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Title:

Field of Application
Vicaima 20 & 30 minute fire resisting doorsets

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1 Foreword

This field of application report has been commissioned by Vicaima Ltd and relates to the fire resistance of Vicaima 20 and 30 minute SDC and HDC doorset designs.

The report is for National Application and has been written in accordance with the general principles outlined in BS EN 15725: 2010; *Extended application reports on the fire performance of construction products and building elements*.

This field of application (scope) uses established empirical methods of extrapolation and experience of fire testing similar door assemblies, in order to extend the scope of application by determining the limits for the designs based on the tested constructions and performances obtained. The scope is an evaluation of the potential fire resistance performance, if the variations specified herein were to be tested in accordance with BS 476: Part 22: 1987 and therefore can neither be considered for a CE marking application nor can the conclusion be used to establish a formal classification against EN13501-2.

This field of application has been written using appropriate test evidence generated at UKAS accredited laboratories[1], to the relevant test standard. The supporting test evidence has been deemed appropriate to support the manufacturers stated door design and is summarised in section 3 and appendix B.

The scope presented in this report relates to the behaviour of the proposed door design variations under the particular conditions of the test; they are not intended to be the sole criterion for considering the potential fire hazard of the door assembly in use.

This field of application has been prepared and checked by product assessors with the necessary competence, who subscribe to the principles outlined in the Passive Fire Protection Forum (PFPF) guidelines to undertaking assessments. The aim of the PFPF guidelines is to give confidence to end-users that assessments that exist in the UK are of a satisfactory standard to be used for building control and other purposes.

The PFPF guidelines are produced by the UK Fire Test Study Group (FTSG) an association of the major fire testing laboratories in the UK and are published by the PFPF, the representative body for the passive fire protection industry in the UK.

[1] Test evidence from overseas laboratories has also been considered as supporting evidence for the designs in this assessment report. The test evidence is from a laboratory that has been accredited by a national accreditation body that is a signatory of the International Laboratories Accreditation Co-operation (ILAC).

2 Proposal

It is proposed to consider the fire resistance performance of the Vicaima SDC and HDC doorset designs described in the technical specification in section 4 of this assessment report, for 20 and 30 minutes fire resistance, if the doorsets were to be tested to the requirements of BS 476: Part 22: 1987, *Fire tests on building materials and structures – Part 22: Method for determination of the fire resistance of non-load bearing elements of construction.*

The field of application defined in this report is based on the fire resistance test evidence for the doorset design, which is summarised in section 3. Analysis of specific construction details that require assessment are given within this report against the relevant element of construction, as appropriate.

3 Test Evidence

The test evidence summarised below has been generated to support the fire resistance performance of the door design that is the subject of this field of application.

Primary and supplementary test data for the Vicaima SDC/HDC doorsets is based on fire resistance performance to both the BS 476 Part 22:1987 test standard and the EN 1634-1 and EN 1363-1 test standards. Because the BS 476 Part 22:1987 test standard is less onerous than the EN 1634-1 and EN 1363-1 test standards, it is the opinion of Warringtonfire that primary and supplementary test data can be used to support the performance of the Vicaima SDC/HDC doorset designs for 20 and 30 minutes fire resistance integrity, if it was to be tested in accordance with BS 476 Part 22:1987.

Note: dimensions are in mm unless otherwise stated.
Abbreviations: (h) = height; (w) = width; (t) = thickness; (d) = depth.
Latches fitted but disengaged for the test, are reported as 'unlatched'.

3.1 Test report Chilt/RF1352

The referenced test report, the essential details of which are summarised below, is the primary data for a latched, single acting, single doorset with chipboard core, being considered for assessment in this report.

Date of test		26th July 1989
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated single leaf, single acting timber, framed solid core doorsets. For the purpose of the test the doorsets were referenced 'A and B'
Summary of test specimen:		Dimensions leaf A: 1983 (h) x 762 (w) x 44 (t) Dimensions leaf B: 1983 (h) x 762 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 36 (t), Chipboard core 36 (t), with chipboard facings 3.5 (t) and outer hardwood veneer 0.5 (t), the door leaf was hung in a European Redwood frame 43 (t) on 3No. Steel hinges. Doorset B: Solid core perimeter framed timber door with stiles and rails 36 (t), Chipboard core 36 (t), with chipboard facings 3.5 (t) and outer hardwood veneer 0.5 (t), the door leaf was hung in a European Redwood frame 43 (t) on 3No. Steel hinges. Doorset A was oriented to open towards heat conditions, whereas, doorset B was oriented to open away from the heat conditions. Doorsets including a mortise latch, positioned at approximately mid-height of the doorset. The door leaves where latched for the duration of the test.
Test Standard:		BS 476: Part 22: 1987
Performance	**Doorset A**	Integrity: 32 minutes Insulation: 32 minutes
	Doorset B	Integrity: 33 minutes Insulation: 33 minutes

3.2 Test report Chilt/RF1541

The referenced test report, the essential details of which are summarised below, is the primary data for a latched, single acting, single doorsets with Chipboard core, being considered for assessment in this report.

Date of test		3rd May 1991
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated single leaf, single acting timber, framed solid core doorsets. For the purpose of the test the doorsets were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 925 (w) x 44 (t) Dimensions of Door leaf B: 2040 (h) x 925 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 38 (t), 3 pieces of Chipboard core 38 (t), with chipboard facings 3.0 (t) and outer Sapele veneer 0.5 (t), the door leaf was hung in a European Redwood frame 43 (t) on 3No. Steel hinges. Doorset B: Solid core perimeter framed timber door with stiles and rails 38 (t), 3 pieces Chipboard core 38 (t), with chipboard facings 3.0 (t) and outer Sapele veneer 0.5 (t), the door leaf was hung in a European Redwood frame 43 (t) on 3No. Steel hinges. Doorset A was oriented to open towards heat conditions, whereas, doorset B was oriented to open away from the heat conditions. Doorsets including a Legge latch, positioned at approximately mid-height of the doorset. The door leaves where latched for the duration of the test.
Test Standard:		BS 476: Part 22:1987
Performance	**Doorset A**	Integrity: 34 minutes Insulation: 34 minutes
	Doorset B	Integrity: 44 minutes Insulation: 44 minutes

3.3 Test report Chilt/RF1685

The referenced test report, the essential details of which are summarised below, is the primary data for a latched, single acting, single doorsets with Chipboard core fitted with ESKO 2000-B security lock, being considered for assessment in this report.

Date of test		8th April 1993
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated single leaf, single acting timber, framed solid core doorsets. For the purpose of the test the doorsets were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 926 (w) x 44 (t) Dimensions of Door leaf B: 2040 (h) x 926 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), 3 pieces of Chipboard core 37 (t), with chipboard facings 3.5 and outer Sapele veneer 0.5 (t), the door leaf was hung in a Chipboard frame 29 (t) on 3No. Steel hinges. Doorset B: Solid core perimeter framed timber door with stiles and rails 37 (t), 3 pieces of Chipboard core 37 (t), with chipboard facings 3.5 and outer Sapele veneer 0.5 (t), the door leaf was hung in a Chipboard frame 29 (t) on 3No. Steel hinges. Doorset A was oriented to open towards heat conditions, whereas, doorset B was oriented to open away from the heat conditions. Doorsets including a 3 point security latch, with the middle lock positioned at approximately mid-height of the doorset. The door leaves where latched at all 3 positions for the duration of the test.
Test Standard:		BS 476: Part 22: 1987
Performance	**Doorset A**	Integrity: 34 minutes Insulation: 34 minutes
	Doorset B	Integrity: 42 minutes Insulation: 42 minutes

3.4 Test report Chilt/RF96087

The referenced test report, the essential details of which are summarised below, is the primary data for a latched, single acting, single doorsets with a chipboard core, which are considered for assessment in this report.

Date of test		25th October 1996
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, latched single leaf, single acting framed solid core door. For the purpose of the test the 2 doors were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf: 2045 (h) x 926 (w) x 44 (t) Dimensions of Door leaf: 2045 (h) x 926 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), Chipboard core 37 (t), with inner chipboard facings 3.5 and outer hardwood veneer 0.5 (t), the door leaf was hung in a veneered Chipbaord frame 28 (t) on 3No. Steel hinges. Doorset B: Solid core perimeter framed timber door with stiles and rails 37 (t), Chipboard core 37 (t), with inner chipboard facings 3.5 (t) and outer hardwood veneer 0.5 (t), the door leaf was hung in a veneered Chipbaord frame 28 (t) on 3No. Steel hinges. Both doorsets where oriented to open towards heat conditions. Doorsets including a tubular mortise latch, positioned at approximately mid-height of the doorset. The door leaves where latched for the duration of the test.
Test Standard:		BS 476 Part 22:1987
Performance	**Doorset A**	Integrity: 34 minutes Insulation: 34 minutes
	Doorset B	Integrity: 25 minutes Insulation: 25 minutes

3.5 Test report Chilt/RF96101

The referenced test report, the essential details of which are summarised below, is the primary data for an unlatched, single acting, double doorsets with a Chipboard core, and rebated meeting edges, which is considered for assessment in this report.

Date of test		23rd December 1996
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, unlatched double leaf, single acting framed solid core door incorporating 18 (d) rebated meeting edges.
Summary of test specimen:		Dimensions of Door leaf: 2035 (h) x 925 / 925 (w) x 44 (t) Solid core perimeter framed timber door with stiles and rails 37 (t), 3 pieces Chipboard core 37 (t), with inner chipboard facings 3.5 (t) and outer hardwood veneer 0.5 (t), the door leaves where hung in a veneered Chipbaord frame 29 (t) on 3No. Steel hinges. The meeting edges had 18 (d) rebates lipped with 6 (t) mahogany hardwood lippings. The doorset was oriented to open towards heat conditions. Doorsets including a mortise latch, positioned at approximately mid-height of the doorset. The door leaves where unlatched for the duration of the test.
Test Standard:		BS 476 Part 22:1987
Performance	**Doorset A**	Integrity: 37 minutes Insulation: 37 minutes

3.6 Test report Chilt/RF98138

The referenced test report, the essential details of which are summarised below, is the primary data for an unlatched, single acting, single doorsets with a Flaxboard core, which are considered for assessment in this report.

Date of test		4th February 1999
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, unlatched single leaf, single acting framed solid core door. For the purpose of the test the 2 doors were referenced 'A and B'
Suary of test specimen:		Dimensions of door leaf A: 2040 (h) x 926 (w) x 44 (t) Dimensions of door leaf B: 2040 (h) x 926 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), 2 piece Flaxboard core 37 (t), with a hardboard decorative veneer 3.2 (t), the door leaf was hung in a Chipboard frame with hardwood decorative veneer 28 (t) on 3No. Steel hinges. Doorset B: Solid core perimeter framed timber door with stiles and rails 37 (t) 2 piece Flaxboard core 37 (t) with a hardboard decorative veneer 3.2 (t). the door leaf was hung in a Chipboard frame with hardwood decorative veneer 28 (t) on 3No. Steel hinges. Doorsets A was oriented to open away and doorset B was oriented to open towards the heat conditions. Doorsets including a mortise latch, positioned at approximately mid-height of the doorset. The door leaves where unlatched for the duration of the test.
Test Standard:		BS 476 Part 22:1987
Performance	**Doorset A**	Integrity: 40 minutes Insulation: 40 minutes
	Doorset B	Integrity: 37 minutes Insulation: 37 minutes

3.7 Test report Chilt/RF99024

The referenced test report, the essential details of which are summarised below, is the primary data for a latched, single acting, single doorsets with a Flaxboard core, MDF facings wrapped in foil and Pilkington Pyroshield glazing, which are considered for assessment in this report.

Date of test		25th March 1999
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, latched single leaf, single acting framed solid core door. For the purpose of the test the 2 doors were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 928 (w) x 43.5 (t) Dimensions of Door leaf B: 2040 (h) x 928 (w) x 43.5 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), a Flaxboard core 37 (t), with MDF facing 3 (t) wrapped in paper foil on both faces and vertical edges 0.5 (t), the door leaf was hung in a Chipboard frame 28 (t) on 3No. Steel hinges, 6 (t) Pilkington Pyroshield glazing aperture with a sight size of 670(h) x 495 (w). Doorset B: Solid core perimeter framed timber door with stiles and rails 37 (t), a Flaxboard core 37 (t), with MDF facing 3 (t) wrapped in paper foil on both faces and vertical edges 0.5 (t), the door leaf was hung in a Chipboard frame 28 (t) on 3No. Steel hinges. The doorsets where oriented to open towards heat conditions. Doorsets including a tubular mortise latch, positioned at approximately mid-height of the doorset. The door leaves where latched for the duration of the test.
Test Standard:		BS 476 Part 22:1987
Performance	**Doorset A**	Integrity: 39 minutes Insulation: 39 minutes
	Doorset B	Integrity: 45 minutes Insulation: 45 minutes

3.8 Test report Chilt/RF00153

The referenced test report, the essential details of which are summarised below, is the primary data for an unlatched, single acting, double doorsets with a Flaxboard core, rebated meeting edge and Pilkington Pyroshield glazing, which are considered for assessment in this report.

Date of test		8th November 2000
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, unlatched double leaf, single acting framed solid core door. For the purpose of the test the door was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 926 / 926 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), Flaxboard core 37 (t), with MDF facings 3 (t) and outer hardwood veneer 0.5 (t), the door leaves where hung in a MDF frame 30 (t) on 3No. Steel hinges, 6 (t) Pilkington Pyroshield glazing apertures in both leaves. Left leaf sight size 675 (h) x 480 (w) and right leaf 701 (h) x 506 (w). 12 rebate on meeting edge. Doorset included a tubular mortise latch, positioned at approximately mid-height of the doorset. The doorset was oriented to open towards heat conditions. The door leaves where unlatched for the duration of the test.
Test Standard:		BS 476 Part 22:1987
Performance	**Doorset A**	Integrity: 36 minutes Insulation: 36 minutes

3.9 Test report Chilt/RF04116

The referenced test report, the essential details of which are summarised below, is the primary data for an unlatched, single acting, double doorsets with a Chipboard core, rebated meeting edge and Pilkington Pyrodur Plus glazing, which are considered for assessment in this report.

Date of test		16th December 2004
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, unlatched double leaf, single acting framed solid core door. For the purpose of the test the door was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf A: 1980 (h) x 839 / 839 (w) x 43 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), 2 piece Chipboard core 37 (t), with hardwood and decorative veneer facings 3.2 (t), the door leaves where hung in a Redwood frame 30 (t) on 3No. Steel hinges, 7 (t) Pilkington Pyrodur Plus glazing apertures in both leaves. Overall sight size for both leaves 1644 (h) x 549 (w). The doorset was oriented to open towards heat conditions. Doorsets including a tubular mortise latch, positioned at approximately mid-height of the doorset. The door leaves where unlatched for the duration of the test.
Test Standard:		BS 476 Part 22
Performance	**Doorset A**	Integrity: 31 minutes Insulation: 18 minutes

3.10 Test report Chilt/RF05116

The referenced test report, the essential details of which are summarised below, is the primary data for an unlatched, single acting, double doorsets with a Flaxboard core, rebated meeting edge and Pilkington Pyrodur Plus glazing, which are considered for assessment in this report.

Date of test		19th October 2005
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Unlatched double leaf, single acting framed solid core door. For the purpose of the test the door was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf t A: 2040 (h) x 912 / 922 (w) x 43 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), Flaxboard core 37 (t), with MDF facings 3 (t),), the door leaves where hung in a Birch plywood frame 28 (t) on 3No. Steel hinges, with 7 (t) Pilkington Pyrodur Plus glazing apertures in both leaves. Overall sight size for both leaves 1555 (h) x 635 (w). The doorset was oriented to open towards heat conditions. Doorsets including a mortise latch, positioned at approximately mid-height of doorset. The door leaves where unlatched for the duration of the test.
Test Standard:		BS 476 Part 22
Performance	**Doorset A**	Integrity: 35 minutes Insulation: 15 minutes

3.11 Test report Chilt/RF06115

The referenced test report, the essential details of which are summarised below, is the primary data for a latched and unlatched, single acting, single doorsets with a Chipboard core, MDF internal framing, MDF door frame, MDF facings and rebated edges which are considered for assessment in this report.

Date of test		14th March 2006
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, latched and unlatch single leaf, single acting framed solid core door. For the purpose of the test the 2 doors were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 925 (w) x 44 (t) Dimensions of Door leaf B: 2040 (h) x 927 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), a Chipboard core 37 (t), with MDF facing 3 (t), the door leaf was hung in a Birch plywood frame 28 (t) on 3No. Steel hinges. Doorset B: Solid core perimeter framed timber door with stiles and rails 37 (t), a Chipboard core 37 (t), with 2 layers of MDF facing 3 (t) each, the door leaf was hung in a MDF frame 28 (t) on 3No. Steel hinges. Both doors oriented to open towards heat conditions. Doorsets A included a Vingcard electronic latch and Doorset B included a standard latch, positioned at approximately mid-height of each doorset. Doorset A was latched and Doorset B was unlatched for the duration of the test.
Test Standard:		BS EN 1634 – 1 and BS EN 1363 - 1
Performance	**Doorset A**	Integrity: 39 minutes Insulation: 39 minutes
	Doorset B	Integrity: 44 minutes Insulation: 44 minutes

3.12 Test report Chilt/RF06114

The referenced test report, the essential details of which are summarised below, is the primary data for a latched, single acting, single doorsets with a Flaxboard core, Veneered MDF facings, and VingCard Euro lock/latch which are considered for assessment in this report.

Date of test		13th December 2006
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Latched, single leaf, single acting framed solid core door. For the purpose of the test the door was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 926 (w) x 34 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 28 (t), a Flaxboard core 28 (t), with Veneered MDF facing 3 (t), the door leaf was hung in a Veneered birch plywood frame 23 (t) on 3No. Steel hinges. The door was oriented to open towards heat conditions. Doorsets including a Vingcard Euro latch, positioned at approximately mid-height of doorset. The door leaf was latched for the duration of the test.
Test Standard:		BS EN 1634 – 1 and BS EN 1363 - 1
Performance	**Doorset A**	Integrity: 27 minutes Insulation: 20 minutes

3.13 Test report Chilt/IF06114A

The referenced test report, the essential details of which are summarised below, is the supplementary data for Pilkington Pyrodur, fitted with White Oak mock beading and fixed to glazing by Lorient Polyproducts Ltd self-adhesive graphite foam seal.

Date of test		13th December 2006
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Framed glazing section. For the purpose of the test only specimen 'A' is considered.
Summary of test specimen:		Dimensions of specimen A: 935 (h) x 840 (w) x 44 (t) Specimen A: Perimeter framed glazing with stiles and rails 44 (t), 7 (t) Pilkington Pyrodur fitted with white oak mock beading 23.5 (w) x 15 (d), fixed to the glazing by a 2 (t) Lorient Polyproducts Ltd self-adhesive graphite foam seal, creating 4 apertures with a sight size of 310 (h) x 257 (w).
Test Standard:		To the temperature and pressure conditions of BS EN 1363 - 1 and general principles of BS EN 1634 -1 where applicable
Performance	**Specimen A**	Integrity: 33 minutes

3.14 Test report Chilt/IF06114B

The referenced test report, the essential details of which are summarised below, is the supplementary data for Pilkington Pyroshield safety clear, fitted with white Oak beading and Lorient Polyproducts Ltd foamed glazing graphite protection.

Date of test		13th December 2006
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Framed glazing section. Only specimen B is the subject of this report.
Summary of test specimen:		Dimensions of specimen A: 935 (h) x 840 (w) x 44 (t) Specimen B: Perimeter framed glazing with stiles and rails 44 (t), 6 (t) Pilkington Pyroshield safety clear with a sight size of 645 (h) x 540 (w), fitted with white oak beading 22.5 (h) x 22 (d), including a 6 x 6 bolection return, a 20 degree chamfer and a 2 x 2.5 rebate in the outer edge, fixed to the glazing by a 2 (t) Lorient Polyproducts Ltd self-adhesive graphite foam seal, creating 4 apertures with a sight size of 310 (h) x 257 (w).
Test Standard:		To the temperature and pressure conditions of BS EN 1363 - 1 and general principles of BS EN 1634 -1 where applicable
Performance	**Specimen B**	Integrity: 33 minutes

3.15 Test report Chilt/RF07093

The referenced test report, the essential details of which are summarised below, is the primary data for a latched and unlatched, single acting, single doorsets with a Chipboard core, 20 minute MDF frame with no intumescent seals and a 30 minute MDF frame with 10 x 4 seal, Sapele Veneered facings, which are considered for assessment in this report.

Date of test		26th July 2007
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, latched and unlatch single leaf, single acting framed solid core door. For the purpose of the test the 2 doors were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 926 (w) x 44 (t) Dimensions of Door leaf B: 2040 (h) x 926 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), a Chipboard core 37 (t), Sapele veneered facing 3.2 (t), the door leaf was hung in a MDF frame on 3No. Steel hinges and didn't include any intumescent seals. Doorset B: Solid core perimeter framed timber door with stiles and rails 37 (t), a Chipboard core 37 (t), with Sapele veneered facing 3.2 (t), the door leaf was hung in a MDF frame 25 (t) on 3No. Steel hinges and included a 10 x 4 intumescent seal. Both doors oriented to open towards heat conditions. Doorsets included tubular mortice latch, positioned at approximately mid-height of each doorset. Doorset A was latched and Doorset B was unlatched for the duration of the test.
Test Standard:		BS 476 Part 22
Performance	**Doorset A**	Integrity: 29 minutes* Insulation: 29 minutes*
	Doorset B	Integrity: 43 minutes Insulation: 43 minutes

*Doorset A failed at 29 minutes from continuous flaming at the head.

3.16 Test report Chilt/FR08166 AR1

The referenced test report, the essential details of which are summarised below, is the primary data for a latched, single acting, double doorsets with a Chipboard core, MDF frame with 25 with 15 x 4 intumescent seals, Sapele veneered facings with decorative groves, rebated meeting edge and Pilkington Pyrodur Plus glazing, which are considered for assessment in this report.

Date of test		11th February 2009
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Latched double leaf, single acting framed solid core door. For the purpose of the test the door was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 926 / 926 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), Chipboard core 37 (t), the door leaves hung on a MDF frame 25 (t) on 3No. Steel hinges and incorporated a 15 x 4 intumescent seals with Sapele veneered facings 6 (t), including 2 (d) decorate horizontal grooves, plus 7 (t) Pilkington Pyrodur Plus 30-104 glazed aperture in left leaf. Overall sight size for left leaf 870 (h) x 637 (w). Both doors oriented to open towards heat conditions. Doorsets included a tubular mortise latch, positioned at approximately mid-height of doorset. The door leaves where latched for the duration of the test.
Test Standard:		BS EN 1634 – 1 and BS EN 1363 - 1
Performance	**Doorset A**	Integrity: 33 minutes* Insulation: 18 minutes

*A gap gauge test was performed at the glazing at 33 minutes resulting in an integrity failure. The Door edge failure occurred at 40 minutes.

3.17 Test report Chilt/RF09030A

The referenced test report, the essential details of which are summarised below, is the primary data for a latched, single acting, single doorsets with a Chipboard core, Veneered hardboard facings, 30 minute MDF frame 25 (t) including 10 x 4 intumescent seal fitted to the head of the door, which are considered for assessment in this report.

Date of test		30th March 2009
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Latched, single leaf, single acting framed solid core door. For the purpose of the test the door was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf A: 1980 (h) x 915 (w) x 43 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), a Chipboard core 37 (t), with Veneered MDF facing 3 (t), the door leaf hung in a MDF frame 25 (t) on 3No. Steel hinges and included a 10 x 4 intumescent seal fitted in the head of the door. The door was oriented to open towards heat conditions. Doorsets including a tubular mortise latch, positioned at approximately mid-height of doorset. The door leaf was latched for the duration of the test.
Test Standard:		BS 476 Part 22
Performance	**Doorset A**	Integrity: 27 minutes Insulation: 20 minutes

3.18 Test report Chilt/IF00003

The referenced test report, the essential details of which are summarised below, is the supplementary data for a Pilkington Pyroshield Georgian wired glass, fitted with American White Oak Cassettes either side of the glazing, which are considered for assessment in this report.

Date of test		15th February 2000
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Half height, latched, single leaf, single acting framed solid core door. For the purpose of the test the door was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf A: 1040 (h) x 910 (w) x 44 (t) Doorset A: Top half, solid core perimeter framed timber door with stiles and rails 36 (t), a Flaxboard core 36 (t), Chipboard facings 3.5 (t), the door leaf was hung in a softwood frame 33 (t) on 2No. Steel hinges and incorporated 6 (t) Pilkington Pyroshield Georgian wired glass. Overall aperture size 680 (h) x 200 (w), fitted with American White Oak Cassettes either side of the glazing 22.5 (w) x 31 (t) including a 5 (d) x 10.5 (h) bolection return with the section sitting over the glass measuring 18 (w) x 29 (d), this being fitted with Hodgsons Sealant intumescent between the beading and glass. The door was oriented to open towards heat conditions. Doorsets A included a latch positioned at approximately mid-height of the doorset. The door was latched for the duration of the test.
Test Standard:		To the temperature and pressure conditions of BS 476 - 20 and general principles of BS 476 Part 22 where applicable.
Performance	**Doorset A**	Integrity: 32 minutes

3.19 Test report Chilt/IF00059

The referenced test report, the essential details of which are summarised below, is the supplementary data for a MDF frame, Pilkington Pyroshield safety glass, fitted with foil wrapped MDF beading either side of the glazing, which are considered for assessment in this report.

Date of test		12th December 2000
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Half height, latched, single leaf, single acting framed solid core door. For the purpose of the test the door was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf A: 1000 (h) x 925 (w) x 44 (t) Doorset A: Top half, solid core perimeter framed timber door with stiles and rails 37 (t), a Flaxboard core 37 (t), MDF facings 3.0 (t) with an outer facing of hardwood veneer 0.5 (t), the door leaf was hung in a MDF frame 30 (t) on 2No. Steel hinges and incorporated 6 (t) Pilkington Pyroshield safety glass. Overall sight size 520 (h) x 450 (w), fitted with foil wrapped MDF beading either side of the glazing 22 (w) x 19 (t) including a 6 (d) bolection return with Hodgsons putty intumescent between the beading and glass. Doorsets A included a tubular latch positioned at approximately mid-height the doorset. The door was latched for the duration of the test.
Test Standard:		To the temperature and pressure conditions of BS 476 - 20 and general principles of BS 476 Part 22 where applicable.
Performance	**Doorset A**	Integrity: 33 minutes

3.20 Test report Chilt/IF01018

The referenced test report, the essential details of which are summarised below, is the supplementary data for a glazed aperture with Ventrotech “Firestar” toughened glass, which are considered for assessment in this report.

Date of test		18th April 2001
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Section of framed solid core door. For the purpose of the test the door was referenced ‘A’
Summary of test specimen:		Dimensions of Door leaf A: 926 (h) x 926 (w) x 44 (t) Doorset A: Section of solid core perimeter framed timber door with stiles and rails incorporated 5 (t) Ventrotech “Firestar” toughened glass. Overall sight size 582 (h) x 482 (w), fitted with Hardwood beading either side of the glazing 19 (h) x 22.5 (w) including a 5 (d) x 6 (w) bolection return with Hodgsons Sealants intumescent fire strip 12 x 4 between the beading and glass.
Test Standard:		To the temperature and pressure conditions of BS 476 - 20 and general principles of BS 476 Part 22 where applicable.
Performance	**Specimen B**	Integrity: 38 minutes

3.21 Test report Chilt/IF01019

The referenced test report, the essential details of which are summarised below, is the supplementary data for a glazed aperture with Ventrotech “Pyroswiss” toughened glass, which are considered for assessment in this report.

Date of test		17th April 2001
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Section of framed solid core door. For the purpose of the test the door was referenced ‘A’
Summary of test specimen:		Dimensions of Door leaf A: 926 (h) x 926 (w) x 44 (t) Doorset A: Section of solid core perimeter framed timber door with stiles and rails incorporated 6 (t) Ventrotech “Pyroswiss” toughened glass. Overall sight size 582 (h) x 482 (w), fitted with Hardwood beading either side of the glazing 19 (h) x 22.5 (w) including a 5 (d) x 6 (w) bolection return with Hodgsons Sealants intumescent fire strip 12 x 4 between the beading and glass.
Test Standard:		To the temperature and pressure conditions of BS 476 - 20 and general principles of BS 476 Part 22 where applicable.
Performance	**Specimen B**	Integrity: 39 minutes

3.22 Test report Chilt/IF02002

The referenced test report, the essential details of which are summarised below, is the supplementary data for a Tesa electronic mortice lock, which are considered for assessment in this report.

Date of test		15th January 2002
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Top half, latched, single acting, single doorset, framed solid core door. For the purpose of the test the door was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf A: 1000 (h) x 926 (w) x 44 (t) Doorset A: Section of solid core perimeter framed timber door with stiles and rails 37 (t), Chipboard core 37 (t), with inner chipboard facings 3.5 and outer hardwood veneer 0.5 (t), the door leaf was hung in a veneered Chipbaord frame 28 (t), on 2No. Steel hinges and fitted with a Tesa Electronic mortice lock. Doorset A including an electronic mortice lock. The door leaf was latched for the duration of the test.
Test Standard:		To the temperature and pressure conditions of BS 476 - 20 and general principles of BS 476 Part 22 where applicable.
Performance	**Specimen B**	Integrity: 34 minutes

3.23 Test report Chilt/IF13091

The referenced test report, the essential details of which are summarised below, is the supplementary data for a PVC edge band on the closing edge of the leaf and Pilkington Pyrodur glazing, which are considered for assessment in this report.

Date of test		14th November 2013
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Latched, single leaf, single acting framed solid core door. For the purpose of the test the door was referenced 'A'.
Summary of test specimen:		Dimensions of Door leaf A: 1310 (h) x 914 (w) x 43 (t) Doorset A: Section of solid core perimeter framed timber door with stiles and rails 37 (t), Particleboard core 37 (t), with hardboard facings 3 (t), the door leaf was hung in a MDF frame 30 (t), on 3No. Steel hinges and fitted with a PVC edge band on the meeting edge of the door leaf 0.5 (t), and 7 (t) Pilkington Pyrodur glazing, aperture size being 1057 (h) x 660 (w). Fitted with Oak beading either side of the glazing 23 (h) x 27.3 (d) including a 16.5 (w) x 6 (d) rebate and Oak decorative beading 20 (h) x 18 (d) fitted with Technibond HTA plain black foam tape Ref. T567 – self-adhesive to both sides of the glass. Doorset A including a tubular mortise latch, positioned 990 from the head of the leaf. The door leaf was latched for the duration of the test.
Test Standard:		To the temperature and pressure conditions of BS 476 - 20 and general principles of BS 476 Part 22 where applicable.
Performance	**Specimen B**	Integrity: 34 minutes

3.24 Test report 9907191 – IFC/350

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorsets, fitted with Stanley 2060R hinges, being considered for assessment in this report.

Date of test		-
Identification of test body:		Cambridge Fire Research
Sponsor:		Dixon International
Tested Product:		Single leaf, single acting timber, framed solid core doorsets. For the purpose of the test the doorsets were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 1930mm (h) x 960mm (w) x 44mm (t) Dimensions of Door leaf B: 1983mm (h) x 762mm (w) x 44mm (t) Stanley 2060R Hinges
Test Standard:		BS 476: Part 22: 1987
Performance	**Doorset A**	Integrity: 31 minutes Insulation: 31 minutes
	Doorset B	Integrity: 31 minutes Insulation: 31 minutes

3.25 Test report 55463

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorsets, fitted with SOSS 218 concealed hinges, being considered for assessment in this report.

Date of test		-
Identification of test body:		Warringtonfire
Sponsor:		Warres
Tested Product:		Single leaf, single acting timber, framed solid core doorsets. For the purpose of the test the doorsets were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2134mm (h) x 914mm (w) x 44mm (t) Dimensions of Door leaf B: 2134mm (h) x 914mm (w) x 44mm (t) SOSS 218 concealed hinges
Test Standard:		BS 476: Part 22: 1987
Performance	**Doorset A**	Integrity: 30 minutes Insulation: 30 minutes
	Doorset B	Integrity: 30 minutes Insulation: 30 minutes

3.26 Test report WFRC133469 & WFRC143873 Assessment

The referenced test report, the essential details of which are summarised below, is the supplementary data for a unlatched, single acting, single doorsets, fitted with Tectus 510 Hu & 3D hinges, being considered for assessment in this report.

Date of test		29th July 2003
Identification of test body:		Warringtonfire
Sponsor:		Hinge & Things Limited
Tested Product:		Single leaf, single acting timber, framed solid core doorsets. For the purpose of the test the doorsets was referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 927 (w) x 53 (t) Dimensions of Door leaf B: 2040 (h) x 925 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 36 (t), a Flaxboard core 36 (t), Non-asbestos insulation board inner facing 4.5 (t), with Chipboard outer facings 4 (t), the door leaf was hung in a Hardwood frame 57 (t) on 3No. 1880 Samson' brass butt hinges. Doorset B: Solid core perimeter framed timber door with stiles and rails 40 (t), a Flaxboard core 40 (t), with MDF veneered facing 2 (t), the door leaf was hung in a Softwood frame 38 (t) on 3No. Tectus hinges. Both doors oriented to open towards heat conditions. Both doorsets were fitted without locks and were unlatched for the duration of the test.
Test Standard:		BS EN 1634 – 1
Performance	**Doorset A**	Integrity: 63 minutes Insulation: 63 minutes
	Doorset B	Integrity: 33 minutes Insulation: 33 minutes

3.27 Test report WF148540/A

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorsets, with 25 removed from foot of leaf, being considered for assessment in this report.

Date of test		12th August 2005
Identification of test body:		Warringtonfire
Sponsor:		Vicaima
Tested Product:		Single leaf, single acting timber, framed solid core doorsets. For the purpose of the test the doorsets was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf A: 2016 (h) x 927 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 38 (t), a Flaxboard core 38 (t), with Plywood facing 3 (t), with 25 removed from the foot of the door, the door leaf was hung in a Softwood frame. The doorset was oriented to open towards heat conditions. The doorset was fitted with a lock which was latched for the duration of the test.
Test Standard:		BS 476: Part 22: 1987
Performance	**Doorset A**	Integrity: 37 minutes

3.28 Test report WF135190

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorsets, fitted with 10 x 4 Therm-A-Seal, being considered for assessment in this report.

Date of test		7th October 2003
Identification of test body:		Warringtonfire??
Sponsor:		Vicaima
Tested Product:		Single leaf, single acting timber, framed solid core doorsets. For the purpose of the test the doorsets was referenced 'A'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 926 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 38 (t), a Flaxboard core 38 (t), with Plywood facing 3 (t), the door leaf was hung in a MDF frame 36 (t), incorporating a 10 x 4 Therm-A-Seal intumescent strip. The doorset was oriented to open towards heat conditions. The doorset was fitted with a lock approximately mid height, which was latched for the duration of the test.
Test Standard:		BS 476: Part 22: 1987
Performance	**Doorset A**	Integrity: 38 minutes

3.29 Test report ENAC 22008513

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorsets, fitted with a SALTO SL85 electronic lock, being considered for assessment in this report.

Date of test		-
Identification of test body:		-
Sponsor:		-
Tested Product:		Single leaf, single acting timber, framed solid core doorsets. For the purpose of the test the doorsets were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2020mm (h) x 925mm (w) x 40mm (t) Dimensions of Door leaf B: 2016mm (h) x 927mm (w) x 44mm (t) a SALTO SL85 electronic lock was fitted to each doorset
Test Standard:		UNE 23-802-79
Performance	**Doorset A**	Integrity: 32 minutes Insulation: 32 minutes
	Doorset B	Integrity: 32 minutes Insulation: 32 minutes

3.30 Test report WF341550

The referenced test report, the essential details of which are summarised below, is the supplementary data for a section of door, fitted with 7mm Pyroguard and Pyrostem glazing incorporating Morland Quickflix glazing beads, being considered for assessment in this report.

Date of test		20th June 2014
Identification of test body:		Warringtonfire
Sponsor:		Newmor Group Ltd
Tested Product:		Section of timber frame doors. For the purpose of the test the door leaves were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 1380 (h) x 608 (w) x 44 (t) Dimensions of Door leaf B: 1380 (h) x 608 (w) x 44 (t) Doorset A: Framing timber door stiles and rails 44 (t), the door leaves hung on a timber frame 100 (t) on 2No. Steel hinges. 7 (t) Pyrostem wired glass 1160 (h) x 410 (w) glazed aperture in left leaf, incorporating MDF beading 21 (w) x 25 (h) with a 6 x 10 bolection return and chamfered 15^0 to the glass, a 15 x 2 closed cell foam tape was used between the glass and the beads and intumescent acrylic used around the perimeter of the glass. Doorset B: Framing timber door stiles and rails 44 (t), the door leaves hung on a timber frame 100 (t) on 2No. Steel hinges. 7 (t) Pyroguard clear glass 1160 (h) x 410 (w) glazed aperture in right leaf, incorporating MDF beading 21 (w) x 25 (h) with a 6 x 10 bolection return and chamfered 15^0 to the glass, a 15 x 2 closed cell foam tape was used between the glass and the beads.
Test Standard:		To the temperature and pressure conditions of BS 476 - 20 and general principles of BS 476 Part 22 where applicable.
Performance	**Doorset A**	Integrity: 35 minutes
	Doorset B	Integrity: 27 minutes

3.31 Test report WF342584

The referenced test report, the essential details of which are summarised below, is the supplementary data for a section of door, fitted with 7mm Pyrodur and Pyroguard glazing incorporating Morland Quickflix glazing beads, being considered for assessment in this report.

Date of test		18th July 2014
Identification of test body:		Warringtonfire
Sponsor:		Newmor Group Ltd
Tested Product:		Section of timber frame doors. For the purpose of the test the door leaves were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 1380 (h) x 608 (w) x 44 (t) Dimensions of Door leaf B: 1380 (h) x 608 (w) x 44 (t) Doorset A: Framing timber door stiles and rails 44 (t), the door leaves hung on a timber frame 100 (t) on 2No. Steel hinges. 7 (t) Pyrodur clear glass 1160 (h) x 410 (w) glazed aperture in left leaf, incorporating MDF beading 21.5 (w) x 27 (h) with a 6 x 12 bolection return and chamfered 15^0 to the glass, a 15 x 2 closed cell foam tape was used between the glass and the beads. Doorset B: Framing timber door stiles and rails 44 (t), the door leaves hung on a timber frame 100 (t) on 2No. Steel hinges. 7 (t) Pyroguard clear glass 1160 (h) x 410 (w) glazed aperture in right leaf, incorporating MDF beading 21.5 (w) x 27 (h) with a 6 x 12 bolection return and chamfered 15^0 to the glass, a 15 x 2 closed cell foam tape was used between the glass and the beads with intumescent mastic applied around the perimeter of the glass.
Test Standard:		To the temperature and pressure conditions of BS 476 - 20 and general principles of BS 476 Part 22:1987, where applicable.
Performance	**Doorset A**	Integrity: 35 minutes
	Doorset B	Integrity: 36 minutes

3.32 Test report Chilt/RF1653

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorsets with a chipboard core fitted with a steel sheet incorporated into the middle of the leaf, which are considered for assessment in this report.

Date of test		8th October 1992
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, latched single leaf, single acting framed solid core door. For the purpose of the test the 2 doors were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 926 (w) x 40 (t) Dimensions of Door leaf B: 2040 (h) x 926 (w) x 40 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 33 (t), 2 layers of Chipboard core 16 (t), with a 1 (t) steel sheet approximately 1990 (h) x 870 (w) sandwich between, fitted with chipboard facings 3 (t) and a Sapele veneer nominally 0.5 (t), the door leaf was hung in a Chipbaord frame 29 (t) on 3No. Steel hinges. A Tesa TLP3 three locking mechanism with foil wrapped locks was fitted to the door. Doorset B: Solid core perimeter framed timber door with stiles and rails 33 (t), 2 layers of Chipboard core 16 (t), with a 1 (t) steel sheet approximately 1990 (h) x 870 (w) sandwich between, fitted with chipboard facings 3 (t) and a Sapele veneer nominally 0.5 (t), the door leaf was hung in a Chipboard frame 29 (t) on 3No. Steel hinges. A Tesa TLP3 three locking mechanism with foil wrapped locks was fitted to the door. Both doorsets where oriented to open towards heat conditions. Doorsets were fitted with a tubular mortise latch, positioned at approximately mid-height of the doorset. The door leaves where latched for the duration of the test.
Test Standard:		BS 476 Part 22: 1987
Performance	**Doorset A**	Integrity: 38 minutes Insulation: 38 minutes
	Doorset B	Integrity: 37 minutes Insulation: 37 minutes

3.33 Test report Chilt/RF01051

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorsets with a chipboard core faced with a steel sheet on both sides and reinforced L brackets to frame, which are considered for assessment in this report.

Date of test		27th June 2001
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, latched single leaf, single acting framed solid core door. For the purpose of the test the 2 doors were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 925 (w) x 44 (t) Dimensions of Door leaf B: 2040 (h) x 925 (w) x 40 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), Chipboard core 36 (t), faced with a 0.5 (t) steel sheet on both sides, fitted with Hardboard facings 3 (t) and a Sapele decorative facing 0.5 (t), the door leaf was hung in a Veneered Plywood frame 16 (t) on 3No. Steel hinges. The frame also had Steel L brackets fitted to the rear of the frame 2 (t) x 135 (l) and a Steel L bracket fitted in the frame reveal 2 (t) x 46 (l). Doorset B: Solid core perimeter framed timber door with stiles and rails 37 (t), Chipboard core 36 (t), faced with a 0.5 (t) steel sheet on both sides, fitted with Hardboard facings 3 (t) and a Sapele decorative facing 0.5 (t), the door leaf was hung in a Veneered Plywood frame 16 (t) on 3No. Steel hinges. The frame also had Steel L brackets fitted to the rear of the frame 2 (t) x 135 (l) and a Steel L bracket fitted in the frame reveal 2 (t) x 46 (l). Both doorsets where oriented to open towards heat conditions. Doorsets were fitted with a multi-point mortise latch, middle latch body positioned at approximately mid-height of the doorset. The door leaves where latched for the duration of the test.
Test Standard:		BS 476 Part 22: 1987
Performance	**Doorset A**	Integrity: 28 minutes Insulation: 28 minutes
	Doorset B	Integrity: 23 minutes Insulation: 23 minutes

3.34 Test report Chilt/RF01127

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorsets with a flaxboard and chipboard core faced with a steel sheet on both sides and reinforced L brackets to frame, which are considered for assessment in this report.

Date of test		15th January 2002
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Fully insulated, latched single leaf, single acting framed solid core door. For the purpose of the test the 2 doors were referenced 'A and B'
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 925 (w) x 44 (t) Dimensions of Door leaf B: 2040 (h) x 925 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), Flaxboard core 37 (t), with Hardboard facings 3.2 (t) and a veneer of 0.5 (t), the door leaf was hung in a veneered plywood frame 29 (t) on 3No. Steel hinges. The frame also had Steel L brackets fitted to the rear of the frame 2 (t) x 135 (l) and a Steel L bracket fitted in the frame reveal 2 (t) x 46 (l). Doorset B: Solid core perimeter framed timber door with stiles and rails 37 (t), Chipboard core 37 (t), faced with a 0.5 (t) steel sheet on both sides, fitted with hardboard facings 3.2 (t) and Sapele decorative facing 0.5 (t), the door leaf was hung in a veneered plywood frame 29 (t) on 3No. Steel hinges. The frame also had Steel L brackets fitted to the rear of the frame 2 (t) x 135 (l) and a Steel L bracket fitted in the frame reveal 2 (t) x 46 (l). Both doorsets were oriented to open towards heat conditions. Doorsets were fitted with a multi-point mortise latch, middle latch body positioned at approximately mid-height of the doorset The door leaves where latched for the duration of the test.
Test Standard:		BS 476 Part 22:1987
Performance	**Doorset A**	Integrity: 22 minutes Insulation: 22 minutes
	Doorset B	Integrity: 20 minutes Insulation: 20 minutes

3.35 Test report WF345074

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorset being considered for assessment in this report.

Date of test		13th January 2015
Identification of test body:		Warringtonfire
Sponsor:		Carlisle Brass
Tested Product:		Two Single leaf, single acting timber, framed solid core doorsets. The doorsets were referenced A and B. Only doorset A is relevant to this report.
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 932 (w) x 44 (t) The doorset was a particle board construction fitted with various items of hardware, including a Carlisle Brass eye viewer AA77 comprising a brass body fitted with a glass lens. The viewer was fitted approximately 1600 mm above the threshold. The hole in the door leaf for the viewer was lined with 0.8 (t) intercalated graphite. The doorset was orientated to open in towards the furnace and was unlatched for the duration of the test
Test Standard:		BS EN 1634-1:2014.
Performance	**Doorset A**	Integrity: 34 minutes Insulation: 34 minutes

3.36 Test report IF2018

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorset being considered for assessment in this report.

Date of test		
Identification of test body:		
Sponsor:		Viciama
Tested Product:		Single leaf, single acting timber, framed solid core doorset. For the purpose of the test the doorset was referenced 'A '
Summary of test specimen:		Dimensions of Door leaf A: 1000 (h) x 910 (w) x 44 (t)
Test Standard:		To the temperature and pressure conditions of BS 476 - 20 and general principles of BS 476 Part 22 where applicable.
Performance	**Doorset A**	Integrity: 41 minutes Insulation: 41 minutes

3.37 Test report Chilt/RF12102 - Doorset B

The referenced test report, the essential details of which are summarised below, is the supplementary data for a latched, single acting, single doorsets with a Particleboard core, faced with Hardboard incorporating grooves and a Poplar plywood frame with reinforced L brackets to frame, together with the Ezcurra 2010V/3 FR 3-point lock and a Planet HS drop seal, which are considered for assessment in this report.

Date of test		12th September 2012
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Latched single leaf, single acting framed solid core door. For the test the door was referenced as doorset 'B'
Summary of test specimen:		Dimensions of leaf B: 2041 (h) x 925 (w) x 43 (t) Doorset B: Solid core perimeter framed timber door with stiles and rails 37 (t), Particleboard core 37 (t), faced with hardboard 3.2 (t), incorporating grooves 4 (w) x 2 (d), the door leaf was hung in a Poplar plywood frame 28 (t) on 3No. Steel hinges. Steel L brackets where fitted to the frame to stop rebate 2 (t) x 16 (h) x 16 (w). A Planet H drop seal was fitted into the leaf threshold with intumescent protection. Doorset B was oriented to open towards heat conditions. The doorset included a 3 point latch, middle latch body positioned at approximately mid-height of the doorset The door leaves where latched for the duration of the test.
Test Standard:		BS EN 1634-1:2008 and BS EN 1363-1:2012
Performance	**Doorset B**	Integrity: 44 minutes Insulation: 44minutes

3.38 Test report WF398276

The referenced test report, the essential details of which are summarised below, is the supplementary data for Pyrodur 30 – 105 glazing with Techibond HAS closed cell foam glazing tape, which are considered for assessment in this report.

Date of test		4th April 2018
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd.
Tested Product:		Latched, single leaf, single acting solid door. For the purpose of the test the door was referenced 'A'.
Summary of test specimen:		Dimensions of Door leaf A: 1400 (h) x 926 (w) x 44 (t) Doorset A: Solid timber door with Particleboard core 44 (t), the door leaf was hung in a European Redwood frame 32 (t), on 2No. Steel hinges. 7 (t) Pilkington Pyrodur 30 – 105 glazing, aperture size being 1200 (h) x 726 (w). European Redwood beading either side of the glazing 17 (h) x 17 (d), fitted with Technibond HAS closed foam glazing tape to both sides of the glass. Doorset A was oriented to open towards heat conditions. The doorset included a tubular mortise latch, positioned 265 from the bottom of the leaf. The door leaf was unlatched for the duration of the test.
Test Standard:		To the temperature and pressure conditions of BS 476 - 20 and general principles of BS 476 Part 22 where applicable.
Performance	**Specimen B**	Integrity: 30 minutes* Insulation 30 minutes

* Intermittent flaming occurred at the latch position at 30 minutes resulting in an integrity failure. The glazing system failure occurred at 42 minutes.

3.39 Test report WF375988 Issue 3

The referenced test report, the essential details of which are summarised below, is the supplementary data for Frelan JV942 and JV943 eye viewers, which are considered for assessment in this report.

Date of test		9th November 2017
Identification of test body:		Warrington Fire
Sponsor:		Frelan Hardware.
Tested Product:		Latched and unlatched, single leaf, single acting solid door. For the purpose of the test the door was referenced 'A & B'.
Summary of test specimen:		Dimensions of Door leaf A: 1500 (h) x 687 (w) x 44 (t) Dimensions of Door leaf B: 1500 (h) x 687 (w) x 54 (t) Doorset A: Solid timber door with Chipboard core 44 (t), the door leaf was fixed in a Pine Softwood frame 42 (t) and incorporating a Chrome and Brass JV942 eye viewer, one wrapped in 1 (t) graphite and the other with no intumescent protection. Doorset A: Solid timber door with Chipboard core 54 (t), the door leaf was fixed in a Sapele hardwood frame 42 (t) and incorporating two Chrome JV943 eye viewers, one wrapped in 1 graphite and the other with no intumescent protection. Both doorset were oriented to open towards heat conditions. The doorsets were fitted with a latch, positioned around mid-height in the door leaf. Doorset A was latched and Doorset B was unlatched for the duration of the test.
Test Standard:		To the temperature and pressure conditions of BS EN 1363-1 and general principles of BS EN 1634-1 where applicable.
Performance	**Specimen A**	Integrity: 36 minutes
	Specimen B	Integrity 55 minutes*

* Cotton pad test was performed at the bottom eye viewer, igniting the cotton pad, thereby constituting integrity failure. No failures occurred to the upper eye viewer with the test terminating at 60 minutes.

3.40 Test report 379163

The referenced test report, the essential details of which are summarised below, is the supplementary data for Pyroplex FG30 30049 glazing system and FO8500 seals and brush seal, which are considered for assessment in this report.

Date of test		31st January 2017
Identification of test body:		Warrington Fire
Sponsor:		Pyroplex Ltd.
Tested Product:		Unlatched, single leaf, single acting door and an Unlatched, leaf and a half, single acting door. For the purpose of the test the door was referenced 'A & B'.
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 926 (w) x 44 (t) Dimensions of Door leaf B: 2040 (h) x 926 / 425 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 36 (t), Chipboard core 36 (t), with MDF facings 3 (t), the door leaf was hung in a European Redwood frame 32 (t), on 3No. Steel hinges. Door blank incorporated Pilkington Pyrodur Plus 7 (t) glazing, sight size 570 (h) x 575 (w) and fitted with Pyroplex FG30 30049 glazing seals. Doorset B: Solid core perimeter framed timber door with stiles and rails 36 (t), Chipboard core 36 (t), with MDF facings 3 (t), the door leaf was hung in a European Redwood frame 32 (t), on 3No. Steel hinges. Frame incorporated 10 x 4 Pyroplex Rigid Box Seals ref; FO8500. Both doorset were oriented to open towards heat conditions. The doorsets were fitted with a mortice latch, positioned around mid-height in the door leaf. Both doorsets were unlatched for the duration of the test.
Test Standard:		BS 476 Part 22
Performance	**Specimen A**	Integrity: 37 minutes Insulation: 37 minutes
	Specimen B	Integrity 42 minutes Insulation: 42 minutes

3.41 Test report IF13091

The referenced test report, the essential details of which are summarised below, is the supplementary data for false glazing beads, which are considered for assessment in this report.

Date of test		11sh September 2013
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd
Tested Product:		Unlatched, single leaf, single acting door. For the purpose of the test the doors were referenced 'A' and 'B'. However, only Doorset A is the subject of this report.
Summary of test specimen:		Dimensions of Door leaf A: 1310 (h) x 914 (w) x 43 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 37 (t), Particleboard core 37 (t), with Hardboard facings 3 (t), the door leaf was hung in a MDF frame 30 (t), on 3No. Steel hinges. Door blank incorporated Pilkington Pyrodur 7 (t) glazing, aperture size 1057 (h) x 660 (w) with the use of Oak decorative beading 20 (h) x 38 (l), fitted with Technibond HTA foam tape ref; T567 self-adhesive between the glazing and the false beading. The doorset was fitted with a tubular latch, positioned 990 from the head of the leaf. Doorset A was oriented to open towards heat conditions. The doorset was unlatched for the duration of the test.
Test Standard:		To the temperature and pressure conditions of BS 476 Part 20 and general principles of BS 476 part 22 where applicable.
Performance	**Specimen A**	Integrity: 37 minutes Insulation: 37 minutes

3.42 Test report 390522

The referenced test report, the essential details of which are summarised below, is the supplementary data for alternative hinge position, which are considered for assessment in this report.

Date of test		18th October 2017
Identification of test body:		Warrington Fire
Sponsor:		Arnold Laver
Tested Product:		An unlatched and latched, single leaf, single acting doors. For the purpose of the test the doorsets were referenced 'A & B'. However, only doorset A is the subject of this report.
Summary of test specimen:		Dimensions of Door leaf A: 2040 (h) x 925 (w) x 44 (t) Doorset A: Solid core perimeter framed timber door with stiles and rails 38 (t), Particleboard core 37 (t), with MDF American White Oak veneer facings 3.2-3.5 (t), the door leaf was hung in a European Redwood frame 32 (t), on 3No. Steel hinges fitted at 200, 398 and 1738 from the head of the leaf. Doorset A was fitted with a surface mounted rim nightlatch, positioned around mid-height in the door leaf. Doorset A was oriented to open towards the heat conditions and was unlatched for the duration of the test.
Test Standard:		BS 476 Part 22
Performance	**Specimen A**	Integrity: 38 minutes Insulation: 38 minutes

3.43 Test report RF12102

The referenced test report, the essential details of which are summarised below, is the supplementary data for security hardware Ezcurra-ESKO Ref; 424-P and 430P and alternative cylinders, which are considered for assessment in this report.

Date of test		12th September 2012
Identification of test body:		Warrington Fire
Sponsor:		Vicaima Ltd
Tested Product:		Latched, single leaf, single acting doors. For the purpose of the test the door was referenced 'A & B'. However, only doorset B is the subject of this report.
Summary of test specimen:		Dimensions of Door leaf B: 2040 (h) x 926 (w) x 43 (t) Doorset B: Solid core perimeter framed timber door with stiles and rails 37 (t), Particleboard core 37 (t), with Hardboard facings 3.2 (t), the door leaf was hung in a Poplar Plywood frame 28 (t), on 3No. Steel hinges. Fitted with a 3 point latch incorporating an anti-bump thumb turn Evo Cylinder. The doorset was fitted with a 3 point latch positioned around mid-height in the door leaf. Doorset B was oriented to open towards the heat conditions. The doorset was latched for the duration of the test.
Test Standard:		BS EN 1634-1:2008
Performance	**Specimen B**	Integrity 44 minutes Insulation: 33 minutes

3.44 Test report 062036-003-1 M1-a

The referenced test report, the essential details of which are summarised below, is the supplementary data for Assa Abloy VingCard Reader, which are considered for assessment in this report.

Date of test		29th September 2016
Identification of test body:		Tecnalia
Sponsor:		Vicaima
Tested Product:		Single leaf doors. For the purpose of the test the door was referenced 'A & B'.
Summary of test specimen:		Dimensions of Door leaf A: 2030 (h) x 900 (w) x 43 (t) Dimensions of Door leaf B: 2030 (h) x 925 (w) x 43 (t) Doorset A: Perimeter framed solid core door with softwood stiles and rails 37 (t), with Flaxboard core 37 (t), the door leaf was hung in a Birch Plywood frame 28 (t), on 4No. Steel hinges. Fitted with an Assa Abloy VingCard Magnetic Euro cylinder (AN-111) 1 point latch incorporating a VingCard Classic Magnetic Card Reader (AN-111). Doorset B: Perimeter framed solid core door with softwood stiles and rails 37 (t), with Flaxboard core 37 (t), the door leaf was hung in a Birch Plywood frame 28 (t), on 4No. Steel hinges. Fitted with an Assa Abloy VingCard Magnetic Euro cylinder (AN-111) 1 point latch incorporating a VingCard Essence Magnetic Card Reader (AN-241-card). Doorset A was oriented to open towards the heat conditions, whereas Doorset B was oriented to open away from the heat conditions. Both doorsets were fitted with a cylinder latch positioned 900 from the threshold of the door leaf.
		BS EN 1634-1
Performance	**Specimen A**	Integrity: 46 minutes Insulation: 46 minutes
	Specimen B	Integrity 44 minutes Insulation: 44 minutes

3.45 Test Report 054502-001-1-a

The referenced test report, the essential details of which are summarised below, is the supplementary data for Tongued Architraves, which are considered for assessment in this report.

Date of test		16th March 2016
Identification of test body:		Tecnalia
Sponsor:		Vicaima
Tested Product:		Single leaf doors. For the purpose of the test the door was referenced 'A & B'.
Summary of test specimen:		Dimensions of Door leaf A: 2050 (h) x 905 (w) x 44 (t) Dimensions of Door leaf B: 2095 (h) x 905 (w) x 43 (t) Doorset A: Perimeter framed solid core door with Pine stiles and rails 37 (t), with 2 x Chipboard core 19 (t) with a Steel sheet 0.5 (t) in the middle, the door leaf was hung in a MDF frame 28 (t) with a Pine subframe 40 (t), on 4No. Steel hinges. Fitted with a 3 point mortice latch. Doorset B: Perimeter framed solid core door with Pine stiles and rails 37 (t), with 2 panels of Flaxboard core 37 (t), the door leaf was hung in a MDF frame 28 (t) with a Pine subframe 40 (t), on 3No. Steel hinges. Fitted with a 1 point Mortice latch. Both Doorsets where oriented to open towards the heat conditions. Both doorsets were fitted with a cylinder latch positioned around mid-point of the door leaf.
		BS EN 1634-1
Performance	**Specimen A**	Integrity: 32 minutes Insulation: 32 minutes
	Specimen B	Integrity 39 minutes Insulation: 39 minutes

3.46 Test Report 072688-001-1-a

The referenced test report, the essential details of which are summarised below, is the supplementary data for hardware, which are considered for assessment in this report.

Date of test		3rd May 2018
Identification of test body:		Tecnalia
Sponsor:		Vicaima
Tested Product:		Single leaf doors. For the purpose of the test the door was referenced 'A & B'.
Summary of test specimen:		Dimensions of Door leaf A: 2030 (h) x 900 (w) x 43 (t) Dimensions of Door leaf B: 2030 (h) x 925 (w) x 43 (t) Doorset A: Perimeter framed solid core door with European Whitewood stiles and rails 37 (t), with Fluxboard core 19 (t), the door leaf was hung in a Birch Plywood frame 28 (t), on 4No. JNF Concealed Aluminium hinges. Fitted with a 1 point JNF IN.20.602 latch and JNF ML.21.801 Concealed closer. Doorset B: Perimeter framed solid core door with European Whitewood stiles and rails 37 (t), with Fluxboard core 19 (t), the door leaf was hung in a Birch Plywood frame 28 (t), on 4No. JNF Concealed Aluminium hinges. Fitted with a 1 point JNF IN.20.602 latch and JNF ML.21.801 Concealed closer. Doorset A was oriented to open away from the heat conditions whereas, doorset B was oriented to open towards the heat conditions. Both doorsets were fitted with a latch positioned around mid-point of the door leaf.
		BS EN 1634-1
Performance	**Specimen A**	Integrity: 43 minutes Insulation: 43 minutes
	Specimen B	Integrity 34 minutes Insulation: 34 minutes

4 Technical Specification

4.1 General

The technical specification for the proposed door assembly is given in the following sections and is based on the test evidence for the door design, summarised in section 3.

4.2 Intended use

The intended use of the proposed door assembly is summarised below:

A pedestrian doorset including any frame, door leaf or leaves which is provided to give a fire resisting capability when used for the closing of permanent openings in fire resisting separating elements, which together with the building hardware and any seals (whether provided for the purpose of fire resistance or smoke control or for other purposes such as draught or acoustics) which form the assembly.

The construction of door leaves covered by this assessment comprises the following specifications:

4.3 Description of Construction

4.3.1 SDC – Standard Duty Construction

Element	**Material**	**Dimensions** (mm)	**Min. Density** (kg/m^3)
Core	Flaxboard [1]	37 thick	350 – 400
Stiles	1No. European whitewood	37 thick x 33 wide	420 – 470
Top & bottom rail	2No. European whitewood	37 thick x 38 wide	420 – 470
Facing	MDF	3.2 – 3.5 thick	730
	Chipboard		620
	Hardboard		950 – 1000
Lipping (if required)	Hardwood	5 thick	500

[1] May be substituted by HDC chipboard core material of nominal density 500 Kg/m^3

The option to use the HDC chipboard core in lieu of the flaxboard core in the SDC design was requested for fire doors that are required to achieve a certain acoustic rating. After inspecting the performance characteristics of both constructions, it is evident that the essential details are comparable. Therefore, it is the opinion of Warringtonfire that providing the SDC construction is manufactured within the defined parameters, except for substitution of the chipboard HDC core, this design change is assessed as acceptable..

4.3.1.1 SDC – 20 Minute Doorsets

Vicaima 20 minute door leaves are constructed in accordance with the SDC specification, but do not require intumescent seals.

4.3.2 HDC – Heavy Duty Construction

4.3.2.1 HDC - Timber Framing

Element	Material	Dimensions (mm)	Min. Density (kg/m³)
Core	Chipboard	37 thick	500[1]
Stiles	2No. European whitewood	38 wide x 37 thick	420 – 470
Top & bottom rail	2No. European whitewood	38 wide x 37 thick	420 – 470
Facing	MDF	3.2 – 3.5	730
	Chipboard		620
	Hardboard		950 – 1000
Lipping	Hardwood	5 thick	500

[1] Based on the testing conducted in Tecnalia 054502-001-1-a, see section 3, the HDC construction may also use a higher core density of up to 680kg/m³.

4.3.2.2 HDC - MDF Framing

This version is constructed as per section 4.3.2.1 above, except the framing is as stated in the table below and is suitable for single leaf doorsets only, to the dimensions stated in the relevant data sheet in appendix D:

Element	Material	Dimensions (mm)	Min. Density (kg/m³)
Stiles	2No. MDF	28 wide x 37 thick	730
Top & bottom rail	2No. MDF	28 wide x 37 thick	730

4.3.2.3 HDC – Doorsets with Rebated Leaf Edges

Latched, single leaf doorsets with rebated leaf edges must be constructed in accordance with the following specification:

Element		Material	Dimensions (mm)	Min. Density (kg/m^3)
Stiles	**Inner**	European whitewood (finger jointed)	38 wide x 37 thick	420 ±20
	Outer	European whitewood (finger jointed)	33 wide x 37 thick incl. 12 deep x 27 wide rebate	420 ±20
Rails	**Inner - top and bottom**	European whitewood (finger jointed)	38 wide x 37 thick	420 ±20
	Outer – top	European whitewood (finger jointed)	30 wide x 37 thick incl. 12 deep x 27 wide rebate	420 ±20
	Outer - bottom	European whitewood (finger jointed)	30 wide x 37 thick	420 ±20
Core		Chipboard	37 thick	480 ±20[1]
Facings		MDF	3 thick	730 ±20
Adhesive	**Facing**	Urea formaldehyde	-	-
	Lipping	Hot melt	-	-
Lippings – Top edge only		Hardwood veneer	0.5 thick	-

4.3.2.4 Modified 30 Minute Doorsets

Vicaima modified 30 minute door leaves are constructed in accordance with the SDC design, and limited to latched, single acting, single leaf doorsets only when fitted in an MDF door frame and a 10 x 4mm intumescent seal is fitted at the head of the leaf only (based on the performance of doorset B tested in RF09030A) as detailed in 3.17.

4.3.2.5 Security Doorsets

Vicaima 30 minute security door leaves are constructed in accordance with the HDC design, but with 1mm thick steel centrally contained as the core of the leaf and grooved in to the inner stiles and rails.

4.3.2.6 Secured By Design

Vicaima 30 minute secured by design door leaves are constructed in accordance with the HDC design. The design requires a 3-point locking system as described in section 16 and a metal angle in the frame as detailed in note 4 under the table in section 12.1.

5 Leaf Sizes

The approval for increased leaf dimensions is based on the tests listed in section 3 and appendix A and takes into account the margin of over-performance above 20 or 30 minutes integrity for the designs and the characteristics exhibited during test. Data sheets specifying the maximum approved leaf sizes and graphs showing the permitted gradient between maximum height and width are contained in appendix D.

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

6 Configurations and Orientation

6.1 Configurations

This assessment covers the various designs listed in section 4.3 for the following configurations:

Abbreviation	Description	Door Design
LSASD	Latched, single acting, single doorset	All
ULSASD	Unlatched, single acting, single doorset	4.3.1, 4.3.2.1 & 4.3.2.2
DASD	Double acting, single doorset	4.3.1, 4.3.2.1 & 4.3.2.2
LSADD	Latched, single acting, double doorset	4.3.1 & 4.3.2.1
ULSADD	Unlatched, single acting, double doorset	4.3.1 & 4.3.2.1
DADD	Double acting, double doorset	4.3.1 & 4.3.2.1

6.2 Orientation

The primary fire resistance tests for this design were all conducted with the doorset hung such that the door leaf opened towards the fire, which is considered the most onerous orientation in terms of fire resistance performance. Based on this testing, assessment is made that doorsets to this design may be hung to open either away from or towards the fire risk side of the doorset.

The fire risk may therefore be from both directions with respect to these doorsets.

7 Leaf Size Adjustment

7.1 Core and Lipping Reduction

Door leaves other than those detailed in the following table may not be altered post manufacture:

Element	Reduction
Design 4.3.1	Height – May be reduced without restriction, providing the core/stiles are routed out & 1No. rail to the specification stated in section 4.3.1 is inserted & bonded to the facings with PU. The single rail must be at the bottom of the door (identification is required).
	Width – May be reduced without restriction from one side only, providing the core/stiles are routed out & 1No. full height stile to the specification stated in section 4.3.1 is inserted & bonded to the facings with PU.
Lipping	The dimensions stated in section 13 may be reduced by 3mm for fitting purposes.

7.2 Trimming of Head Rail and Stiles

Based on the testing conducted, in addition to the adjustments detailed in 7.1 above, it is permitted to trim up to 3mm from the head and stiles of the SDC design detailed in 4.3.1 and the HDC design detailed in 4.3.2.1.

Trimming of the head and stile is not permitted for other design variations.

8 Overpanels

8.1 Solid

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

The transom required to separate the leaf heads from the overpanel must be constructed from softwood or hardwood with a minimum density of 420kg/m^3 and a minimum section size of 70mm x 32mm.

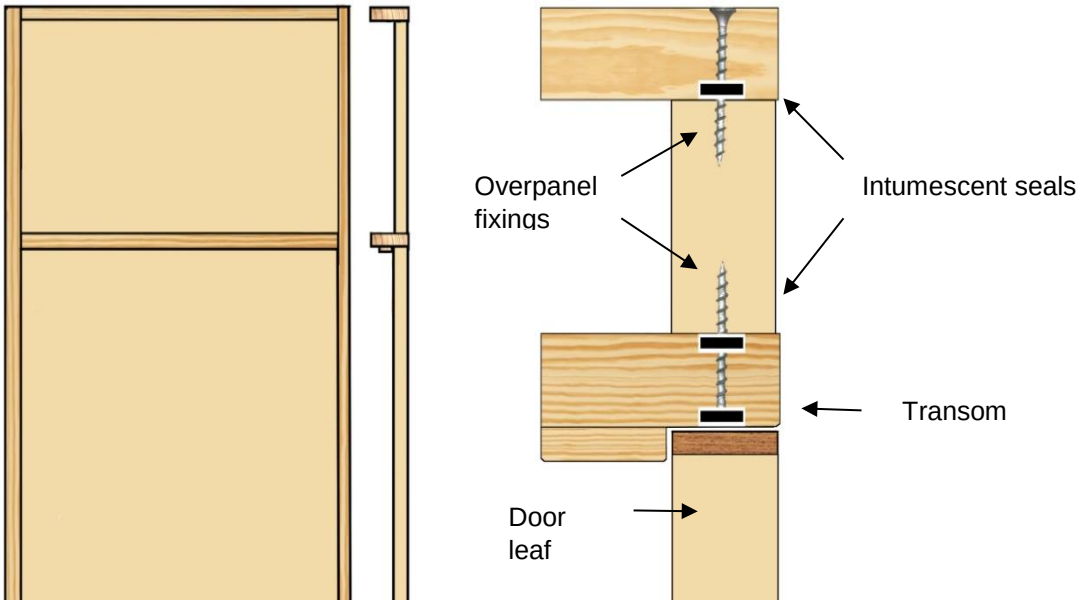
Door frame joints must utilise one of the following methods: mortice and tenon joints or butt joints (see section 12.2).

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.

The 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. A maximum 2mm gap is permitted between the edge of the overpanel and the frame reveal.

Maximum overpanel heights are as follows:

Configuration	**Maximum Overpanel Height** (mm)
Single doorsets	2000
Double doorsets	1500



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

9 Fanlights

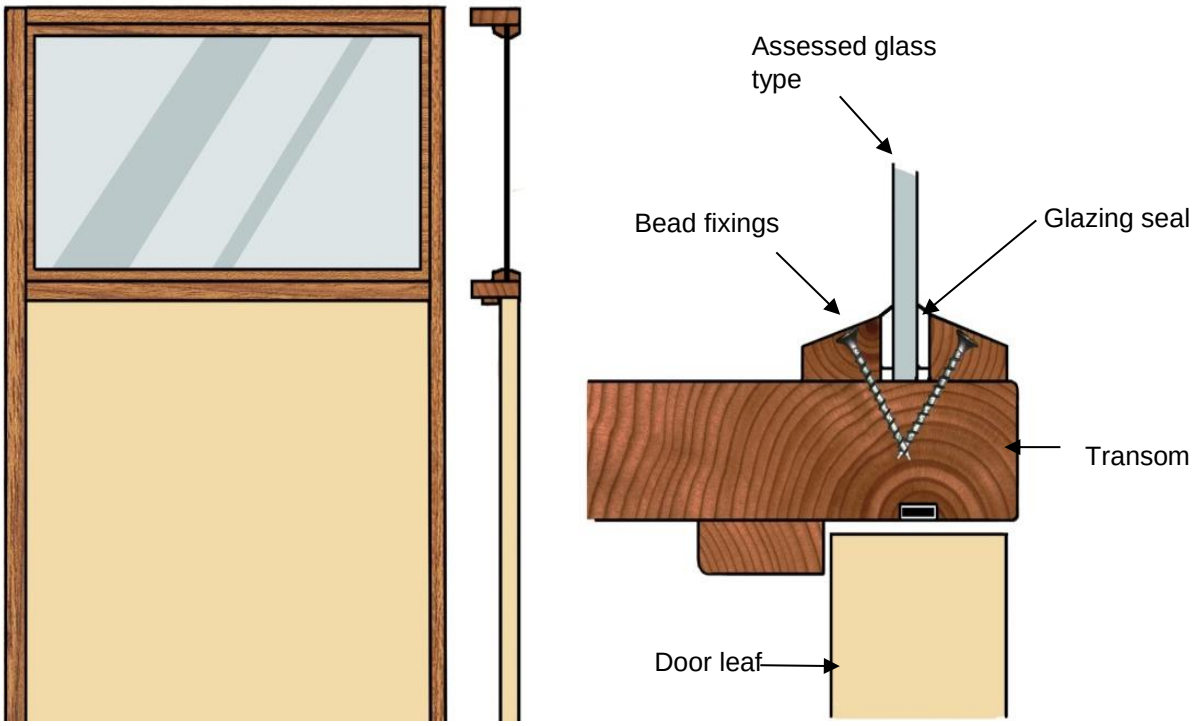
9.1 Glazed Fanlights

Timber frame doorsets including a transom may include a glazed fanlight. The timber frame and glazing beads must be hardwood with a minimum density of 640kg/m³, whilst the frame section for the transom must be a minimum of 70mm x 44mm. Timber door frame and transom construction must comply with the specification contained in section 12.

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

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

Configuration	**Height** (mm)	**Width** (mm)
Single & double doorsets	≤600	Overall door width



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

10 Glazing

10.1 General

The testing conducted on the designs covered by this assessment permits assessment of glazing to the specification contained in the following sections and to the maximum areas detailed in the table below:

Door Design	Maximum Area of Glazing (m^2)
4.3.1 & 4.3.2.1	1.97
4.3.1.1	0.5
4.3.2.2	0.3
4.3.2.3	Not permitted
4.3.2.4	Not permitted
4.3.2.5	Not permitted
4.3.2.6	Not permitted

10.2 Assessed Glazing Systems

Glazing System	Manufacturer
1. Therm-A-Strip 30	Intumescent Seals Ltd.
2. Fireglaze 30	Sealmaster Ltd.
3. Firestrip 30	Hodgsons Sealants Ltd.
4. Pyroglaze 30	Mann McGowan Ltd.
5. System 36 Plus	Lorient Polyproducts Ltd.
6. 30049	Pyroplex Ltd.
7. R8193	Pyroplex Ltd.
8. Flexible Figure 1 (FF1)	Lorient Polyproducts Ltd.
9. Foamed graphite	Lorient Polyproducts Ltd.
10. T567 HTA self-adhesive foam tape[3]	Technibond Ltd.

Notes:

1. System 9 is restricted to a maximum glazed area of $0.7m^2$, with glass types 1 – 4, but may be used to an area of $1.97m^2$ for glass types 5 – 17 (including cassette glazing).
2. System 9 may be used with 38mm long x 1.3mmØ (16 gauge) pins to fix the beads with glass types 1 – 9. All other proprietary systems must use the fixings specified in section 10.4.
3. Based on test WF398276, Technibond T567 HTA self-adhesive foam tape may be used for glazing to a maximum area of $0.9m^2$. This system may also be used for false glazing beads (see section 10.6).

10.3 Assessed Glass Products

Assessed glass types are as follows:

Glass Type	Manufacturer	Thickness (mm)
1 Pyroshield	Pilkington UK Ltd.	6 & 7
2 Pyroshield 2	Pilkington UK Ltd.	6 & 7
3 Pyran S	Schott UK Ltd.	6
4 Pyrostem	Pyroguard UK Ltd.	6
5 Fireswiss Cool 30/7	Glas Trösch AG	7
6 Pyroguard EW 30	Pyroguard UK Ltd.	7
7 Pyrobelite 7	AGC Glass UK	7
8 Pyrodur 30-104	Pilkington UK Ltd.	7
9 Pyrodur 30-105	Pilkington UK Ltd.	7
10 Pyrodur 60-10	Pilkington UK Ltd.	10
11 Pyroguard EW MAXI	Pyroguard UK Ltd.	11
12 Pyranova 15-S2.0	Schott UK Ltd.	11
13 Pyrobelite 12	AGC Glass UK	12
14 Pyrodur 60-20	Pilkington UK Ltd.	13
15 Pyroguard EI 30	Pyroguard UK Ltd.	15
16 Pyrostop 30-10	Pilkington UK Ltd.	15
17 Pyrobel 16	AGC Glass UK	16

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

Glass types 15-17 are fully insulating for 30 minutes in terms of the criteria set out in BS 476 Part 20:1987.

10.4 Glazing Beads & Installations

Glazing beads must be as specified in the following table:

Material	Profile	Min. Density (kg/m^3)	Application
Hardwood	Splayed	640	All proprietary systems listed in 10.2 & all glass types listed in 10.3 (proprietary systems are depicted in appendix B).
Hardwood	Square	640	Proprietary systems 1, 2 & 3 as specified in 10.2 & glass types 6-17 as specified in 10.2 (square timber bead profiles are depicted in appendix B).
Foil wrapped MDF	Square	730	Proprietary systems 1, 2 & 3 as specified in 10.2 & all glass types listed in 10.3, subject to area restriction (see notes 2–4).
Hardwood (cassette)	Square or chamfered	770	Proprietary systems 8 & 9 as specified in 10.2 & glass types 6-17 as specified in 10.3 (see note 8 & Vicaima cassette system depicted in appendix B).

Notes:

1. Glazing beads must be retained in position with 50mm long steel pins or 40mm long No. 6-8 screws, inserted at 30-35° to the vertical, at 150mm maximum centres and no more than 50mm from each corner, or see section 8.4.1 below for bead fixings using gun (pneumatically) fired applications.
2. MDF foil wrapped beads (not approved for glazing cassette) are permitted on the basis of test IF00059, as an alternative to the standard tested hardwood material.
3. MDF beads must be 22mm high x 19mm wide rectangular section, including a 6mm deep x 4mm wide bolection return.
4. The maximum assessed glazed area for MDF beads with glass types 1-3 is $0.55m^2$, which may be increased to $1.2m^2$ with glass types 6-17.
5. Aperture shape is not restricted, providing the glazing system and beads can effectively accommodate the required profile.
6. Glazed opening must not be less than 100mm from any leaf edge. Multiple apertures are acceptable within the permitted glazed area, with a minimum dimension of 80mm between apertures.
7. Gaps between glass and framing, to permit expansion, should be set at 2-3mm on all edges, and using non-combustible or hardwood setting blocks at the bottom edge.
8. Hardwood cassette beads may be applied across the glass face with glass types 6-17(based on indicative test IF13091). See section 10.6.
9. Timber for glazing beads must meet or exceed class J30 as specified in BS EN 942: 2007 (subject to adequate repair of any defects).
10. For alternative glazing bead material specifications, see section 10.5 for Morland Quickfix glazing beads.

10.4.1 Gun (Pneumatically) Fired Pins

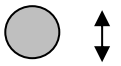
The following pin specification is permitted and has been considered suitable for gun (pneumatically) fired applications:

10.4.1.1 Option 1 – Round, Oval & Rectangular Pins

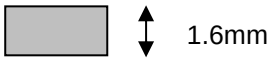
The following dimension of pin has been approved for round, oval and rectangular shaped pins:

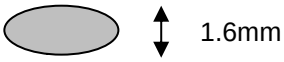
- Minimum Standard Wire Gauge (SWG) 16.
- Minimum cross section area of 2.03mm^2.
- Minimum linear dimension of 1.6mm in any direction.

Round pin diameter (mm) = minimum 1.6mm:



Oval/rectangular pin minimum linear dimension = 1.6mm:





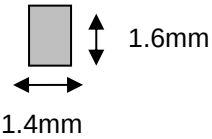
10.4.1.2 Option 2 – Rectangular Pins

Dimensions

The following dimension of rectangular pin has been deemed suitable for gun (pneumatically) fired applications, providing the 1.6mm dimension is predominately oriented perpendicular to the glass, where possible:

- Minimum Standard Wire Gauge (SWG) 16.
- Minimum cross section area of 2.24mm^2.
- Minimum linear dimension of 1.4mm.

Rectangular pin minimum diameter linear dimension = 1.4mm:



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

10.5 Morland Quickfix Glazing Beads

The Morland Quickfix MDF glazing beads have the following scope of application based on the testing conducted in WF341550 and WF342584:

1. The maximum glazed aperture area permitted when using the Morland Quickfix glazing beads is 0.48m^2.
2. Permitted glass types for use with the Morland Quickfix glazing beads are restricted to glass types 1 – 9 given in the table in section 10.3 above.
3. Morland Quickfix glazing bead dimensions are held in confidence on file by Warringtonfire.

4. Morland Quickfix glazing beads must be retained in position with 50mm long x 2mm diameter steel pins, inserted at 30° to the vertical, at maximum 150mm centres on the vertical beads and maximum 230mm centres on the horizontal beads. Pneumatically fired pins are acceptable providing the pins meet the specification given in section 10.4.1 above.
5. When using glass types 1 - 6 from the table in section 10.3 above, a 6mm deep bead of Lorient Polyproducts Ltd. 4 hour fire-rated intumescent mastic must be applied around the perimeter of the glass.
6. The glass must be fitted with maximum 13mm edge cover and allowing for 3mm expansion on all edges.
7. Aperture shape is not restricted, providing the glazing system and beads are compatible with that shape.
8. Glazed openings must not be less than 95mm from any edge, with a minimum dimension of 80mm between apertures.
9. Multiple apertures are permitted, subject to point 8 above.

10.6 False Glazing Beads

Based on the testing conducted in IF13091 it is permitted to fit false glazing beads to glass types 6-17 in section 10.3, above.

One of the following intumescent glazing products must be used under the false glazing beads:

Glazing System	Manufacturer
1. 10 x 2mm Technibond HTA foam tape Ref T567	Technibond
2. Therm-A-Strip 30	Intumescent Seals Ltd.
3. Fireglaze 30	Sealmaster Ltd
4. Firestrip 30	Hodgsons Sealants Ltd.
5. Envirograf Product 77 – G10/10	Environmental Seals Ltd.
6. Intumescent mastic or silicone tested for glazing applications to BS 476-22:1987 or BS EN 1634-1	Various

False glazing bead seals must be a minimum of 10mm wide x 0.5 - 3mm thick. Preformed self-adhesive strip systems 1 - 5 may be grooved into the rear of the glazing bars.

False glazing beads must be manufactured from hardwood of minimum density 640kg/m^3, of maximum size 20 high (or wide) x 18 deep.

11 Leaf Facing Materials

11.1 Primary Facings

The following materials have been tested or assessed for use with all designs covered by this assessment:

Material	**Thickness** (mm)	**Min. Density** (kg/m^3)
MDF	3.2 – 3.5	730
Chipboard	3.2 – 3.5	620
Hardboard	3.2 – 3.5	950

11.2 Grooves

Option 1

Based on the specimens tested in RF08166 AR1 and RF12102, a maximum of 20No. 6mm wide x 2mm deep horizontal grooves may be machined in the door facings, spaced a minimum of 50mm apart. Grooves may extend to the vertical edges but must be no less than 20mm from the horizontal edges

Option 2

Based on the testing conducted in Tecnalia 054502-001-1-a, a maximum of 6No. 8mm wide x 2mm deep vertical grooves are permitted. Vertical grooves may extend to the horizontal leaf edges but must be no less than 80mm from the vertical leaf edges and no less than 50mm apart. Vertical grooves may intersect with a maximum of 8No. 6mm wide x 2mm deep horizontal grooves of the same size which may be no less than 80mm from the horizontal leaf edges and no less than 50mm apart.

11.3 Decorative & Protective Materials

The following additional decorative and protective materials are permitted for these door designs since they would degrade rapidly under test conditions without significant effect:

Facing Material	**Maximum Permitted Thickness** (mm)
Paint	0.5
Timber veneers	2
Plastic & resin laminates	2
Cellulosic foils	0.5

Notes:

1. Metallic facings are not permitted (except for push plates & kick plates).
2. The door leaf thickness must not be reduced to accommodate the chosen finish.
3. Materials must not conceal intumescent strips.
4. Plastic and resin laminates must not be applied to the edges of leaves.
5. 8mm wide x 2mm thick decorative inlays may be grooved into the facings since these will be less onerous than the grooves detailed in section 11.2.

12 Door Frames

12.1 Door Frame Construction

Door frames must be constructed to meet the following specification:

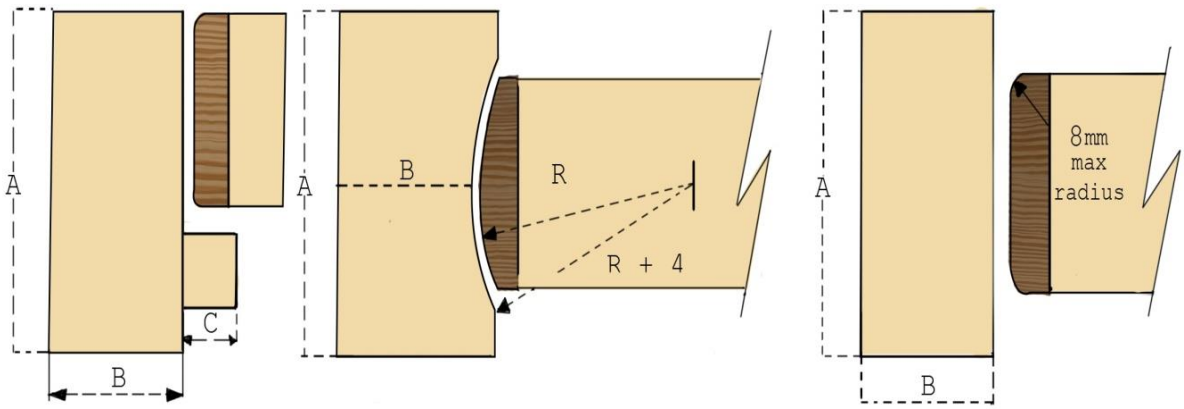
Material	**Section Size** (mm)	**Min. Density** (kg/m^3)
1. Hardwood or softwood[1]	70 x 28 [2]	470
2. Chipboard	70 x 28 [2]	670
3. MDF	70 x 25 [2]	730
4. Birch plywood	70 x 28 [2]	700
5. Poplar plywood (security designs only[4])	70 x 28 [2]	460

Notes:

1. Timber used for constructing door frames must meet or exceed class J30 as specified in BS EN 942: 2007, providing any defects are adequately repaired.
2. Excluding the stop, a 12mm deep integral or planted stop is adequate for single acting, 30 minute door frames.
3. 20 minute doorsets not fitted with intumescent seals must use door frames with a 12mm deep MDF stop, or alternatively a 25mm deep softwood stop.
4. The security and secured by design doorsets require a minimum of 16mm x 16mm x 2mm thick steel 'L' bracket fixed under the door stop, returning half way up the door stop. The door stop must be a minimum of 28mm deep.
5. Frame joints may be mortice and tenoned, mitred, half lapped or butted and with no gaps (see section 12.2). All jointing methods require mechanical fixing with the appropriate size ring shank nails or screws.
6. Rounded or rebated quirk edges to door frames are not permitted.
7. Latched, single acting, single doorsets (LSASD) and latched, single acting, double doorset (LSADD) configurations of the designs detailed in sections 4.3.1 and 4.3.2.1 are assessed to be used with 4-sided door frames, subject to the following:
    - Frame types 1 – 4 specified in section 12.1 are used to form all 4 sides of the door frame.
    - The intumescent head seal specification must be used in the bottom edge of the doors.
    - The maximum threshold gap must not exceed 4mm.
    - The requirements stated in notes 1-4 and 6-7 of this section apply to this assessment.
    - The plinth supporting the frame threshold must provide at least the same level of fire resistance performance required for the doorset.
    - Doorsets with 4-sided frames may be raised from the floor level by a maximum of 350mm.

8. Based on the testing conducted in Tecnalia 054502-001-1-a it is permitted to utilise MDF veneered and tongued architraves fitted into a 27mm deep groove in MDF frames.

The following diagram depicts the assessed frame profiles and dimensions:



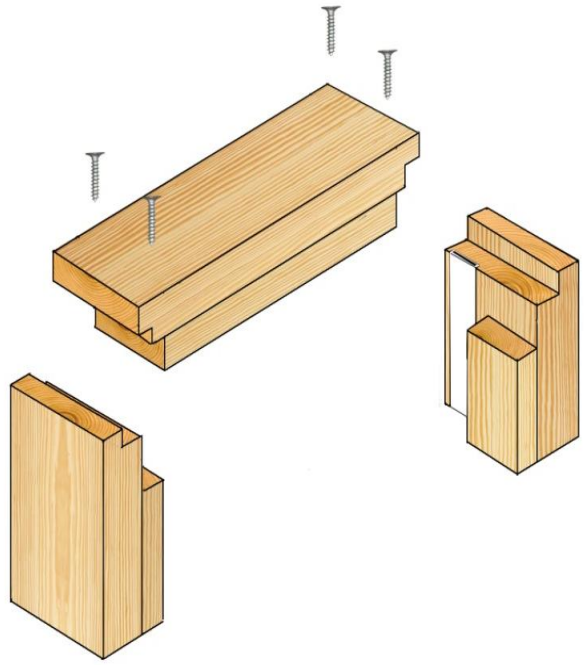
Standard **Scalloped** **Profiled Edges**

A = Min. 70mm B = Min. 25mm (see table above) C = Min. 12mm (see notes above)

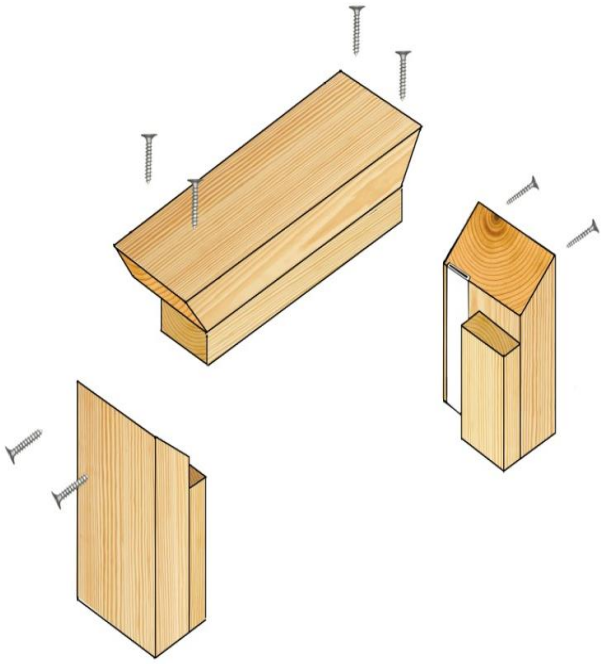
R = Radius from floor spring 8mm radius to create maximum 2mm edge profiling

12.2 Door Frame Joints

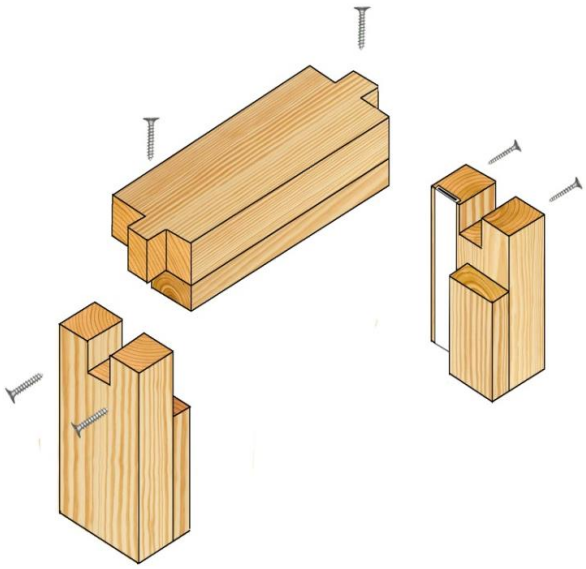
The following generic types of joint are approved for door frame joints.



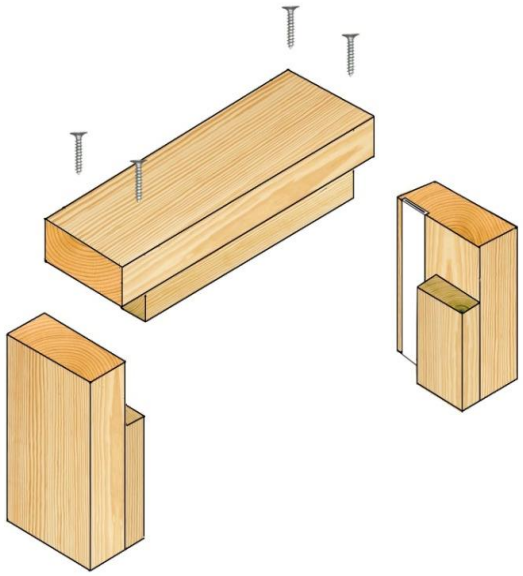
Half Lapped Joint



Mitre Joint



Mortice & Tenon Joint

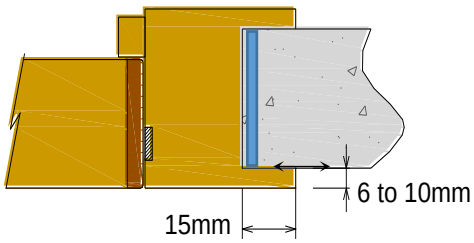


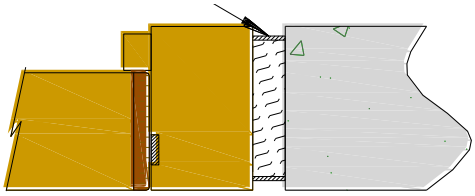
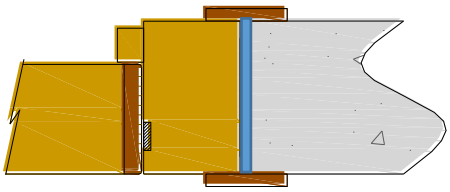
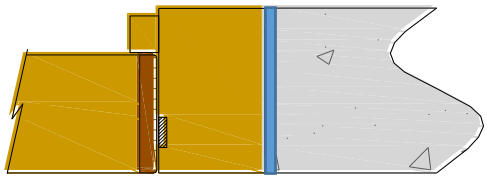
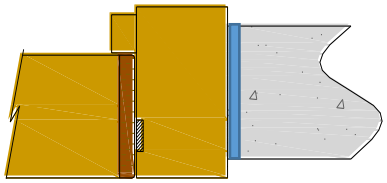
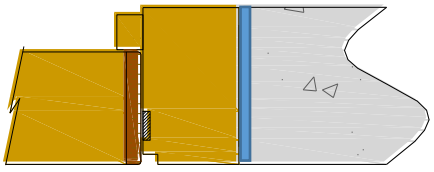
Butt Joint

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

12.3 Door Frame Installation

The following diagrams indicate acceptable and unacceptable door frame installations:

<table>
<tr><th colspan="2">Permitted Installations</th></tr>
<tr>
<td> 

6-10mm is the maximum a frame is permitted to be proud of the structural surround when combined with a 12mm bolection return. Projecting frames outside these dimensions will require specific test evidence or assessment.</td>
<td>Max 10 x 10mm shadow gap with 2mm intumescent mastic capping or
10 x 4mm PVC encased intumescent seal
 
Shadow gaps are permitted as shown in the above diagram providing the frame to structural surround is infilled with timber of the same density as the frame or a non-combustible material such as plasterboard. Other shadow gap dimensions will require specific test evidence or assessment.</td>
</tr>
<tr>
<td> 
Architraves overlapping the frame to structural surround junction are always permitted where required but may be mandatory depending on the size of frame to surround junction gap and the fire stopping used. See section on Sealing to the Structural Surround.</td>
<td> 
Depending on the size of the frame to surround junction gap and the fire stopping methods used, it may be permitted to install doorsets without architraves. See section on Sealing to the Structural Surround.</td>
</tr>
<tr><th colspan="2">Installations Not Permitted</th></tr>
<tr>
<td> 
Projecting frames without bolection returns are not permitted without specific test evidence or assessment due to the potential for increased charring to the back of the frame.</td>
<td> 
Quirks between the leaf and frame are not permitted without specific test evidence or assessment due to the potential for increased charring of the leaf to frame gap.</td>
</tr>
</table>

Notes: Dark brown = lippings/architraves; blue = 5-10mm fitting tolerance for sealing (Section 21).

Diagrams are representative; actual installation must be as specified within this document

13 Lippings

Doors must be lipped in accordance with the following specification:

Type	**Size** (mm)	
Flat	5-10 thick with a maximum 2mm profiling permitted at corners of lipping (see diagram in section 12.1).	
Rounded	7-12 thick with a radius matching the distance between leaf edge & floor pivot (see diagram in section 12.1).	
Rebated	Single doors Design 4.3.2.3	27 wide x 13 deep (rebates formed in the door stile & top rail & then lipped with hardwood, veneer or foil).
	Double doors Designs 4.3.1 and 4.3.2.1	21.5 wide x 13 deep equal meeting edge rebates (rebates formed in the door stile & then lipped with hardwood, veneer or foil).

Notes:

1. Overpanels separated from the leaf heads by a transom do not need to be lipped.
2. Lippings for the standard HDC design must be from hardwood with a minimum density of 500kg/m^3 and need only be applied to the vertical edges.
3. Based on the un-lipped and foil-faced and foil-edge wrapped SDC specimen tested in RF99024, doors may be un-lipped and foil-faced and edge wrapped to the same specification as tested.
4. Based on the un-lipped and veneer edged SDC specimen tested in IF13091, doors may be un-lipped and veneer edged to the same specification as tested.
5. The SDC design does not require lipping. If lipping is required, it must be from hardwood with a minimum density of 500kg/m^3.
6. A 2.5° parallel chamfer is permitted to the lipping at the leading edge of leaves providing the door gaps meet the requirements of section 20.
7. Only the latched, single leaf version of the HDC design specified in section 4.3.2.3 may have concurrently rebated top and vertical edges.

14 Intumescent Materials

The intumescent materials tested and assessed for these doorset designs are as follows:

14.1 Door Edge Seals

The following products have been tested with the designs covered by this assessment:

Application	Location	Product/Manufacturer
Edge seals	Fitted in the frame jambs or leaf edges	1. Therm-A-Seal – Intumescent Seals Ltd. 2. Palusol 100 – Mann McGowan Ltd. 3. Type 617 – Lorient Polyproducts Ltd. 4. Pyroplex FO8500 – Pyroplex Ltd

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

14.2 Hardware Protection

Application	Location	Product/Manufacturer
Hinges (see note 1)	Underneath both hinge blades	1. 1mm Interdens – Dufaylite Developments Ltd. 2. 1mm MAP paper – Lorient Polyproducts Ltd. 3. 1mm Pyrostrip 300 – Mann McGowan Ltd. 4. 1mm Therm-A-Strip – Intumescent Seals Ltd. 5. Lorient acrylic intumescent sealant
Locks/latches (see notes 2 and 3)	Under forend & keep	1. 1mm Interdens – Dufaylite Developments Ltd. 2. 1mm MAP paper – Lorient Polyproducts Ltd. 3. 1mm Pyrostrip 300 – Mann McGowan Ltd. 4. 1mm Therm-A-Strip – Intumescent Seals Ltd. 5. Lorient acrylic intumescent sealant
Flush bolts	Lining all sides of the mortices	1. 1mm Interdens – Dufaylite Developments Ltd. 2. 1mm MAP paper – Lorient Polyproducts Ltd. 3. 1mm Therm-A-Strip – Intumescent Seals Ltd. 4. 1mm Therm-A-Flex – Intumescent Seals Ltd.
Top pivots	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.

Notes:

1. Door leaves up to 2200mm high do not require hinge protection.
2. Single leaf doorsets with lock forends up to 60mm high x 25mm wide do not require lock protection.
3. All double doorsets require lock protection.

15 Adhesives

The adhesives used in construction of these designs are as follows:

Element	Product
Facings	UF
Lippings	PU, PVA or UF
Veneers & foils	Hot melt

16 Tested Hardware

The following hardware has been tested or assessed for the doorset designs covered in this assessment:

Element	Manufacturer & Product Reference
Hinges	1. Eurospec steel bearing butt hinges; Ref: DOB SEG EUR 1433 SEXC 2. Vicaima stainless steel bearing butt hinges 3. Steel butt hinges 4. Rhodes steel hinges; Ref: 6000B 5. Ceur steel security bolt hinges 6. Eurospec Enduro stainless steel hinges 7. Igle R363 steel hinges 8. SOSS 218 steel & die cast concealed hinges 9. Tectus 510 Hu & 510 3D concealed hinges 10. Stanley 2060R spring hinges 11. Stanley FBB191 hinges 12. Simonswerke VN2828110 hinges (rebated doors only) 13. JNF Concealed hinges Ref: IN.05.062 COPLAN 175
Closers	1. Arrone AR2000 face-fixed overhead closers 2. CISA face-fixed overhead closers; Ref: 60440-0387 & 60440-03 3. Dorma TS73V face-fixed overhead closers 4. Rutland TS3204 overhead closers 5. Dorma TS71 overhead closers 6. Astra 3000 concealed jamb closers 7. Astra 4000 series closers 8. Perko R1/R2, Perkomatic R85 & Powermatic R100 jamb closers (subject to fitting manufacturer's tested intumescent gaskets)
Locks & latches	1. Vicaima heavy-duty tubular mortice latch with rebate conversion kit[1] 2. Eurospec TLS tubular steel 3. Rhodes brass mortice latch; Ref: 338BLPO 4. Ezcurra 2010V/3 FR 3-point lock/latch 5. Tesa 3-point security lock; Ref: TLP3 6. Standard tubular mortice latch 7. Tesa 4039T mortice lock 8. Tesa HT-22/24+2030+11P electronic mortice lock[2] 9. Ezcurra Esko2000B/3 point mortice latch with multi-point lock 10. Ezcurra–Esko (424-P and 430P) with anti-bump turn Evo Cylinder 11. VingCard electronic locksets (FEA/F97092 Rev. B) 12. VingCard Signature US ASSI/Euro lockset 13. Assa Abloy VingCard Magnetic Euro cylinder (AN-111) single point latch incorporating a VingCard Essence Magnetic Card Reader (AN-241-card) 14. Rhodes 790B latch 15. Salto ANSI locks 16. Aluminium rebate conversion set

[1] Rebated locks used with the rebate conversion kit must not be of larger dimensions than tested.

[2] This lock must be protected with 1mm Therm-A-Strip gaskets on each side of the lock body plus Therm-A-Caulk mastic to protect the associated hardware, as tested in IF02002.

Element	Manufacturer & Product Reference
Furniture	1. Aluminium lever handles 2. Brass twist handles 3. Hoppe Valetta AR366 lever type handle with Mila hardware anti-bump thumb-turn Euro cylinder 4. Rhodes Tupe 5. Steel lever type handles
Eye viewers	1. Ferrete Mirilla 35-35 (steel-bodied) 2. Frelan Hardware JV942 (Brass or Chrome)[1] 3. Frelan Hardware JV943 (Brass or Chrome) [1] 4. Carlisle Brass AA77 brass body eye viewer with Carlisle Brass 0.8mm intercalated graphite lining to leaf hole (Ref FS318) [1,2]
Threshold seal	1. Domatic A6003 threshold drop down seal 2. Domatic A6004 threshold drop down seal 3. Planet HS threshold drop down seal
Letter plates	1. Lorient TS008 type letter plate RJ008 (CF5688) 2. UAP Soterian TS008 type letter plate (CF5723) 3. Royde and Tucker TS008 type fire rated letter plate (CF255)

[1] Frelan Hardware and Carlisle Brass eye viewers may be utilised between 1000mm and 1650mm from the leaf threshold. Where required, based on the testing conducted, an upper and lower viewer may both be fitted to the same door leaf. Viewers must not be positioned less than 50mm from other hardware (e.g. letterplates or door knockers).

[1]Frelan viewers fitted ≥ 1400mm above the threshold must be fitted with a 1mm intumescent graphite sheet wrapped around the tubular body of the viewer, as tested in WF375988.

[1]Frelan Brass or Chrome viewers may have a polished or satin finish.

[1,2] Carlisle Brass viewers must be fitted with the 0.8mm graphite (as above) lining the leaf hole, as tested in WF345074.

17 Additional & Alternative Hardware

The following section details the permitted scope and constraints for fitting hardware to these door designs.

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

- Latches & Locks: Test Standard EN 12209
- Single Axis Hinges: Test Standard EN 1935
- Controlled Door Closing Devices: Test Standard EN 1154
- Panic Exit Hardware: Test Standard EN 1125
- Door Co-ordinators: Test Standard EN 1158.

17.1 Certifire

The Certifire third party certification scheme approves various items of hardware for different door types and different fire ratings and has its own set of requirements relating to that item of hardware.

Where the alternative hardware sections in this report allow alternatives to the tested hardware, Certifire approved hardware may be used as an alternative, subject to the following provisos:

- In all cases, the requirements of this report must take precedence.
- Hardware must comply with the requirements of the relevant section e.g. hinges.
- The hardware must comply with the limitations specified in terms of design, materials and dimensions.

17.2 Latches & Locks

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

Element	Specification
Maximum forend & strike plate dimensions	235mm high by 28mm wide by 4mm thick
Maximum body dimensions	165mm high by 100mm wide by 18mm thick
Intumescent protection	See section 14.2
Materials	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel, stainless steel or brass (melting point ≥800^{o}C)
Location	Between 1000mm and 1200mm from the threshold

17.3 Automatic Closing

Automatic closing devices must either be as tested or components of equal specification that have demonstrated contribution to the required performance of these types of 20 or 30 minute doorset designs, when tested to BS 476: Part 22: 1987, BS EN 1634-1 or BS EN 1634-2.

Note: The top pivots to floorspring assemblies must be protected with 2mm thick intumescent gasket (see section 14.2) or alternatively the manufacturers tested intumescent pack.

17.4 Hinges

Door leaves up to 2300mm high must be hung on a minimum of 3 hinges, whilst leaves over this height must fit 4 hinges. Hinges with the following specification are acceptable:

Element		Specification	
Blade height		90 - 120mm	
Blade width (excluding knuckle)		30 - 35mm	
Blade thickness		2.5 - 4mm	
Fixings		Minimum of 4No. 30mm long No.8 or No.10 steel wood screws per blade	
Materials		Steel, stainless steel or brass (melting point ≥800°C)	
Hinge positions	Where 3 hinges are fitted or required	Top	120-200mm from the head of the leaf to the top of the hinge
		2nd	From 200mm below bottom of top hinge to equidistant between top and bottom hinges
		Bottom	150-300mm from the foot of the leaf to the bottom of the hinge blade
	Where 4 hinges are fitted or required	Top	120-200mm from the head of the leaf to the top of the hinge
		2nd	From 200mm below bottom of top hinge to equidistant between top and 3rd hinge
		3rd	Equidistant between 2nd and bottom hinges
		Bottom	150-300mm from the foot of the leaf to the bottom of the hinge blade
Intumescent protection		See section 14.2	

17.5 Pull Handles

Steel, stainless steel or brass (melting point ≥800°C) handles may be fixed or bolted through the door leaf, providing the length is limited to 1200mm between the fixing points. If through-fixed, there must be no more than 1mm clearance between the hole and stud.

17.6 Push Plates & Kick Plates

Steel, stainless steel or brass (melting point ≥800°C) face-fixed hardware such as push plates and kick plates may be fitted to the doorsets up to a maximum of 20% of the door leaf area if mechanically fixed, and up to a maximum of 30% of the door leaf area if bonded with a contact or other thermally softening adhesive. Plates must not return around the door leaf edges.

17.7 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.

17.8 Door Selectors

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

17.9 Environmental Seals

Silicon based flame retardant acoustic, weather and dust seals (e.g. Lorient IS1212, IS1511, IS7025, IS7060) may be fitted to these doorset designs 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.

17.10 Threshold Seals

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

Manufacturer	Product Reference
Norsound Ltd.	NOR810, NOR810S & NOR810dB+
Lorient Polyproducts Ltd.	IS8010s
Raven Products Ltd.	RP8Si
Athmer	Schall-Ex Duo L-15

17.11 Safehinge

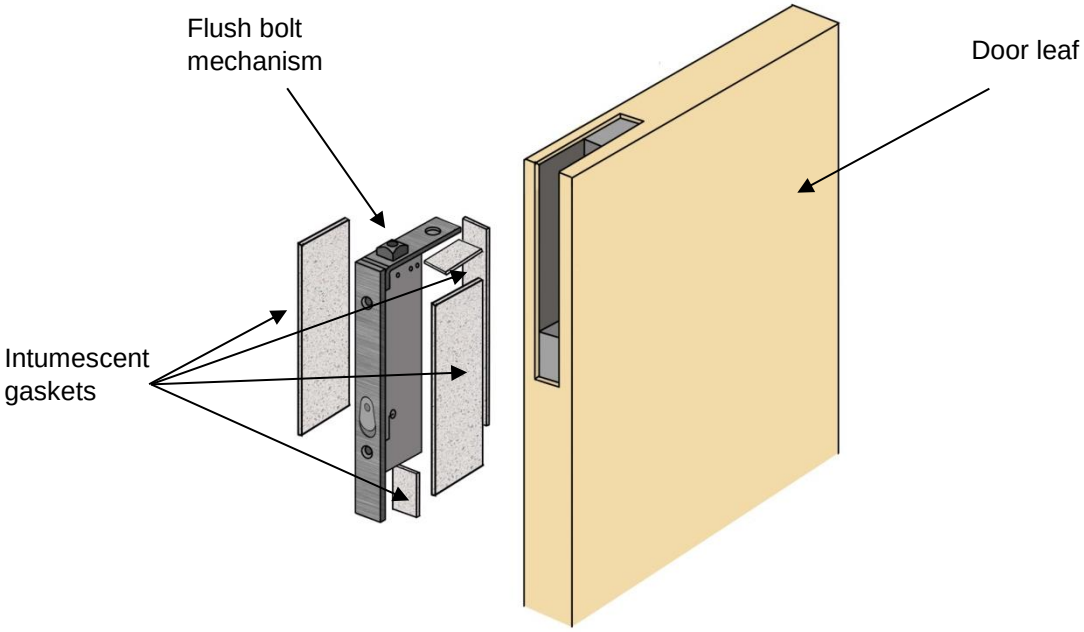
The Safehinge Alumax product may be fitted to Vicaima SDC and HDC doorsets as specified in sections 4.3.1 and 4.3.2.1 providing the specifications for 30 minutes performance, as detailed in the current Safehinge global assessment, are fully complied with. Other SDC and HDC variations are not assessed for use with the Safehinge product.

17.12 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:

- 210mm long x 20mm deep x 20mm wide

Flush bolts must be steel, stainless steel, or brass (melting point ≥800°C), 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 14.2. Alternatively, the hardware manufacturers tested gaskets may be used. See diagram below for example of intumescent protection to flush bolt:



17.13 Letter Boxes/Plates

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

17.14 Cable ways

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.

17.15 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, that demonstrates a minimum 20 or 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 percentage of glazing, if both elements are fitted.

18 Supporting Construction

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

19 Fixings

The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm. It is not necessary to fix the frame head, although packers must be inserted.

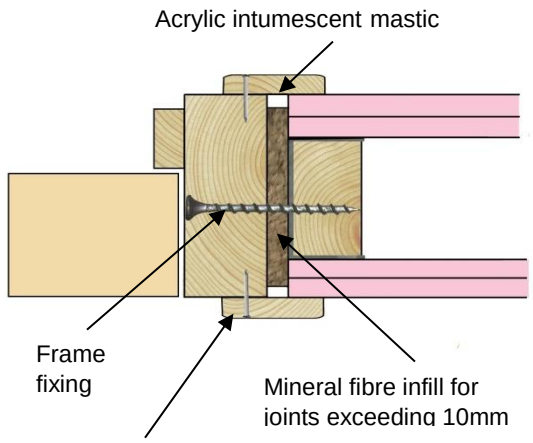
20 Door Gaps

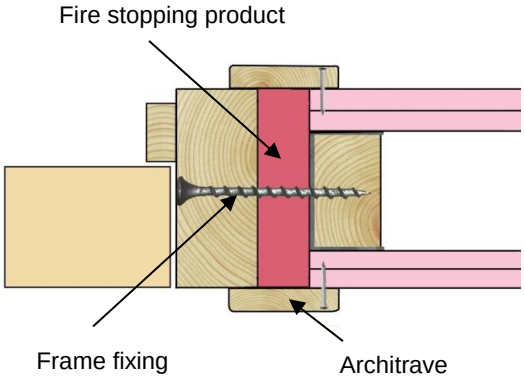
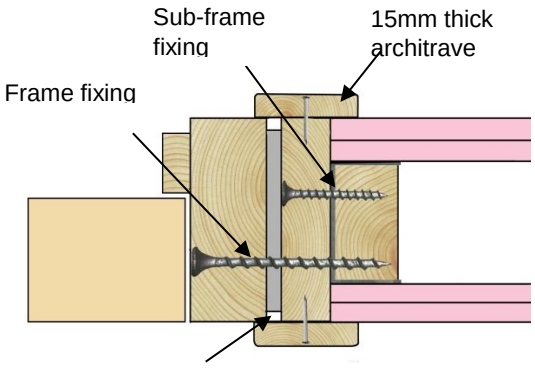
For fire resistance applications, door gaps and alignment tolerances must fall within the following range:

Location	Dimensions
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm
Threshold	10mm between bottom of leaf and top of floor covering. See section 22 for smoke control tolerances

21 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. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</td><td rowspan="2"> 

Architrave for joints not filled with mineral wool and optional for filled joints</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. 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. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</td><td> 
</td></tr>
<tr><td>4. Timber based or non-combustible sub-frame up to 50mm thick, with gaps up to 10mm between the components filled on both sides with 10mm depth of acrylic intumescent mastic or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Joint must be fitted with 15mm thick architraves overlapping at least 15mm each side.</td><td> 
</td></tr>
</table>

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

Guidance for various methods of sealing the frame to structural opening gap is also given in BS 8214: 2016, *"Timber-based fire door assemblies. Code of practice",* which may be referred to where appropriate.

22 Insulation

Insulation performance may be claimed for doorsets to one of these designs meeting the following criteria:

Type	Details
Partially insulating	Doorsets incorporating up to 20% of non-insulating glazing
Fully insulating	Unglazed doorsets or doorsets fitted with 30 minute fully insulating glass (see notes to section 10.3 – glass types)

23 Smoke Control

23.1 General

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

(a) have a leakage rate not exceeding $3m^3/m/hour$ (head and jambs only) when tested at 25Pa under BS 476 *Fire tests on building materials and structures*, Section 31.1 - *Methods for measuring smoke penetration through doorsets and shutter assemblies, Method of measurement under ambient temperature conditions*; or

(b) meet the additional classification requirement of Sa when tested to BS EN 1634-3: 2004 - *Fire resistance tests for door and shutter assemblies*, Part 3 – *Smoke control doors*.

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

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

23.2 Further Considerations

Note that there is other guidance available, including BS EN 9999-2017 - *Code of practice for fire safety in the design, management and use of buildings,* which may impose different or additional requirements, such as consideration of the gap between door leaf and threshold.

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

24 Conclusion

If the Vicaima SDC and HDC doorset designs referred to in section 2 of this assessment, constructed in accordance with the specifications documented herein, were to be tested in the appropriate configuration in accordance with BS 476: Part 22: 1987, it is our opinion that they would provide a minimum of 20 or 30 minutes integrity and insulation performance (as applicable), subject to section 22.

25 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: PAULO C.S. AMARAL.....

For and on behalf of: Vicaima Ltd.

26 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, Warringtonfire reserves the right to withdraw the assessment unconditionally, but not retrospectively.

3) This assessment has been carried out in accordance with Fire Test Study Group Resolution No. 82: 2001.

4) Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

5) This assessment relates only to those aspects of design, materials and construction that influence the performance of the element(s) under fire resistance test conditions. It does not purport to be a complete specification ensuring fitness for purpose and long-term serviceability. It is the responsibility of the client to ensure that the element conforms to recognised good practice in all other respects and that, with the incorporation of the guidance given in this assessment, the element is suitable for its intended purpose.

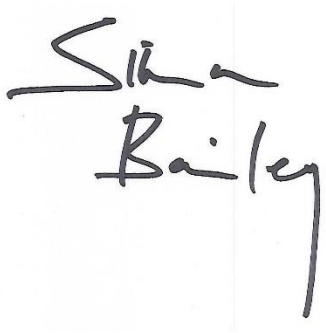
6) This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with BS 476: Part 22: 1987, on the basis of the test evidence referred to in this report. We express no opinion as to whether that evidence, and/or this assessment, would be regarded by any Building Control authority as sufficient for that or any other purpose. This assessment is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.

7) This report may only be reproduced in full. Extracts or abridgements of reports shall not be published without permission of Warringtonfire. All work and services carried out by Warringtonfire Testing and Certification Limited are subject to, and conducted in accordance with, the Standard Terms and Conditions of Warringtonfire Testing and Certification Limited, which are available at https://www.element.com/terms/terms-and-conditions or upon request

27 Validity

1) The assessment is initially valid for five years from the date of issue, after which time it must be submitted to Warringtonfire for re-appraisal.

2) This assessment report is not valid unless it incorporates the declaration given in Section 25, duly signed by the applicant.

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

Appendix A

Performance Data Summary

Primary Data

Report No.	Configuration	Leaf Size (h x w x t) (mm)	Test Standard	Performance (mins)
FR1352	LSASD	1983 x 762 x 44	BS 476: Part 22 1987	32
FR1541	LSASD	2040 x 925 x 44	BS 476: Pt 22	34
FR1685	LSASD	2040 x 926 x 45	BS 476: Pt 22	34
RF96087	LSASD	2045 x 926 x 44	BS 476: Pt 22	A: 34 B: 25
RF96101 (rebated meeting edges)	ULSADD	2035 x 925 x 44	BS 476: Pt 22	37
RF98138	ULSASD	2040 x 926 x 44	BS 476: Pt 22	A: 40 B: 37
RF99024 (Flaxboard)	LSASD	2040 x 928 x 44	BS 476: Pt 22	A: 39 B: 45
RF00153	ULSADD	2040 x 926 x 44	BS 476: Pt 22	36
RF04116	ULSADD	1980 x 839 x 43	BS 476: Pt 22	31
RF05116	ULSADD	2040 x 922 x 43	BS 476: Pt 22	35
RF06115 (A: rebated edges) (B: MDF internal framing & door frame)	A: LSASD	2040 x 925 x 44	BS EN 1634-1	A: 39
	B: ULSASD	2040 x 927 x 44		B: 44
RF06114 (A: glazing cassette, B: glazing, both with foamed graphite)	A: Door panel	935 x 840 x 44	BS EN 1634-1	A: 33
	B: Door panel	935 x 840 x 44		B: 33
RF07093 (A: SDC – 20 minute 25mm MDF frame no intumescent) (B: SDC – 25mm MDF frame 10x4mm seal)	A: LSASD	2040 x 926 x 44	BS 476: Pt 22	A: 29
	B: ULSASD	2040 x 926 x 44		B: 43
RF08166 AR1 (SDC – 25mm MDF frame, 15x4mm seal & grooves)	LSADD	2040 x 926 x 44	BS EN 1634-1	33 Glazing 40 Leaf edge
RF09030A (SDC – 30 minute 25mm MDF frame 10x4mm seal head only)	A: LSASD	1980 x 915 x 44	BS 476: Pt 22	35
Tecnalia 054502-001-1-a	A: LSASD B: LSASD	2040 x 926 x 44	UNE-EN 1634-1	A: 32 B: 39
Tecnalia 062036-003-1	A: LSASD B: LSASD	2040 x 926 x 44	UNE-EN 1634-1	A: 46 B: 44
Tecnalia 072688-001-1-a	A: LSASD B: LSASD	2040 x 926 x 44	UNE-EN 1634-1	A: 43 B: 42

Supplementary Data

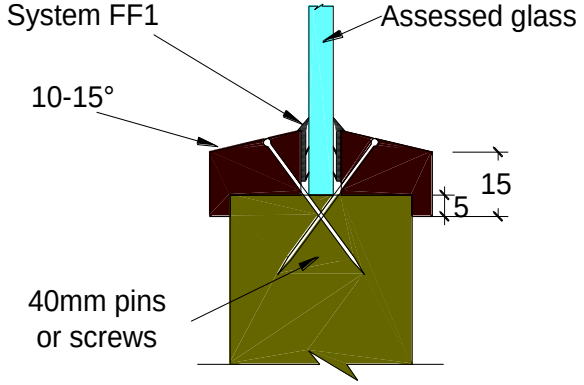
Report No.	Configuration	Leaf Size (h x w x t)(mm)	Test Standard	Performance (mins)
Dixon International 9907191 – IFCI/350 (Stanley 2060R hinges)	LSASD	1920 x 960 x 43	BS 476: Pt 22	31
Warres 55463 (SOSS 218 concealed hinges)	LSASD	2134 x 914 x 44	BS 476: Pt 22	30
WFRC133469/143873 (Tectus 510 Hu & 3D hinges)	ULSASD	2134 x 914 x 44	BS EN 1634-1	33
WF148540/A (BWF audit test - 25mm removed from foot of leaf)	LSASD	2016 x 927 x 44	BS 476: Pt 22	37
WF135190 (BWF audit test - 10x4mm Therm-A-Seal)	LSASD	2016 x 927 x 44	BS 476: Pt 22	37
ENAC 22008513 (SALTO SL85 electronic lock)	LSASD	2020 x 825 x 40	UNE 23-802-79	32
IF00003 (Cassette glazing)	LSASD	1040 x 910 x 44	BS 476: Pt 22	32
IF00059 (Half leaf – MDF frame & glazing beads)	LSASD	1000 x 925 x 43	BS 476: Pt 22	33
IF01018 (glazing)	Door panel	926 x 926 x 44	BS 476: Pt 22	38
IF01019 (glazing)	Door panel	926 x 926 x 44	BS 476: Pt 22	39
IF02002 (Tesa electronic lock)	LSASD	1000 x 926 x 44	BS 476: Pt 22	34
IF13091	LSASD	1310 x 914 x 43	BS 476: Pt 22	36
WF341550 (Morland Quickfix glazing beads)	Indicative sample	1380 x 608 x 44	BS 476: Pt 20	A: 35
WF342584 (Morland Quickfix glazing beads)	Indicative sample	1380 x 608 x 44	BS 476: Pt 20	A: 35
WF345074 (Carlisle Brass AA77 Eye Viewers)	A: ULSASD	A: 2040 x 932 x 44	BS EN 1634-1	A: 34

Security Designs

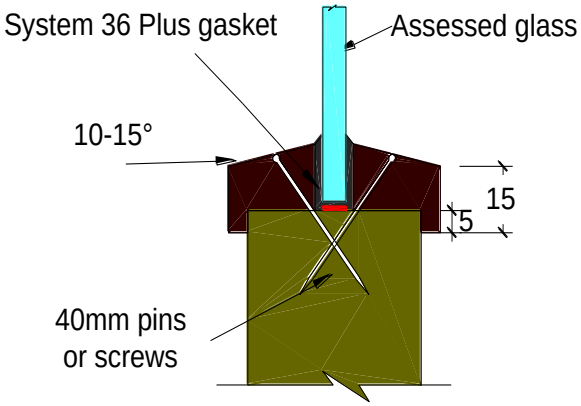
Report No.	Configuration	Leaf Size (mm)	Test Standard	Performance (mins)
FR1653 (Steel core security design)	LSASD	2040 x 926 x 40	BS 476: Pt 22	38
RF01051 (Steel sub-faced security design)	LSASD	2040 x 926 x 44	BS 476: Pt 22	A: 23 B: 28
RF01127 (For use with “Secured by Design”)	LSASD	2040 x 925 x 44	BS 476: Pt 22	A: 22 B: 20
IF2018 (For use with “Secured by Design”)	LSASD	1000 x 910 x 44	BS 476: Pt 22	41
RF12102 (For use with “Secured by Design” including grooves)	B: LSASD	2040 x 926 x 44	BS EN 1634-1	B: 44

Appendix B

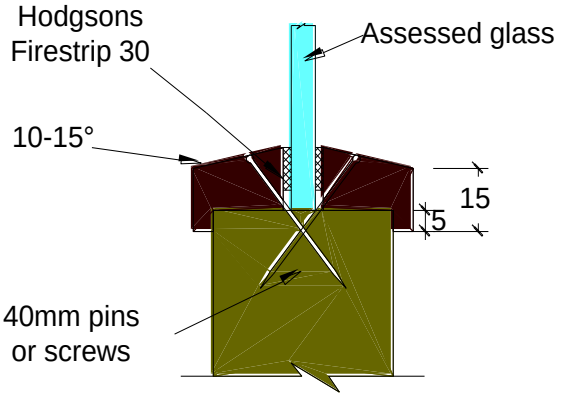
Proprietary 30 Minute Glazing Systems



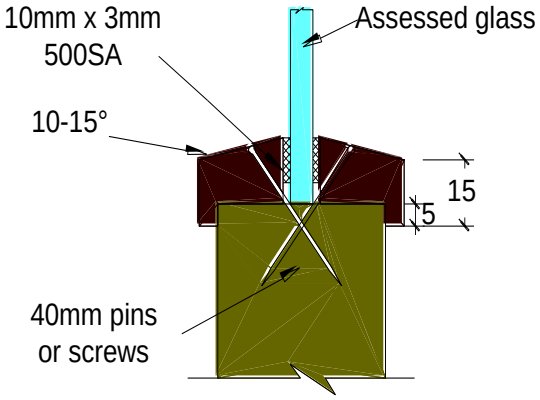
System FF1
Lorient Polyproducts Ltd



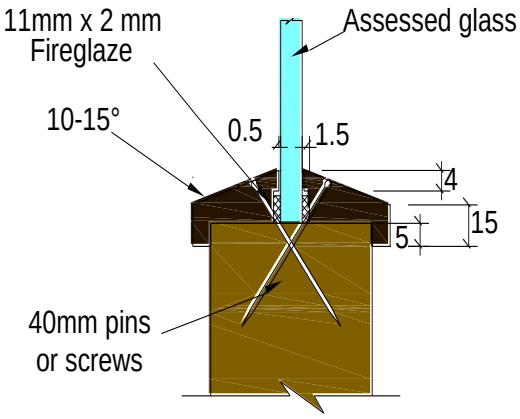
System 36 Plus
Lorient Polyproducts Ltd



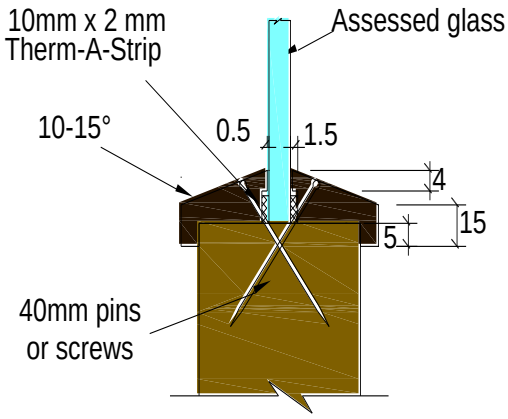
Firestrip 30
Hodgsons Sealants Ltd



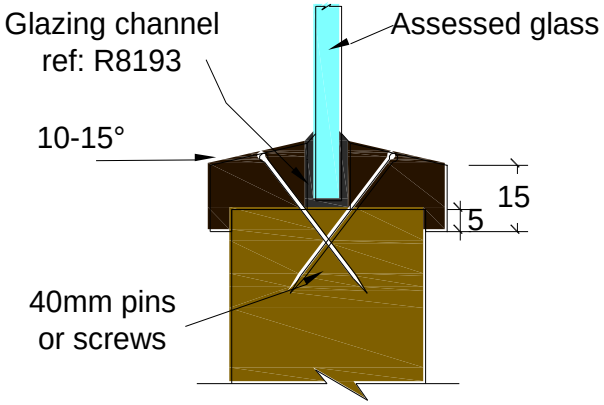
Pyroglaze 30
Mann McGowan Ltd



Fireglaze
Sealmaster Ltd



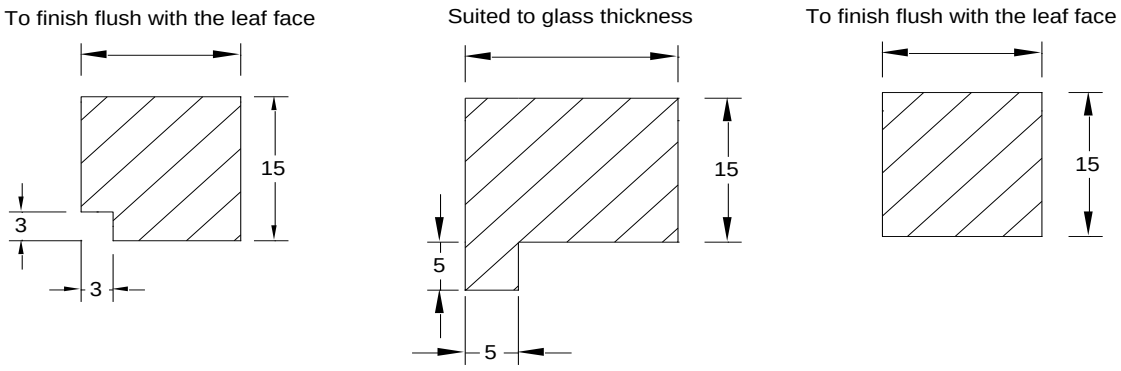
Therm-A-Strip
Intumescent Seals Ltd



Pyroplex Ltd

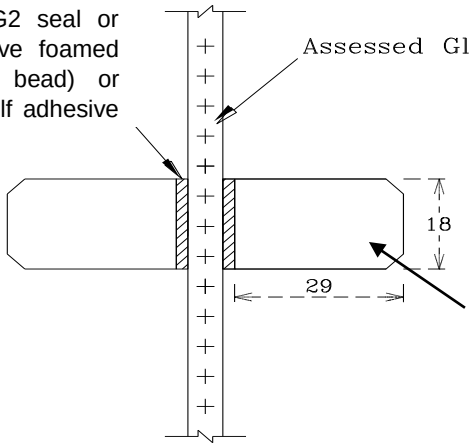
Assessed Square Glazing Bead Profiles

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



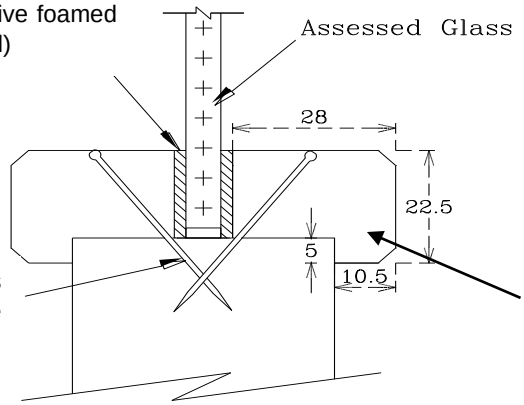
Vicaima Glazing Cassette

Hodgsons 3mm thick FG2 seal or Lorient 2mm self adhesive foamed graphite (full height of bead) or Technibond T567 HTA self adhesive



Hardwood beads notched into perimeter beads and screwed through rear

Hodgsons 3mm thick Firestrip 30 seal or Lorient 2mm self adhesive foamed graphite (full height of bead)



50mm long 15 gauge steel pins @100mm centres and no more than 50mm from mitres

Hardwood perimeter beads mitred, bonded with PVA and mechanically fixed with 2No. corrugated fasteners

Appendix C

Revisions

Revision	Warringtonfire Reference	Date	Description
-	A99112A	15.7.1999	2 year revalidation & update
A	A01144	09.10.2001	5 year revalidation & update
B	A02062	18.4.2002	Addition of new security design & Tesa electronic locks
C	A03113	24.6.2003	Assessment of HDC chipboard core for use in the SDC design
D	A06031	06.3.2007	5 year revalidation & update to include recent test evidence
E	A08167	18.8.2008	Update & inclusion of test data from RF07093
F	A11114	08.6.2011	Inclusion of data from RF08166 AR1 to support LSADD with MDF frames
G	A11187	05.10.2011	Inclusion of data from RF08166 AR1 to support 38mm glazing pins for use only with foamed graphite
H	A13206	04.12.2013	Technical review, update & 5 year revalidation including additional test data
I	A15122	10.06.2015	Inclusion of data from WF341550 & WF342584 to support Morland Quickfix Bead System
J	WF412583	09.07.2019	Five year revalidation, rebranding to Warringtonfire and inclusion of test data to allow additional coverage.

Appendix D

Data Sheets

Data Sheets for:

Vicaima Ltd.

20 & 30 Minute Fire Resisting Doorsets

Vicaima SDC 30 Minute Fire Resisting Doorsets

Latched & Unlatched, Single & Double Acting, Single Doorsets

	Configuration		Height (mm)	Width (mm)
Leaf Sizes	LSASD	From:	2040	1252
		To:	2753	926
	ULSASD & DASD	From:	2040	1227
		To:	2703	926

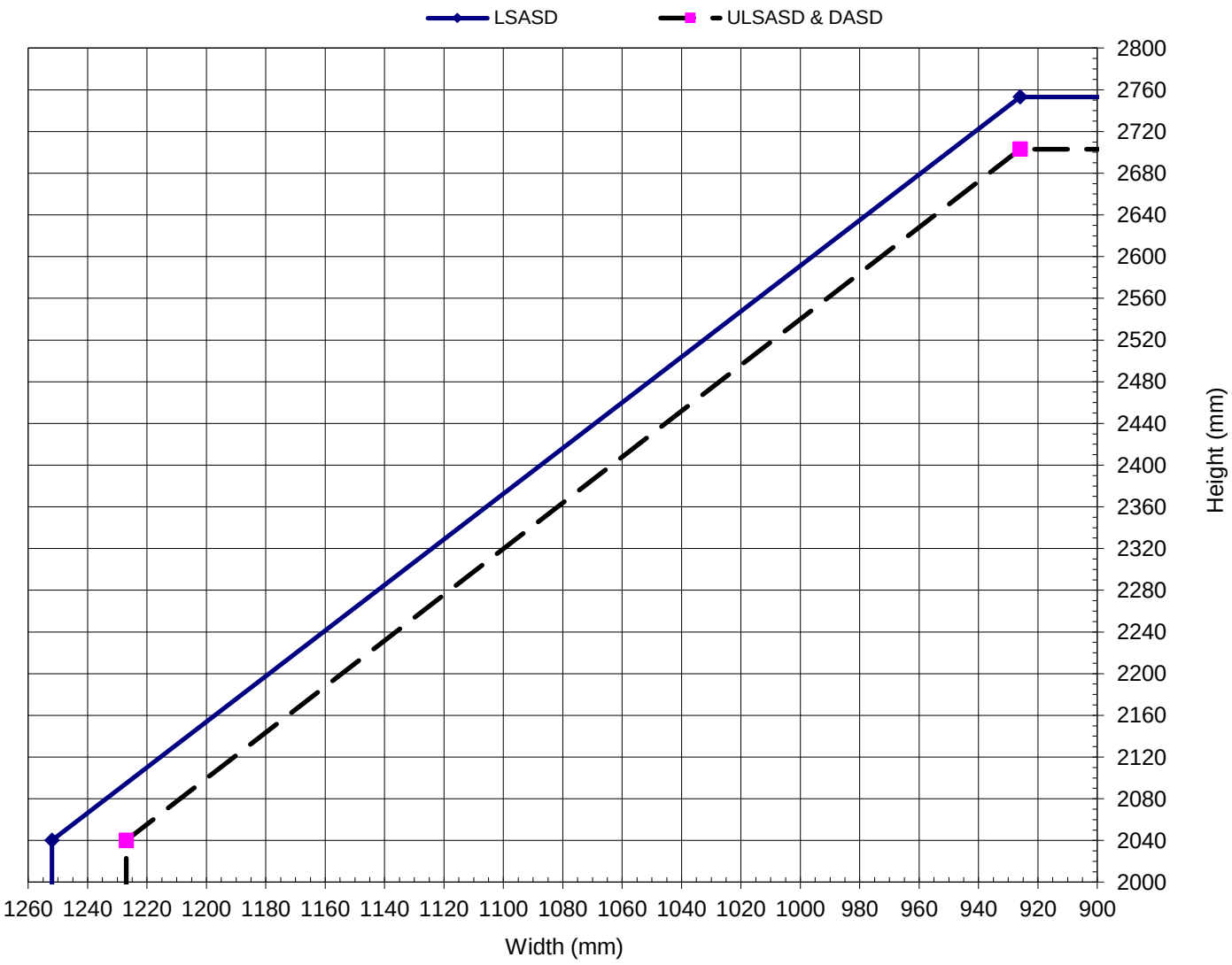
INTUMESCENT MATERIALS: Therm-A-Seal, Palusol 100P or Type 617

HEAD: 1No. 10x4mm fitted centrally in the leaf edge or frame reveal. Leaves over 2300mm high increase to 1No. 15x4mm.

JAMBS: 1No. 10x4mm fitted centrally in the leaf edge or frame reveal. Leaves over 1000mm wide increase to 1No. 15x4mm

HARDWARE PROTECTION: See section 14.2.

Maximum Door Leaf Size



Vicaima SDC 30 Minute Fire Resisting Doorsets

Latched & Unlatched, Single & Double Acting, Double Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSADD	From:	2040	x	1157
		To:	2550	x	926
	ULSADD & DADD	From:	2035	x	1036
		To:	2280	x	925

INTUMESCENT MATERIALS: Therm-A-Seal, Palusol 100P or Type 617

HEAD:

Square: 1No. 15x4mm centrally fitted in the leaves or frame head.

MEETING EDGES:

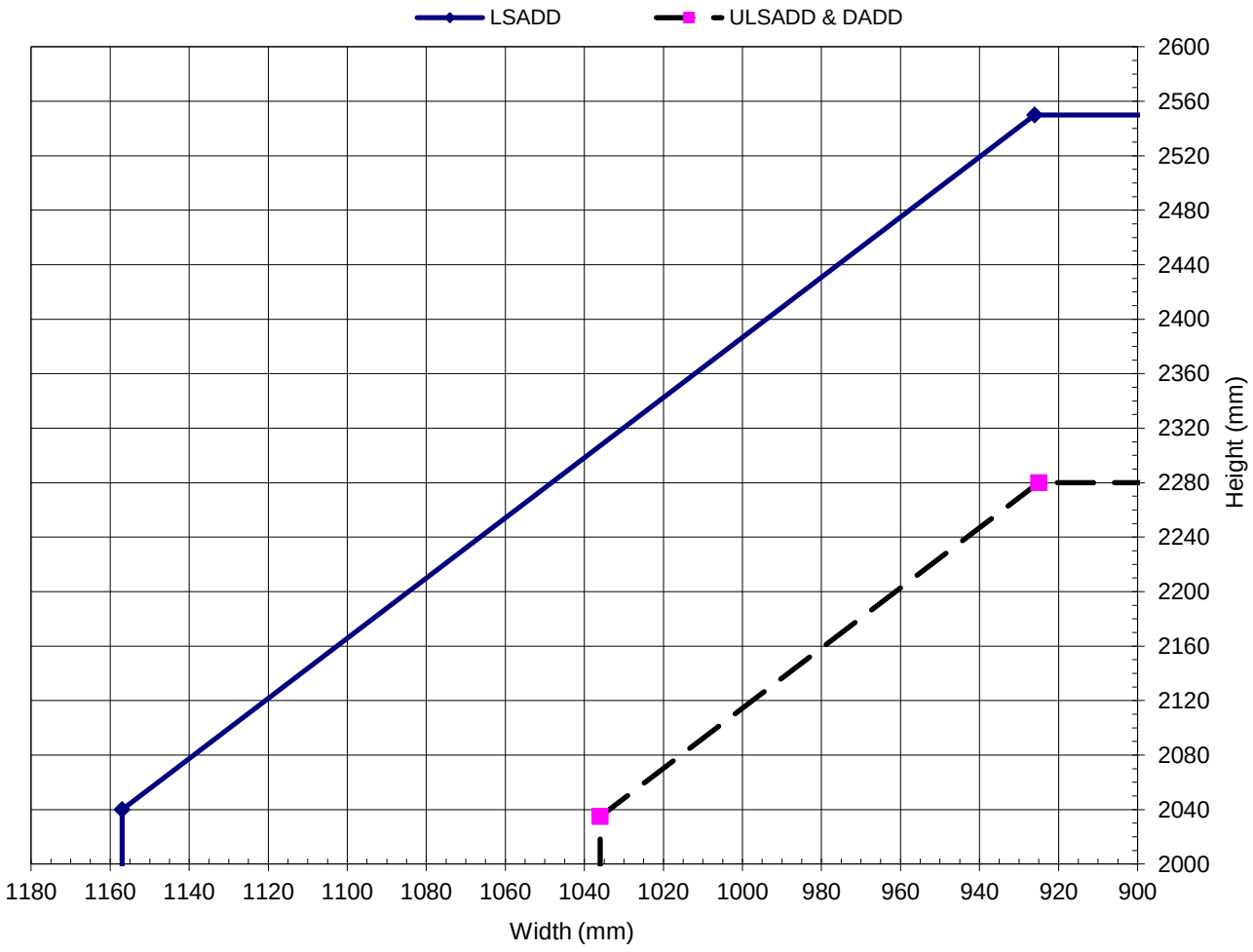
Square: 1No. 15x4mm centrally fitted or 2No. 10x4mm spaced 5mm either side of the centreline in one leaf edge only.

Rebated: 1No. 10x4mm centrally fitted in the rebate of each leaf.

JAMBS: 1No. 15x4mm centrally fitted in the leaves or frame reveal.

HARDWARE: See section 14.2.

Maximum Door Leaf Size



Vicaima HDC 30 Minute Fire Resisting Doorsets

Latched & Unlatched, Single & Double Acting, Single Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSASD	From:	2040	x	1157
		To:	2550	x	928
	ULSASD & DASD	From:	2040	x	1043
		To:	2344	x	928

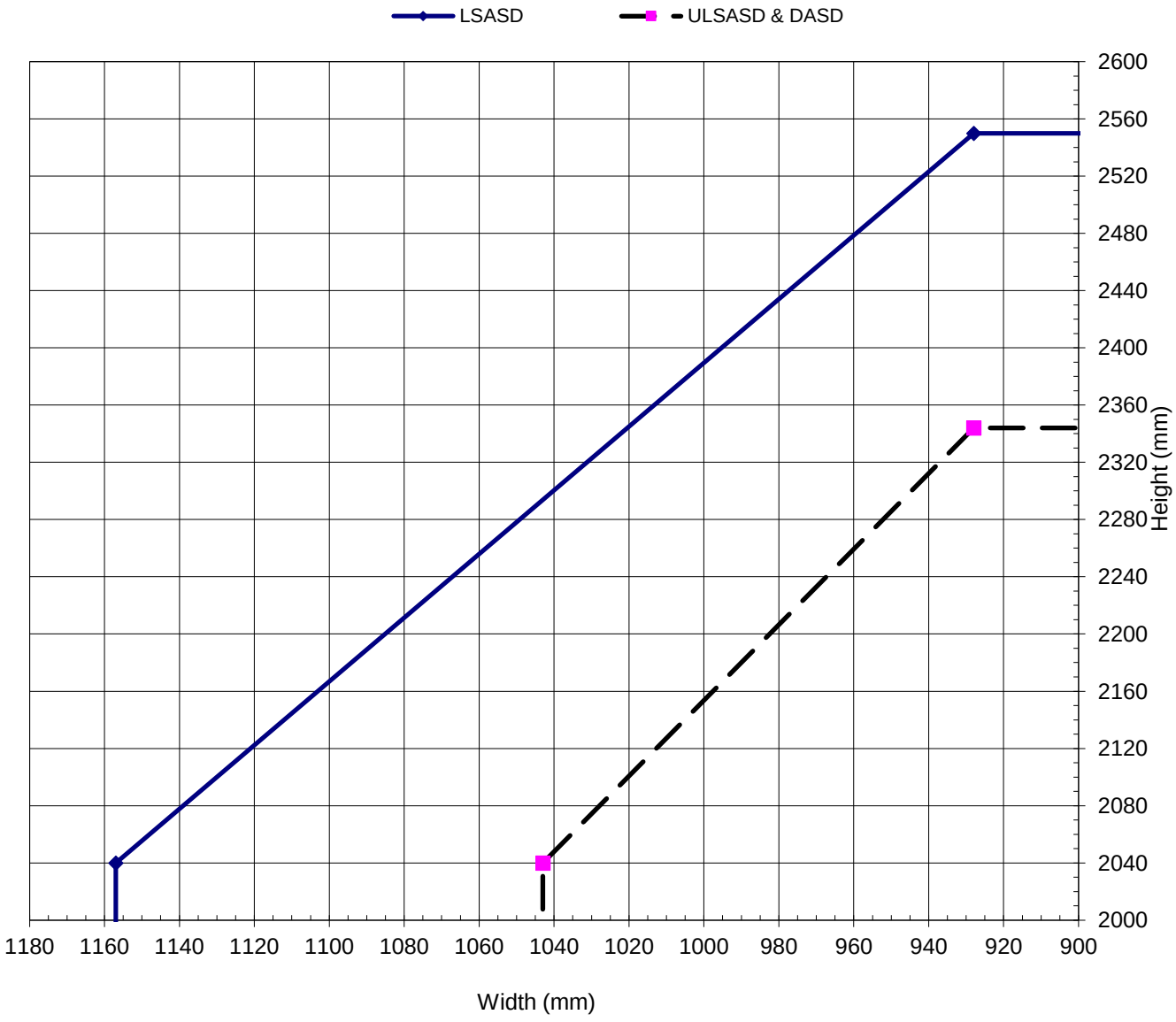
INTUMESCENT MATERIALS: Therm-A-Seal, Palusol 100P or Type 617

HEAD: 1No. 15x4mm strip centrally fitted in the frame reveal.

JAMBS: 1No. 15x4mm strip centrally fitted in the frame reveal.

HARDWARE PROTECTION: See section 14.2.

Maximum Door Leaf Size



Vicaima HDC 30 Minute Fire Resisting Doorsets

Latched & Unlatched, Single & Double Acting, Double Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSADD	From:	2040	:	1043
		To:	2294	:	928
	ULSADD & DADD	From:	2040	:	1018
		To:	2244	:	928

INTUMESCENT MATERIALS: Therm-A-Seal, Palusol 100P or Type 617

HEAD: 1No. 15x4mm fitted centrally in the frame reveal.

JAMBS: 1No. 15x4mm fitted centrally in the frame reveal.

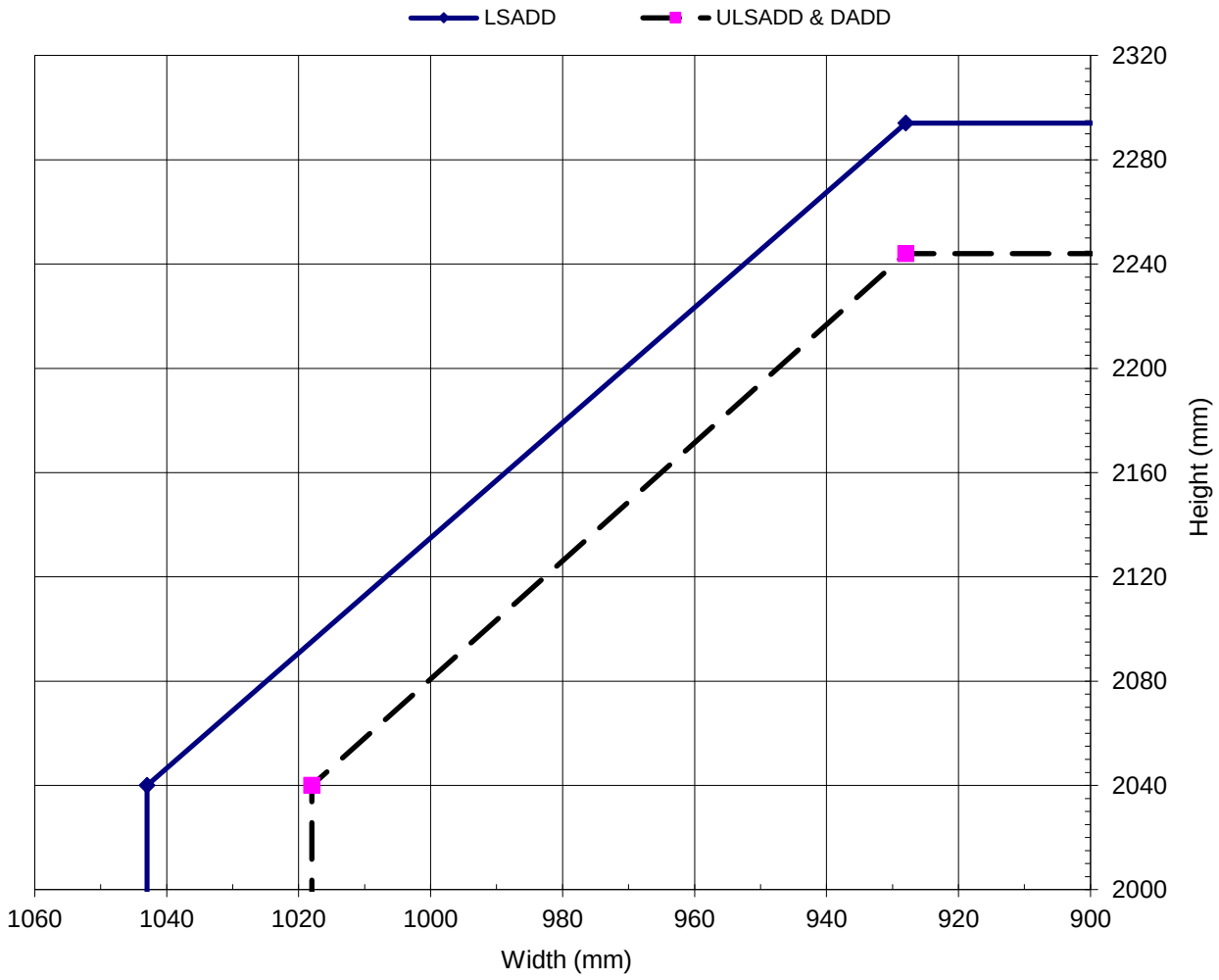
MEETING EDGES:

Square: 1No. 15x4mm fitted centrally or 2No. 10x4mm spaced 5mm either side of the centreline in one leaf edge only.

Rebated: 1No. 10x4mm fitted centrally in the rebate of each leaf.

HARDWARE PROTECTION: See section 14.2.

Maximum Door Leaf Size



Vicaima HDC MDF Stiles & Rails 30 Minute Fire Resisting Doorsets

Latched & Unlatched, Single & Double Acting, Single Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSASD	From:	2040	x	1146
		To:	2559	x	927
	ULSASD & DASD	From:	2040	x	1121
		To:	2509	x	927

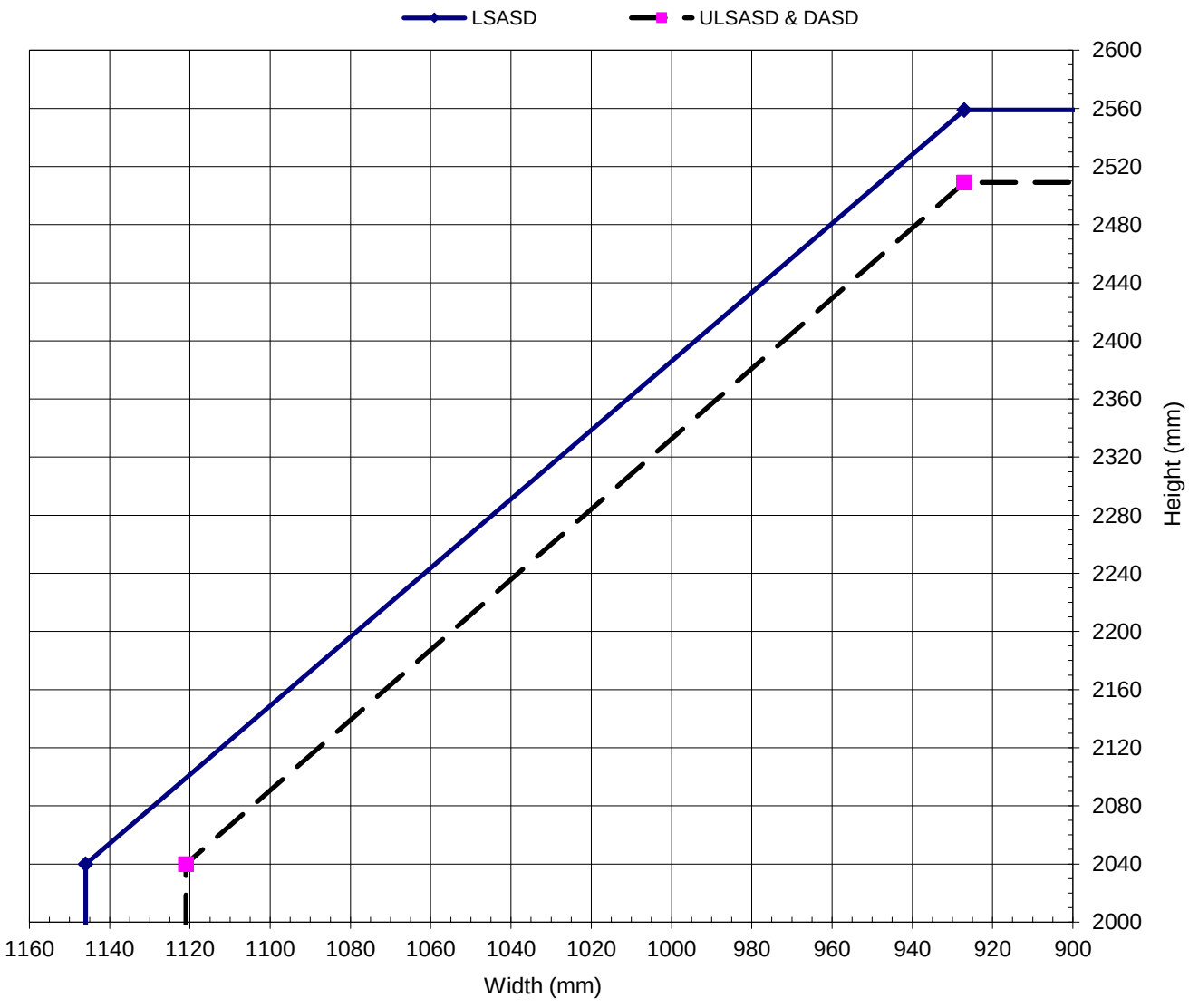
INTUMESCENT MATERIALS: Type 617

HEAD: 1No. 15x4mm centrally fitted in the frame reveal. Leaves over 2250mm high increase to 1No. 20x4mm.

JAMBS: 1No. 15x4mm centrally fitted in the frame reveal.

HARDWARE PROTECTION: See section 14.2.

Maximum Door Leaf Size



Vicaima HDC Rebated Edges 30 Minute Fire Resisting Doorsets

Latched, Single Acting, Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2040	x	1064
		To:	2346	x	925

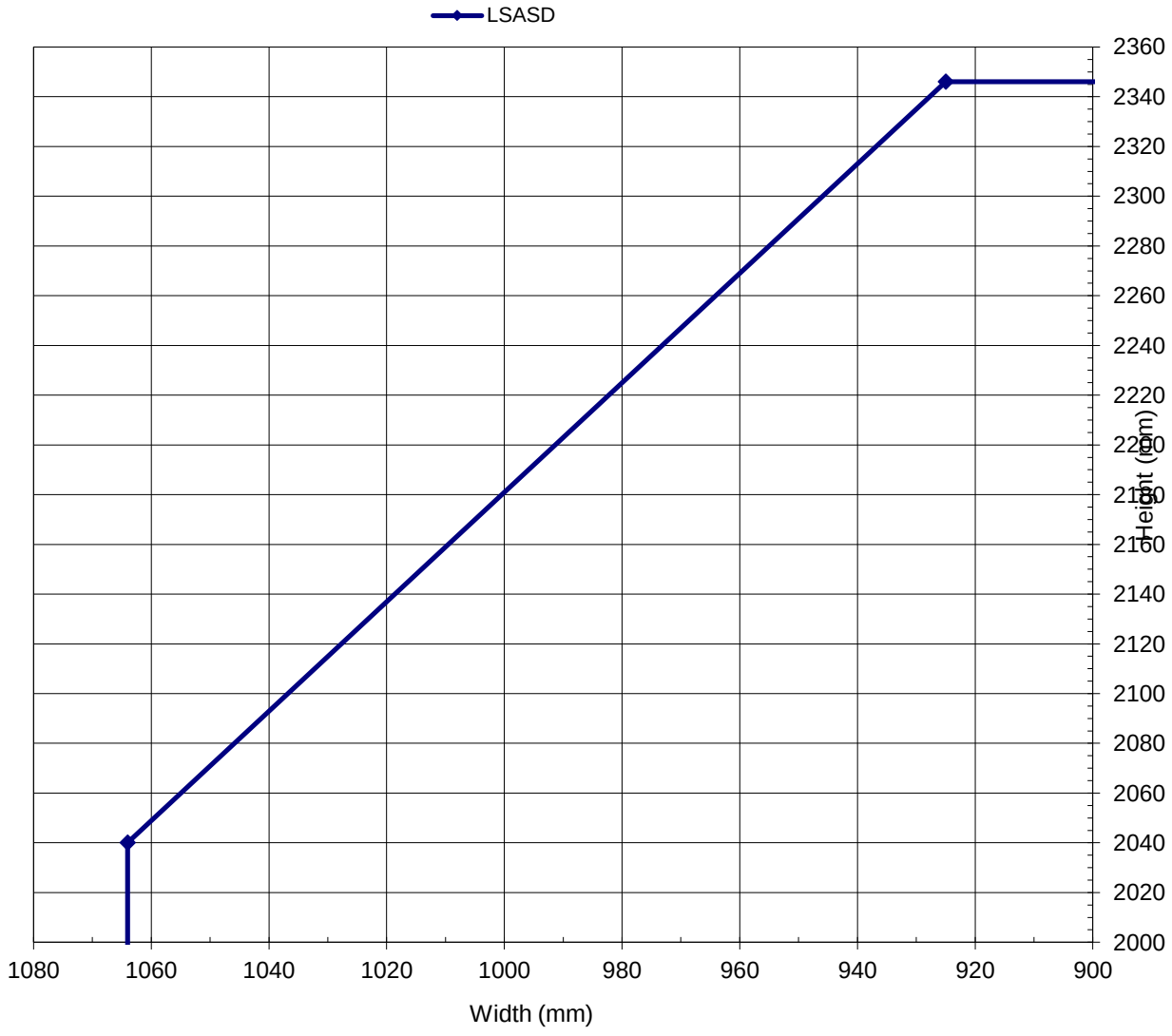
INTUMESCENT MATERIALS: Type 617

HEAD: 1No. 15x4mm centrally fitted in the rebated section of the frame reveal & 1No. 10x4mm centrally fitted in the rebated section of the leaf edge.

JAMBS: 1No. 15x4mm centrally fitted in the rebated section of the frame reveal & 1No. 10x4mm centrally fitted in the rebated section of the leaf edge.

HARDWARE PROTECTION: See section 14.2.

Maximum Door Leaf Size



Vicaima SDC Modified 30 Minute Fire Resisting Doorsets

Latched, Single Acting, Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	1980	:	1025
		To:	2218	:	915

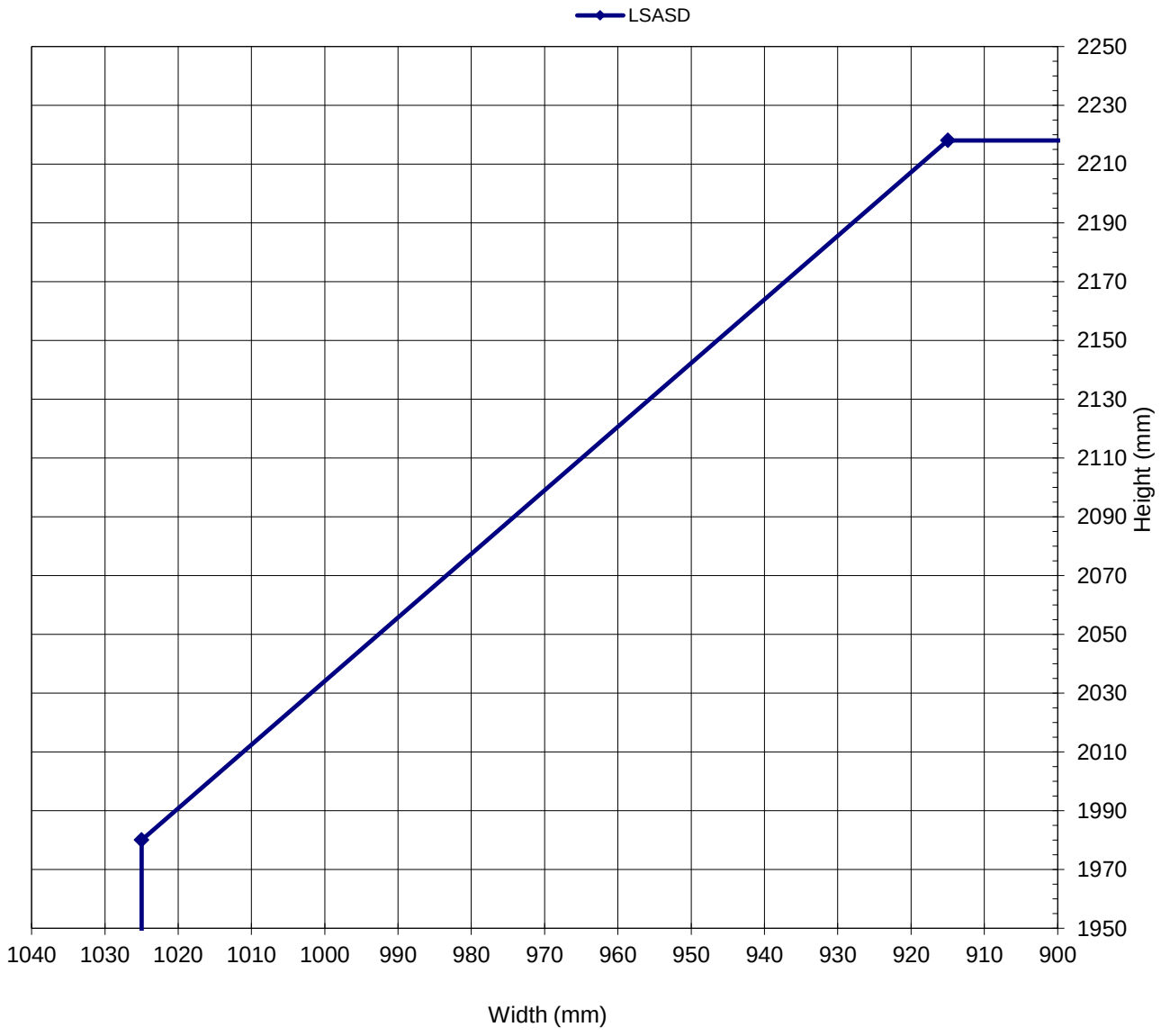
INTUMESCENT MATERIALS: Type 617

HEAD: 1No. 10x4mm centrally fitted in the leaf or frame head.

JAMBS: Not required.

HARDWARE PROTECTION: See section 14.2.

Maximum Door Leaf Size

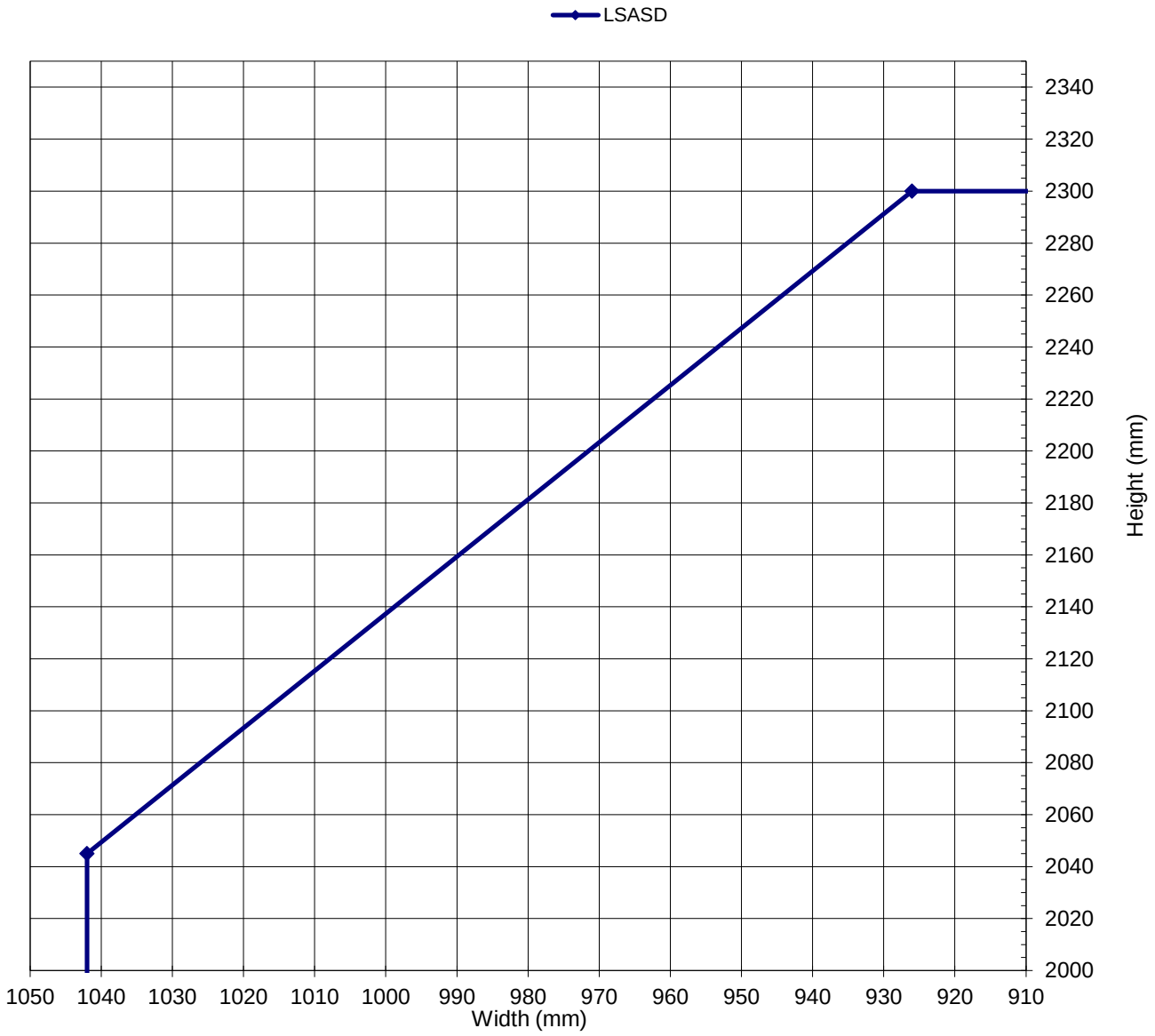


Vicaima 20 Minute Fire Resisting Doorsets

Latched, Single Acting, Single Doorsets

Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	2045	:	1042
		To:	2300	:	926
INTUMESCENT MATERIALS: Not required.					

Maximum Door Leaf Size



Vicaima Security Steel Sub-Faced 30 Minute Fire Resisting Doorsets

Latched, Single Acting, Single Doorsets

	Configuration		Height (mm)		Width (mm)
Leaf Sizes	LSASD	From:	2040	x	1046
		To:	2305	x	926

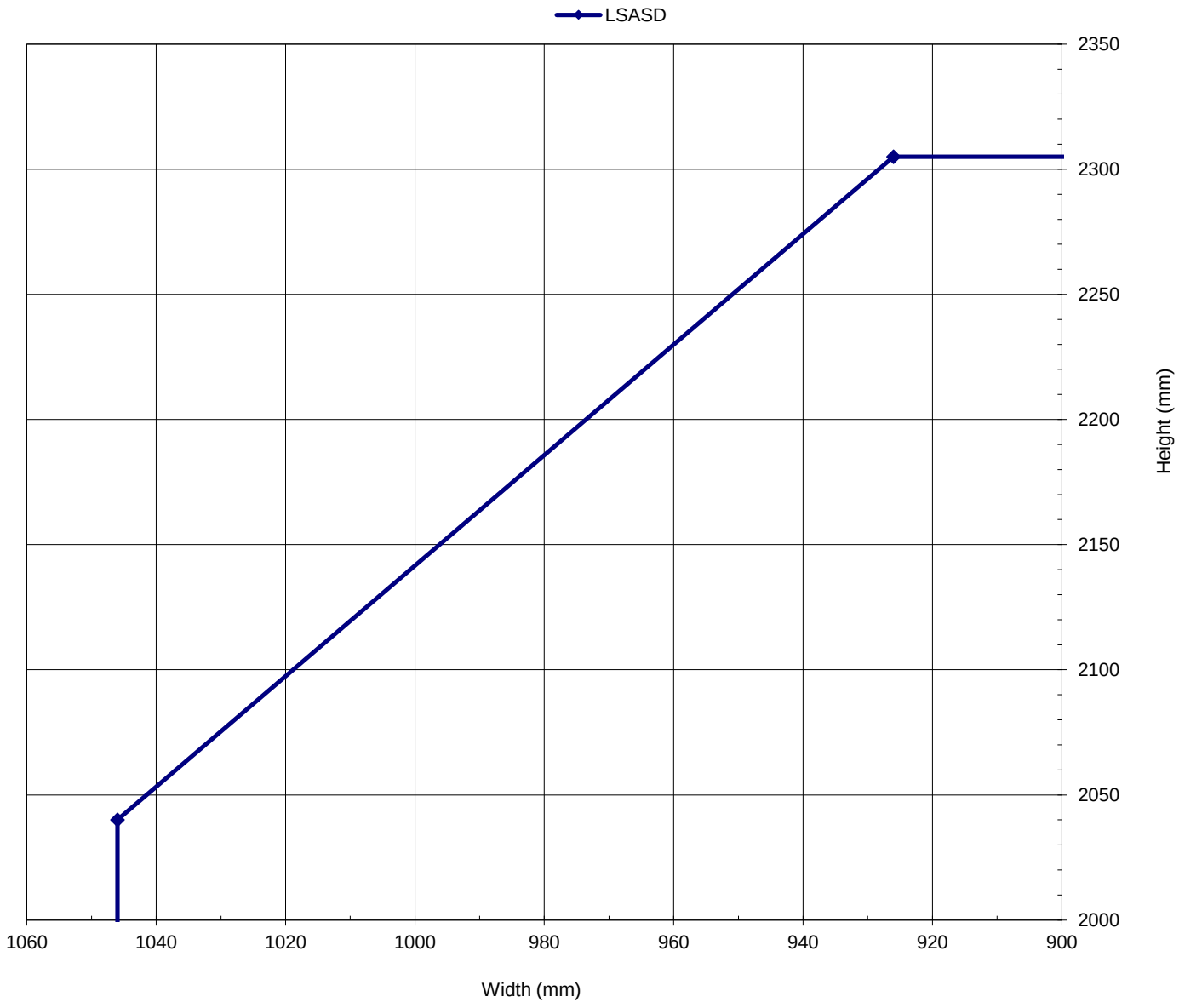
INTUMESCENT MATERIALS: Therm-A-Flex & Therm-A-Strip

HEAD: 1No. 10x4mm Therm-A-Flex fitted in the inner edge of the door stop facing the leaf.

JAMBS: 2mm Therm-A-Strip fitted on both sides of all 3 lock mortices and for the full length of the face plate & under keeps.

NOTE: An engaged 3-point lock is required for this design, as tested.

Maximum Door Leaf Size



Vicaima Portaro "Secured by Design" 30 Minute Fire Resisting Doorsets

Latched, Single Acting, Single Doorsets

Leaf Sizes	Configuration		Height (mm)	Width (mm)
	LSASD	From:	2040	1140
		To:	2509	926

INTUMESCENT MATERIALS: Halspan Fire Seals

HEAD: 1No. 15x4mm centrally fitted in the frame reveal.

JAMBS: 1No. 15x4mm centrally fitted in the frame reveal.

STOPS: 1No. 10x2mm Therm-A-Strip behind the steel angle frame reinforcement & 1No. 10x4mm Halspan twin fin in the door stop facing the leaf.

HARDWARE PROTECTION: 1No. 10x4mm Halspan plain seal fitted alongside the length of the keep plates in the frame reveal & 1mm Therm-A-Strip lining the lock mortices and under the lock forend & keep plates. 1mm Therm-A-Strip lining the drop down seal mortice & around eye viewer body.

NOTE: An engaged 3-point lock is required for this design, as tested.

Maximum Door Leaf Size