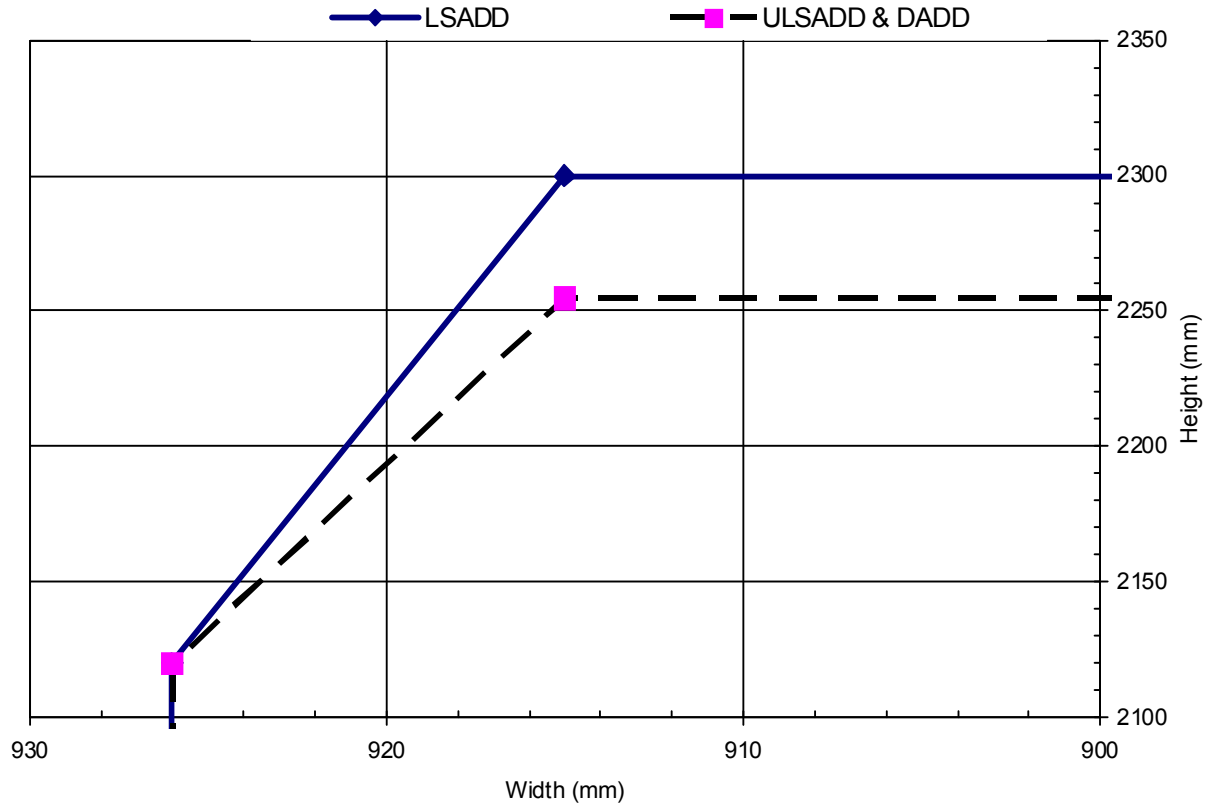
Head: 2 No 15 x 4mm strips spaced 5mm each side of the centreline in the leaf edge or frame reveal

Meeting edges:
Square: 2 No. 15 x 4mm strips spaced 5mm either side of the centreline in one leaf edge

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60 (chipboard faces) & Blankfort 60+ – extended width

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2151	x	987
		To:	2290	x	924
	ULSASD & DASD	From:	2151	x	962
		To:	2240	x	924
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

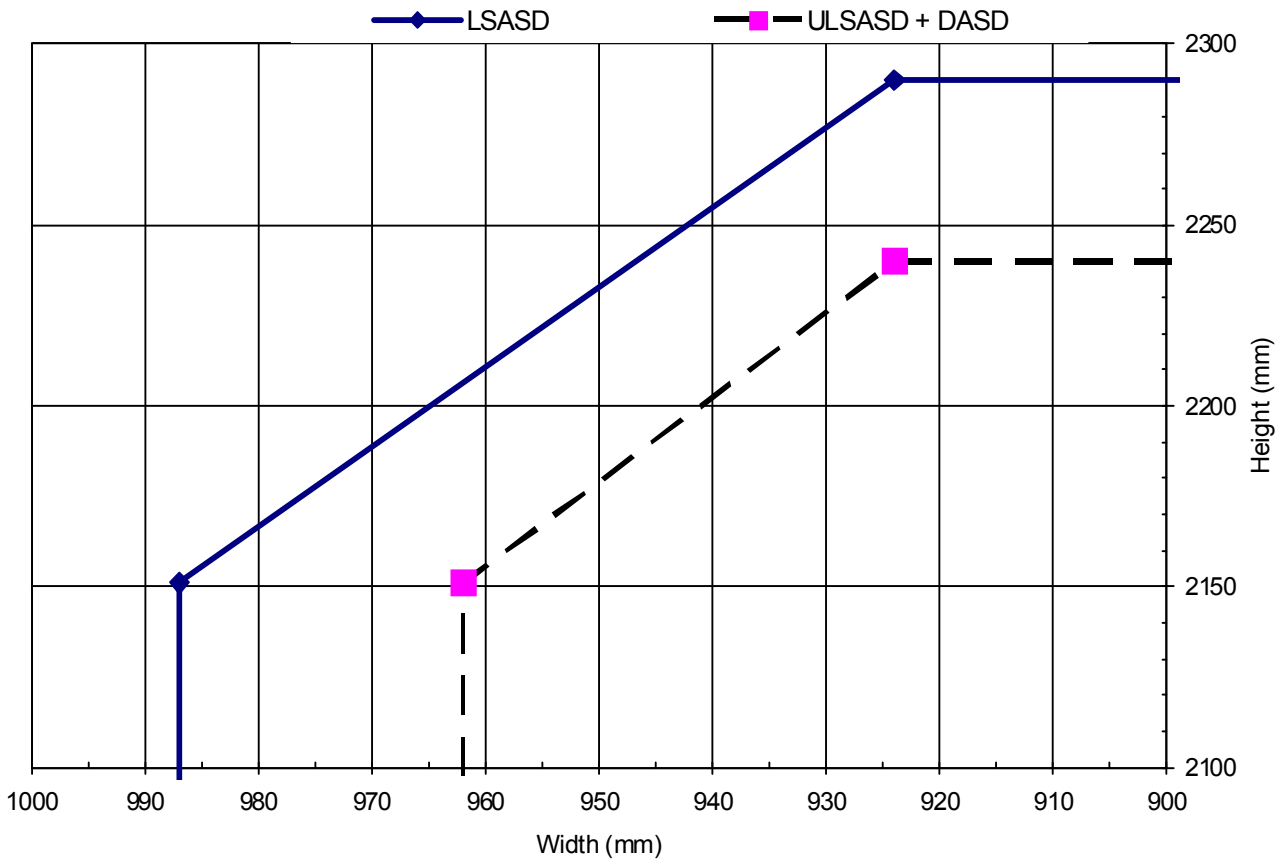
Intumescent Materials: PVC encapsulated Pyroplex

Head: 2 No. 20 x 4mm spaced 4mm either side of the centre line in the leaf edge or frame reveal

Jambs & overpanels: 2 No. 20 x 4mm spaced 4mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60 (chipboard faces) & Blankfort 60+ – extended height

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2443	x	971
		To:	2554	x	923
	ULSASD & DASD	From:	2443	x	946
		To:	2504	x	923
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

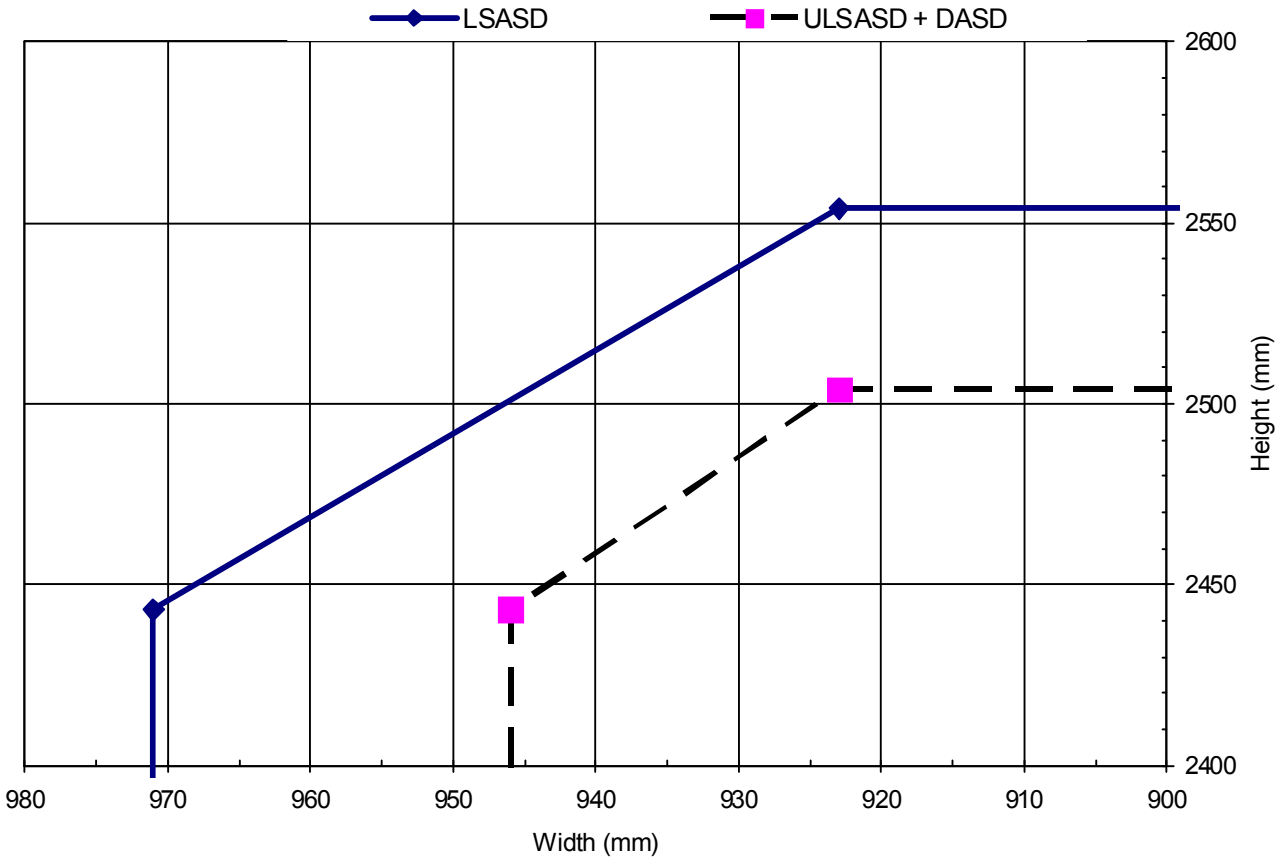
Intumescent Materials: PVC encapsulated Pyroplex

Head: 2 No. 20 x 4mm spaced 4mm either side of the centre line in the leaf edge or frame reveal

Jambs & overpanels: 2 No. 20 x 4mm spaced 4mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60 & Blankfort 60+ - Pyroplex

Latched & Unlatched Single Acting & Double Acting Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2135	x	1002
		To:	2374	x	890
	ULSASD & DASD	From:	2135	x	977
		To:	2324	x	890
Maximum Overpanel height (mm)		Transomed	2000		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

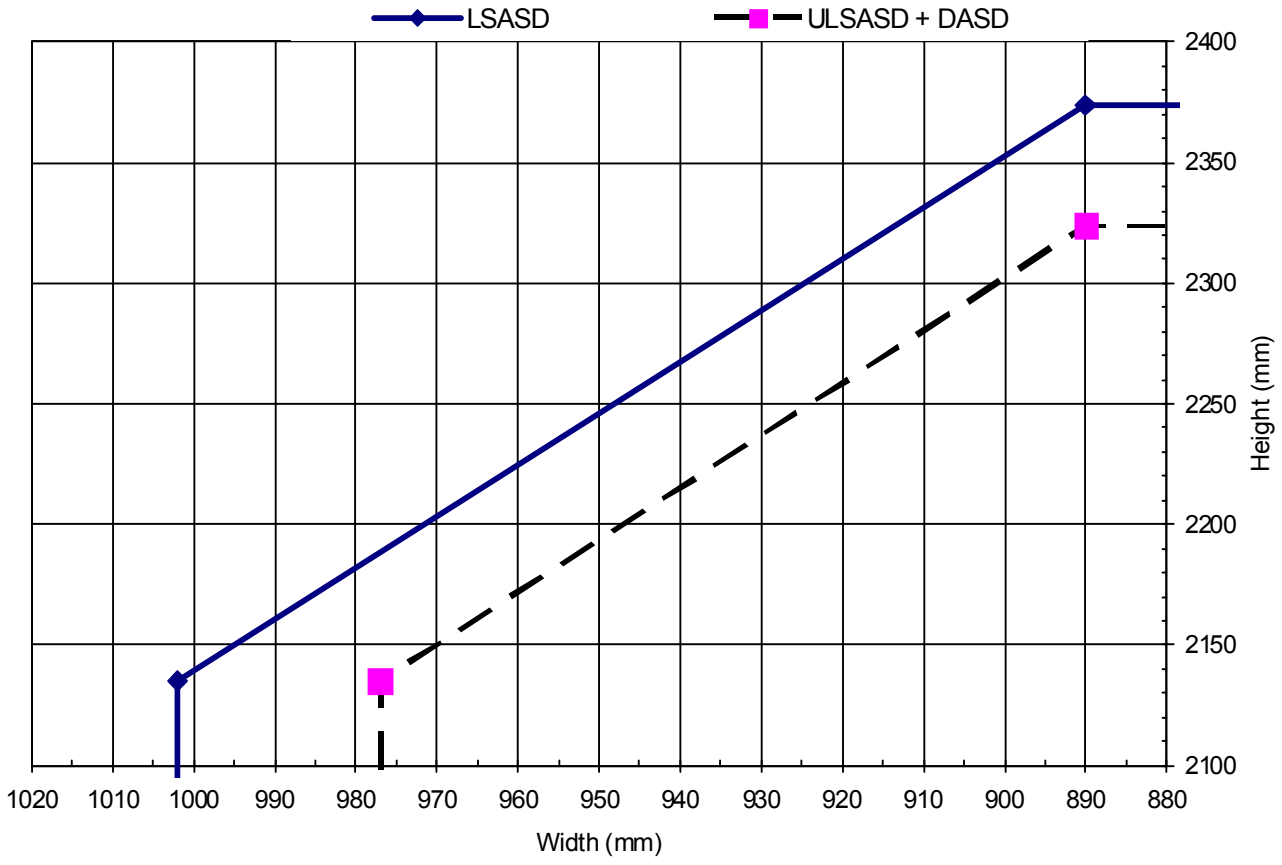
Intumescent Materials: PVC encapsulated Pyroplex

Head: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size



Blankfort 60 & Blankfort 60+ - Pyroplex

Latched & Unlatched Single Acting & Double Acting Double Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSADD	From:	2135	x	952
		To:	2274	x	890
	ULSADD & DADD	From:	2135	x	927
		To:	2224	x	890
Maximum Overpanel height (mm)		Transomed	1500		
Glazing		Maximum Glazed Area:	0.72m^2 (For 1.1m^2 see section 6 for details)		
		Approved systems:	See section 6 and appendix B		
Frame specification (see section 9)		Min. Section (mm):	70 x 32		70 x 30
		Material:	Hardwood		MDF
		Min. Density (kg/m^3):	640		720

Intumescent Materials: PVC encapsulated Pyroplex

Head: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Meeting edges:
Square: 2 No. 15 x 4mm spaced 5mm either side of the centre line in one leaf edge only

Jambs & overpanels: 2 No. 15 x 4mm spaced 5mm either side of the centre line in the leaf edge or frame reveal

Hardware Protection: see section 11

Maximum Door Leaf Size