
Title

Field of Application for:
Halspan® Prima 30 Doorsets
Part 1: Timber based frames

For 30 minutes Fire Resistance

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The version/revision stated on the front of this Field of Application supersedes all previous versions/revisions and must be used to manufacture doorsets from the stated validity date on this front cover. Previous revisions of the Field of Application cannot be used once an updated Field of Application has been issued under a new revision.

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1 Foreword

This Field of application report has been commissioned by Halspan Limited and relates to the fire resistance of 30 minute fire resisting 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 doorsets, 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.

This field of application has been written using appropriate test evidence generated at UKAS accredited laboratories¹, 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 with specific evidence for hardware listed in 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) 'Guide to Undertaking Technical Assessments of the Fire Performance of Construction Products Based on Fire Test Evidence'. 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).*

The drawings provided in this report are for guidance and illustrative purposes only. Please note that the written scope of application takes precedence.

2 Proposal

It is proposed to consider the fire resistance performance of the specified proprietary Prima 30 doorset designs, for 30 minutes fire resistance integrity and insulation, if the doorset designs 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.

2.1 Assumptions

- All densities referred to in this document are based upon an assumed moisture content of 12%.
- It is assumed that unless otherwise documented in the field of application sections of this report, the doorset subject to this report will be constructed in accordance with the test evidence referred to herein.

3 Test Data

The test data used to support this product has been gathered over 20 years and has been deemed relevant to support the scope detailed in this assessment, as the basic core composition has remained unchanged over this period of time. Furthermore, the older data has been supported and supplemented with more recent data, which provides additional confidence that the evidence cited in this assessment is suitable to support the scope of the designs in this field of application. Other test evidence on designs that are fundamentally the same as the Halspan Prima design have been included where appropriate.

The evidence has been generated to BS 476 Part 22: 1987 and EN 1634-1, which is known to be more onerous than the BS 476: Part 22: 1987 standard, primarily due to the use of plate thermocouples within the furnace to record the furnace temperature. The EN 1634-1 tests have been undertaken at a number of European laboratories.

The same time temperature curve is used to control the temperature within the furnace for both test methods (the heating curve given within ISO 834-1). However, the plate thermocouple used to record the temperature within the furnace for the EN test method, requires a longer thermal exposure to read the same temperature as the probe thermocouple that is used for the BS 476: Part 22: 1987 test, particularly during the early stages of the test. This results in more onerous test conditions for doorsets tested to the BS EN 1634-1 test standard compared with the BS 476: Part 22: 1987 test standard, which has been demonstrated by testing the same products to both standards.

It is therefore the opinion of Warringtonfire that the fire resistance performance of the Prima 30 doorsets can be assessed to provide at least 30 minutes fire resistance integrity performance, if the doorsets, constructed in accordance with the specifications documented in this field of application, were to be tested in accordance with BS 476: Part 22: 1987.

A summary for each test has been generated to support the fire resistance performance of the door designs that are the subject of this field of application.

The summary of each test used in this assessment is given in the following sections. The summary details the key aspects of the design tested. In some summaries there is a section which identifies a particular aspect of the design that Halspan was investigating.

Originally, the Halspan product range was called Halspan 30. Thereafter, this product was sub-divided into 2 product ranges Prima and Optima. The physical properties and respective average densities of these production options differed slightly, however, the technical attributes of Prima and Optima over the years has demonstrated, by testing, that the products performance in fire test conditions is positively comparable.

Therefore, in regard to base line data and generic performance, coupled with laboratory test results it is possible to transfer product characteristics between Halspan 30, Prima and Optima. This means that whilst the summary tables reference a core as Halspan 30, Prima 30 and Optima 30, all the evidence has been deemed appropriate and relevant to this assessment.

The test evidence developed by Halspan is the primary evidence to support the different leaf types being evaluated in this assessment namely:

- Prima 44mm thick
- Prima 54mm thick

There is limited test evidence for Prima 54mm for use at 30 minute applications. However the test evidence produced using the Prima 44mm thick construction has been used to support the use of the 54mm construction, because the products are made from the same materials, using the same manufacturing methods. It is therefore the opinion of Warringtonfire that increasing the leaf thickness will not reduce the doorsets fire resistance performance when tested to BS 476 Part 22; 1987.

All leaf types have been tested with different types of timber frames.

Additional evidence produced by 3rd parties has been used to supplement this assessment. This evidence is used with the permission of the owner of the test evidence.

Note:

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

3.1 Primary Test Evidence

3.1.1 Test Report BMT/FEP/F15214 AR1

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	05.Oct.2015
Identification of test body:	Warringtonfire Testing and Certification Ltd
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Double Door, – LSADD Doorset with Glazed Apertures
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2205 (h) x 1000/1000 (w) x 46mm (t) Core: Halspan Optima 30, 44mm thick Lipping: mahogany (640kg/m3), 10mm thick to all edges Facing: 1mm veneer</p> <p><u>Frame:</u> Head & Jambs: Mahogany (640kg/m3), 32 x 70mm, with 15 x 24mm deep planted stop Frame Fixing: 4No 100 x 8 screw per jamb & 2No per head.</p> <p><u>Intumescent:</u> Head & Jambs: 1no 15x4 Halspan SLS-PLA. Fitted 15mm from exposed face in frame reveal. Partially interrupted by hinges leaving 2mm continuous, and fully interrupted by flushbolt keep. Meeting Edges: 1no 10x4 Halspan SLS-PLA. Fitted 18mm from exposed face in the meeting edge of both leaves. Fully interrupted by flushbolt body in right leaf edge.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3No Halspan HIN-BSS-104 standard hinges per leaf</p> <p>Closer: 1No Halspan R30 Eco Closer Fig.1 per leaf</p> <p>Lock/Latch: 1No Halspan R30 lock – LCK-BSS-100 in main leaf.</p> <p>Flushbolt: 2No Eclipse 155 x 20, in slave leaf.</p> <p>Handle: 1No Aluminium lever set on rose to main leaf</p> <p><u>Hardware Protection:</u></p> <p>Around Bolt Body, Under Forend, Keep & Bolt keep: 1mm thick Halspan SLS-PAD-110</p> <p><u>Glazing:</u></p> <p>Glass: Schott Pyran S. 635 x 187 x 6. 1No glazed panel per leaf</p> <p>Beading: Mahogany (640kg/m3), chamfered beads.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: Halspan 30 Glazing seal SLS-GLZ-200 (10x3) used around glass both sides</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 40 minutes</p> <p>Insulation: 40 minutes (In accordance with the note to clause 7.6.1.1 of BS 476: Part 22: 1987, the glazing has not been evaluated for insulation)</p>

3.1.2 Test Report BMT/FEP/F15270B AR1

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	03.Dec.2015
Identification of test body:	Warringtonfire Testing and Certification Ltd
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Single Door – LSASD Insulated, unglazed timber doorset
Summary of test specimen:	<p><u>Leaf:</u> Leaf Sizes: 2400 (h) x 1000 (w) x 44 (t) Core: Halspan Optima 30, 44mm thick. Lipping: Sapele (640kg/m³) 6mm thick to all edges.</p> <p><u>Intumescent:</u> Head & Jambs: 1no 15x4 Halspan SLS-PLA-103. Fitted 15mm from exposed face in frame reveal. Fully interrupted by hinges and latch keep. Leaf Bottom Edge: 1no 35x14 Halspan SLS-DRP-300. Fitted centrally.</p> <p><u>Frame:</u> Head & Jambs: Sapele (640kg/m³), 44 x 90mm deep including a rebated stop 12mm thick. Architrave: MDF to exposed face. 45 x 18mm thick.</p> <p><u>Hardware:</u> Hinges: 4no Halspan HIN-BSS-104 standard hinges equi-spaced Closer: 1no Halspan R30 Eco Closer Fig.1 Latch/Lock: 1no Halspan R30 lock – LCK-BSS-100 Handle: 1no Aluminium leverset on rose to main leaf Eye Viewer: 1no door viewer at 1500mm AFFL (Eurospec SWE1000SSS)</p> <p><u>Hardware Protection:</u> Under Forend & Keep: 1mm thick Halspan SLS-PAD-110</p> <p><u>Glazing:</u> none</p> <p><u>Doorset Orientation:</u> Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	Integrity: 39 minutes Insulation: 39 minutes

3.1.3 Test Report CFR1808311

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	31.Aug.2018
Identification of test body:	Cambridge Fire Research
Sponsor:	Halspan Limited
Tested Product:	Right Hand Doorset: Latched, Single Acting, Double Door – LSADD Insulated, unglazed timber unequal double doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2403mm (h) x 828/282mm (w) x 44mm (t) Core: Halspan Optima 30, 44mm thick. Lipping: 6mm thick Sapele (640kg/m3) to vertical edges only.</p> <p><u>Intumescent:</u> Head & Jambs: 1no 15x4 Halspan SLS-PLA-103. Fitted 16mm from unexposed face. Fully interrupted by hinges and bolt keep. Meeting Edges: 2no 10x4 Halspan SLS-PLA-111. Fitted 4.5mm and 30mm from unexposed face in main leaf. Both seals partially interrupted by latch forend with 70% remaining continuous. 1no 10x4 Halspan SLS-PLA-111. Fitted centrally in slave leaf. Fully interrupted by latch keep.</p> <p><u>Frame:</u> Head & Jambs: Douglas Fir (530kg/m3), 33 x 100mm deep, with 16 x 35mm deep door stops.</p> <p><u>Hardware:</u> Hinges: 4no Halspan HIN-BSS-104 per leaf Closer: 1no Halspan R6000/CLR-BSS-101 to main leaf Lock/Latch: 1no Halspan LCK-BSS-100 to main leaf Lock/Latch Size: (Forend): 235 x 23mm Handle: 1no Zoo Hardware, Halspan LCK-MISC-200 Flushbolt: 2no Royde & Tucker Barza bolt to slave leaf – face mounted</p> <p><u>Hardware Protection:</u> Under Hinges: 1mm thick Halspan SLS-PAD-102. Around Latch Body: 1.5mm thick Halspan SLS-PAD-109. Under Bolt Keep: 1mm thick Therm-A-Flex.</p> <p><u>Glazing:</u> none</p> <p><u>Doorset Orientation:</u> Opening away from heating conditions.</p>
Test Standard:	BS EN 1634-1:2014
Performance:	Integrity: 41 minutes (no failure) Insulation: 41 minutes (no failure)

3.1.4 Test Report BMT/FEP/F15272 AR1

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	08.Dec.015
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Double Door - ULSADD Insulated, unglazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2630mm (h) x 901/901mm (w) x44mm (t) Core: Halspan Optima 30, 44mm thick. Lipping: 6mm thick Sapele lippings all edges (640kg/m3)</p> <p><u>Intumescent:</u> Head & Jambs: 1no 10x4 Halspan SLS-PLA-100. Fitted 17mm from unexposed face in frame reveal. Fully interrupted by hinges. Meeting Edges: 2no 10x4 Halspan SLS-PLA-100. Fitted 10mm apart and 7mm from exposed face in the meeting edge of the left leaf.</p> <p><u>Frame:</u> Head & Jambs: Mahogany (560kg/m3), 44 x 90mm deep including rebated door stops 12 wide. Architrave: MDF, 45 x 18mm thick to exposed face.</p> <p><u>Hardware:</u> Hinges: 4no Halspan HIN-BSS-103 standard hinges equi-spaced Closer: 1no Halspan R30 Eco Closer Fig.1 to each leaf Lock/Latch: none fitted</p> <p><u>Hardware Protection:</u> Under Forend & Keep: 1mm thick Halspan SLS-PAD-110</p> <p><u>Glazing:</u> none</p> <p><u>Doorset Orientation:</u> Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 20/22: 1987
Performance:	Integrity: 34 minutes Insulation: 34 minutes

3.1.5 Test Report BMT/FEP/F16050B AR1

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	10.Mar.2016
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Single Door - LSASD Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2100mm (h) x 900mm (w) x 44mm (t) Core : Halspan Optima 30, 44mm thick Lipping: 10mm thick Sapele lippings to top & vertical edges only (640kg/m3)</p> <p><u>Intumescent:</u> Leaf Head: 1no 10x4 Pyroplex FO8500. Fitted 17mm from exposed face. Leaf Vertical Edges: 1no 10x4 Pyroplex FO8500. Fitted 17mm from exposed face. Smoke/Acoustic: 1no 10x11 Halspan SLS-TRI-100 triple fin fitted in frame shut all round.</p> <p><u>Frame:</u> Head & Jambs: Sapele (640kg/m3) 44 x 230mm deep including 10mm wide rebated door stops Architrave: 45x18 architraves in MDF to exposed face.</p> <p><u>Hardware:</u> Hinges: 4no Halspan HIN-BSS-104 standard hinges Closer: 1no Halspan R30 Eco Closer Fig.1 Latch/Lock: 1no Halspan R60 lockset LCK-BSS-100 Handle: 1no Aluminium leverset on rose</p> <p><u>Hardware Protection:</u> None</p> <p><u>Glazing:</u> none</p> <p><u>Doorset Orientation:</u> Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 20/22: 1987
Performance:	Integrity: 47 minutes Insulation: 47 minutes

3.1.6 Test Report CFR1111221 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	22.Nov.2011
Identification of test body:	Cambridge Fire Research Ltd
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Single Door – LSASD A: Left hand specimen, Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2040 (h) x 926 (w) x 44mm (t) Core: Halspan Optima 30 (601kg/m³ tested), 44mm thick. Lipping: 8mm thick Sapele, to vertical edges only.</p> <p><u>Frame:</u> Head & Jambs: European Redwood, 32 x 70mm deep with 12 x 22mm deep planted stop. Frame Fixing: 4no 5 x 90mm long screws per jamb</p> <p><u>Intumescent:</u> Head & Jambs: 1no 10x4 ISL Therm-A-Seal, fitted 17mm from exposed edge. 11x4 seals fitted centrally to frame reveal.</p> <p><u>Hardware:</u> Hinges: 3no Jedo 1121-CPD-AC-0033 butt hinges. Closer: Halspan R30 Eco Power closer R6000 CLR-AGN-100 Lock/Latch: 1no The Dale Collection, SAA Sandal internal door pack, CSP706. Handle: The Dale Collection, SAA Sandal internal door pack, CSP706.</p> <p><u>Hardware Protection:</u> Latch Body, Under Forend & Keep: 1mm thick ISL Therm-A-Strip.</p> <p><u>Glazing:</u> None</p> <p><u>Doorset Orientation:</u> Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	Integrity: 37 minutes Insulation: 37 minutes (integrity failure)

3.1.7 Test Report CFR1111221 B

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	22.Nov.2011
Identification of test body:	Cambridge Fire Research Ltd
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Single Door – LSASD B: Right hand specimen, Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2040 (h) x 926 (w) x 44mm (t) Core: Halspan Prima 30 (572kg/m3 tested), 44mm thick. Lipping: 8mm thick Sapele, to vertical edges only.</p> <p><u>Frame:</u> Head & Jambs: European Redwood, 32 x 70mm deep with 12 x 22mm deep planted stop. Frame Fixing: 4no 5 x 90mm long screws per jamb</p> <p><u>Intumescent:</u> Head & Jambs: 1no 10x4 ISL Therm-A-Seal, fitted 17mm from exposed edge. 10x4 seals fitted centrally to frame reveal.</p> <p><u>Hardware:</u> Hinges: 3no Jedo 1121-CPD-AC-0033 butt hinges. Closer: Halspan R30 Eco Power closer R6000 CLR-AGN-100 Lock/Latch: 1no The Dale Collection, SAA Sandal internal door pack, CSP706. Handle: The Dale Collection, SAA Sandal internal door pack, CSP706.</p> <p><u>Hardware Protection:</u> Latch Body, Under Forend & Keep: 1mm thick ISL Therm-A-Strip.</p> <p><u>Glazing:</u> None</p> <p><u>Doorset Orientation:</u> Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	Integrity: 37 minutes Insulation: 37 minutes (integrity failure)

3.1.8 Test Report CFR1803021 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	02.Mar.2018
Identification of test body:	Cambridge Fire Research
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Double Door – ULSADD A: Left hand specimen, Insulated, unglazed timber unequal double doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2040 (h) x 927/455 (w) x 45mm (t)</p> <p>Core: Halspan Optima, 3no layer particleboard (620kg/m3), 44mm thick. With 16 x 7 vertical & horizontal oak inserts fitted into 10 x 6 grooves.</p> <p>Lipping: 6mm thick, American Oak (770kg/m3) to vertical edges only</p> <p>Facing: 0.5mm thick Oak veneer.</p> <p><u>Frame:</u></p> <p>Head & Jambs: Softwood (470kg/m3), 32 x 95 deep with 15 x 35 deep pinned stop.</p> <p>Frame Fixing: 5no 6 x 100 long screw fixings per jamb.</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 1no 15x4 Halspan SLS-PLA-103, fitted 15mm from exposed face.</p> <p>Meeting Edge: 2no 10x4 Halspan SLS-PLA-101, fitted 5mm from each face and 15mm apart in main leaf.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Halspan 60 HIN-BSS-104</p> <p>Closer: 1no Halspan R30 Eco Closer, CLR AGN 100 (concealed)</p> <p>Latch/Lock: 1no Halspan R30, LCK-BSS-100 (disengaged for test)</p> <p>Handle: 1no Zoo ZCA030SA</p> <p>Flushbolt: 1no Zoo hardware, at top & bottom of slave leaf (engaged for test)</p> <p><u>Hardware Protection:</u></p> <p>Under Forend & Keep: 1mm thick Halspan SLS-PAD-110</p> <p>Under Hinges: 1mm thick Halspan SLS-PAD-103.</p> <p>Under Flushbolt: 1mm thick ISL Therm-A-Strip</p> <p><u>Glazing:</u></p> <p>None</p> <p><u>Specific Feature Being Tested:</u></p> <p>Feature grooves and inserts, and concealed closer.</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2014
Performance:	<p>Integrity: 38 minutes (no failure)</p> <p>Insulation: 38 minutes (no failure)</p>

3.1.9 Test Report CFR1803021 B

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	02.Mar.2018
Identification of test body:	Cambridge Fire Research
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door– ULSASD B: Right hand specimen, Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2040 (h) x 825 (w) x 45mm (t)</p> <p>Core: Halspan Optima, 3no layer particleboard (620kg/m3), 44mm thick. With 10 x 6 2no vertical & 4no horizontal sapele inserts fitted into 3.5 x 2 V-grooves.</p> <p>Lipping: 6mm thick, Sapele (640kg/m3) to vertical edges only</p> <p>Facing: 0.5mm thick Sapele veneer.</p> <p><u>Frame:</u></p> <p>Head & Jambs: Softwood (470kg/m3), 32 x 95mm deep with 15 x 35mm deep pinned stop.</p> <p>Frame Fixing: 5no 6 x 100 long screw fixings per jamb.</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 1no 15x4 Halspan SLS-PLA-103, fitted 15mm from exposed face.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Halspan 60 HIN-BSS-104</p> <p>Closer: Halspan R30 Eco Closer, CLR AGN 100 (concealed)</p> <p>Latch/Lock: 1no Halspan R30, LCK-BSS-100 (disengaged for test)</p> <p>Handle: Halspan LCK MISC 200</p> <p><u>Hardware Protection:</u></p> <p>Under Forend & Keep: 1mm thick Halspan SLS-PAD-110</p> <p>Under Hinges: 1mm thick Halspan SLS-PAD-103.</p> <p><u>Glazing:</u></p> <p>None</p> <p><u>Specific Feature Being Tested:</u></p> <p>Feature grooves and inserts, and concealed closer.</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2014
Performance:	<p>Integrity: 38 minutes (no failure)</p> <p>Insulation: 38 minutes (no failure)</p>

3.1.10 Test Report CFR1809181_Rev 1

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	18.Sep.2018
Identification of test body:	Cambridge Fire Research
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door – ULSASD Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2440 (h) x 918 (w) x 44mm (t) Core: Halspan Optima 30 (620kg/m3), 44mm thick. Lipping: 7mm thick Sapele (640kg/m3) to all edges</p> <p><u>Frame:</u> Head & Jambs: Douglas Fir (550kg/m3), 32 x 134mm deep, with 12 x 25mm deep planted door stops projecting 12mm into furnace. Frame Fixing: 6no No.10 x 3 inches long screw fixings per jamb.</p> <p><u>Intumescent:</u> Head & Jambs: 1no 15x4 Halspan SLS-PLA-103, fitted 16mm from exposed face. Fully interrupted at hinges and latch keep.</p> <p><u>Hardware:</u> Hinges: 4no Halspan HIN-BSS-104 standard hinges Closer: 1no Halspan R6000 Eco Closer, CLR-AGN-100 Lock/Latch: 1no Halspan LCK-BSS-100 (disengaged for test) Handle: 1no Zoo Hardware, ZCA030SA</p> <p><u>Hardware Protection:</u> Under Forend & Keep: 1mm thick Halspan SLS-PAD-105</p> <p><u>Glazing:</u> None</p> <p><u>Specific Feature Being Tested:</u> Softwood frames projecting 12mm into the furnace creating a 12mm deep flashgaps around the perimeter.</p> <p><u>Doorset Orientation:</u> Opening towards heating conditions.</p>
Test Standard:	BS 476 Part 22:1987
Performance:	Integrity: 36 minutes (no failure) Insulation: 36 minutes (no failure)

3.1.11 Test Report CFR1808101

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	10.Aug.2018
Identification of test body:	Cambridge Fire Research
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Double Door– LSADD Insulated, unglazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2400 (h) x 1000/1000 (w) x 54mm (t) Core: Halspan Optima (620kg/m3), 54mm thick.</p> <p>Lipping: Sapele (640kg/m3), 18mm thick to top and vertical edges, with 13 x 12mm rebates at hanging stiles & head and 42 x 12mm rebates at meeting stiles.</p> <p><u>Frame:</u></p> <p>Head & Jambs: Sapele (640kg/m3), 43 x 69mm deep, including 11.5 x 12mm deep integral stops with over rebated frames</p> <p>Frame Fixing: 6no No.10 x 3 inches long screw fixings per jamb.</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 2no 15x4 Halspan SLS-PLA series, fitted 21mm & 43mm from exposed face. Seal fitted at 21mm partially interrupted at hinges with 73% remaining, other seal is fully interrupted</p> <p>Meeting Edge: 2no 15x4 Halspan SLS-PLA series, fitted 4mm & 26mm from exposed face. Seal fitted at 4mm fully interrupted by latch keep and partially interrupted by flushbolts with 80% remaining. Other seal partially interrupted by latch keep and flushbolts with 13% and 33% remaining respectively.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 4no Halspan 60, HIN-BSS-104, Grade 13</p> <p>Closer: 1no Dorma TS92G, per leaf.</p> <p>Lock/Latch: 1no Halspan R60, LCK-BSS-100</p> <p>Handle: 1no Zoo Hardware, ZCA030SA, per leaf.</p> <p>Flushbolt: 1no Zoo ZAS03RSS, top & bottom of right leaf.</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges: 1mm thick SLS-PAD-103</p> <p>Under Forend & Keep: 1mm thick Halspan SLS-PAD-109</p> <p><u>Glazing:</u></p> <p>None</p> <p><u>Specific Feature Being Tested:</u></p> <p>To obtain evidence for over rebated frames</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476 Part 22:1987
Performance:	<p>Integrity: 58 minutes</p> <p>Insulation: 58 minutes</p>

3.1.12 Test Report Chilt/RF11005 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	07.Feb.2011
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door - ULSASD A: Left hand specimen, Insulated, glazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2040 (h) x 916 (w) x 44mm (t) Core: Halspan Optima 30 (603kg/m³ tested), 44mm thick. Lipping: 6mm thick Sapele (719kg/m³ tested) to all edges</p> <p><u>Frame:</u> Head & Jambs: European Redwood (510kg/m³), 32 x 70mm deep, with planted stops. Architrave: European Redwood, 16mm thick to fire side only Frame Fixing: 4no 5 x 100mm long screw fixings per jamb Threshold: non combustible</p> <p><u>Intumescent:</u> Head & Jambs: 1no 10x4 ISL Therm-A-Seal, fitted centrally. Fully interrupted at hinges & latch.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Royde & Tucker H105 lift off hinges.</p> <p>Closer: 1no Dorma TS73 overhead closer.</p> <p>Lock/Latch: 1no E*S tubular mortice latch (disengaged for test)</p> <p>Handle: 1no Aluminium lever type handle</p> <p><u>Hardware Protection:</u></p> <p>None</p> <p><u>Glazing:</u></p> <p>Glass: Pilkington Pyroshield 2, 6mm thick</p> <p>Glass Size: 1011 x 315mm wide</p> <p>Beading: Sapele (640kg/m3), 21.5 x 19mm deep, chamfered and bolected.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 2mm thick Sealmaster Fireglaze between glass and beads.</p> <p><u>Doorset Orientation:</u></p> <p>Opening toward heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	Integrity: 43 minutes Insulation: 43 minutes

3.1.13 Test Report Chilt/RF06048 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	25.Apr.2006
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Double Acting, Single Door – DASD A: Left hand specimen, Insulated, timber double doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall size: 1980 (h) x 755 (w) x 45mm (t)</p> <p>Core: Halspan Optima, solid particleboard (620kg/m3), 44mm thick.</p> <p>Lipping: Sapele (650kg/m3), max. 5mm thick to min. 2mm thick (radii) to hanging edge, 8mm thick to closing edge. And a 10 (t) exposed lip with 38 (w) x 15 (d) tongue 'T' profile to the top & bottom edges.</p> <p><u>Frame:</u></p> <p>Head: European Redwood (450kg/m3), 99 x 44 thick.</p> <p>Jambs: 99 x 44 thick, with 63 x 7mm deep scalloped recess in hanging edge.</p> <p>Frame Fixing: 3no 8 x 100 long screw fixings per jamb.</p> <p>Threshold: European Redwood (450kg/m3).</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 1no 15x4 ISL Therm-A-Seal fitted centrally.</p> <p><u>Hardware:</u></p> <p>Floor Spring: Dorma BTS80F concealed floor spring.</p> <p>Door Bottom Strap: Dorma 7421</p> <p>Door Top Strap: Dorma 8066</p> <p>Frame Top Pivot: Dorma 8066</p> <p>Lock/Latch: none fitted</p> <p><u>Hardware Protection:</u></p> <p>Top & Bottom Strap: 1-2mm thick graphite based intumescent protection pack.</p> <p><u>Glazing:</u></p> <p>None</p> <p><u>Doorset Orientation:</u></p> <p>Opening in both directions</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	Integrity: 34 minutes Insulation: 34 minutes

3.1.14 Test Report Chilt/RF06074

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	08.Jun.2006
Identification of test body:	Chiltern International Fire (now trading as: Warringtonfire Testing & Certification Ltd).
Sponsor:	Halspan Ltd
Tested Product:	Double Acting, Single Door - DASD Insulated, unglazed timber double action doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 1985mm (h) x 760mm (w) x 45mm (t) Core: Halspan Optima 44mm thick. Lipping: 8mm thick Sapele (radiused to 3mm thick) to hanging edge, 8mm thick Sapele lipping to closing edge, 44x10mm Sapele lipping to top & bottom edge (T-Profile) (650kg/m³)</p> <p><u>Intumescent:</u> Head & Jambs: 15x4 ISL Therm-a-seal. Fitted centrally to frame perimeter</p> <p><u>Frame:</u> Head & Jambs: European Redwood (450kg/m³), 44 x 88mm deep, hanging edge scalloped to accept radiused door edge. Threshold: Softwood 160 x 95mm overlaid in plasterboard to accommodate the floor spring</p> <p><u>Hardware:</u> Bottom Pivot: 1no Dorma BTS80F floor spring with bottom centre strap Top Pivot: 1no Dorma 8066 Top centre & strap</p> <p><u>Hardware Protection:</u> 1-2mm thick graphite based intumescent protection to top strap and bottom strap</p> <p><u>Glazing:</u> None</p> <p><u>Doorset Orientation:</u> Opens in both directions</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	Integrity: 34 minutes Insulation: 34 minutes

3.1.15 Test Report Chilt/RF08127

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	22.Sep.2008
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Double Door with Overpanel – ULSADD+OP Insulated, unglazed timber double doorset with Overpanel
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2315mm (h) x 916/916mm (w) x 44mm (t)</p> <p>Core: Halspan Optima 30, 44mm thick.</p> <p>Lipping: 10mm thick Sapele to vertical edges, and 18mm thick rebated lipping to top edge of leaf.</p> <p><u>Overpanel:</u></p> <p>Overall Size: 400mm (h) x 1835mm (w) x 44mm (t)</p> <p>Core: Same as leaf</p> <p>Lipping: 18mm thick Sapele, rebated lipping to bottom edge.</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Redwood (510kg/m³), 45 x 70mm deep including rebated stops 14mm thick.</p> <p><u>Intumescent:</u></p> <p>Leaf Head: 1no 10x4G Halspan SF. Fitted 6mm from exposed face within the top of rebated upstand</p> <p>Jambs: 1no 10x4G Halspan SF. Fitted centrally in frame reveal finishing at the base of the Overpanel. Fully interrupted by hinges.</p> <p>Meeting Edges: 2no 10x4G Halspan SF. Fitted 10mm apart and 8mm from exposed face in right leaf only.</p> <p>Overpanel: 1no 10x4G Halspan SF. Fitted 6mm from unexposed face within the top of rebate upstand in bottom edge.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Halspan R30 standard hinges per leaf.</p> <p>Closer: 1no Halspan Power Closer to each leaf.</p> <p>Lock/Latch: none fitted.</p> <p><u>Hardware Protection:</u></p> <p>None</p> <p><u>Glazing:</u></p> <p>none</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 38 minutes</p> <p>Insulation: 38 minutes</p>

3.1.16 Test Report Chilt/RF09010

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	16.Jan.2009
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Single Door - LSASD Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2045mm (h) x 904mm (w) x 46mm (t) Core: Halspan Optima 30 door blank, 44mm thick. Lipping: 2mm thick PVC lippings to top & vertical edges only. Facing: 0.7mm decorative veneer each face.</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 15x4 Halspan SFS twin fin seals. Fitted centrally to frame reveal. Smoke/Acoustic Seal: Halspan triple fin SAS 1BLTR. Fitted to frame reveal against door stop. Leaf Bottom: SAC PA 08935 drop seal</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Redwood (510kg/m³), 42 x 92mm deep with 12mm thick integral door stop. Architrave: 16mm thick architrave to exposed face</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Assa Lift off hinges ref 3248</p> <p>Closer: 1no Halspan R30 O/H Closer Fig.1 ref CBSSN30</p> <p>Latch/Lock: 1no Halspan 90 mortice lock Ref LKBSSN30</p> <p>Handle: 1no Lever type handle on roses</p> <p><u>Hardware Protection:</u></p> <p>Under Forend & Keep: 1mm thick Interdens intumescent to lock body & under forend & keep</p> <p><u>Glazing:</u></p> <p>None</p> <p><u>Specific Feature Being Tested:</u></p> <p>PVC lippings</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 56 minutes</p> <p>Insulation: 56 minutes (integrity failure)</p>

3.1.17 Test Report WF 384748A AR1

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	29.Jun.2017
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Single Door - LSASD Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2065mm (h) x 934mm (w) x44mm (t) Core: Optima 30, 44mm thick. Lipping: 5mm thick Sapele (640kg/m3) to all edges.</p> <p><u>Frame:</u> Head & Jambs: Steamed Beech 640kg/m3 32x119, planted door stops pinned 18x50, 45x18 MDF architraves to exposed face. Frame Fixing: 4no 5 x 80mm long screws per jamb.</p> <p><u>Intumescent:</u> Head & Jambs: 1no 15x4 LP1504. Fitted 18mm from exposed face. Partially interrupted by hinges with 3mm remaining continuous. Fully interrupted by latch keep. Smoke/Acoustic: Halspan triple fin smoke seal to door shut – SLS-TRI-105.</p> <p><u>Hardware:</u> Hinges: 3no Halspan R30 standard hinges ref HIN-BSS-104 Closer: 1no Halspan R30 O/H Closer Fig.1 ref CLR-AGN-100 Lock/Latch: 1no Halspan R30 mortice lock Ref LCK-BSS-100 Handle: 1no Aluminium Leverset on rose</p> <p><u>Hardware Protection:</u> Under Forend & Keep: 1mm thick Halspan SLS-PAD-110</p> <p><u>Glazing:</u> None</p> <p><u>Doorset Orientation:</u> Open towards heating conditions.</p>
Test Standard:	BS 476: Part 20/22: 1987
Performance:	Integrity: 34 minutes Insulation: 34 minutes (integrity failure)

3.1.18 Test Report CFR 1005241

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	24.May.2010
Identification of test body:	Cambridge Fire Research
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door - ULSASD Insulated, unglazed timber single doorset within large screen
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2040mm (h) x 827mm (w) x44mm (t) Core: Prima 30, 44mm thick. Lipping: 10mm thick sapele (650kg/m3) to vertical edges only.</p> <p><u>Frame (Door):</u></p> <p>Head & Jambs: Sapele (650kg/m3) 44 x 94mm deep, with 15mm thick planted stops. Frame Fixing: 4no dia 5 x 100mm long screws per jamb</p> <p><u>Frame (Screen):</u></p> <p>Sapele (650kg/m3), 39 x 94mm deep to 44 x 94mm deep for all screen components</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 1no 15x4 ISL Therm-A-Blade. Fitted centrally in frame reveal.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Halspan R30 hinges – HIN-BSS-104</p> <p>Closer: 1no Halspan R30 O/H Closer Fig.1 ref CLR-AGN-100</p> <p>Lock/Latch: 1no tubular mortice latch – disengaged for test</p> <p>Handle: 1no Aluminium lever type handle</p> <p><u>Hardware Protection:</u></p> <p>None</p> <p><u>Glazing (Screens):</u></p> <p>Glass: 15mm Pyroswiss Foam 30 to all apertures,</p> <p>Beading: Splayed Sapele beads fixed with screws.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 15x2mm thick Therm-A-Glaze 45 between glass and beads.</p> <p><u>Doorset orientation:</u></p> <p>Opens toward heating conditions.</p>
Test Standard:	BS 476 Part 22
Performance:	<p>Integrity: 31 minutes</p> <p>Insulation: 31 minutes</p>

3.1.19 Test Report Chilt/RF01056 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test	09.Jul.2001
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door - ULSASD A: Left hand specimen, Insulated, glazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2040 (h) x 827 (w) x 44mm (t)</p> <p>Core: Halspan 3 layer particle board (650kg/m³), 44mm thick, with 3no 5x4 horizontal groove channels.</p> <p>Lipping: Sapele (640kg/m³), 10mm thick, on vertical edges only.</p> <p>Facing: None</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Redwood (510kg/m³), 30x70 with 14mm thick planted stop.</p> <p>Architrave: Softwood, 60x15 applied to exposed face.</p> <p>Threshold: non combustible.</p> <p>Frame Fixing: Unknown</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 1no 10x4 ISL Therm-A-Seal, fitted centrally.</p> <p><u>Hardware:</u></p> <p>Hinges: 3no Royde & Tucker H105</p> <p>Closer: Cairney Hardware, Mitron C2300 concealed overhead now Rutland ITS.11204.</p> <p>Latch: None</p> <p>Handle: None</p>

Summary of test specimen (continued):	<p><u>Hardware protection:</u></p> <p>Closer (body & channel): Cairney Hardware Mitron 30 minutes intumescent pack now known as Rutland IP.114</p> <p><u>Glazing:</u></p> <p>Glass: Sureglaze 'Insul', 7mm thick.</p> <p>Aperture: 998 x 250</p> <p>Beading: Sapele (640kg/m³) 15x18 square section, with 4x4 quirk.</p> <p><u>Glazing System:</u></p> <p>10x2 ISL Therm-A-Strip between the glass and bead, fitted into rebate.</p> <p><u>Specific Feature Being Tested:</u></p> <p>3no face grooves in door 5x4mm, Concealed closer. Quirk beads and Sureglaze glass</p> <p><u>Doorset Orientation:</u></p> <p>Open towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance	<p>Integrity: 39 minutes</p> <p>Insulation: 13 minutes</p>

3.1.20 Test Report Chilt/RF01059 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	16.Jul.2001
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door - ULSASD A: Left hand specimen, Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2040mm (h) x 825mm (w) x 44mm (t) Core: Halspan 30 door blank (650kg/m³). 44mm thick. Lipping: 10mm thick Sapele H/W (640kg/m³) to vertical edges only.</p> <p><u>Frame:</u> Head & Jambs: MDF (730-750kg/m³) 30 x 120mm deep, with 12mm thick planted MDF door stop. Architrave: MDF Torus architrave 70 x 20mm thick applied to exposed face. Frame Fixing: not detailed</p> <p><u>Intumescent:</u> Head & Jambs: ISL Therm-a-seal 10x4 centrally to frame reveal.</p> <p><u>Hardware:</u> Hinges: 3no R&T H105 lift off hinges 100x75 Closer: 1no Dorma TS73V O/H door closer Fig.1 Lock/Latch: 1no Henderson Hardware tubular mortice latch Handle: 1no Aluminium leverset</p> <p><u>Hardware Protection:</u> None</p> <p><u>Glazing:</u> none</p> <p><u>Doorset Orientation:</u> Open towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	Integrity: 39 mins Insulation: 39 mins

3.1.21 Test Report Chilt/RF05148 B

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	09.Mar.2006
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door– ULSASD B: Right hand specimen, Insulated, glazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2040mm (h) x 913mm (w) x 44mm (t) Core: Halspan Prima 30 (630kg/m3), 44mm thick. Lipping: 6mm thick Sapele (650kg/m3) to all edges.</p> <p><u>Frame:</u> Head & Jambs: Sapele (650kg/m3), 32 x 90mm deep, with 12 x 25mm deep planted door stop.</p> <p><u>Intumescent:</u> Head & Jambs: 1no 10x4 ISL Therm-A-Seal. Fitted centrally in frame reveal. Fully interrupted by hinges.</p> <p><u>Hardware:</u> Hinges: 3no Royde & Tucker H105 lift off hinges. Closer: 1no Dorma TS73V overhead closer.</p> <p><u>Hardware Protection:</u> None</p> <p><u>Glazing:</u> Glass: Pilkington Pyroshield, 6mm thick. Aperture Size: 995 x 297mm Beading: Sapele chamfered and bolected.</p> <p><u>Glazing System:</u> Glazing Perimeter: 2mm thick Therm-A-Strip between glass and beads.</p> <p><u>Doorset Orientation:</u> Opening towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	Integrity: 36 mins Insulation: 36 mins

3.1.22 Test Report Chilt/RF06068 B

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test	26.May.2006
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door– ULSASD B: Right hand specimen, Insulated, glazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2090 (h) x926 (w) x44mm (t)</p> <p>Core: Halspan Prima 44 door blank (630kg/m3), 44mm thick.</p> <p>Lipping: Sapele (640kg/m3), 6mm thick on vertical edges only.</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Redwood (510kg/m3), 32x90 with 12x25 planted stop.</p> <p>Architrave: European Redwood (510kg/m3), 16mm thick.</p> <p>Threshold: non combustible.</p> <p>Frame Fixing: 4no 100mm long wood screws per jamb</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 15x4 ISL Therm-A-Seal, fitted centrally.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Interior Hardware Steel Butt hinges</p> <p>Closer: Dorma TS73V Overhead closer</p> <p>Latch: None fitted</p> <p><u>Hardware Protection:</u></p> <p>None</p> <p><u>Glazing:</u></p> <p>Glass: Pilkington Pyrodur Plus, 7mm thick.</p> <p>Aperture Size: 1896 x 656</p> <p>Beading: Sapele, 18 x 21 chamfered hook beads</p> <p><u>Glazing System:</u></p> <p>2mm Therm-A-Strip between glass and beads.</p> <p><u>Specific Feature Being Tested:</u></p> <p>Large glazing. Pattern 10 single doorset.</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	<p>Integrity: 32 mins</p> <p>Insulation: 20 mins</p>

3.1.23 Test Report Chilt/RF08039

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test	28.Mar.2008
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Double Door – ULSADD Insulated, unglazed timber double doorset, unequal leaves
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2055 (h) x 912/415 (w) x 46mm (t) Core: Halspan Prima door blank (630kg/m³), 44mm thick. Lipping: Doelken PVC Edgeband, 2mm thick, on all edges. Facing: Steamed Beech Veneer, 0.7mm thick, on both faces.</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Redwood (510kg/m³), 42x92 with 12mm deep integral stop. Architrave: European Redwood, 18mm thick. Frame Fixing: 3no 80mm long wood screws per jamb Threshold: non combustible</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 15x4 Halspan Fireseal SF G2BN2100, fitted centrally Meeting Edge: 15x4 Halspan Fireseal SF G2BN2100, fitted on right leaf.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no ASSA 3244</p> <p>Closer: 1no Halspan 30 9500 series overhead type closer</p> <p>Latch: 1no Ingersoll Rand 5520 (disengaged for test)</p> <p>Handle: 1no Ingersoll Rand Steel leverset on rose</p> <p><u>Hardware Protection:</u></p> <p>Forend & Keep: 1mm thick Halspan Fireseal SF PLK1G4</p> <p><u>Glazing:</u></p> <p>None</p> <p><u>Specific Feature Being Tested:</u></p> <p>PVC Lipping</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	<p>Integrity: 50 minutes</p> <p>Insulation: 50 minutes</p>

3.1.24 Test Report Chilt/RF00067 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	03.Aug.2000
Identification of test body:	Chiltern International Fire (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Double Door - ULSADD A: Left hand specimen, Insulated, glazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2102mm (h) x 509/877mm (w) x 44mm (t) Core: Halspan 30 door blank (650kg/m3), 44mm thick. Lipping: 9mm thick Ash (710kg/m3) to vertical edges only.</p> <p><u>Frame:</u></p> <p>Head & Jambs: Sapele (728kg/m3) 30 x 70mm deep with 13.5mm thick planted door stop pin fixed. Architrave: Sapele Architrave to exposed face 53 x 15mm Frame Fixing: 5no dia 5 x 80mm long screws per jamb</p> <p><u>Intumescent:</u></p> <p>Head: 1no 20x4 LP2004. Fitted centrally in frame reveal. Jambs: 1no 10x4 LP1004. Fitted centrally in jamb frame reveal. Fully interrupted by hinges. Meeting Edges: 2no 10x4 LP1004. Fitted centrally and 8mm apart in meeting edge of right leaf.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no R&T H105 hinges 100x75 per leaf</p> <p>Closer: 1no Dorma TS73V Door Closer Fig.1 per leaf</p> <p>Lock/Latch: 1no Henderson 100x75 3-lever lock (disengaged for test)</p> <p>Handle: 1no Aluminium leverset</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges, Forend & Keep: 1mm thick Lorient Interdens</p> <p>Around Lockcase: 1mm thick Lorient Interdens</p> <p><u>Glazing (Main Leaf):</u></p> <p>Glass: Pilkington Pyroshield Safety 6mm.</p> <p>Aperture Size: 900 x 200mm.</p> <p>Beading: Dark Red Meranti, chamfered hook over beads pin fixed</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 10x2mm thick Therm-A-Strip let into face of bead facing the glass</p> <p><u>Doorset Orientation:</u></p> <p>Open towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2000 & BS EN 1363-1:1999
Performance:	Integrity: 37 mins Insulation: 38 mins

3.1.25 Test Report Chilt/RF00067 B

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	03.Aug.2000
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door - ULSASD B: Right hand specimen, Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2101mm (h) x 826mm (w) x 44mm (t) Core: Halspan 30 door blank (650kg/m³), 44mm thick. Lipping: 9mm thick Utile (660kg/m³) to vertical edges only.</p> <p><u>Frame:</u> Head & Jambs: Sapele (728kg/m³) 30 x 70mm deep with 13.5mm thick planted door stop. Architrave: Sapele Architrave to exposed face 53 x 15mm Frame Fixing: 5no dia 5 x 80mm long screws per jamb</p> <p><u>Intumescent:</u> Head: 1no 20x4 LP2004. Fitted centrally in frame reveal. Jambs: 1no 10x4 LP1004. Fitted centrally in frame reveal. Fully interrupted by hinges.</p> <p><u>Hardware:</u> Hinges: 3no R&T H105 hinges 100x75 Closer: 1no Dorma TS73V Door Closer Fig.1 per leaf Lock/Latch: 1no Henderson 100x75 3-lever lock (disengaged for test) Handle: 1no Aluminium leverset</p> <p><u>Hardware Protection:</u> Under Hinges, Forend & Keep: 1mm thick Lorient Interdens Around Lockcase: 1mm thick Lorient Interdens</p> <p><u>Glazing:</u> None</p> <p><u>Doorset Orientation:</u> Open towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2000 & BS EN 1363-1:1999
Performance:	Integrity: 43 mins Insulation: 43 mins

3.1.26 Test Report Chilt/RF00068 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	15.Sep.2000
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door - ULSASD A: Left hand specimen, Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2702mm (h) x 915mm (w) x 44mm (t) Core: Halspan 30 door blank (650kg/m³), 44mm thick. Lipping: 10mm thick Sapele (670kg/m³) to vertical edges only.</p> <p><u>Frame:</u> Head & Jambs: Sapele (670kg/m³) 43.5 x 93.5mm deep, with 12mm deep integral door stop. Architrave: Sapele Architrave to exposed face 50 x 15mm Frame Fixing: 5no dia 5 x 80mm long screws per jamb</p> <p><u>Intumescent:</u> Head: 1no 20x4 LP2004. Fitted centrally in frame reveal. Leaf Hanging & Latching Edges: 1no 30x2 100EC. Fitted centrally grooved into the rear face of lipping. Seal is continuous beneath hinges.</p> <p><u>Hardware:</u> Hinges: 4no R&T H105 lift off hinges 100x75 Closer: 1no Dorma TS73V Door Closer Fig.1 Lock/Latch: none fitted</p> <p><u>Hardware Protection:</u> Under Hinges: 1mm thick Lorient Interdens</p> <p><u>Glazing:</u> None</p> <p><u>Specific Feature Being Tested:</u> Tall doorset, Concealed intumescent</p> <p><u>Doorset Orientation:</u> Open towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2000 & BS EN 1363-1:1999
Performance:	Integrity: 42 mins Insulation: 42 mins

3.1.27 Test Report Chilt/RF02082 A

The referenced test report, the essential details of which are summarised below, is the supplementary data for: Optima 38mm thick core and for justification of minimum leaf thickness when applying grooves. Not used for envelopes but demonstrates the performance of the basic 38mm thick core.

Date of test:	09.Sep.2002
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd).
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Double Door - ULSADD A: Left hand specimen, Insulated, unglazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2135 (h) x 825/500 (w) x 38mm (t) Core: Halspan Prima 30 (640kg/m³), 38mm thick. Lipping: Sapele (640kg/m³), 6mm thick to vertical edges only.</p> <p><u>Frame:</u> Head & Jambs: European Redwood (510kg/m³), 32x95 with 12mm deep planted stop pinned. Frame fixing: Unknown Architrave: European Redwood (510kg/m³), 60x16 to exposed face.</p> <p><u>Intumescent:</u> Frame Head & Jambs: 1No 20x4 Therm-A-Seal, fitted centrally. Meeting Stiles: 2No 10x4 Therm-A-Seal, fitted 6mm apart in one meeting stile.</p> <p><u>Hardware:</u> Hinges: 3No Royde & Tucker, H105 Closer: 1No Dorma, TS73V Latch: none fitted.</p> <p><u>Hardware Protection:</u> None</p> <p><u>Glazing:</u> None</p> <p><u>Specific Feature Being Tested:</u> Basic 38mm thick leaf construction</p> <p><u>Doorset Orientation:</u> Open towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	Integrity: 41 minutes Insulation: 41 minutes

3.1.28 Test Report Chilt/RF02098 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	05.Sep.2002
Identification of test body:	Chiltern International Fire (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door - ULSASD A: Left hand specimen, Insulated, timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2040mm (h) x 936mm (w) x 44mm (t) Core: Halspan Prima (650kg/m³), 44mm thick. Lipping: 10mm thick Sapele (640kg/m³) to vertical edges only.</p> <p><u>Frame:</u> Head & Jambs: Sapele (640kg/m³), 32 x 70mm deep with 12mm deep planted stop. Architrave: Sapele, 60 x 16mm thick to exposed face. Threshold: non combustible.</p> <p><u>Intumescent:</u> Head & Jambs: 1no 10x4 Therm-A-Seal. Fitted 36mm from exposed face in frame reveal, continuous and uninterrupted by hinges.</p> <p><u>Hardware:</u> Hinges: 3no Royde & Tucker H101 lift off hinges Closer: 1no Dorma TS73V Latch: none fitted</p> <p><u>Hardware Protection:</u> None fitted</p> <p><u>Glazing:</u> None</p> <p><u>Specific Feature Being Tested:</u> Offset intumescent i.e not fitted centrally in frame rebate</p> <p><u>Doorset Orientation:</u> Opening towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	Integrity: 36 minutes Insulation: 36 minutes

3.1.29 Test Report Chilt/RF04021 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	08.Mar.2004
Identification of test body:	Chiltern International Fire (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Double Door - ULSADD A: Left hand specimen, Insulated, glazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2135mm (h) x 825/501mm (w) x 44mm (t) Core: Halspan Prima (630kg/m³), 44mm thick. Lipping: 10mm thick Sapele (640kg/m³) to vertical edges only.</p> <p><u>Frame:</u></p> <p>Head & Jambs: Sapele (650kg/m³), 51 x 90mm deep, with 14mm deep integral stop.</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 1no 20x4 Therm-A-Stop & 1no 10x4 Therm-A-Seal. Fitted 8mm apart in frame reveal, and Therm-A-Seal fitted 5mm from exposed face. Seals fully interrupted by hinges.</p> <p>Leaf Bottom Edge: 1no 38x2 Therm-A-Flex. Fitted centrally.</p> <p>Meeting Edge: 1no 20x4 Therm-A-Stop & 1no 10x4 Therm-A-Seal. Fitted 5mm apart, and Therm-A-Seal fitted 5mm from exposed face in left leaf edge only.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Royde & Tucker R107 lift off hinges per leaf</p> <p>Closer: 1no Dorma TS73V per leaf.</p> <p>Lock/Latch: Union 2 lever mortice latch (disengaged for test)</p> <p>Handle: 1no aluminium leverset</p> <p><u>Hardware Protection:</u></p> <p>Around Lockcase, Under Hinges, Forend & Keep: 2mm thick ISL Therm-A-Strip.</p> <p><u>Glazing:</u></p> <p>Glass: Sureglaze wired glass, 6mm thick</p> <p>Aperture Size: 500 x 400mm wide</p> <p>Beading: Sapele, 21 x 30mm high, chamfered and beveled.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 2mm thick Sealmaster GL60 liner to aperture & 4mm thick Fireglaze mastic between glass and beads</p> <p><u>Specific Feature Being Tested:</u></p> <p>Wired glazing, Enhanced intumescent seal arrangement.</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	<p>Integrity: 52 mins</p> <p>Insulation: 52 mins (In accordance with the note to clause 7.6.1.1 of BS 476: Part 22: 1987, the glazing has not been evaluated for insulation)</p>

3.1.30 Test Report Chilt/RF10111

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	26.Aug.2010
Identification of test body:	Chiltern International Fire (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Double Door - ULSADD Insulated, unglazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2800mm (h) x928/928mm (w) x44mm (t) Core: Halspan Prima 44mm door blank (630kg/m3). Lipping: 6mm thick Sapele (640kg/m3) to vertical edges only.</p> <p><u>Intumescent:</u> Head & Jambs: 1No 24.5x1.5 Norfast to door head and hanging stiles. Meeting Edges: 2No 10x4 Therm-a-seal fitted 10mm apart in one meeting stile. Smoke/Acoustic Seal: Norseal 710 perimeter smoke seal in door shut against stop.</p> <p><u>Frame:</u> Head & Jambs: European Redwood (510kg/m3) 32 x 70mm deep with 12 x 25mm deep planted stop. Architrave: 18mm thick softwood architrave to exposed face. Frame Fixing: 5 x 100mm long woodscrews at 600-800mm centres</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 4No CP Building Systems lift off hinges 100x75 per leaf</p> <p>Closer: 1No Dorma TS71 Door Closer per leaf</p> <p>Lock/Latch: none</p> <p>Push Plate: 1No 400 (h) x 900 (w) x 1.6mm (t) S/S pushplate flushed into each door on the exposed face only at 800mm up from FFL</p> <p><u>Hardware Protection:</u></p> <p>None</p> <p><u>Glazing:</u></p> <p>None</p> <p><u>Specific Feature Being Tested:</u></p> <p>Tall double doorset, Norfast intumescent seals, large push plates recessed into the face of the door leaves</p> <p><u>Doorset Orientation:</u></p> <p>Open towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2000 & BS EN 1363-1:1999
Performance:	<p>Integrity: 46 mins</p> <p>Insulation: 46 mins</p>

3.1.31 Test Report Chilt/RF97091

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	10.Oct.1997
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd (Timber & Door Products)
Tested Product:	Unlatched, Single Acting, Double Door with Overpanel – ULSADD+OP Insulated, glazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2130mm (h) x 915/915mm (w) x 45mm (t) Core: Halspan 30 particleboard, 45mm thick. Lipping: Sapele (650kg/m3), 10mm thick to vertical edges and 18mm thick rebated lip to top edge.</p> <p><u>Overpanel:</u> Overall Size: 800 (h) x 1830 (w) x 45mm (t) Core: same as leaf core Lipping: Sapele (650kg/m3), 18mm thick rebated lip to bottom edge</p> <p><u>Frame:</u> Head & Jambs: Sapele (650kg/m3), 45 x 70mm deep, with 12mm deep integral stop Architrave: 12.5mm thick plasterboard to exposed face</p> <p><u>Intumescent:</u> Leaf Head: 1no 10x4 LP1004. Fitted centrally within rebate Jambs: 1no 10x4 Lorient LP1004. Fitted centrally to frame jamb reveals. Fully interrupted by hinges. Meeting Edge: 2no 10x4 LP1004. Fitted centrally and 12mm apart in the meeting edge of one leaf only. Overpanel: 1no 10x4 LP1004. Fitted centrally within rebate in bottom edge of Overpanel.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Steel Butt hinges 100x75 per leaf</p> <p>Closer: 1no Dorma TS73V per leaf</p> <p>Lock/Latch: 1no Tubular mortice latch (disengaged for test)</p> <p>Handle: 1no Aluminium lever type handle</p> <p><u>Hardware Protection:</u></p> <p>None fitted</p> <p><u>Glazing (Both Leaf):</u></p> <p>Glass: Pilkington Pyroshield, 6mm thick.</p> <p>Aperture Size: 900 x 500mm wide</p> <p>Beading: Sapele, 18 x 22mm, beveled and chamfered.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 10x2 ISL Therm-A-Strip between beads and glass.</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 39 minutes</p> <p>Insulation: 39 minutes (In accordance with the note to clause 7.6.1.1 of BS 476: Part 22: 1987, the glazing has not been evaluated for insulation)</p>

3.1.32 Test Report PX06466A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	29.Mar.2011
Identification of test body:	SP Technical Research Institute of Sweden
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Double Door – LSADD Insulated, glazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2135 (h) x 915/915 (w) x 44mm (t). Core: Halspan Prima 30 (630kg/m3), 44mm thick. Lipping: 6mm thick Sapele (640kg/m3), to vertical edges.</p> <p><u>Frame:</u> Head & Jambs: European Redwood (510kg/m3), 32 x 94mm deep with 12mm thick planted stop. Frame Fixing: 5no steel screws per jamb and 1 in the head Threshold: Sapele (640kg/m3), 32 x 95mm</p> <p><u>Intumescent:</u> Frame Head & Jambs: 1no 15x4 Halspan SLS-PLA-103, fitted centrally. Meeting Edge: 1no 10x4 Halspan SLS-PLA-100 & SLS-BRU-100, fitted 10mm apart in one meeting stile.</p> <p>Smoke/Acoustic Seal: 1no Halspan SLS-TRI-100/2 placed in door shut. And 1no 30x7 Halspan SLS-DRP-111 in bottom of leaf.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Halspan R30 butt hinges per leaf.</p> <p>Closer: 1no Halspan R30 Eco Power CLR-AGN-100 overhead closer per leaf.</p> <p>Lock/Latch: 1no Halspan mortice lock LCK-BSS-200</p> <p>Handle: 1no Steel leverset on rose</p> <p><u>Hardware Protection:</u></p> <p>Under Forend & Keep: 1mm thick Halspan Fireseal SFPLK1G4.</p> <p><u>Glazing (Both Leaf):</u></p> <p>Glass: Pyroswiss Foam 30-15, 15mm thick</p> <p>Glazing Aperture: 980 (h) x 230 (w)</p> <p>Beading: Sapele (650kg/m3), 15mm high, chamfered & bolected.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 2mm Halspan SLS-MISC-300 acrylic intumescent mastic between glass and beads</p> <p><u>Specific Feature Being Tested:</u></p> <p>Doorset with large insulated glazing</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2008 & BS EN 1363-1:1999
Performance:	Integrity: 36 mins no failure Insulation: 36 mins no failure

3.1.33 Test Report Chilt/RF95042 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	25.Jul.1995
Identification of test body:	Chiltern International Fire (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd (Timber & Door Products)
Tested Product:	Unlatched, Single Acting, Single Door - ULSASD A: Left hand specimen, Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2100mm (h) x 874mm (w) x 44mm (t) Core: Halspan Chipboard, 44mm thick. Lipping: 10mm thick Utile (660kg/m3) to vertical edges only.</p> <p><u>Frame:</u> Head & Jambs: Sapele (728kg/m3), 32 x 70mm deep with 12mm thick planted stop Architrave: 12.5mm thick plasterboard to exposed face Threshold: non combustible</p> <p><u>Intumescent:</u> Frame Head: 1no 20x4 LP2004. Fitted centrally to frame head. Jambs: 1no 10x4 Lorient LP1004. Fitted centrally in frame jamb reveal. Fully interrupted by hinges and latch keep.</p> <p><u>Hardware:</u> Hinges: 3no Royde & Tucker H105 Closer: 1no Dorma TS72V Latch/Lock: 1no Henderson Hardware 3-lever (disengaged for test) Handle: 1no Henderson Lever type handle</p> <p><u>Hardware Protection:</u> Under Hinges: 1mm thick interdens Around Lockcase: 1mm thick interdens</p> <p><u>Glazing:</u> None</p> <p><u>Doorset Orientation:</u> Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	Integrity: 49 minutes Insulation: 49 minutes

3.1.34 Test Report Chilt/RF95042 B

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	25.Jul.1995
Identification of test body:	Chiltern International Fire (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd (Timber & Door Products)
Tested Product:	Unlatched, Single Acting, Double Door - ULSADD B: Right hand specimen, Insulated, glazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2100mm (h) x 874/874mm (w) x 44mm (t) Core: Halspan Chipboard, 44mm thick. Lipping: 10mm thick Utile (660kg/m3) to vertical edges only.</p> <p><u>Frame:</u></p> <p>Head & Jambs: Sapele (728kg/m3), 32 x 70mm deep with 12mm thick planted stop Architrave: 12.5mm thick plasterboard to exposed face Threshold: non combustible</p> <p><u>Intumescent:</u></p> <p>Frame Head: 1no 20x4 LP2004. Fitted centrally to frame head. Jambs: 1no 10x4 Lorient LP1004. Fitted centrally in frame jamb reveal. Fully interrupted by hinges and latch keep. Meeting Edge: 2no 10x4 LP1004. Fitted centrally and 9mm apart in meeting edge of the left leaf. Partially interrupted by latch.</p> <p><u>Hardware:</u></p> <p>Hinges: 3no Royde & Tucker H105 Closer: 1no Dorma TS72V per leaf Latch/Lock: 1no Henderson Hardware 3-lever (disengaged for test) Handle: 1no Henderson Lever type handle</p>

Summary of test specimen (continued):	<p><u>Hardware Protection:</u></p> <p>Under Hinges: 1mm thick interdens</p> <p>Around Lockcase: 1mm thick interdens</p> <p><u>Glazing (Both Leaf):</u></p> <p>Glass: Pyroguard, 6mm thick</p> <p>Glass Size: 446 x 196mm</p> <p>Beading (Left Leaf): Dark Red Meranti, 20 x 22.5mm deep, beveled and chamfered.</p> <p>Beading (Right Leaf): Dark Red Meranti, 20 x 22.5mm deep, beveled and squared on the unexposed face.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter (Left Leaf): 10 x 0.8mm thick HAZGLAZE 30. Fitted between rear face of bead and glass.</p> <p>Glazing Perimeter (Right Leaf): Lorient, system 36. Fitted between rear face of bead and glass.</p> <p><u>Specific Feature Being Tested:</u></p> <p>First Prima 44mm single door test</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 35 minutes</p> <p>Insulation: 35 minutes (In accordance with the note to clause 7.6.1.1 of BS 476: Part 22: 1987, the glazing has not been evaluated for insulation)</p>

3.1.35 Test Report WARRES 112248 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test	22.Feb.2000
Identification of test body:	Warrington Fire Research
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Double Door– ULSADD A: Left hand specimen, Uninsulated, glazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2040 (h) x 726/412 (w) x 45 (t)</p> <p>Core: Halspan particle board (650kg/m3), 44mm thick.</p> <p>Lipping: Sapele (750kg/m3), 6mm thick, to vertical edges.</p> <p>Facing: Sapele veneer, 0.7mm thick, to both faces.</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Redwood (490kg/m3), 28x94 with 11x25 planted stop.</p> <p>Threshold: European Redwood, 24x88 with 6mm thick supalux lining.</p> <p>Frame Fixing: 3no 100x5 screws per jamb</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 1no 10x4 Lorient LP1004. Fitted centrally.</p> <p>Meeting Edge: 1no 10x4 Lorient LP1004. Fitted centrally in both meeting edges opposing each other.</p>

<p>Summary of test specimen (continued):</p>	<p><u>Hardware:</u></p> <p>Hinges: 4no Annstar Ironmongery steel butt hinges</p> <p>Closer: 1no Dorma TS73.</p> <p>Lock/Latch: 1no Colson sashlock (disengaged for test)</p> <p>Handle: 1no Contract Ironmongery aluminium leverset</p> <p><u>Hardware Protection:</u></p> <p>Hinges, Lock/Latch: MIFP310WV Acrylic intumescent mastic.</p> <p><u>Glazing (Both Leaves):</u></p> <p>Glass: Pilkington Pyroshield Safety, 6mm thick.</p> <p>Aperture Size: Large Leaf – 1724x270, Small Leaf – 1700x150</p> <p>Beading: Large Leaf – Sapele (750kg/m³), 39x30 & 22x30, chamfered hook over beads rebated over each other.</p> <p>Small Leaf – Sapele (750kg/m³), 2no 23.5x20, chamfered hook over beads & square sections forming ladder frame.</p> <p><u>Glazing System:</u></p> <p>Large Leaf: 2mm bed of MIFP310WV Acrylic intumastic between beads and glass.</p> <p>Small Leaf: 10x2 ISL Therm-A-Strip between glass and beads.</p> <p><u>Specific Feature Being Tested:</u></p> <p>Leaf & half doorset with large glazing areas. Ladder pattern beading</p> <p><u>Doorset Orientation:</u></p> <p>Open towards heating conditions.</p>
<p>Test Standard:</p>	<p>BS 476: Part 22: 1987</p>
<p>Performance</p>	<p>Integrity: 30 minutes</p> <p>Insulation: N/A</p>

3.1.36 Test Report WARRES 118409 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test	17.Apr.2001
Identification of test body:	Warrington Fire Research
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door - ULSASD A: Left hand specimen, Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2700 (h) x 836 (w) x 43mm (t) Core: Halspan particle board (650kg/m³), 43mm thick. Lipping: 6mm thick, Sapele (640kg/m³), to vertical edges only.</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Whitewood (450kg/m³), 32x95 with 12x25 planted door stop. Frame Fixing: 5no 150x5 screws per jamb</p> <p><u>Intumescent:</u></p> <p>Head: 1no 20x4 ISL Therm-A-Seal, fitted centrally. Jambs: 1no 10x4 ISL Therm-A-Seal, fitted centrally</p> <p><u>Hardware:</u></p> <p>Hinges: 4no Royde & Tucker H105 Closer: 1no Briton 2003E</p> <p><u>Hardware Protection:</u></p> <p>Hinges: 1mm thick ISL Therm-A-Strip</p> <p><u>Glazing:</u></p> <p>None</p> <p><u>Doorset Orientation:</u></p> <p>Open towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance	Integrity: 41 minutes Insulation: 41 minutes

3.1.37 Test Report CFR1909021

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	02.Sep.2019
Identification of test body:	Cambridge Fire Research
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Double Door - LSADD Insulated, glazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2441(h) x 1000/1000(w) x 55(t) Core: Optima 54mm thick particle board (630kg/m3). Lipping: Sapele (640kg/m3), 6mm thick on vertical edges. Facing: 0.5mm thick sapele veneer.</p> <p><u>Frame:</u> Head & Jambs: Redwood (450kg/m3), 32x96 with 15x30 pinned stop. Frame Fixing: 6No dia 5 x 100mm long steel screws per jamb. Architrave: not listed</p> <p><u>Intumescent:</u> Head & Jambs: 1No 15x4 Halspan SLS-PLA-103. Meeting Edge: 2No 10x4 Halspan SLS-PLA-101 in left meeting stile.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 4No Halspan 60</p> <p>Closer: Halspan R6000 Series CLR-AGN-100</p> <p>Latch: Halspan R60 lockset.</p> <p>Flushbolt: Halspan LCK-MS-210</p> <p>Handle: 1No Halspan LCK-MS-200</p> <p><u>Hardware Protection:</u></p> <p>Hinges: 1mm thick Halspan SLS-PAD-103.</p> <p>Lock/Latch: 1mm thick Halspan SLS-PAD-110</p> <p>Forend & Keep: 1mm thick Halspan SLS-PAD-110</p> <p>Flushbolt: 10x2 Therm-A-Strip covering unexposed faces</p> <p><u>Glazing (Both Leaves):</u></p> <p>Glass: Pilkington Pyrodur Plus, 7mm thick. (The client has stated this glass is now referenced: 30-105, and is identical to the glass originally tested and recorded in the test report)</p> <p>Aperture: 1009 x 409</p> <p>Beading: Sapele (640kg/m³), 21 x 28 bolected</p> <p>Bead Fixing: dia 1.6 x 50mm long steel pins.</p> <p><u>Glazing System:</u></p> <p>10x4 ISL Therm-A-Strip inside glazing bead.</p> <p><u>Doorset Orientation:</u></p> <p>Open towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2014 + A1:2018
Performance:	<p>Integrity: 45 minutes</p> <p>Insulation: 45 minutes (doors); 12 minutes (glazing)</p>

3.1.38 Test Report Chilt/RF09069

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test	29.May.2009
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd.
Tested Product:	Unlatched, Single Acting, Double Door with Overpanel – ULSADD+OP Insulated, unglazed double leaf, single acting, timber doorset with overpanel
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2160 (h) x 926/926 (w) x 44mm (t)</p> <p>Core: Halspan particleboard (628kg/m³), 44mm thick.</p> <p>Lipping: Sapele (640kg/m³), 6mm thick lip on vertical edges, and 19mm thick rebated lip on leaf head.</p> <p><u>Overpanel:</u></p> <p>Overall Size: 288 (w) x 1852 (h) x 44mm (t)</p> <p>Core: same as leaf core</p> <p>Lipping: Sapele (640kg/m³), 19mm thick rebated lip to bottom edge of overpanel.</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Redwood (510kg/m³), 70 x 32mm with 12mm deep planted stop</p> <p>Architrave: European Redwood (510kg/m³), 18mm thick.</p> <p>Frame Fixing: 4no. 80mm long steel woodscrews per jamb</p> <p>Threshold: non combustible</p> <p><u>Intumescent:</u></p> <p>Leaf Head: 1no 10x4 Halspan Fireseal SF G1BN2100, fitted centrally.</p> <p>Jambs: 1no 10x4 Halspan Fireseal SF G1BN2100, fitted centrally and finishing 10mm above overpanel lipping.</p> <p>Meeting Edge: 2no 10x4 Halspan Fireseal SF G1BN2100, fitted centrally and 10mm apart in right leaf.</p> <p>Overpanel: 1no 10x4 Halspan Fireseal SF G1BN2100, fitted centrally in rebate of lip in bottom edge</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no. Halspan HBSSN30 each leaf</p> <p>Closer: 2no Halspan R30 CBSSN30 overhead closer,</p> <p>Latch: E*S tubular steel mortice (disengaged)</p> <p>Handle: Aluminium lever handle.</p> <p><u>Hardware Protection:</u></p> <p>none</p> <p><u>Glazing:</u></p> <p>none</p> <p><u>Specific Feature Being Tested:</u></p> <p>Double door with overpanel, Halspan seals and ironmongery</p> <p><u>Doorset Orientation:</u></p> <p>Opening toward heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 37 minutes</p> <p>Insulation: 37 minutes</p>

3.1.39 Test Report Chilt/RF01103

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	22.Oct.2001
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd.
Tested Product:	Unlatched, Single Acting, Double Door – ULSADD Insulated, glazed leaf and a half, single acting, timber doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2085 (h) x 850/442 (w) x 44mm (t) Core: Halspan Optima 30, 44mm thick. Lipping: 10mm thick Sapele (640kg/m3), to vertical edges only.</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Whitewood (450kg/m3), 90 x 32 with 25 x 12 planted stop Frame Fixing: Not detailed Architrave: European Whitewood (450kg/m3), 70 x 16. Threshold: non combustible.</p> <p><u>Intumescent:</u></p> <p>Head: 1no 20x4 ISL Therm-A-Seal, fitted centrally. Jambs: 1no 10x4 ISL Therm-A-Seal, fitted centrally. Meeting Edge: 1no 10x4 ISL Therm-A-Seal, fitted centrally in left & right leaf edges.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no. Royde & Tucker H105 lift off hinges</p> <p>Closer: Dorma TS73V overhead closer</p> <p>Latch: none fitted</p> <p><u>Hardware Protection:</u></p> <p>None fitted</p> <p><u>Glazing (Left Leaf only):</u></p> <p>Glass: Pyroshield Safety Glass, 6mm thick.</p> <p>Aperture Size: 1000 x 400 wide</p> <p>Beading: Sapele (640kg/m³), 20 x 24 deep, bevelled, chamfered & recessed in rear face.</p> <p><u>Glazing System:</u></p> <p>10x2 ISL Therm-A-Strip, fitted in a recess in the rear face of glazing bead</p> <p><u>Doorset Orientation:</u></p> <p>Opening toward heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 39 minutes</p> <p>Insulation: 39 minutes (In accordance with the note to clause 7.6.1.1 of BS 476: Part 22: 1987, the glazing has not been evaluated for insulation)</p>

3.1.40 Test Report WF 403596A AR1

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	20.Aug.2018
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	Halspan Ltd
Tested Product:	Unlatched, Single Acting, Single Door– ULSASD Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2400 (h) x 1000 (w) x 44mm (t) Core: Halspan Optima 30 (620kg/m3), 44mm thick. Lipping: 6mm thick Sapele (640kg/m3) to all edges.</p> <p><u>Frame:</u> Head & Jambs: European Redwood (510kg/m3), 95 x 32mm thick, with 32 x 12mm thick planted stop. Frame Fixing: 4no 5 x 100mm long steel screws per jamb Architrave: 45 x 18mm thick MDF (750kg/m3) to exposed face only. Threshold: Promat Supalux, 9mm thick.</p> <p><u>Intumescent:</u> Head & Jambs: 1no 15x4 STS 154FO fitted centrally. Partially interrupted at the hinges with 1mm remaining continuous, and fully interrupted at the latch. Smoke/Acoustic Seal: 1no 11x5 STS 1009 fitted to upstand of door stop.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 4no Jedo 102 butt hinges</p> <p>Closer: Synergy Hardware S800 EN2-5 overhead closer</p> <p>Latch: Harbrine mortice lock/latch with Eurocylinder with thumbturn, Hoppe Arrone AR8100 (disengaged for test)</p> <p>Furniture: Harbrine lever handle and lock escutcheon, Instinct Hardware IH 1912</p> <p><u>Hardware Protection:</u></p> <p>none</p> <p><u>Glazing:</u></p> <p>none</p> <p><u>Specific Feature Being Tested:</u></p> <p>Opening away from heating condition. Sealed Tight Solutions seals.</p> <p><u>Doorset Orientation:</u></p> <p>Opening away from heating conditions.</p>
Test Standard:	BS 476: Part 20/22: 1987
Performance:	<p>Integrity: 42 minutes – No failure</p> <p>Insulation: 42 minutes - No failure</p>

3.1.41 Test Report WF 372220 AR1

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	28.Sep.2016
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Double Door - LSADD Insulated, unglazed timber double doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2040mm (h) x 984/984mm (w) x 44mm (t) Core: Optima 30, 44mm thick. Lipping: 10mm thick Mahogany (600kg/m3) to all edges.</p> <p><u>Frame:</u> Head & Jambs: Mahogany (600kg/m3) 42 x 158mm deep, with 18mm thick planted door stops. Architrave: 70 x 20mm thick architraves to exposed face. Frame Fixing: 4no 5 x 80mm long screws per jamb</p> <p><u>Intumescent:</u> Leaf Head: 1no 15x4 FO8700. Fitted 15mm from exposed face. Leaf Hanging Edges: 1no 15x4 FO8700. Fitted 15mm from exposed face. Fully interrupted by hinges. Meeting Edges: 2no 10x4 FO8500. Fitted 8mm apart and 8mm from exposed face in the meeting edge of one leaf. One seal fully interrupted by latch keep. Second seal partially interrupted by latch keep with 3mm remaining continuous. Flushbolt body partially interrupts both seals with 2mm remaining continuous.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 4no Devon hinges ref 89.338.86 to each leaf</p> <p>Closer: 1no Devon O/H Closer Fig.1 ref 86.214.86 FC to main leaf</p> <p>Lock/Latch: 1no Devon mortice lock Ref 88.601.86 to main leaf</p> <p>Handle: 1no Lever type handle and lock escutcheon FE54-133.6</p> <p>Flushbolt: 2no Devon Flushbolts 94.156.61 – 205x20 size</p> <p><u>Hardware Protection:</u></p> <p>Under Forend: 1mm thick Interdens.</p> <p>Around Flushbolt body & Under Keep: 2mm Therm-A-Strip.</p> <p><u>Glazing:</u></p> <p>None</p> <p><u>Doorset Orientation:</u></p> <p>Open towards heating conditions.</p>
Test Standard:	BS 476: Part 20/22: 1987
Performance:	<p>Integrity: 42 minutes</p> <p>Insulation: 42 minutes (integrity failure)</p>

3.1.42 Test Report WF 372222A AR1

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test	27.Sep.2016
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Single Door - LSASD Insulated, unglazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2404mm (h) x 1085mm (w) x 44mm (t) Core: Optima 30, 44mm thick. Lipping: 10mm thick Mahogany (600kg/m3) to all edges.</p> <p><u>Frame:</u> Head & Jambs: Mahogany (600kg/m3) 42 x 156mm deep, with 18mm thick planted door stops. Architrave: 70 x 16mm thick architraves to exposed face. Frame Fixing: 4no 5 x 80mm long screws per jamb.</p> <p><u>Intumescent:</u> Leaf Head: 1no 15x4 Pyroplex FO8700. Fitted 15mm from exposed face. Leaf Vertical Edges: 1no 15x4 Pyroplex FO8700. Fitted 15mm from exposed face. Fully interrupted by hinges and latch forend. Smoke/Acoustic Seal: 12x12 Pyroplex smoke seal 9946 to door shut.</p> <p><u>Hardware:</u> Hinges: 4no Devon hinges ref 89.338.86 Closer: 1no Devon O/H Closer Fig.1 ref 86.214.86 FC Lock/Latch: 1no Devon mortice lock Ref 88.601.86 Handle: 1no Lever type handle and lock escutcheon FE54-133.6</p> <p><u>Hardware Protection:</u> Around Lockcase, Under Forend & Keep: 1mm thick Interdens</p> <p><u>Glazing:</u> None</p> <p><u>Doorset orientation:</u> Open towards heating conditions.</p>
Test Standard:	BS 476: Part 20/22: 1987
Performance	Integrity: 48 minutes Insulation: 48 minutes (integrity failure)

3.1.43 Test report WF412654 B

The referenced test report, the essential details of which are summarised below, is primary data for: Decorative grooves and false glazing beads.

Date of test:	17.Jun.2019
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	Halspan Ltd
Tested Product:	Latched, Single Acting, Single Door - LSASD B: Right hand specimen, Insulated, glazed timber single doorset
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2135 (h) x 926 (w) x 44mm (t)</p> <p>Core: Halspan Prima 30 (630kg/m³), 38mm thick. Incorporating 5 x 1mm thick & 10 x 1mm thick aluminium inserts fitted inside grooves on both faces.</p> <p>Lipping: 6mm thick Sapele (640kg/m³), to vertical edges only</p> <p>Facing: 3mm thick MDF (720kg/m³) bonded with PU.</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Redwood (500kg/m³), 32 x 90mm deep, with 12 x 25mm deep planted door stops.</p> <p>Frame Fixing: 4no 5 x 100mm long screw fixings per jamb.</p> <p><u>Intumescent:</u></p> <p>Frame Head & Jambs: 1no 15x4 Halspan SLS-PLA series graphite type seal, fitted 15mm from exposed face. Fully interrupted at hinges and latch.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Halspan R30 HIN-BSS-103.</p> <p>Closer: 1no Halspan Eco CLR-AGN-100 overhead closer</p> <p>Lock/Latch: 1no Halspan R60 mortice lock/latch – LCK-BSS-100</p> <p>Handle: 1no Zoo LCK-MSC-200 aluminium handle</p> <p><u>Hardware Protection:</u></p> <p>Under Forend & Keep: 1mm thick MAP</p> <p><u>Glazing:</u></p> <p>Glass: Pyroguard EW30, 7mm thick.</p> <p>Aperture Size: 1500 x 400mm wide</p> <p>Beading: Sapele (640kg/m³), 24 x 23mm deep perimeter beads, squared & boleted, and 24 x 23mm deep false beads fitted horizontally at 349mm centres.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 10x2 ISL Therm-A-Strip between glass and beads and under false beads (ladder frame)</p> <p><u>Specific Feature Being Tested:</u></p> <p>grooves, aluminium inserts</p> <p><u>Doorset Orientation:</u></p> <p>Opening toward heating conditions.</p>
Test Standard:	BS EN 1634-1: 2014 & BS EN 1363-1: 2012
Performance:	<p>Integrity: 30 minutes</p> <p>Insulation: 30 minutes</p>

3.1.44 Test Report Chilt/RF03076

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test	14.Aug.2003
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd.
Tested Product:	Latched, Single Acting, Single Door – LSASD Insulated, glazed single leaf, single acting, timber doorset with side panels
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2060 (h) x 930 (w) x 44mm (t) Core: Halspan 30 (630kg/m³), 38mm thick. Lipping: Sapele (650kg/m³), 25mm thick T-shaped lippings. Facing: WBP Plywood (650kg/m³), 3mm thick.</p> <p><u>Frame:</u></p> <p>Head & Jambs: Sapele (650kg/m³), 95 x 44mm with 21mm deep integral stop Frame Fixing: 100mm long steel screws Threshold: non combustible</p> <p><u>Intumescent:</u></p> <p>Head: 1no 10x4 Lorient LP1004 Fitted centrally. Hanging Jamb: 1no 10x4 Lorient LP1004. Fitted centrally. Fully interrupted by hinges. Closing Jamb: 1no 25x4 Lorient LP2504. Fitted centrally. Leaf Bottom: 47x14 Lorient IS8010 drop seal. Fitted centrally.</p> <p><u>Hardware:</u></p> <p>Hinges: 3no Stanley butt hinges. Closer: Mitron concealed overhead closer. Now known as Rutland ITS.11204 Latch: GU Ferco 3 point lock. Handle: Steel lever handle. Eye Viewer: Lorient LRJ 3745. Letterplate: Lorient LRJ 8042F</p> <p><u>Hardware Protection:</u></p> <p>Around Latch Body: 2mm thick Therm-A-Flex. Under Forend: 2mm thick Therm-A-Flex</p>

Summary of test specimen (continued):	<p><u>Leaf Glazing (Top):</u></p> <p>Glass: Pilkington Pyrodur laminated glass Class A Safety, 13mm thick.</p> <p>Aperture Size: 190 x 850mm</p> <p>Beading: Sapele, 20 x 16, chamfered & bolected.</p> <p><u>Leaf Glazing (Bottom):</u></p> <p>Glass: Pilkington Pyrodur laminated glass Class A Safety, 13mm thick.</p> <p>Aperture Size: 190 x 685mm</p> <p>Beading: Sapele, 20 x 16, chamfered & bolected.</p> <p><u>Glazing System (Leaf):</u></p> <p>Glazing Perimeter: 2mm thick Lorient Figure 1 glazing seal, between glass and bead.</p> <p><u>Centre Glazed Panel & Side Screen:</u></p> <p>Frame Head: Sapele (650kg/m³), 95 x 40 with 32mm deep integral stop</p> <p>Frame Jambs & Base: Sapele (650kg/m³), 95 x 32 with 20mm deep integral stop</p> <p>Transom (Centre Panel only): Sapele (650kg/m³), 95 x 32 with 2no 20mm deep integral stop</p> <p>Glass: Pilkington Pyrodur laminated double glazed unit</p> <p>Aperture Size (Centre Glazing – Top Pane): 1137 x 922</p> <p>Aperture Size (Centre Glazing – Bottom Pane): 1137 x 1075</p> <p>Aperture Size (Side Glazing Pane): 337 x 2027</p> <p>Beading: Sapele, 20 x 33, chamfered. On exposed side.</p> <p><u>Glazing System (Centre & Side Glazing):</u></p> <p>2mm thick Lorient Figure 1 glazing seal, between glass and bead.</p> <p><u>Specific Feature Being Tested:</u></p> <p>Optima 30 Bond Up test. 3 point GU Ferco Lock & concealed closer.</p> <p><u>Doorset Orientation:</u></p> <p>Opening toward heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 26 minutes (Letterplate); 30 minutes (Leaf)</p> <p>Insulation: 24 minutes</p>

3.1.45 Test Report Chilt/RF07008 A

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	13.Feb.2007
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Lorient Polyproducts Ltd.
Tested Product:	Unlatched, Single Acting, Double Door – ULSADD A: Left hand specimen, Insulated, unglazed one and a half leaf, single acting, timber doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 2040 (h) x 302/827 (w) x 45mm (t) Core: Halspan Prima 30 (630kg/m³), 45mm thick. Lipping: 8mm thick Sapele (640kg/m³) to all edges.</p> <p><u>Frame:</u> Head & Jambs: European Redwood (510kg/m³), 70 x 33mm thick, with 23 x 12mm thick planted stop Frame Fixing: 3no. 100mm long steel woodscrews per jamb. Architrave: European Redwood (510kg/m³), 18mm thick. Threshold: non combustible.</p> <p><u>Intumescent:</u> Frame Head & Jambs: 1no 15x4 Palusol 100P, fitted centrally. Fully interrupted at hinges. Meeting Edge: 2no. 10x4 Palusol 100P, fitted 10mm apart & 7.5mm from exposed face in right meeting edge. Both strips partially interrupted at latch forend with 2.5mm remaining.</p>

Summary of test specimen (continued):	<u>Hardware:</u> Hinges: 3no. Royde & Tucker 105 lift off hinges, Closer: Dorma TS73V overhead door closer, Lock/Latch: Legge 'life' mortice latch (disengaged), Handle: Aluminium Lever handles Bolt: Aluminium surface mounted barrel bolts (engaged) <u>Hardware Protection:</u> none <u>Glazing:</u> none <u>Doorset Orientation:</u> Opening toward heating conditions.
Test Standard:	BS 476: Part 22: 1987
Performance:	Integrity: 36 minutes Insulation: 36 minutes

3.1.46 Test Report Chilt/RF07008 B

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	13.Feb.2007
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Lorient Polyproducts Ltd.
Tested Product:	Unlatched, Single Acting, Double Door – ULSADD B: Right hand specimen, Insulated, unglazed one and a half leaf, single acting, timber doorset
Summary of test specimen:	<p><u>Leaf:</u> Overall Size : 2040 (h) x 300/827 (w) x 45mm (t) Core: Halspan Prima 30 (630kg/m3), 45mm thick. Lipping: 8mm thick Sapele (640kg/m3) to all edges.</p> <p><u>Frame:</u> Head & Jambs: European Redwood (510kg/m3), 70 x 33mm thick, with 23 x 12mm thick planted stop Frame Fixing: 3no. 100mm long steel woodscrews per jamb. Architrave: European Redwood (510kg/m3), 18mm thick. Threshold: non combustible.</p> <p><u>Intumescent:</u> Head & Jambs: 1no 15x4 LP1504, fitted centrally. Fully interrupted at hinges. Meeting Edge: 2no. 10x4 Lorient LP1004 fitted 10mm apart & 7.5mm from exposed face in right meeting edge. Both strips partially interrupted at latch forend with 2.5mm remaining.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no. Royde & Tucker 105 lift off hinges, Closer: Dorma TS73V overhead door closer, Lock/Latch: Legge 'life' mortice latch (disengaged), Handle: Aluminium Lever handles Bolt: Aluminium surface mounted barrel bolts (engaged)</p> <p><u>Hardware Protection:</u></p> <p>none</p> <p><u>Glazing:</u></p> <p>none</p> <p><u>Specific Feature Being Tested:</u></p> <p>Lorient Type 617 intumescent</p> <p><u>Doorset Orientation:</u></p> <p>Opening toward heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 42 minutes Insulation: 42 minutes</p>

3.1.47 Test Report CFR1903071

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of Test:	07.Mar.2019
Identification of Test Body:	Cambridge Fire Research Ltd.
Sponsor:	Halspan Ltd.
Tested Product:	Latched, Single Acting, Single Door– LSASD Latched, Single Acting, Single Leaf, Timber Doorsets
Tested Orientation:	Left doorset: Opening in towards heating condition Right doorset: Opening away from the heating conditions
Summary of Test Specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2440 (h) x 1001 (w) x 45mm (t) Core: Halspan Prima 30 Three-layer Particleboard (630kg/m³), 44mm thick Lipping: Sapele (640kg/m³), 6mm thick to all four edges Facing: 0.5mm thick, Sapele veneer</p> <p><u>Frame:</u></p> <p>Head & Jambs: Redwood (535.6kg/m³), 94 x 32mm thick, with 30 x 15mm thick planted stop. Frame Fixing: 5No 5 x 100mm long steel screws per jamb</p> <p><u>Intumescent:</u></p> <p>Frame Reveal/Leaf Edges: 1No 15x4 Halspan Plain fire seal, fitted centrally and 1no. 25 x4mm Halspan plain seal 11mm from hinge knuckle face in closing edge only Smoke seal: Halspan triple fin affixed to frame adjacent to stop</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 4No Halspan 30min butt hinges</p> <p>Closer: Rutland R6000 series overhead door closer, Rutland TS.6204</p> <p>Lock/Latch: ERA 6945-80-85MA 3-point latch/lock</p> <p>Lock/Latch Status: Engaged for test</p> <p>Letterplate: Royde & Tucker LP08-44</p> <p>Door Viewer: Lorient LRJ 3745 wide angle door viewer</p> <p>Drop seal: Halspan SLS-DRP-300 drop seal</p> <p>Handle: Aluminium lever handle</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges: 1mm thick Halspan graphite hinge pad</p> <p>Rear of strike body and faces of keeps: 1mm thick Halspan graphite sheet</p> <p>Faces of latch/hook boxes body: 1mm Halspan ammonium phosphate sheet</p> <p>Around letterplate: Royde & Tucker graphite collar 38 x 3mm</p> <p>One side of barrel of door viewer: Lorient Polyproducts graphite-based liner 119 x 42 x 2mm</p>
Test Standard:	BS EN 1634-1:2014
Performance:	<p>Integrity: 39 minutes</p> <p>Insulation: 39 minutes</p>

3.1.48 Test Report Chilt/RF010143

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of Test:	16.May.2001
Identification of Test Body:	Chiltern International Fire UKAS No. 1762 (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Limited
Tested Product:	Latched Single Acting Double Doorset with Overpanel - LSADD+OP
Tested Orientation:	Opening in towards heating condition
Sampling information:	None
Summary of Test Specimen:	<p>LEAF: Overall Size: 2135 (h) x 914/914 (w) x 44mm (t) Core: Halspan Lite 3-layer particleboard (550kg/m³), 44mm thick Lipping (Vertical Edges): Sapele (640kg/m³), 10mm thick. Lipping (Head) Sapele (640kg/m³), 19mm thick Facing: None</p> <p>OVERPANEL: Overall Size: 600 (h) x 1838 (w) x 44mm (t) Core: Halspan Lite 3-layer particleboard (550kg/m³), 44mm thick Lipping: Sapele (640kg/m³), 19mm thick to bottom edge Facing: None Transom: N/A</p> <p>FRAME: Head & Jambs: Sapele (640kg/m³), 95 x 32mm thick, with 26 x 13mm thick planted stop. Frame Fixing: 6No 6 x 100mm long steel screws per jamb Threshold: Non-Combustible.</p> <p>INTUMESCENT: Frame Reveal (Head & Jambs): Intumescent Seals Ltd Therm-A-Seal, 10 x 4, fitted centrally Frame Reveal (Overpanel Bottom): 2No. Intumescent Seals Ltd Therm-A-Seal, 10 x 4, one fitted centrally in the rebate and one fitted centrally in the upstand. Leaf Edges: None Meeting Stiles: 2No. Intumescent Seals Ltd Therm-A-Seal, 10 x 4, fitted centrally in the meeting edge of each leaf. Bottom Leaf Edge: None</p> <p>HARDWARE: Hinges: 3No. Royde & Tucker H105 (Lift off) per jamb Closer: 1No. Dorma Door Controls TS73 Overhead Closer per leaf Lock/Latch: None Lock/Latch Size: N/A Lock/Latch Status: N/A Flush Bolt: None Handle: None</p> <p>HARDWARE PROTECTION: Under Hinges: None Under Forend & Keep: N/A Around Lockcase: N/A</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	Integrity: 33 minutes Insulation: 33 minutes

3.1.49 Test Report CFR1903181 Revision 1

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of Test:	18.MAR.2019
Identification of Test Body:	Cambridge Fire Research. UKAS No. 4319
Sponsor:	Halspan Limited
Tested Product:	Latched Single Acting Double Doorset – LSADD
Tested Orientation:	Opening in towards heating condition
Sampling information:	None
Summary of Test Specimen:	<p>LEAF: Overall Size: 2440 (h) x 1000/1000 (w) x 45mm (t) Core: Halspan Prima core(630kg/m3), 44mm thick Lipping: Sapele (640kg/m3), 6mm thick to vertical edges Facing: 0.5mm thick, Sapele</p> <p>FRAME: Head & Jambs: European Redwood (470kg/m3), 94 x 32mm thick, with 30 x 15mm thick planted stop. Frame Fixing: 5No 5 x 100mm long steel woodscrews per jamb, 2No 870 from each corner. Threshold: Non-combustible</p> <p>INTUMESCENT: Frame Jambs: 1No Halspan SLS-PLA-103, 15x4, 16mm from exposed face of the jambs. Frame Head: 1No Halspan SLS-MS-404, 25x4, 10mm from the exposed face of the head. Meeting Stiles (Left hand Leaf): 1No. Halspan SLS-MS-406, 10 x 4, Fitted centrally Meeting Stiles (Right hand Leaf): 2No. Halspan SLS-MS-406, 10 x 4, Set 7.5mm and 27mm from the exposed face of the leaf. Bottom Leaf Edge: None</p> <p>HARDWARE: Hinges: 4No Halspan Limited 60 HIN-BSS-103 per leaf Closer: 1No R30 Series CLR-AGN-100 per leaf Lock/Latch: 1No. Halspan R30 Lockset LCK-BSS-100 Lock/Latch Size: Lockcase: 164 x 81 x 14mm, Forend: 238 x 22 x 2.8mm, Keep: 180 x 40 x 1.4mm. Lock/Latch Status: Engaged for test Flush Bolt: 2No. Zoo Architectural Hardware ZAS03RSS fixed to the top & bottom of slave leaf. Handle: 1No: Zoo Architectural Hardware Stanza ZCA030SA</p> <p>HARDWARE PROTECTION: Under Hinges: 1mm thick Halspan SLS-PAD-103 Under Forend & Keep: 1mm thick Halspan SLS-PAD-109 Around Lockcase: 1mm thick Halspan SLS-PAD109</p>

Summary of test specimen (continued):	<p><u>GLAZING (Main Leaf):</u> Glass: Pilkington Pyrodur 30-105, 7mm thick Aperture Size: 992 x 392mm wide Beading: Sapele (640kg/m³*), 19.5 x 21mm high, chamfered & bolected. Bead Fixing: 1.6 x 50mm long pins, at 35° degrees, 150mm centres & 50mm from corners.</p> <p><u>GLAZING (Slave Leaf):</u> Glass: Pilkington Pyrodur 30-105, 7mm thick Aperture Size: 992 x 392mm wide Beading: Sapele (640kg/m³*), 19.5 x 21mm high, chamfered & bolected. Bead Fixing: 1.6 x 50mm long pins, at 35° degrees, 150mm centres & 50mm from corners.</p> <p><u>GLAZING SYSTEM:</u> Glazing Perimeter: 10mm wide x 2mm thick, Halpan SLS-MSC-210, fixed inside glazing bead around all sides Glazing Aperture Liner: None</p>
Test Standard:	BS EN 1634-1:2014
Performance:	<p>Integrity: Sustained flaming: 38 minutes Cotton pad test: 35 minutes Gap gauge: 39 minutes Insulation: Glazing: 9 minutes Doors: 35 minutes</p>

* = information was supplied subsequently by the Sponsor

3.1.50 Test Report WF370389

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of Test:	18.AUG.2016
Identification of Test Body:	Warringtonfire Testing and Certification Ltd. UKAS No. 1762
Sponsor:	Halspan Ltd
Tested Product:	Unlatched Single Acting Double Doorset + Overpanel - ULSADD+OP
Tested Orientation:	Opening in towards heating condition
Sampling information:	None
Summary of Test Specimen:	<p>LEAF: Overall Size: 2133 (h) x 915/915 (w) x 44mm (t) Core: Halspan particleboard (630kg/m³), 44mm thick Lipping: Beech (670kg/m³), 6mm thick to all vertical edges Lipping: Beech (670 kg/m³), 20mm thick to leaf head. Facing: None</p> <p>OVERPANEL: Overall Size: 600 (h) x 1835 (w) x 44mm (t) Core: Halspan particleboard (630kg/m³), 44mm thick Lipping: Beech (670kg/m³), 20mm thick to bottom edge only Facing: None</p> <p>FRAME: Head & Jambs: Beech(670kg/m³), 90 x 42mm thick, with 30 x 16mm thick planted stop. Frame Fixing: 4No. 6 x 80mm long steel screws per jamb Threshold: Non-Combustable.</p> <p>INTUMESCENT: Frame Reveal: Halspan Ref: SLS-PLA-103, 15 x 4, Fitted 14mm from the exposed face in the frame reveal. Leaf Edges (Closing Edge – Left Leaf): 2No. 10 x 4, Halspan Ref: SLS-PLA-100. Fitted 8mm apart, 8mm from the exposed face Leaf Edges (Head): 1No. 10 x 2, Interdens, Fitted 9mm from the unexposed face in the rebate of the lipping. Overpanel (bottom edge only): 1No.10 x 4 Halspan Ref: SLS-PLA-100 fitted 5mm from the exposed face in the rebate of the lipping and 1No.10 x 4 Halspan Ref: SLS-PLA-100 fitted 6mm from the unexposed face in the the lipping</p> <p>HARDWARE: Hinges: 3No. Halspan R60 stainless steel bearing butt type hinge per jamb. Closer: 1No. Rutland TS6204 overhead type closer per leaf Lock/Latch: 1No. Halspan R60 mortice latch. Lock/Latch Size: Lockcase: 165* x 90* x 16*mm, Forend: 235 x 24 x 3*mm, Keep: 175 x 22 x 2*mm. Lock/Latch Status: Disengaged for test Flush Bolt: None Handle: Aluminium lever type handle</p> <p>HARDWARE PROTECTION: Under Hinges: 1mm thick Halspan Ref SLS-PAD-103 graphite type, Fitted under hinge blade on frame and leaf Under Forend: 1mm thick, Interdens Around Lockcase: 1mm thick, Interdens</p>

Summary of test specimen (continued):	<p><u>GLAZING (Main Leaf):</u> Glass: Pilkington Pyrodur EW30-104, 7mm thick Aperture Size: 730 x 550mm wide Beading: Profiled Beech (670kg/m³), 20 x 24mm high, chamfered & beveled. Bead Fixing (Left Leaf): 16g* x 38mm long steel pins, at 35* degrees, 70mm centres & 35mm from corners. Bead Fixing (Right Leaf): 16g* x 38mm long steel pins, at 35* degrees, 110mm centres & 30mm from corners.</p> <p><u>GLAZING (Slave Leaf):</u> Glass: Pyrodur EW30-104, 7mm thick Aperture Size: 275 x 275mm wide. Beading: Profiled Beech (670kg/m³), 20 x 24mm high, chamfered & beveled. Bead Fixing (Left Leaf): 16g* x 38mm long steel pins, at 35* degrees, 70mm centres & 35mm from corners. Bead Fixing (Right Leaf): 16g* x 38mm long steel pins, at 35* degrees, 110mm centres & 30mm from corners.</p> <p><u>GLAZING SYSTEM:</u> Glazing Perimeter: 2mm thick, Intumescent Seals Limited Therm-a-strip, between glass & bead. Glazing Aperture Liner: None</p>
Test Standard:	BS EN 1634-1:2014
Performance:	<p>Integrity: Sustained flaming: 37 minutes Cotton pad test: 37 minutes Gap gauge: 40 minutes Insulation: Maximum set: 37 minutes Average set: 37 minutes</p>

* = information was supplied subsequently by the Sponsor

3.1.51 Test Report Chilt/RF13063

The essential details of the referenced test report that are used to support the scope of this assessment are summarised below.

Date of test:	09.May.2008
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd.
Tested Product:	Unlatched, double leaf, single acting, timber doorset with glazing, overpanel & side panel – ULSADD+OP
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2135mm (h) x 915/915mm (w) x 44mm (t)</p> <p>Core: Halspan Optima 30 (620kg/m3), 44mm thick</p> <p>Lipping: Sapele (640kg/m3), 6mm thick to vertical edges and 12mm thick with 22 x 12mm deep rebate to leaf head.</p> <p><u>Overpanel:</u></p> <p>Overall Size: 600 (h) x 1830 (w) x 44mm (t)</p> <p>Core: same as leaf</p> <p>Lipping: Sapele (650kg/m3), 20mm thick with 22 x 12mm deep rebate.</p> <p><u>Sidepanel:</u></p> <p>Overall Size: 2741 (h) x 600 (w) x 44mm (t)</p> <p>Core: same as leaf</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Redwood (450kg/m3), 70 x 32mm thick, with 20 x 12mm thick planted stop.</p> <p>Architrave: MDF, 50 x 18mm thick</p> <p>Threshold: non combustible.</p> <p>Frame Fixing: 4no. 8 x 100mm long steel screws per jamb and 2no in head</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 1no 15x4 Halspan SLS Type seal. Fitted centrally in frame reveal and in leaf head.</p> <p>Meeting Edge: 1no 15x4 Halspan SLS Type seal. Fitted centrally in slave leaf.</p> <p>Smoke/Acoustics Seal: 1no 10.2x11 Halspan SLS-TRI-100/2. Fitted in upstand of stop and in overpanel rebate.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no. Halspan 30 HIN-BSS-103 per leaf</p> <p>Closer: 1no Halspan 30 CLR-AGN-100 per leaf.</p> <p>Lock/Latch: Halpsan R30 LCK-BSS-100 (disengaged for test)</p> <p>Handle: Zoo Hardware Z1CF</p> <p>Shoot bolt: Surface mounted Straight Aluminium barrel bolts (engaged for test)</p> <p><u>Hardware Protection:</u></p> <p>Under Forend & Keep: 1mm thick SLS-PAD-107</p> <p><u>Glazing (Both Leaves):</u></p> <p>Glass: CGI International, Pyroguard EI30, 23mm thick.</p> <p>Glass Size (Main Leaf): 690 x 550mm wide</p> <p>Glass Size (Slave Leaf): 308 x 308mm wide</p> <p>Beading: Sapele (650kg/m3), 21 x 18mm wide, chamfered and bolected.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 10 x 2mm thick interdens between glass and bead</p> <p><u>Doorset Orientation:</u></p> <p>Opening toward heating conditions.</p>
Test Standard:	BS EN 1634-1: 2008 & BS EN 1363-1: 1999
Performance:	Integrity: 36 minutes Insulation: 36 minutes

3.1.52 Test Report BMT/FEP/F16037 Doorset A

The referenced test report, the essential details of which are summarised below, is the primary data for: James Latham's WoodEx engineered timber frame.

Date of Test:	01.FEB.2016
Identification of Test Body:	Warringtonfire Testing and Certification Ltd. UKAS No. 1762
Sponsor:	James Latham
Tested Product:	ULSADD - Unlatched Single Acting Double Doorset.
Tested Orientation:	Opening in towards heating condition
Sampling information:	None
Summary of Test Specimen:	<p>LEAF: Overall Size: 2042 (h) x 356/900 (w) x 54mm (t) Core: Halspan Optima graduated density particleboard (620kg/m³), 54mm thick Lipping: American White Oak (720kg/m³), 6mm thick to all four edges Facing: None</p> <p>FRAME: Head & Jambs: James Latham Woodex Grandis (690kg/m³), 90 x 45mm thick, with 34 x 15mm thick planted stop. Frame Fixing: 4No. 8 x 100mm long steel screws per jamb Threshold: Non-combustible.</p> <p>INTUMESCENT: Frame Reveal (Head & Jambs): 2No. STS graphite type seals, 15 x 4, Fitted 10mm apart, 8mm from the exposed face in the frame reveal. Leaf Edges (right leaf only): 2No. STS graphite type seals. Fitted 10mm apart, 7mm from the exposed face in the right leaf closing edge. Bottom Leaf Edge: None</p> <p>HARDWARE: Hinges: 3No. Eurospec bearing butt type hinges Closer: 1No. Geze overhead type closer Lock/Latch: None fitted Flush Bolt: 2No. Stainless steel, Fitted at the head and threshold of the left leaf edge Handle: None fitted</p> <p>HARDWARE PROTECTION: Under Hinges: 1mm thick interdens Under Forend & Keep: 1mm thick interdens Around Lockcase: N/A</p> <p>GLAZING (Main Leaf): Glass: Promat Securiglass Pyrobel, 16mm thick Aperture Size: 1258 x 208mm wide Beading: Profiled American Oak (640kg/m³), 32 x 24mm high, chamfered & bolected. Bead Fixing: 2mm* x 60mm long steel pins, at 35* degrees, 100mm centres & 30mm from corners.</p> <p>GLAZING SYSTEM: Glazing Perimeter: 5mm thick AB (Acrylic) AS633 closed cell foam rebated into bead, fitted between the glass and bead on both faces. Glazing Aperture Liner: 2 x 54mm Norseal Therm-A-Line glazing liner, fitted lining the glazing aperture.</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	<p>Integrity: 63 minutes Insulation: 63 minutes</p>

* = information was supplied subsequently by the Sponsor

3.1.53 Test Report BMT/FEP/F14102 Doorset A

The referenced test report, the essential details of which are summarised below, is the primary data for: James Latham's WoodEx engineered timber frame.

Date of Test:	08.JUL.2014
Identification of Test Body:	Chiltern International Fire Limited UKAS No. 1762 (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	James Latham
Tested Product:	ULSADD - Unlatched Single Acting Double Doorset
Tested Orientation:	Opening in towards heating condition
Sampling information:	N/A
Summary of Test Specimen:	<p>LEAF: Overall Size: 2040 (h) x 303/826 (w) x 54mm (t) Core: Halspan Optima particleboard (620kg/m³), 54mm thick Lipping: Beech (720kg/m³), 8mm thick to all four edges Facing: None</p> <p>FRAME: Head & Jambs: Lathams WoodEx Engineered European Ash FSC (640kg/m³), 125 x 30mm thick, with 32 x 15mm thick planted MDF stop (700kg/m³). Frame Fixing: 4No 8 x 100mm long steel screws per jamb Threshold: Non-Combustible.</p> <p>INTUMESCENT: Frame Reveal: 2No. Norseal 154FOW, 15 x 4, Fitted 10mm apart 7mm from the exposed face. Norseal NOR710 smoke/acoustic seal, 10 x 11, Fitted up to the upstand of the stop in the frame reveal. Leaf Edges (Right Leaf closing edge): 1No. 20x4 Lorient LP2004SS. Fitted centrally. Leaf Edges (Left Leaf closing edge): 1No. 20x4 Lorient LP2004. Fitted centrally. Bottom Leaf Edge: None</p> <p>HARDWARE: Hinges: 3No Royde and Tucker H101 lift off type hinges per jamb. Closer: 1No. Geze TS2000V overhead type closer. Lock/Latch: 1No. Zoo tubular steel mortice latch Lock/Latch Size: Lockcase: 64* x 21* x 15*mm, Forend: 62 x 25 x 2*mm, Keep: 65 x 25 x 2*mm. Lock/Latch Status: Disengaged for test Flush Bolt: Fush bolts 200 x 25 Handle: Aluminium lever type handle</p> <p>HARDWARE PROTECTION: Under Hinges: 1mm thick interdens Under Forend & Keep: 1mm thick interdens Around Lockcase: None Under flushbolts: 1mm thick interdens</p> <p>GLAZING (Main Leaf): Glass: AGC Flatglass Pyrobel 16, 16mm thick Aperture Size: 1290 x 190mm wide Beading: American White Oak (670kg/m³), 32 x 20mm high. Bead Fixing: 1.5 x 50mm Pneumatically fired steel pins, 150mm centres & 55mm from corners.</p> <p>GLAZING SYSTEM: Glazing Perimeter: 25 x 2mm thick ISL Therm-a-Bead, between glass & bead. Glazing Aperture Liner: 2 x 54mm ISL Therm-a-Line.</p>
Test Standard:	BS 476 Part 22: 1987.
Performance:	Integrity: 42 minutes Insulation: 42 minutes

* = information was supplied subsequently by the Halspan Limited

3.1.54 Test Report BMT/FEP/F14102 Doorset B

The referenced test report, the essential details of which are summarised below, is the primary data for: James Latham's WoodEx engineered timber frame.

Date of Test:	08.JUL.2014.
Identification of Test Body:	Chiltern International Fire Limited UKAS No. 1762 (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	James Latham
Tested Product:	ULSADD - Unlatched Single Acting Double Doorset
Tested Orientation:	Opening in towards heating condition
Sampling information:	None
Summary of Test Specimen:	<p>LEAF: Overall Size: 2040 (h) x 303/826 (w) x 44mm (t) Core: Halspan Optima Particleboard (620kg/m³), 44mm thick Lipping: Beech (720kg/m³), 8mm thick to all four edges Facing: None</p> <p>FRAME: Head & Jambs: Lathams WoodEx Engineered Redwood FSC (510kg/m³), 125 x 30mm thick, with 32 x 15mm thick planted MDF stop (700kg/m³). Frame Fixing: 4No 8 x 100mm long steel screws per jamb Threshold: Non-combustible.</p> <p>INTUMESCENT: Frame Reveal: Norseal 154FOW, 15 x 4, Fitted 14mm from the exposed face. Norseal NOR710 smoke/acoustic seal, 10 x 11, Fitted up to the upstand of the stop in the frame reveal. Leaf Edges(Right Leaf closing edge): 1No 20x4 Lorient Polyproducts Ltd LP2004SS Type 617. Fitted centrally. Leaf Edges (Left Leaf closing edge): None Bottom Leaf Edge: None</p> <p>HARDWARE: Hinges: 3No Royde and Tucker H101 lift off type hinges per jamb. Closer: 1No. Geze TS2000V overhead type closer. Lock/Latch: 1No. Zoo tubular steel mortice latch Lock/Latch Size: Lockcase: 64* x 21* x 15*mm, Forend: 62 x 25 x 2*mm, Keep: 65 x 25 x 2*mm. Lock/Latch Status: Disengaged for test Flush Bolt: Flush bolts 200 x 25 Handle: Aluminium lever type handle</p> <p>HARDWARE PROTECTION: Under Hinges: 1mm thick interdens Under Forend & Keep: 1mm thick interdens Around Lockcase: None Under flushbolts: 1mm thick interdens</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	Integrity: 30 minutes Insulation: 30 minutes

* = information was supplied subsequently by Halspan Limited

3.1.55 Test Report WF420277

The referenced test report, the essential details of which are summarised below, is the primary data for: James Latham's WoodEx engineered timber frame.

Date of test	15 th November 2019
Identification of test body:	Warringtonfire Testing and Certification Ltd, UKAS No. 1762
Sponsor:	James Latham
Tested Product:	Unlatched, single leaf, single acting, timber doorset - ULSASD
Tested Orientation:	Doorset orientated to open toward heating conditions.
Summary of test specimen:	<p><u>Door leaf:</u> Dimensions: 2111mm (h) x 925mm (w) x 54mm (t). Core: Halspan Prima particleboard core 54(t), density 630kg/m³. Lipping: American Maple, 10(t) all edges.</p> <p><u>Intumescent:</u> Frame reveal: 2No. Pyroplex Rigid Box Seals ref: 8700FO 15(w) x 4(t), fitted centrally, 10 apart in leaf edges of the head and jambs.</p> <p><u>Frame:</u> Material: Lathams WoodEx Red Grandis. Dimensions: 140(d) x 48(t) with integral stop 16(t) x 83(w), density 626 kg/m³ Frame fixing: 4no masonry fixings 100 mm long on each jamb.</p> <p><u>Hardware:</u> Hinges: 3No Royde & Tucker H102 stainless steel bearing butt hinges, 100(h) x 35(w) blade size. Closer: Dormakaba TS71 overhead closer, 232(w) x 68(w) footprint size. Latch: mortice latch/lock, 235(h) x 22(w) forend size. Lever Handle: Zoo hardware ref: ZSC2010SS, 50ø Rose size.</p> <p><u>Hardware protection:</u> 1mm thick Interdens fitted underneath both hinge blades. 1mm thick interdens fitted encasing latch body. 1mm thick interdens fitted under latch forend. 2mm thick interdens fitted under keep. 1mm thick interdens fitted lining flush bolt cut-outs and under keep.</p>
Test Standard:	BS 476: Part 22: 1987
Performance	<p>Integrity: 51 minutes</p> <p>Insulation: 51 minutes</p>

3.2 Supplementary Test Evidence

3.2.1 Evidence for Fanlights & Sidelights

The following test evidence has been incorporated to support the use of particular glass types and glazing systems, when used as sidelights or fanlights. From the sizes tested it is possible to establish the maximum pane size for the particular glass type in either landscape or portrait orientation.

The performance column indicates the fire resistance result obtained by the screen and doorset. In some cases the doorset result is below 30 minutes. In the case of test reference RF09134, the integrity failure at 29 minutes for the doorset was by cotton pad test applied to the doorset glass, which is not a failure mode for BS 476 Part 22. In the case of test reference RF10081, the doorset was based on a timber rail and stile construction and therefore the only aspect of the test being considered in this assessment is the glazed screen component, so the doorset result is not relevant.

Evidence for Fanlights & Sidelights			
Report Reference (Glass Type)	Pane Size & Glazing System (mm)	Test Standard	Performance (minutes)
RF09134 (EW30 Pyroguard)	Portrait: 2510 high x 810 wide Landscape: 816 high x 921 wide Glazing system: 15x3 K ceramic tape	BS EN 1634-1	Doorset: 29
			Screen: 34
RF09201 (EW30 Pyroguard)	Portrait: 1415 high x 320 wide Landscape: 816 high x 2510 wide Glazing system: 10 x 2 Interdens	BS EN 1634-1	Doorset: 33
			Screen: 33
RF10070 (EW30 Pyroguard)	Portrait: 1415 high x 310 wide Landscape: 816 high x 2510 wide Glazing system: 10 x 2 Interdens	BS EN 1634-1	Doorset: 33
			Screen: 33
RF10081 (EW30 Pyroguard)	Portrait: 2510 high x 1010 wide Landscape: 816 high x 921 wide and 320 high x 1010 wide Glazing system: 10 x 2 Interdens	BS EN 1634-1	Doorset: 29
			Screen: 32

Evidence for Fanlights & Sidelights			
Report Reference (Glass Type)	Report Reference (Glass Type)	Report Reference (Glass Type)	Report Reference (Glass Type)
RF10120 (EW30 Pyroguard)	Portrait: 2510 high x 1010 wide Landscape: 816 high x 921 wide and 320 high x 1010 wide Glazing system: 10 x 2 Interdens	BS EN 1634-1	Doorset: 32
			Screen: 32
RF10163 (EW30 Maxi Pyroguard)	Portrait: 1415 high x 320 wide and 987 high x 749 wide Landscape: 816 high x 2510 wide Glazing system: 10 x 2 Interdens	BS EN 1634-1	Doorset: 38
			Screen: 38
IFT 27128098 (EI30 Pyroguard)	Portrait: 2520 high x 225 wide and 1141 high x 1100 wide Landscape: 350 high x 2890 wide Glazing system: 7 x 2 Egopren glazing tape	BS EN 1634-1	Doorset: 34
			Screen: 34
IFT 27129622 Revision 1 (15mm Pyranova)	Portrait 2264 high x 350 wide Landscape 425 high x 2280 wide Glazing system 8 x 3 close cell foam	BS EN 1634-1	Doorset: 35
			Screen: 35
RF00138 (7 Pyrodur)	Portrait: 2016 high x 515 wide Landscape: 720 high by 1670 wide Glazing system: 20 x 2 Interdens	BS EN 1634-1	Doorset: 40
			Screen: 32

Evidence for Fanlights & Sidelights			
Report Reference (Glass Type)	Report Reference (Glass Type)	Report Reference (Glass Type)	Report Reference (Glass Type)
RF01024 Rev. A (10 Pyrodur)	Portrait: 2000 x 1400 Landscape: 720 high by 1670 wide Glazing system: 20 x 2 Interdens	BS 476: Part 22: 1987	Doorset: 60
			Screen: 57
RF03068 (7 Pyrodur)	Portrait: 2057 high x 917 wide Landscape: 720 high by 1670 wide Glazing system: 20 x 2 Interdens	BS EN 1634-1	Doorset: 37
			Screen: 37
RF05037 (15 Pyrostop)	Portrait: 2910 x 1406 wide Landscape: 720 high by 1670 wide Glazing system: 13 x 3 Hodgsons Firestrip 30	BS EN 1634-1	Doorset: 43
			Screen: 59
RF10028 (Pyroshield 2)	Portrait: 2040 high x 485 wide Landscape: 810 high x 1830 wide Glazing system: 10 x 2 Interdens	BS 476: Part 22: 1987	Doorset: 39
			Screen: 39

3.2.2 Test Report WF393450

The referenced test report summarised below is being used as supplementary evidence to support the Forever Firecheck Frame design

Date of test:	03.Jan.2018
Identification of test body:	Warringtonfire Testing and Certification Ltd
Sponsor:	Newmor Group Ltd. trading as Morland Profiles
Tested Product:	2no. Insulated, single acting single doorsets - ULSASD
Summary of test specimen:	<p><u>Door A & B</u></p> <p><u>Leaf (Door A):</u></p> <p>Overall Size: 2040 (h) x 924 (w) x 44mm (t)</p> <p>Core: Vicaima, Flaxboard (350-400kg/m3), 37mm thick.</p> <p>Stile & Rails: European Whitewood (420-470kg/m3), 44 x 38mm deep rails & 44 x 33mm deep stiles</p> <p>Lipping: 5mm thick Oak (500kg/m3) to all edges.</p> <p>Facing: Oak foil (620kg/m3).</p> <p><u>Leaf (Door B):</u></p> <p>Overall Size: 2040 (h) x 924 (w) x 44mm (t)</p> <p>Core: Egger, GDC (540kg/m3), 44mm thick.</p> <p>Lipping: 2mm thick ABS (1150kg/m3) to all edges.</p> <p>Facing: Paper, Melamine, Laminate facing.</p> <p><u>Frame:</u></p> <p>Head & Jambs: Morland, Forever Firecheck frame – MDF (680kg/m3) with laminate facing, 90 x 30mm thick with 30 x 12mm thick planted stop</p> <p>Frame Fixing: 4no 80 x 5mm diameter screw fixings with plastic plugs along latched jambs, 6no along hinged jambs.</p> <p><u>Intumescent:</u></p> <p>Frame Head & Jambs: 1no 15x4 Mann McGowan CF 356 in frame grooves concealed under decorative finish. Interrupted at hinges & latch keep.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Zoo ZHSS243RS hinges Closer: 1no Briton 1120B.SES Lock/Latch: 1no Zoo ZDL0055RSS.</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges: 1mm thick Therm-A-Strip. Around Lockcase, Under Forend & Keep: 1mm thick interdens.</p> <p><u>Glazing:</u></p> <p>Not tested</p> <p><u>Specific Feature Being Tested:</u></p> <p>Forever Firecheck Frame</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 39 minutes (DOOR A) 43 minutes (DOOR B) Insulation: 39 minutes (DOOR A) 43 minutes (DOOR B)</p>

3.2.3 Test Report WF393430

The referenced test report summarised below is being used as supplementary evidence to support the Forever Firecheck Frame design

Date of test:	03.Jan.2018
Identification of test body:	Warringtonfire Testing and Certification Ltd
Sponsor:	Newmor Group Ltd. trading as Morland Profiles
Tested Product:	2no. Insulated, single acting single doorsets – ULSASD
Summary of test specimen:	<p><u>Door A & B</u></p> <p><u>Leaf:</u></p> <p>Overall Size: 2040 (h) x 924 (w) x 44mm (t)</p> <p>Core: Egger GDC (540kg/m³), 44mm thick.</p> <p>Lipping: 2mm thick ABS (1150kg/m³) to all edges.</p> <p>Facing: Paper, Melamine, Laminate facing.</p> <p><u>Frame:</u></p> <p>Head & Jambs: Morland, Forever Firecheck frame – MDF (680kg/m³) with laminate facing, 90 x 30mm thick with 30 x 12mm thick planted stop</p> <p>Frame Fixing: 4no 80 x 5mm diameter screw fixings with plastic plugs along latched jambs, 6no along hinged jambs.</p> <p><u>Intumescent:</u></p> <p>Frame Head & Jambs: 1no 15x4 Mann McGowan CF 356 in frame grooves concealed under decorative finish. Interrupted at hinges & latch keep.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Zoo ZHSS243RS hinges Closer: 1no Briton 1120B.SES Lock/Latch: 1no Zoo ZDL0055RSS.</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges: 1mm thick Therm-A-Strip. Around Lockcase, Under Forend & Keep: 1mm thick interdens.</p> <p><u>Glazing:</u></p> <p>Not tested</p> <p><u>Specific Feature Being Tested:</u></p> <p>Forever Firecheck Frame</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 46 minutes (DOOR A) 43 minutes (DOOR B) Insulation: 46 minutes (DOOR A) 43 minutes (DOOR B)</p>

3.2.4 Test Report WF 367904B

The referenced test report summarised below is being used as supplementary evidence to support the Vingcard electronic locks

Date of test	10.Jul.2016
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	ASSA ABLOY Hospitality Limited
Tested Product:	2no. Insulated, single acting single doorsets - LSASD
Summary of test specimen:	<p><u>Doorset A & B are of the same construction</u></p> <p><u>Leaf:</u></p> <p>Overall Size: 2040 (h) x 932 (w) x 44mm (t)</p> <p>Core: Halspan Optima, 3no layer particle board, 44mm thick.</p> <p>Lipping: 8mm thick Sapele (640kg/m3), to vertical edges</p> <p><u>Frame:</u></p> <p>Head & Jambs: Softwood (510kg/m3), 72 x 43mm with 12mm deep rebated stop</p> <p>Frame Fixing: 4no 100 x 5.6mm diameter screws along closing jamb & 6no along hinged jamb</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 1no 15x4 Pyroplex CF355 graphite, fitted centrally in rebate.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Royde & Tucker H102-fr-BZP</p> <p>Latch 1: 1no ASSA ABLOY Vingcard Essence RFID (active lock)</p> <p>Latch 2: 1no ASSA ABLOY Vingcard Classic RFID (inactive lock)</p> <p>Latch 3: 1no ASSA ABLOY Vingcard Signature RFID (inactive lock)</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges: 1mm thick interdens</p> <p><u>Glazing:</u></p> <p>Not tested</p> <p><u>Special Feature Being Tested:</u></p> <p>Vingcard electronic locks.</p> <p><u>Doorset Orientation:</u></p> <p>Door A: Open away from heating conditions.</p> <p>Door B: Opening towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2014
Performance:	<p>Integrity: 36 minutes (Door A); 36 minutes (Door B)</p> <p>Insulation: 36 minutes (Door A); 36 minutes (Door B)</p>

3.2.5 Test Report WF 391351A

The referenced test report summarised below is being used as supplementary evidence to support the Pyrogrille 100 air transfer grilles

Date of test:	09.Dec.2017
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	Mann McGowan Fabrications Ltd
Tested Product:	2no. Insulated, single acting single doorsets - LSASD
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size (Door A): 2040 (h) x 926 (w) x 44mm (t) Overall Size (Door B): 2040 (h) x 926 (w) x 54mm (t) Core (Door A): Halspan Optima 30, 44 mm thick Core (Door B): Halspan Optima 60, 54mm thick Lipping: 6mm thick Sapele (640kg/m3), to all four edges.</p> <p><u>Frame:</u></p> <p>Head & Jambs (Door A): Redwood (450kg/m3), 95 x 44mm with 45 x 12mm deep rebated stop. Head & Jambs (Door B): Sapele (640kg/m3), 95 x 44mm with 55 x 12mm deep rebated stop. Frame Fixing: 150mm x 5.8mm diameter wood screws</p> <p><u>Intumescent:</u></p> <p>Head & Jambs (Door A): 1no 15x4 Palusol 500PSA, fitted centrally in rebate Head & Jambs (Door B): 2no 15x4 Palusol 500PSA, fitted centrally in rebate</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no Royde & Tucker Hi Load 105 Lift-off hinges</p> <p>Closer: 1no Rutland TS3204 Closer</p> <p>Latch: 1no Smith & Locke 3006K (engaged)</p> <p>Handle: Locke & co 2000 series lever handle.</p> <p>Air Transfer Grille: 1no Pyrogrille 100</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges (Door A): 1mm thick Mann Mcgowan Interdens</p> <p>Under Hinges (Door B): 2mm thick Mann Mcgowan Interdens</p> <p>Around Lockcase (Door A): 1mm thick Mann Mcgowan Interdens</p> <p>Around Lockcase (Door B): 2mm thick Mann Mcgowan Interdens</p> <p>Under Forend and Keep (Door A): 1mm thick Mann Mcgowan interdens</p> <p>Under Forend and Keep (Door B): 2mm thick Mann Mcgowan interdens</p> <p>Around Grille Perimeter: Mann Mcgowan Pyromas A acrylic sealant</p> <p><u>Glazing:</u></p> <p>Not tested</p> <p><u>Specific Feature Being Tested:</u></p> <p>Pyrogrille 100- Mann Mcgowan air transfer grille</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2014
Performance:	Integrity: 40 minutes (DOOR A); 69 minutes (DOOR B) Insulation: 40 minutes (DOOR A); 69 minutes (DOOR B)

3.2.6 Test Report WF146520

The referenced test report summarised below is being used as supplementary evidence to support the Pyroplex air transfer grilles

Date of test:	08.Jun.2005
Identification of test body:	Warringtonfire Testing and Certification Ltd
Sponsor:	Pyroplex Ltd.
Tested Product:	Indicative test of 4no. air transfer grilles within timber door leaf constructions
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 990mm (h) x 900mm (w) x 44/54mm (t)</p> <p>Core: Halspan Prima 44mm thick (containing Grilles C & D) and 54mm thick (containing Grilles A & B) with 6mm hardwood lining</p> <p><u>Hardware:</u></p> <p>All grilles 0.6mm galvanised steel assembled in a modular format with a clip system to connect the grille facings</p> <p>Grille A: 225mm x 112mm x 40mm in top half of door leaf</p> <p>Grille B: 300mm x 300mm x 40mm in bottom half of door leaf</p> <p>Grille C: 225mm x 112mm x 40mm in top half of door leaf</p> <p>Grille D: 300mm x 300mm x 40mm in bottom half of door leaf</p> <p><u>Hardware Protection:</u></p> <p>Grille A: 4no layers, 40mm (w) x 3.5mm (t) and 224mm (l) of Pyroplex intumescent</p> <p>Grille B: 5no layers, 40mm (w) x 3.5mm (t) and 148mm (l) of Pyroplex intumescent</p> <p>Grille C: 4no layers, 40mm (w) x 3.5mm (t) and 224mm (l) of Pyroplex intumescent</p> <p>Grille D: 5no layers, 40mm (w) x 3.5mm (t) and 148mm (l) of Pyroplex intumescent</p> <p><u>Specific Feature Being Tested:</u></p> <p>Pyroplex Air Transfer Grilles</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p><u>Integrity:</u></p> <p>Grille A 41 minutes</p> <p>Grille B 55 minutes</p> <p>Grille C 46 minutes</p> <p>Grille D 45 minutes</p>

3.2.7 Test Report Chilt/RF08169

The referenced test report summarised below is being used as supplementary evidence to support the Pyrotech glass

Date of test	22.Nov.2008
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Essex Safety Glass
Tested Product:	uninsulated, glazed single leaf, single acting, timber doorset in a glazed screen
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size : 2040 (h) x 926 (w) x 44mm (t)</p> <p>Stiles & Top Rail: Sapele (640kg/m³), 100 x 44mm thick</p> <p>Bottom Rail: Sapele (640kg/m³), 205 x 44mm thick</p> <p>Aperture E (leaf glazing): 1734mm (h) x 726mm (w)</p> <p><u>Screen Aperture Sizes:</u></p> <p>Aperture A: 873mm (h) x 954mm (w)</p> <p>Aperture B: 873mm (h) x 446mm (w)</p> <p>Aperture C: 873mm (h) x 1440mm (w)</p> <p>Aperture D: 2007mm (h) x 954mm (w)</p> <p>Aperture F: 2007mm (h) x 954mm (w)</p> <p><u>Intumescent:</u></p> <p>Leaf Edges: Therm-A-Seal 15 x 4mm in leaf edges</p> <p><u>Frame:</u></p> <p>Head & Jambs: Sapele (640kg/m³), 90 x 40mm thick, with 12mm thick stop</p> <p>Head and Jambs together with transoms and mullions of Sapele (640kg/m³), 90 x 40mm thick, form the screen.</p> <p>Frame Fixing: not detailed</p> <p><u>Hardware:</u></p> <p>Hinges: 3no. Royde & Tucker H105 lift of hinges</p> <p>Closer: Dorma TS71 overhead door closer</p>

Summary of test specimen (continued):	<p><u>Hardware Protection:</u></p> <p>Under Hinges: 1mm thk Interdens under hinge blades</p> <p><u>Leaf Glazing:</u></p> <p>Glass: ESG Pyrotech 630 6mm thk including aluminium foil at glass edges.</p> <p>Glass Size: 1711mm x 703mm</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 10mm (w) x 1mm thick interdens around perimeter</p> <p>Glass & Bead: Kerafix ceramic tape 15 x 3mm between glass and beads</p> <p><u>Bead: Sapele: 26mm (h) x 22mm (d) including a 5 x 5 bolection return and a 15° chamfer.</u></p> <p><u>Specific Feature Being Tested:</u></p> <p>Pyrotech glass</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2000
Performance:	Integrity: 16 minutes
Reason for use (if test failed)	Supplementary evidence for the use of Essex Safety Glass Pyrotech in 44mm thick timber doors.
Mode of failure (if test failed)	<p>Initial Failure: Cotton pad test on glass at 16 minutes, which has to be applied to uninsulated glasses, but this is not a failure mode for BS 476 Part 22.</p> <p>Further Failure: 34 minutes</p>

3.2.8 Test Report CFR1909241

The referenced test report summarised below is being used as supplementary evidence to support the concealed hinges and concealed closer

Date of test:	24.Sep.2019
Identification of test body:	Cambridge Fire Research
Sponsor:	Halspan Ltd.
Tested Product:	Insulated, glazed double leaf, single acting, timber doorset – LSADD.
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2135mm (h) x 915/915mm (w) x 54mm (t)</p> <p>Core: Halspan Prima 60, 54mm thick.</p> <p>Lipping: 6mm thick Sapele to all edges.</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 2no. 15x4 Halspan verified Sodium Silicate based seals. Fitted 7mm and 33mm from exposed face.</p> <p>Meeting Edges: 1no 10x4 Halspan verified Sodium Silicate based seals. Fitted centrally to one leaf edge. And 2no 15x4 fitted 8mm from both faces left leaf.</p> <p><u>Frame:</u></p> <p>Head & Jambs: Sapele, 45 x 96mm deep, with 15 x 30mm deep planted stop</p> <p><u>Hardware:</u></p> <p>Hinges: 4no Eurospec CEAM Art Stars 1131 concealed hinges.</p> <p>Closer: 1no concealed closer The tested closer reference redacted from this summary, please see note below*,</p> <p>Latch/Lock: Halspan R60 lockset.</p> <p>Flushbolt: Halspan LCK-MS-205.</p> <p>Handle: Halspan LCK-MS-200.</p> <p>Euro Cylinder: Vier V5 35/10/35.</p> <p>Escutcheon: Zoo Hardware ZCS001SS.</p>

Summary of test specimen (continued):	<p><u>Hardware Protection:</u></p> <p>Under Hinges: 1mm thick Eurospec ES1131</p> <p>Around Body of Closer 1: 1mm thick graphite.</p> <p>Forend Top of Closer 2: 1mm thick graphite.</p> <p>Around Body of Closer Track: 2mm thick graphite.</p> <p>Latch Body, Under Forend and Keep: 1mm Halspan SLS-PAD-109</p> <p>Around Body of Flushbolt: 2mm thick FlexiFire Z1F0160G</p> <p><u>Glazing:</u></p> <p>Glazing Units: Hygeno Intavista and Flushview units each 750mm high x 500mm wide.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 50x3 BASF interdens</p> <p><u>Specific Feature Being Tested:</u></p> <p>Concealed hinges. Concealed closer</p> <p><u>Doorset Orientation:</u></p> <p>Opening toward heating conditions.</p>
Test Standard:	BS EN 1634-1+A1:2018
Performance:	<p>Integrity: 31 minutes</p> <p>Insulation: (Left Glazing) - 14 minutes, (Right Glazing) - 21 minutes, (Door) - 31 minutes</p>

*The tested closer and the tested closer intumescent references are contained in the test report. The details of the tested closer have been redacted from this summary as requested by Halspan Ltd for commercial confidentiality. Halspan Ltd has stated that the brand name Halspan 6200 concealed closer is identical to the concealed closer originally tested and recorded in the test report.

3.2.9 Test Report BMT/FEP/F15097

The referenced test report summarised below is being used as supplementary evidence to support the STS intumescent seals

Date of test:	30.May.2015
Identification of test body:	Chiltern International Fire (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Sealed Tight Solutions Ltd.
Tested Product:	Insulated, glazed double leaf, single acting, timber doorset – ULSADD
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2900mm (h) x 1050/1050mm (w) x 44mm (t)</p> <p>Core: Halspan 44mm thick particleboard (620kg/m3).</p> <p>Lipping: 6mm thick Sapele (640kg/m3) to all edges.</p> <p><u>Frame:</u></p> <p>Head & Jambs: European Redwood (510kg/m3), 70 x 32mm thick, with 20 x 12mm thick planted stop.</p> <p>Architrave: European Redwood (510kg/m3), 45 x 18mm thick</p> <p>Threshold: non combustible.</p> <p>Frame Fixing: 4no. 80mm long steel wood screws per jamb.</p> <p><u>Intumescent:</u></p> <p>Frame Head & Jambs: 1no 15x4 STS ST1504FO. Fitted 15mm from exposed face in frame reveal. Fully interrupted by hinges. Fully interrupted by flushbolt keep in frame head.</p> <p>Meeting Edge: 2no. 10x4 STS ST1004FO. One fitted 7mm and the other fitted 27mm from exposed face in right leaf meeting edge. Both seals partially interrupted by latch forend with 4mm remaining continuous.</p> <p>Smoke/Acoustics Seal: 1no 10x9 STS ST1009. Fitted in upstand of stop.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 4no. Intelligent UK butt hinges, Closer: Arrone AR1500 overhead closer, Lock/Latch: Union mortice latch (disengaged), Handle: Aluminium lever handles Flushbolt: 1no ZAS03 (609mm x 20mm) to top of left leaf and 1no (203mm x 20mm) to bottom of left leaf (both disengaged)</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges, Latch Forend & Keep, Flushbolt Keep: 1mm thick ST100 graphite. Encasing Lockcase & Flushbolt: 1mm thick ST100 graphite.</p> <p><u>Glazing (Both Leaves):</u></p> <p>Glass: Pyrobelite, 7mm thick Aperture Size: 1150 x 600mm wide Beading (Left Leaf): 15 x 17.5mm deep, squared and bolected. Beading (Right Leaf): 20 x 22.5mm deep, chamfered and bolected.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: 1no 10x5 STS ST105GT between glass and beads</p> <p><u>Specific Feature Being Tested:</u></p> <p>STS intumescent seals</p> <p><u>Doorset Orientation:</u></p> <p>Opening toward heating conditions.</p>
Test Standard:	BS 476: Part 20/22: 1987
Performance:	<p>Integrity: 33 minutes</p> <p>Insulation: 33 minutes (In accordance with the note to clause 7.6.1.1 of BS 476: Part 22: 1987, the glazing has not been evaluated for insulation)</p>

3.2.10 Test Report WF 415117A

The referenced test report, the essential details of which are summarised below, for use as evidence for hardware.

Date of Test:	01.Oct.2019
Identification of Test Body:	Warringtonfire Testing and Certification Ltd.
Sponsor:	Gianni Industries Inc.
Tested Product:	Latched, Single Acting, Single Leaf, Timber Doorset- LSASD
Tested Orientation:	Open in towards heating condition
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2045 (h) x 924 (w) x 44mm (t) Core: Halspan Prima 30 Three-layer Particleboard (630kg/m3), 44mm thick</p> <p><u>Frame:</u> Head & Jambs: Pine (510 - 550kg/m3), 70mm x 46mm with 46mm x 13mm deep rebate Frame Fixing: 4no. 4.8mm dia. x 100mm long steel screws per jamb 100mm above and 100mm below centre of each hinge position</p> <p><u>Intumescent:</u> Frame Reveal/Leaf Edges: 1No 15x4 Pyroplex CF355 PVC encased graphite strip. Fitted centrally.</p> <p><u>Hardware:</u> Hinges: Royde & Tucker H102 Lock/Latch: Securefast SEU777/2R steel latch Lock/Latch Size: Lockcase: 155mm long x 75mm wide x 15.5 Forend plate: 235 x 24 x 3mm Lock/Latch Status: Upper lockset engaged for test Handle: Smith and Locke Aluminium Milano lever on rose Cylinder: Union Assa Abloy J-U6PED4555SN Union 6 pin Euro Profile 100mm long x 45/55 (even split) Strike Plate- Fail Secure: Gianni Industries Inc. GK361M-ST-1224 201.6mm long x 43mm wide x 29.5mm deep Strike Plate- Fail Safe: Gianni Industries Inc. GK450M-ST-1224 123mm long x 1.8 – 43.5mm ide x 29.5mm deep Door Loop: Gianni Industries Inc. DL-500 steel 292.5mm x 25mm x 20mm Door Loop: Gianni Industries Inc. DL-417ST steel 290mm x 24.4mm x 20mm</p>

Summary of test specimen (continued):	<u>Hardware Protection:</u> Under Hinges: 1mm thick interdens Under lock case Forend: 1mm thick interdens Strike Plates: wrapped in 1mm thick interdens Door loops: wrapped in 1mm thick Interdens <u>Specific Feature Being Tested:</u> Various hardware
Test Standard:	BS EN 1634-1:2014
Performance:	Integrity: 36 minutes Insulation: 36 minutes

3.2.11 Test Report WARRES 404075A

The referenced test report, the essential details of which are summarised below, for use as evidence for hardware – magnetic locks.

Date of Test:	29.AUG.2018
Identification of Test Body:	Warringtonfire
Sponsor:	Specialized Security
Tested Product:	Unlatched, Single Acting, Single Leaf Timber Doorset– ULSASD
Tested Orientation:	Opening in towards heating condition
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2084 (h) x 1007 (w) x 44mm (t) Core: Halspan Prima 30 three-layer particleboard (630kg/m³), 44mm thick Lipping: Sapele, 8mm thick to vertical edges</p> <p><u>Frame:</u> Head & Jambs: Pine (510-550kg/m³), 74 x 44mm thick, with 45 x 13.2mm deep rebate Frame Fixing: 5.8mm diameter x 150mm long steel screws</p> <p><u>Intumescent:</u> Frame Reveal/Leaf Edges: 1No 15x4 Pyroplex Rigid Box Seal. Fitted centrally.</p> <p><u>Hardware:</u> Hinges: confidential held in Exova archives Closer: confidential held in Exova archives Lock/Latch: confidential held in Exova archives Lock/Latch Status: disengaged for test Handle: confidential held in Exova archives Electronic Strike Plate: Specialized Security DS-01-02 mild steel/stainless steel 160mm long x 26mm wide x 29mm deep Magnetic Lock: Specialized Security ML 600 45mm x 26mm x 250mm long aluminium housing with slim line magnet Contact Armature: Specialized Security BLK 600 aluminium with mild steel block 38mm x 180mm long fixed to contact armature with 8mm Thr'd stud with countersunk head Magnetic Door Stop: Specialized Security DR-01 aluminium with slim line magnet fixed to door leaf 100mm up from base and 50mm in from lipping</p>

Summary of test specimen (continued):	<u>Hardware Protection:</u> Under Hinges: 2.4mm thick interdens sheet 100mm x 35mm Under Forend & Keep: 1mm thick intumescent Under forend and body of Electronic Strike Plate: 1mm AR8680 <u>Specific Feature Being Tested:</u> Various hardware, including electronic strike and surface mounted magnetic lock
Test Standard:	BS EN 1634-1:2014
Performance:	Integrity: 36 minutes Insulation: 36 minutes

3.2.12 Test Report Chilt/RF02110

The referenced test report summarised below is being used as supplementary evidence to support the Pyroswiss 'Classic' glass

Date of test	14.Nov.2002
Identification of test body:	Chiltern International Fire (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Vetrotech Saint-Gobain International AG
Tested Product:	2no. Insulated, glazed single leaf, single acting, timber doorsets
Summary of test specimen:	<p><u>Door A & B</u></p> <p><u>Leaf:</u></p> <p>Overall Size: 2044mm (h) x 825mm (w) x 44mm (t)</p> <p>Core: European softwood vertical lamels (450 kg/m³), 22 x 27mm thick</p> <p>Rails (top & bottom): European softwood horizontal lamel (450 kg/m³), 22 x 27mm thick.</p> <p>Facing: 9mm thick chipboard (680 kg/m³)</p> <p>Lipping: 8mm thick Sapele (640 kg/m³)</p> <p><u>Intumescent:</u></p> <p>Head & Jambs: 1no 15x4 Lorient LP1504</p> <p><u>Frame:</u></p> <p>Head & Jambs: Sapele (640 kg/m³), 90 x 40mm thick with 45 x 13mm deep planted stop.</p> <p>Architrave: Sapele (640kg/m³), 18mm thick.</p> <p>Frame Fixing: No.10 x 80mm long wood screws.</p> <p><u>Hardware:</u></p> <p>Hinges: 3no. Royde & Tucker H101 hinges.</p> <p>Closer: Dorma TS83 overhead closers.</p> <p>Lock/Latches: 63mm tubular latches</p> <p>Lock/Latch Status: Engaged</p> <p>Handle: Aluminium lever handles.</p>

Summary of test specimen (continued):	<p><u>Hardware Protection:</u></p> <p>Under Hinges: 2mm thick interdens</p> <p>Under Latch Forend & Keep: 2mm thick interdens</p> <p>Encasing Latch Body: 2mm thick interdens</p> <p><u>Glazing (Door A & B):</u></p> <p>Glass: Pyroswiss 'Classic' glass, 6mm thick.</p> <p>Aperture Size (Door A): 526 x 1640mm</p> <p>Aperture Size (Top) (Door B): 526 x 940mm</p> <p>Aperture Size (Bottom) (Door B): 526 x 490mm</p> <p>Beading: Sapele (640 kg/m³), 21 x 25mm high, 5x5mm bevel and 25° chamfer.</p> <p>Bead Fixing: 50mm long Steel screws. Fitted at 30° and 50mm from corners, 150mm centres vertical, and 130 centres horizontal.</p> <p>Expansion Allowance: 12mm on all edges.</p> <p><u>Glazing System:</u></p> <p>Perimeter: 15x3 Hodgsons sealant between beads and glass</p>
Test Standard:	BS EN 1634-1: 2000 & BS EN 1363-1: 1999
Performance:	<p>Integrity:</p> <p>Door A: 24 minutes; Door B: 23 minutes</p> <p>Insulation:</p> <p>Door A: 4 minutes; Door B: 4 minutes</p>
Reason for use (if test failed)	for use as evidence for 6mm thick pyroswiss glass and hodgsons sealant
Mode of Failure (if test failed)	<p>Initial Failure:</p> <p>Cotton pad failure of the glazing pane at 24 minutes (Door A).</p> <p>Cotton pad failure of the top glazing pane at 23 minutes (Door B).</p> <p>Further Failure:</p> <p>Continuous flaming around the top glazing at 32 minutes (Door B)</p> <p>Continuous flaming around the glazing at 38 minutes (Door A)</p> <p>This report is an evaluation of the potential fire resistance performance if the design were to be tested in accordance with BS 476: Part 22: 1987. If tested to BS 476: Part 22: 1987, a cotton pad test would not normally be applied to the glazing pane and therefore the initial failure times are not considered relevant when used for this purpose.</p>

3.2.13 Test Report WARRES 135011

The referenced test report, the essential details of which are summarised below.

Halspan Lite Double acting double doorset with overpanel use of top pivots in leaf and overpanel PUR and hotmelt glue for lipping used to support Double action pivots in an overpanel.

Date of test	28.Oct.2003
Identification of test body:	Warringtonfire
Sponsor:	Halspan Ltd
Tested Product:	Insulated, unglazed double leaf, double acting, timber doorset with overpanel – DADD+OP
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2040+622 (h) x 921/332 (w) x 44mm (t)</p> <p>Core: Halspan Lite (500kg/m3), 43mm thick.</p> <p>Lipping: Meranti hardwood, 10mm thick on vertical edges & 19mm thick on top and bottom edges.</p> <p>Facing: Gaboon hardwood veneer (700kg/m3), 0.6mm thick.</p> <p>Overpanel Core: Same construction as leaf core.</p> <p>Overpanel Lipping: Meranti hardwood, 6mm thick, along head & 19mm thick along base.</p> <p>Overpanel Facing: Gaboon hardwood veneer (700kg/m3), 0.6mm thick.</p> <p><u>Frame:</u></p> <p>Head: European Whitewood (450kg/m3), 95 x 38mm</p> <p>Jambs: European Whitewood (450kg/m3), 95 x 38 with 63mm radius x 3mm deep.</p> <p>Cill: European Whitewood (450kg/m3), 42 x 123mm lined with 11m calcium silicate board</p> <p>Frame Fixing: 100mm long x 5/4mm dia. woodscrews</p> <p><u>Intumescent:</u></p> <p>Jambs: 10x4 Lorient LP1004, fitted centrally.</p> <p>Overpanel: 15x4 Lorient LP1504 fitted centrally along base of overpanel.</p> <p>Meeting Edges: 10x4 Loreint LP1004, fitted centrally in both leaf edges.</p>

Summary of test specimen (continued):	<u>Hardware:</u> Closer: Dorma BTS75V, floor spring closer. <u>Hardware Protection:</u> 2mm Therm-A-Flex shrouding the mortice for the unit <u>Glazing:</u> Glass: Pilkington Pyrodur Plus, 7.5mm thick. Aperture Size: 250 x 1150mm Beading: Meranti hardwood (500kg/m3), 21 x 23 chamfered. <u>Glazing System:</u> 18x2 Lorient graphite based intumescent gasket. <u>Specific Feature Being Tested:</u> Hot melt PUR adhesive for lippings and meranti glazing beads <u>Doorset Orientation:</u> Opening toward heating conditions.
Test Standard:	BS 476: Part 22: 1987
Performance:	Integrity: 36minutes Insulation: 36 minutes (In accordance with the note to clause 7.6.1.1 of BS 476: Part 22: 1987, the glazing has not been evaluated for insulation)

This test is used to support the use of top pivots at the location where a leaf and overpanel meet. This was undertaken using a GDC with a slightly lower density than Prima 30 and still was successful. The lower density means the core would char quicker than Prima 30, so in the opinion of Warringtonfire if the top pivots worked in this arrangement in this lower density core, they would work in Prima 30.

3.2.14 Test Report CFR2004171B

The referenced test report, the essential details of which are summarised below, for use as evidence for Halspan Prima with cable way, electric strike and cable loop.

Date of Test:	17.Apr.2020
Identification of Test Body:	Cambridge Fire Research Ltd.
Sponsor:	Halspan Ltd.
Tested Product:	Latched Single Acting, Double Leaf, Timber Doorset – LSADD
Tested Orientation:	Opening in towards heating condition
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2440 (h) x 826/345 (w) x 54mm (t) Core: Halspan Prima 60 Particleboard (630kg/m³), 54mm thick Lipping: Sapele (640kg/m³), 6mm thick to all four edges</p> <p><u>Frame:</u> Head & Jambs: Sapele (640kg/m³), 100 x 32mm thick, with 32 x 12mm thick planted stop. Frame Fixing: 5no. 6 x 100mm long steel screws equispaced per jamb</p> <p><u>Intumescent:</u> Frame Reveal/Leaf Edges: 1No 15x4 Halspan Plain seal & 1no. 15x4 Halspan Twin Fin seal Meeting Stiles: 1No 15x4 Halspan Plain seal & 1no. 15x4 Halspan Twin Fin seal Top Leaf Edge: 1No 15x4 Halspan Plain seal Bottom Leaf Edge: 1No 15x4 Halspan Plain seal</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 4No Halspan HIN-BSS-103 per jamb</p> <p>Closer: Halspan R9000 Power Closer</p> <p>Lock/Latch: Dormakaba SVP 6268 Solenoid lock</p> <p>Lock/Latch Size: Lock body: 165 x 90 x 16mm, Forend: 235 x 24 x 3mm, Strike: 232 x 40</p> <p>Lock/Latch Status: Engaged for test</p> <p>Shoot Bolt: Royde & Tucker Barza B151-200-220 top & bottom of slave leaf.</p> <p>Handle: Dormakaba CORE 90050063189</p> <p>Cable way: Dormakaba KU 260</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges: 1mm graphite Halspan hinge pads</p> <p>Under Forend & Keep: 1mm Dormakaba Intumescent kit 40SVP6024</p> <p>Around Lockcase: 1mm Dormakaba Intumescent kit 40SVP6024</p> <p>Around cableway recess box: 1mm Halspan SLS-PAD-107 MAP to one side to all concealed faces of cableway recess box and to base of the inside</p> <p>Cableway: Sealed Tight Solutions Ltd SLS CablePro 1mm, graphite sleeve around all cables</p>
Test Standard:	BS EN 1634-1:2014
Performance:	<p>Integrity: 53 minutes</p> <p>Insulation: 53 minutes</p>

3.2.15 Test Report CFR2004171A

The referenced test report, the essential details of which are summarised below, for use as evidence for 12mm thick decorative MDF facings.

Date of Test:	17.Apr.2020
Identification of Test Body:	Cambridge Fire Research Ltd.
Sponsor:	Halspan Ltd.
Tested Product:	Latched Single Acting, Single Leaf, Timber Doorset – LSASD
Tested Orientation:	Opening in towards heating condition
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2440 (h) x 926 (w) x 68mm (t) Core: Halspan Optima 44, Particleboard (630kg/m³), 44mm thick Facings: MDF (720kg/m³), 12mm thick adhered with PVA adhesive to core Lipping: Sapele (640kg/m³), 6mm thick to all four edges</p> <p><u>Frame:</u> Head & Jambs: Sapele (640kg/m³), 100 x 32mm thick, with 32 x 12mm thick planted stop. Frame Fixing: 5no. 6 x 100mm long steel screws equispaced per jamb</p> <p><u>Intumescent:</u> Frame Reveal/Leaf Edges: 2No 15x4 Halspan SLS-PLA-103, set 17mm and 42mm from the exposed (opening) face</p> <p><u>Hardware:</u> Hinges: 4No Halspan HIN-BSS-102 per jamb Closer: Halspan R9000 Power Closer Lock/Latch: Halspan R60 Lock Lock/Latch Size: Lock body: 165 x 81 x 15mm, Forend: 234 x 22 x 3mm, Strike: 180 x 40 Lock/Latch Status: Engaged for test Handle: Zoo ZCA030SA</p> <p><u>Hardware Protection:</u> Under Hinges: 1mm graphite Halspan hinge pads SLS-PAD-103 Under Forend & Keep: 1mm Ammonium phosphate Halspan SLS-PAD-109 Around Lockcase: 1mm Ammonium phosphate Halspan SLS-PAD-109 <u>Around spindle/bottom half of eurocylinder aperture: 1mm graphite, Halspan SLS-PAD-107</u></p>
Test Standard:	BS EN 1634-1:2014
Performance:	<p>Integrity: 46 minutes Insulation: 46 minutes</p>

3.2.16 Test Report WARRES 63269

The referenced test report summarised below is being used as supplementary evidence to support the Perkomatic R85 closer

Date of test:	03.Jan.1995
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	Samuel Heath & Sons Plc
Tested Product:	2no. Insulated, single acting single doorsets - LSASD
Summary of test specimen:	<p><u>Leaf:</u> Overall Size: 1981 (h) x 762 (w) x 44mm (t) Core (Door A): Tubular chipboard Core (Door B): Flaxboard</p> <p><u>Frame:</u> Head & Jambs: Softwood 93 x 40mm with 15mm deep integral stop Frame Fixing: Not detailed</p> <p><u>Intumescent:</u> Leaf Edge (Door A): 1no 10x4 Lorient LP1004 fitted centrally in all four edges. Leaf Edge (Door B): 1no 10x4 Lorient LP1004 fitted centrally in top and vertical edges.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3no steel hinges per leaf</p> <p>Closer (Door A): 1no Perkomatic R85 & 1no Perko R1 concealed jamb closers per leaf</p> <p>Closer (Door B): 1no Perkomatic R85 & 1no Perko R1 concealed jamb closers per leaf</p> <p>Latch: 1no surface barrel bolt per leaf (engaged)</p> <p><u>Hardware Protection:</u></p> <p>Not tested</p> <p><u>Glazing:</u></p> <p>Not tested</p> <p><u>Specific Feature Being Tested:</u></p> <p>Perkomatic R85</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance:	<p>Integrity: 28 minutes (Door A); 29 minutes (Door B)</p> <p>Insulation: 28 minutes (Door A); 29 minutes (Door B)</p>
Reason for use (if test failed)	Supplementary test evidence for Perkomatic R85 concealed jamb closers.
Failure Mode (if test failed)	<p>Initial Failure: The failures at 28 and 29 minutes on Door A & B respectively both occurred at the top leading edge of the doors. These failures can be isolated in this instance for the specific items of interest (concealed closers) as they occurred remotely from the vicinity of the items.</p> <p>Further Failure: No further failure was observed until the test was terminated at 32 minutes.</p>

3.2.17 Test Report WARRES 131998

The referenced test report summarised below is being used as supplementary evidence to support the speedset hinge, 6mm Pyroshield glazing, Lorient FF1 glazing system, rebated meeting edges.

Date of test	09.Jun.2003
Identification of test body:	Warringtonfire Testing & Certification Ltd
Sponsor:	Halspan Ltd.
Tested Product:	1no. Unlatched, uninsulated, glazed, unequal double leaf, single acting, timber doorset. 1no. Unlatched, uninsulated, glazed, unequal double leaf, single acting, timber doorset with overpanel.
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size (Door A): 2040mm (h) x 926/200mm (w) x 44mm (t) Overall Size (Door B): 2040mm (h) x 930mm/200 (w) x 44mm (t) Core: Halspan 'Lite' core (500kg/m3 density) with ash veneer. Lipping: Meranti (500kg/m3), 6mm thick on hanging edges and 19mm on rebated meeting edges.</p> <p><u>Overpanel (Door B):</u></p> <p>Overall Size: 660 (h) x 1135 (w) Core: same construction as the door leaves.</p> <p><u>Intumescent:</u></p> <p>Head & Jambs/Frame Reveal (Door A): Lorient LP1504 1no 15 x 4mm in leaf hanging edges and LP1004 10 x 4mm in meeting stiles (Door B): Lorient LP1004 1no 10 x 4mm in hanging edges of frame and meeting edges of leaf.</p> <p><u>Frame:</u></p> <p>Head & Jambs (Door A): Balcas Speedset Frame, MDF, 70 x 25mm with 25 x 12mm stop. (Door B): Premodor Hedingham, Whitewood, 95 x 35 with 12mm deep stop.</p> <p>Frame Fixing (Door A): Right angled Speedset frame fixing clips every 200mm (Door B): 4no. 120mm long by 5.8mm dia. woodscrews per jamb</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>(Door A):</p> <p>Hinges: Hingemaster Speedset hinge.</p> <p>Lock/Latch: Era tubular latch,</p> <p>Closer: Briton 2003E closers</p> <p>(Door B):</p> <p>Hinges: Phoenix 7590 hinge.</p> <p>Lock/Latch: Newman Tonks Legge 3" rebate latch (disengaged).</p> <p>Closer: Briton 2003E closers.</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges: 2mm interdens</p> <p>Around Latch: 2mm interdens</p> <p><u>Glazing:</u></p> <p>Glass: Pyroshield 6mm wired</p> <p>Size (Door A): 595 x 995mm</p> <p>Size (Door B): 621 x 1028mm</p> <p>Beading: MDF (700kg/m³), 21 high x 25 wide, 45 deg. chamfer and 4mm bolection.</p> <p><u>Glazing System:</u></p> <p>Glazing Perimeter: Lorient Flexible Figure 1 glazing system.</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS 476: Part 22: 1987
Performance	<p>Integrity: 27 minutes (Door A), 32 minutes (Door B)</p> <p>Insulation: N/A</p>
Reason for Use	Speedset hinge, 6mm Pyroshield glazing, Lorient FF1 glazing system.
Failure Mode (if test failed)	<p>Initial Failure: (Door A): cotton pad test ignition at the top-right corner at 27 minutes. This failure can be isolated in this instance for the specific items of interest (i.e. speedset hinge, Pyroshield and Lorient FF1 glazing system) as the failure is remote from the vicinity of the items. Door design tested was Halspan Lite in reduced thickness MDF frames, which are not covered in this assessment report.</p> <p>Further Failure: No further failure of Door A until the test was terminated at 33 minutes.</p>

3.2.18 Test Report Chilt/RF02081

The referenced test report summarised below is being used as supplementary evidence to support the use of pivots with flush overpanels for large double doors, with glazed apertures as well as general evidence for Leaf 2.

Date of test	04.Sep.2002
Identification of test body:	Chiltern International Fire Ltd (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd
Tested Product:	Insulated, glazed timber double doorset with overpanel – ULDADD+OP
Summary of test specimen:	<p><u>Leaf:</u></p> <p>Overall Size: 2700mm(h) x 824/824mm(w) x 54mm(t)</p> <p>Core: Optima 60</p> <p>Lipping: 10mm thick radiused to 5mm Sapele (640kg/m³) lippings hanging door edges, 10mm thk to closing edge with radiused corners, bottom edge of O/P 10mm thick.</p> <p><u>Overpanel:</u></p> <p>Overall Size: 250 x 1661 x 54</p> <p><u>Intumescent:</u></p> <p>Head & Jambs/Frame Reveal: ISL Therm-a-seal - 2nr 15x4 seals 10mm apart centrally in the frame & underside of O/P</p> <p>Meeting stiles: 2nr 15x4 Therm-a-seal to meeting stile of one leaf.</p> <p>Therm-a-flex 10x2 fitted to C/L of head of the door. ISL Therm-a-line 35x2 glazing liner & Sealmaster Fireglaze mastic between glass and beads.</p> <p><u>Frame:</u></p> <p>Head & Jambs: MDF 700kg/m³ 30x100 with small triangles of MDF forming a scalloped profile to hanging jambs – see drawing. Non-combustible threshold to mount floor spring into.</p> <p>Frame fixing: 5nr 100mm x 5mm fixings per jamb (not noted in test report). O/P backfixed with 80mm long screws at 100 c/c.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Floor Spring: 1nr Dorma BTS80 Floor spring per leaf</p> <p>Top Pivot: 1nr Dorma 8066/8064 top centre pivot per leaf</p> <p>Bottom Straps: 1nr Dorma top and bottom centre straps per leaf</p> <p><u>Hardware Protection:</u></p> <p>2mm Therm-a-flex encasing top centre, top and bottom straps</p> <p><u>Glazing:</u></p> <p>Pyrobel 14mm thk L/H leaf 490mm diameter with Sapele Quirk beads & Sureglaze 6mm to R/H leaf 200x500 with Sapele Sq beads, both fixed with 50mm steel screws @ 30 deg to glass & 10mm thk Sapele Lined apertures.</p> <p><u>Specific Feature Being Tested:</u></p> <p>Large double swing double doorset with O/P – note glazing performance in L/H leaf made 60mins</p> <p><u>Doorset Orientation:</u></p> <p>Open towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance	<p>Integrity: 49 minutes</p> <p>Insulation: 49 minutes</p>

3.2.19 Test Report WF426991

The referenced test report summarised below is being used as supplementary evidence to support decorative grooves

Date of Test:	20.Mar.2020
Identification of Test Body:	Warringtonfire Testing and Certification Ltd.
Sponsor:	Halspan Ltd.
Tested Product:	Latched, Single Acting, Single Leaf, Timber Doorset with Decorative Grooves–LSASD.
Tested Orientation:	Opening in towards heating condition
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2135 (h) x 926 (w) x 44mm (t) Core: Halspan Optima 30 three-layer Particleboard (620kg/m3), 44mm thick Lipping: Sapele (640kg/m3), 6mm thick to all four edges Grooves: 4no. 50 x 8mm with 38 x 4mm polar infill to each face</p> <p><u>Frame:</u> Head & Jambs: e.g. Redwood (500kg/m3), 100 x 32mm thick, with 32 x 12mm thick planted stop. Frame Fixing: e.g. 4No 6 x 100mm long steel screws per jamb Threshold: N/A</p> <p><u>Intumescent:</u> Frame Reveal//: 1No 15x4 Halspan twin fin fire and smoke seal. Fitted centrally.</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 3No Halspan R30 hinges</p> <p>Closer: Haslapn R30 power closer</p> <p>Lock/Latch: Halspan latch</p> <p>Lock/Latch Size: Lockcase: 21 x 76 x 15mm, Forend: 60 x 22 x 3mm, Keep: 80 x 40 x 2mm</p> <p>Latch Status: engaged for test</p> <p>Handle: Halspan aluminium lever handle</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges: Halspan 1mm thick graphite hinge pads</p> <p>Under Forend & Keep: Halspan 1mm thick interdens</p> <p>Around Lockcase: Halspan 1mm thick interdens</p>
Test Standard:	BS EN 1634-1:2014
Performance:	<p>Integrity: 37 minutes</p> <p>Insulation: 37 minutes</p>

3.2.20 Test Report Chilt/RF99036

The referenced test report summarised below is being used as supplementary evidence to support multi pane glazing

Date of Test:	09.Apr.1999
Identification of Test Body:	Chiltern International Fire Ltd. (now trading as: Warringtonfire Testing & Certification Ltd)
Sponsor:	Halspan Ltd.
Tested Product:	Unlatched, Single Acting, Double Leaf, Timber Doorset with Glazed Apertures–ULSADD.
Tested Orientation:	Opening in towards heating condition
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2126 (h) x 915 (w) x 45mm (t) Core: Halspan three-layer particleboard (650kg/m³), 38mm thick Lipping: Sapele (640kg/m³), 10mm thick to vertical edges, with 35 x 2mm deep groove on hanging edge and left leaf meeting edge Facing: 3.6mm thick WBP far eastern plywood Mullions & transom: sapele 45 x 20mm in right leaf glazed aperture</p> <p><u>Frame:</u> Head & Jambs: Sapele (640kg/m³), 97 x 32mm thick, with 12mm deep integral stop. Architrave: 12.5mm thick plasterboard</p> <p><u>Intumescent:</u> Frame Reveal: 1no. Aaron Fire Seals graphite 20 x 4mm fitted centrally Leaf Edges: 1no. Aaron Fire Seals 32 x 2 graphite seal in hanging edge Meeting Stiles: 1no. Aaron Fire Seals 32 x 2 graphite seal in left leaf only</p> <p><u>Hardware:</u> Hinges: 3No Royde & Tucker H105 per jamb Closer: Dorma TS73V Lock/Latch: ES tubular latch Lock/Latch Size: Forend: 57 x 25mm. Lock/Latch Status: disengaged for test Handle: Aluminium lever handles</p>

Summary of Test Specimen (continued):	<p><u>Glazing (Right Leaf):</u> Glass: Pyroshield, 6mm thick Aperture Size: 2no.945 x 670mm wide & 2no. 590 x 295mm wide Beading: Sapele (640kg/m³), 23 x 19mm high, chamfered & bolected. Bead Fixing: 50mm long steel pins around perimeter of aperture & 32mm long steel pins along mullions and transom, all at 100mm centres</p> <p><u>Glazing (Left Leaf):</u> Glass: Pyroshield 6mm thick Aperture Size: e.g. 950 x 675mm wide Beading: Sapele (640kg/m³), 23 x 19mm high, chamfered & bolected.Bead Fixing: 50mm long steel pins at 100mm centres</p> <p><u>Glazing System:</u> Glazing Perimeter- Left leaf: Aaron Fire Seals Exfoguard glazing channel IGC8 15mm high x 1mm deep x 2mm thick walls, between glass & bead. Glazing perimeter- Right leaf: Sealmaster Fireglaze mastic 2mm thick, between glass and beads</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	Integrity: 26 minutes Insulation: 0 minutes
Reason for Use (if test failed)	Supplementary evidence for multi-pane glazing detail
Failure Mode: (if test failed)	<p>Initial Failure: Continuous flaming at bottom of meeting edges at 26 minutes. Failure remote from the glazing detail being included within this assessment. Perimeter intumescent specification detailed in this test report has not been included within the scope of this assessment. The test evidence has therefore been deemed appropriate to support the multi-pane glazing detail with the Halspan Optima design for 30 minutes fire resistance</p> <p>Further Failure: Continuous Flaming at top meeting edges at 44 minutes</p> <p>Further Failure: Continuous Flaming at glazing at 47 minutes</p>

3.2.21 Test Report TI091-2B

The referenced test report summarised below is being used as supplementary evidence to support feature grooves with decorative trim and concealed closer

Date of Test:	12.Dec.2019
Identification of Test Body:	Thomas Bell-Wright International Consultants. UKAS No. 4439
Sponsor:	Halspan
Tested Product:	Latched, Single Acting, Single Door – LSASD Insulated, unglazed timber doorset
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2200 (h) x 1000 (w) x 45mm (t) Core: Halspan Optima 30, 44mm thick Lipping: Oak (785kg/m3), 8mm thick to all four edges Facing: 0.5mm thick, Oak veneer Decorative Trims: 5mm x 5mm stainless steel bars affixed with araldite epoxy adhesive, fitted within 5mm wide x 3mm deep rebates in the unexposed face of the leaf.</p> <p><u>Frame:</u> Head & Jambs: Oak (785 kg/m3), 95 x 30mm thick, plus 48 x 14mm thick integral stop. Frame Fixing: 5No 10 x 100mm long concrete fixing screws per jamb</p> <p><u>Intumescent:</u> Frame Reveal: 1No 20x4 Lorient LP2004. Fitted centrally.</p> <p><u>Hardware:</u> Hinges: 4No Euroart HINBB433 per jamb Closer: 1No Euroart DC8524 per leaf, concealed closer Lock/Latch: 1No Euroart DLA7255EP (engaged for test) Handle: Euroart LRS102, stainless steel lever on rose Door bottom seal: Lorient LAS8001si, 14mm (w) x 49mm (h)</p> <p><u>Hardware Protection:</u> Under Hinges: 2 mm thick Interdens Around Lockcase: 2mm thick Interdens Closer: 2mm Interdens around the body in the leaf and 1mm Interdens to the channel in the frame head Around Automatic door bottom: 2mm Interdens</p> <p><u>Specific Feature Being Tested:</u> Feature grooves with decorative trim, and concealed closer.</p> <p><u>Doorset Orientation:</u> Opening towards heating conditions.</p>
Test Standard:	BS 476 Part 22: 1987
Performance:	<p>Integrity: 35 minutes Insulation: 35 minutes</p>

3.2.22 Test Report CFR2010021 Doorset A

The referenced test report summarised below is being used as supplementary evidence to support electronic lock with card reader

Date of Test:	02.Oct.2020
Identification of Test Body:	Cambridge Fire Research Ltd
Sponsor:	Halspan Limited
Tested Product:	Latched, Single Acting, Single Door – LSASD A: Left hand specimen, Insulated, unglazed timber doorset
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2285 (h) x 855 (w) x 44mm (t) Core: Halspan Prima 30, 43mm thick Lipping: Sapele (618kg/m3), 8mm thick to all four edges Facing: 0.5mm thick, paper veneer</p> <p><u>Frame:</u> Head & Jambs: Tulipwood (524 kg/m3), 75 x 34mm thick, plus 30 x 16mm thick integral stop. Frame Fixing: 5No 5 x 90mm steel fixing screws per jamb</p> <p><u>Intumescent:</u> Head and Jambs: 1No 15x4, Halspan SLS-PLA-105 centrally Smoke/Acoustics Seal: 1no 11x11 Halspan SLS-TRI. Fitted up to the upstand of the stop in the frame reveal. Bottom Leaf Edge: None</p>

Summary of test specimen (continued):	<p><u>Hardware:</u></p> <p>Hinges: 4No JNF IN 05.020.100 CF SB butt hinges</p> <p>Closer: 1No Dorma ITS96 2-4 concealed closer</p> <p>Electric Lock with Card reader: 1No Salto Mortice Lock LE7Sxx with AElement Fusion, spindle height 865mm above the bottom of door (latch engaged for test)</p> <p>Cylinder with thumbturn: 1No Salto TE010H35PM with escutcheon</p> <p>Handle: Salto R1SWRIA080, brass lever on rose</p> <p>Eye Viewer: JNF IN.23.010.B</p> <p>Kick Plate: 290 (h) x 802 (w) x 1.2mm (t) brass kickplate face fixed with 25mm screws to both faces of door.</p> <p>Drop Seal: Halspan SIS-DRP-308 drop seal</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges: None</p> <p>Around Latch body and card reader box, and under strike of Electronic Lock: 1mm thick BASF Interdens</p> <p>Closer: ITS 96 30 minute intumescent pack, 1mm MAP encasing track body, closer body and beneath forend.</p> <p><u>Specific Feature Being Tested:</u></p> <p>Electric Lock with Card Reader.</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2014 + A1:2018
Performance:	<p>Integrity: 38 minutes</p> <p>Insulation: 38 minutes</p>

3.2.23 Test Report CFR2010021 Doorset B

The referenced test report summarised below is being used as supplementary evidence to support Cableways, Cable loop, Electric Lock, Electric Escape Lock, Electric Strike, Magnetic door contact.

Date of Test:	02.Oct.2020
Identification of Test Body:	Cambridge Fire Research Ltd
Sponsor:	Halspan Limited
Tested Product:	Latched, Single Acting, Double Door – LSADD B: Right hand specimen, Insulated, unglazed timber doorset
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2440 (h) x 345/825 (w) x 44mm (t) Core: Halspan Prima 30, 44mm thick Lipping: Sapele (680kg/m3), 6mm thick to all four edges Cableway to left hand door: From cable loop, down hanging edge, across base and up meeting edge to strike. Set 29mm deep central to the door thickness with a sapele infill prior to lipping. Includes Cat 6 cable. Cableway to right hand door: From cable loop, horizontally through right hand door to latch at 847mm above base of door, central to door thickness, Prima 30 infill to unexposed face. Includes Cat 6 cable.</p> <p><u>Frame:</u> Head: Redwood (510 kg/m3), 75 x 45mm thick, plus 30 x 12mm thk pinned stop. Jambs: Redwood (510 kg/m3), 75 x 32mm thick, plus 30 x 12mm thk pinned stop. Frame Fixing: 5No 5 x 90mm steel fixing screws per jamb</p> <p><u>Intumescent:</u> Frame Reveal: 1No 10x4, Halspan SLS-PLA & 1No 10x4, Halspan SLS-TWF, 10mm apart centrally. Meeting edge: 1No 10x4, Halspan SLS-PLA & 1No 10x4, Halspan SLS-TWF, 10mm apart centrally. Door bottom edge: 2No 10x4, Halspan SLS-PLA 10mm apart centrally</p>

<p>Summary of test specimen (continued):</p>	<p><u>Hardware:</u></p> <p>Hinges: 4No Halspan HIN-BSS-104 per jamb</p> <p>Closer: 1No Halpsan CLR-BSS-101 to right hand door</p> <p>Electric Lock: 1No Assa Abloy EL560 Electronic lock case to right hand door, spindle 900mm above bottom of door, with lock cylinder (engaged for test)</p> <p>Handle: Assa Abloy INOXI 3-19/242, stainless steel lever on backplate</p> <p>Electric Escape Lock: Assa Abloy 351U80, concealed to frame head above the right hand door, strike to head of door at 100mm from closing edge of door.</p> <p>Mortice Latch: Assa Abloy 807-12, to right hand door at 1222mm up to bottom of forend (engaged for test)</p> <p>Electric Strike: Assa Abloy EffEff 332.328, electronic mortice strike to left hand door at 1202mm up to bottom of face plate.</p> <p>Magnetic Door Contact: Assa Abloy 1076D, fitted to head of left hand door at 117mm from hanging edge, with corresponding component to frame head.</p> <p>Cable loop: Assa Abloy EA280, fitted at 595mm above the bottom of the right hand jamb and at 1182mm above the bottom of the left hand jamb.</p> <p>Surface bolts: Halspan BLT-BZA-100 to top and bottom of the left hand door, 50mm from meeting edge of leaf (bolted for test)</p> <p><u>Hardware Protection:</u></p> <p>Under Hinges: 1 mm thick Graphite, Halspan SLS-PAD-103</p> <p>Under Forend & Keep and around Lockcase, Electronic Lock: 1mm thick MAP, Halspan SLS-PAD-120</p> <p>Under Forend & Keep and around Lockcase, Escape Lock: 1mm thick MAP, Halspan SLS-PAD-120</p> <p>Under Forend and around case, Latch: 1mm thick MAP, Halspan SLS-PAD-120</p> <p>Under Forend and around all concealed faces, Electronic Strike: 1mm thick MAP, Halspan SLS-PAD-120</p> <p>Encasing inner body, both components, Door Contact, 1mm thick Graphite, Halspan SLS-PAD-107</p> <p>Concealed faces, Cable loop recess box: 1mm thick MAP, Halspan SLS-PAD-120</p> <p>Sleeve encasing Cable through door (not through cable loop): 2mm Graphite sleeve, Sealed Tight Solutions STS CablePro</p> <p><u>Specific Feature Being Tested:</u></p> <p>Cableways, Cable loop, Electric Lock, Electric Escape Lock, Electric Strike, Magnetic door contact.</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
<p>Test Standard:</p>	<p>BS EN 1634-1:2014 + A1:2018</p>
<p>Performance:</p>	<p>Integrity: 30 minutes</p> <p>Insulation: 30 minutes</p>

3.2.24 Test Report WF429950

The referenced test report summarised below is being used as supplementary evidence to support 3-point electronic lock and letterplate

Date of Test:	02.JUL.2020
Identification of Test Body:	Warringtonfire Testing and Certification Ltd. UKAS No. 1762
Sponsor:	Halspan Limited
Tested Product:	Latched, Single Acting, Single Door – LSADD Insulated, glazed timber doorset with part glazed timber side screen
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2200 (h) x 950 (w) x 44mm (t) Core: Halspan XT30 FD30, 44mm thick Lipping: Sapele, 6mm thick to all four edges Cableway: 12mm diameter central to the leaf thickness. From cable transition unit, routed horizontally to the edge of glazing aperture, around the upper edge of the glazing apertures, down edge of glazing apertures and then horizontally to the motor.</p> <p><u>Frame:</u> Head and Jambs: Tulipwood (minimum 510 kg/m³), 87 x 32mm thick, plus 38 x 15mm thick integral stop. Stop includes a 5° slope. Frame Fixing: 5mm x 80-110mm steel wood screws with rawl plugs, 4No on hanging jamb, 2No on door frame head, 4No for vertical side of glazing side screen frame, 1No top and bottom of each of the side screen sections. PVC Packers. Threshold: Exitex MDS 25/5/2 with ramp, Aluminium & weather seals.</p> <p><u>Intumescent:</u> Frame Reveal: 2No 10x4, Pyroplex 10FOW 1050, Graphite based, 19mm apart centrally. 5mm of each seal uninterrupted by the 3 keeps. Smoke seal: Exitex Aquatex A10, 10 x 10mm flipper fitted in groove in stop.</p> <p><u>Hardware:</u> Hinges: 4No Halspan HIN-BSS-104 Closer: 1No Synergy Hardware S3401.SES.SR Lock/Latch: 1No Winkhaus AV2-F 2070/55 M2 RH, spindle 1050 from bottom of leaf, forend 1770 x 20 x 3mm (auto engaged at top and bottom locks for test), fitted with lockcylinder with thumbturn (Winkhaus XR6-51) and Cylinder guard Winkhaus ArmorShield Part number 4932964. PAS24 Gearbox Plate: ArmorPlate GBOX 024, 94 x 46 x 17mm thick fitted around Winkhaus gearbox under intumescent. Fitted with Electronic conversion kit for Lock to convert standard AV2 auto locking to electronically operated system, including motor (screw fixed to the standard AV2 forend), cable transition unit and 6mm cable. Cable Transition Unit positioned in leaf edge, between 2nd and 3rd hinge. Handle: Hoppe Palladio 4978005, aluminium lever on backplate Letter plate: UAP TS008 Aluminium, cut out 55.5 x 261mm positioned 1250mm from head of leaf Viewer: UAP SWALFCH-FR Rain guard: Halspan Drip moulding</p>

Summary of test specimen (continued):	<p><u>Hardware Protection:</u></p> <p>Under Hinges: 0.8 mm thick, FireFrame(R) hinge pads</p> <p>Under central lockcase and top and bottom lock case, and to motor: FS277 0.8mm Flexfire AV2/AV3 Intumescent Kit.</p> <p>Centre Keep and top and bottom keep: FS279 0.8mm Flexifire F24-908/912 Zinc VTB Keep intumescent Kit.</p> <p>Cylinder Guard: Firestop FS277 0.8mm Flexifire Winkhaus AV2/AV3 Door lock intumescent kit.</p> <p>Handles: Firestop FS416 Flexifire 0.8mm thick</p> <p>Sleeve encasing Cable through leaf: 0.5mm Tenmat Graphite wrapped around cable, FF104E (Norseal FF5335) not through cable loop)</p> <p>Cable Transition Unit: Tenmat graphite intumescent sheet 2 x thickness 0.5mm, 60 x 30mm to external surfaces of the cable transition unit for the wire loop. FF104E (Norseal FF5335).</p> <p>Letter plate: As supplied pre fitted to Letterplate</p> <p>Viewer: FF104E Tenmat graphite sheet, 0.5mm thick, 2x wraps</p> <p><u>Glazing (Leaf):</u></p> <p>Glass: Cleartherm Glass Sealed Units Limited double glazed units</p> <p>Aperture Size: 2No 1000 x 236mm wide</p> <p>Beading: Sapele (minimum 640kg/m³), 15 x 24mm high, chamfered & beveled.</p> <p>Bead Fixing: steel pins, 150mm centres & 50mm from corners and Clear Silicone between leaf surface and bead.</p> <p><u>Glazing System (Leaf):</u></p> <p>Glazing Perimeter: 14mm x 6mm Pyroplex 30049, Graphite, between glass & bead.</p> <p><u>Part glazed timber side screen:</u></p> <p>Details on the construction of the side screen are within the test report, and have not been summarised here as not applicable to this field of application report.</p> <p><u>Specific Feature Being Tested:</u></p> <p>3 point electronic lock, Letterplate</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2014 + A1:2018
Performance:	<p>Integrity: 53 minutes</p> <p>Insulation: 24 minutes</p>

3.2.25 Test Report WF428611

The referenced test report summarised below is being used as supplementary evidence to support 3-point electronic lock and letterplate

Date of Test:	05.JUN.2020
Identification of Test Body:	Warringtonfire Testing and Certification Ltd. UKAS No. 0249
Sponsor:	Halspan Limited
Tested Product:	Latched, Single Acting, Single Door – LSASD Insulated, timber doorset
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2040 (h) x 926 (w) x 44mm (t) Core: Halspan XT30 FD30, 44mm thick Lipping: Sapele, 6mm thick to all four edges</p> <p><u>Frame:</u> Head and Jambs: Softwood (450 kg/m³), 75 x 30mm thick, plus 28 x 15mm thick integral stop. Frame Fixing: 5mm x 100mm steel wood screws, 150mm from top and bottom and maximum 600mm centres. Threshold: Exitex MDS 25/5/2</p> <p><u>Intumescent:</u> Frame Reveal: 1No 15x4, Halspan SLS-TWF, Graphite based. Weather seal: Schlegel Aquamac 21 fitted in groove in stop.</p> <p><u>Hardware:</u> Hinges: 4No Halspan HIN-BSS-103 Closer: 1No Halspan 6100 (CLR-CAM-101) Lock/Latch: 1No 3 point lock. The tested closer reference redacted from this summary, please see note below*, (latched but not locked for the test), forend 1720 x 20 x 2.5mm, fitted with lockcylinder (Kinetica Double 3" Euro cylinder). Handle: UAP DH243-DUO-SSS-NANOCOAST, steel lever on backplate Letter plate: TS008 Aluminium letterplate. The tested letterplate reference redacted from this summary, please see note below*, positioned 500mm from foot of leaf Viewer: Zoo ZAB30, at 1500mm above foot of leaf Rain guard: Exitex Deflector 20 Drip moulding Door Chain: Zoo ZAB15</p>

Summary of test specimen (continued):	<u>Hardware Protection:</u> Under Hinges: 1mm thick, Halspan SLS-PAD_103 hinge pads Bedding material for Lock: Halspan SLS-PAD-122 Letter plate: As supplied pre fitted to Letterplate Viewer: 1mm graphite <u>Specific Feature Being Tested:</u> 3 point lock, Letterplate <u>Doorset Orientation:</u> Opening towards heating conditions.
Test Standard:	BS EN 1634-1:2014 + A1:2018
Performance:	Integrity: 34 minutes Insulation: 34 minutes

*The tested lock and letterplate references are contained in the test report. The details of the tested lock and letterplate has been redacted from this summary as requested by Halspan Ltd for commercial confidentiality. Halspan Ltd has stated that the brand name Halspan 3 point lock and Halspan TS008 Certified Letterplate are identical to the lock and letterplate originally tested and recorded in the test report.

3.2.26 Test Report WF414679

The referenced test report summarised below is being used as supplementary evidence to support single point locks with equal rebated meeting edge

Date of Test:	09.OCT.2019
Identification of Test Body:	Warringtonfire Testing and Certification Ltd. UKAS No. 0249
Sponsor:	Halspan Limited
Tested Product:	Latched, Single Acting, Double Door – LSADD Insulated doorset with glazed aperture and rebated meeting edges
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 2440 (h) x 1000/1000 (w) x 44mm (t) Core: Halspan XT30 FD30, 44mm thick Lipping: Sapele, 6mm thick to three edges and increased to 18mm at rebated meeting edges (with a 22mm x 12mm deep rebate).</p> <p><u>Frame:</u> Head and Jambs: Redwood 450 kg/m³, 94 x 32mm thick, with 30 x 15mm thick stop. Frame Fixing: 6mm x 100mm screws, 150mm from top and bottom and maximum 600mm centres.</p> <p><u>Intumescent:</u> Frame Reveal: 1No 15x4, Halspan Verified seal Meeting edge: 2No 10x4 Halspan at meeting edge in one leaf separated by 22mm Weather seal: Schlegel Aquamac 63 fitted in groove in stop and in upstand of one meeting edge lipping.</p> <p><u>Hardware:</u> Hinges: 4No Halspan HIN-BSS-103 Closer: 1No Halspan R30 Eco CLR-AGN-100 Lock/Latch: 1No R30 Lock case LCK-BSS-100, forend 235 x 22 x 3mm, lock case 165 x 90 x 16mm, strike plate 180 x 24 x 2mm. Fitted with keep in the leaf with the meeting edge intumescent. Handle: Halspan LCK-MS-200 Surface mounted bolts: Royde and Tucker B151 Barza bolt</p>

Summary of test specimen (continued):	<p><u>Hardware Protection:</u></p> <p>Under Hinges: 1mm thick, Halspan SLS-PAD_103 hinge pads</p> <p>Bedding material for Lock, forend and keep: Halspan SLS-PAD-109</p> <p><u>Glazing (Leaf):</u></p> <p>Glass: Pilkington 10mm External Grade Pyrodur CS</p> <p>Aperture Size: 2No 1000 x 400mm wide</p> <p>Beading: Sapele (650kg/m³), 20 x 20mm high, chamfered & beveled.</p> <p>Bead Fixing: 40mm steel pins, 150mm centres & 50mm from corners.</p> <p><u>Glazing System (Right Leaf):</u></p> <p>Glazing Perimeter: 10mm x 2mm Therm-A-Strip between glass & bead and Fire & Acoustic Seals FR Silicone sealant in the void around the perimeter to the glass</p> <p><u>Glazing System (Left Leaf):</u></p> <p>Glazing Perimeter: Lorient FF1 (Flexible Figure 1)</p> <p>Glazing Liner: 3mm Sapele to vertical edges of aperture</p> <p><u>Specific Feature Being Tested:</u></p> <p>Lock with equal rebated meeting edges</p> <p><u>Doorset Orientation:</u></p> <p>Opening towards heating conditions.</p>
Test Standard:	BS EN 1634-1:2014 + A1:2018
Performance:	<p>Integrity: 32 minutes</p> <p>Insulation: 31 minutes</p>

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 designs, 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) form the assembly.

4.3 Door Leaf

Doorsets constructed using the different leaf options can include various design features as summarised below.

Specific sections within this assessment must be referred to for design limitations and construction requirements.

Section 5 gives the description of each leaf type in terms of composition and density, etc.

4.3.1 Leaf 1: Prima 30 (44mm core)

The basic construction for door leaves of this design comprises a 44mm thick particleboard, lipped on the vertical edges. See section 5.1 for further constructional detail.

Minimum Door Leaf Thickness:

- Without decorative facings/finishes – 43mm.
- With permitted decorative facing/finishes – 44mm.
- With permitted 12mm decorative MDF facings – 68mm +/-1mm.

The door designs can include:

- Glazing
- Feature grooves
- Decorative facings
- PVC/ABS lippings
- Decorative planted on timber mouldings
- Decorative steel bar inserts
- 12mm Decorative MDF facings

Note: The Prima 30 bond up construction, including alternate dimensions of decorative facings, is addressed in part 3 of the suite of FEA/F97174 field of applications for the Prima product family.

4.3.2 Leaf 2: Prima 30 (54mm core)

The basic construction for door leaves of this design comprises a 54mm thick particleboard, lipped on the vertical edges. See section 5.2 for further constructional detail.

Minimum Door Leaf Thickness:

- Without decorative facings/finishes – 53mm.
- With permitted decorative facing/finishes – 54mm.

The door designs can include:

- Glazing
- Feature grooves
- Decorative facings
- PVC/ABS lippings
- Decorative planted on timber mouldings
- Decorative steel bar inserts

Note: The Prima 30 bond up construction and Prima Plus core are addressed in parts 3 and 5 respectively of the suite of FEA/F97174 field of applications for the Prima product family.

4.4 Door Frames

Doorsets constructed using the different frame options can include various design features as summarised below.

Specific sections within this assessment must be referred to for design limitations and construction requirements.

Appendix C details which door leaf can be used with which frame.

4.4.1 Frame 1: Softwood or Hardwood Timber

The construction of Frame 1 door frames are based on softwood and hardwood with minimum frame dimensions fitted flush to wall, unless permitted elsewhere in this assessment.

For further information on the specification and construction of the door frames see section 7.

The envelope sizes for Leaf 1 and Leaf 2 with Frame 1 are the same as they are based on the sizes for the 44mm Leaf 1 which means 54mm Leaf 2 is automatically covered.

4.4.2 Frame 2: Hardwood Timber

The construction of Frame 2 door frames are based on hardwood with minimum frame dimensions fitted flush to wall, unless permitted elsewhere in this assessment.

For further information on the specification and construction of the door frames see section 7.

The envelope sizes for Leaf 1 and Leaf 2 are the same as they are based on the sizes for the 44mm Leaf 1 which means 54mm Leaf 2 is automatically covered.

4.4.3 Frame 3: MDF

The construction of Frame 3 door frames are based on MDF with minimum frame dimensions fitted flush to wall.

For further information on the specification and construction of the door frames see section 7.

An analysis of the MDF frame test evidence shows that an MDF is at least equivalent to softwood frame, so the leaf size envelopes for Frame 1 also apply to MDF frames.

The envelope sizes for Leaf 1 and Leaf 2 are the same as they are based on the sizes for the 44mm Leaf 1.

Doorsets hung in MDF frames are only permitted as single acting configurations.

4.4.4 Frame 4: Morland Firecheck Frame

The construction of these bespoke door frames are based on MDF with minimum frame dimensions fitted flush to wall.

For further information on the specification and construction of the door frames see section 7.

The limitations associated with the leaf size, intumescent and configuration for this frame are given in section 4.5.6 below

4.4.5 Frame 5: Projecting Softwood, MDF or Hardwood Timber

The construction of the Frame 5 door frames covers 2 types

- (1) Softwood, MDF or hardwood with minimum frame dimensions and the frame is fitted such that it projects up to 12mm in front of the line of the wall.
- (2) Softwood, MDF or hardwood with minimum frame dimensions and the frame is fitted such that it projects up to 18mm in front of the line of the wall but returns across the face of the wall by a minimum of 12mm.

For further information on the specification and construction of the door frames see section 7. An analysis of the softwood frame test evidence shows that an MDF is at least equivalent to softwood frame, so MDF can be used in lieu of the tested softwood.

4.4.6 Frame 6: Over Rebated Hardwood Timber

The construction of Frame 6 door frames are based on hardwood with minimum frame dimensions and the frame has the same depth as the door. The frame has a rebate which fits into a rebate into the door perimeter.

For further information on the specification and construction of the door frames see section 7.

4.4.7 Frame 7: WoodEx Frame

The construction of these bespoke door frames are based on engineered softwood or hardwood timber with minimum frame dimensions fitted flush to wall.

For further information on the specification and construction of the door frames see section 7.

The WoodEx frame (Frame 7) has been successfully tested in 3 different types of engineered timber, as reported in test evidence BMT/FEP/F14102, BMT/FEP/F16037 and WF420277.

An analysis of the WoodEx test evidence use of WoodEx frames has been assessed against door designs based upon Halspan Prima.

The tests FEP/F16037 Doorset A and WF420277 demonstrate that the lower density WoodEx Red Grandis tested in WF420277 has not negatively affected the integrity performance of the complete doorset, and therefore the use of the WoodEx products as detailed in section 7 are permitted.

Consideration of the test data based on the WoodEx frames and Frame 1, provides evidence of a comparative performance of the WoodEx frame designs against Frame 1 which is based on solid timber.

The leaf size envelopes for Leaf 1 and 2 and Frame 1 can be used for Leaf 1 and 2 in conjunction with Frame 7, subject to the limitations associated with configurations and intumescent for this frame, which are given in section 4.5.7.

4.5 Doorset Orientation, Configurations & Maximum Leaf Sizes

4.5.1 General

The evaluation of the leaf size for each door leaf and frame and doorset configuration is based on the tests listed in section 3 and takes into account:

- (1) The margin of over performance above 30 minutes integrity for the design
- (2) The characteristics exhibited during test and
- (3) The doorset configuration tested.

The evaluation of the permitted configuration included in this field of application is based on the configuration tested. The principle is that the more components i.e. door leaves and overpanel – the harder it becomes to pass a test. This is because the junction between two

door leaves or door leaf and overpanel introduces a discontinuity into the doorset which can cause failures. This leads to the following statements:

- (1) A test on a double doorset is more onerous than a test on a single doorset
- (2) A test on a doorset with a flush overpanel is more onerous than a test on a doorset without an overpanel. A flush overpanel has the same thickness as the door leaf and is flush with the leaves.
- (3) A test on an unlatched doorset is more onerous than a test on a latched doorset as the leading edge is unrestrained and will deflect more in fire test conditions
- (4) A test on an unlatched single acting doorset is considered to be equivalent to a double acting doorset. This is due to the known and tested deflection of an unlatched single acting doorset moving towards the furnace conditions i.e. away from the doorstep, so no benefit is derived from the stop. This condition does not cover doorsets with flush overpanels as there is a need to demonstrate the performance of the top pivot.
- (5) A doorset with transomed overpanel is considered to perform the same as a similar doorset without an overpanel. This is because the transom structurally separates the overpanel from the doorset.

The leaf size for each leaf type and configuration is linked to the intumescent specification and frame type. The following section details the maximum leaf size for each door leaf type and configuration based on the intumescent and frame details tested.

Doorsets with reduced dimensions are deemed to be less onerous. Therefore, doors with dimensions that are less than given in the leaf size envelopes (for the relevant intumescent specification) in the following sections are covered and may be manufactured.







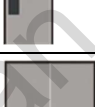



4.5.2 Orientation



The primary fire resistance tests for these designs were 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 the doorsets to this design may be hung either away from or towards the fire risk side of the doorset. The rationale behind the direction of fire testing timber based doorsets opening towards the fire test conditions is further explained in Annex C of BS EN 1634-1:2014 +A1:2018.

Tests evidence WF403596A was tested on a ULSASD doorset opening out and achieved 42 minutes fire integrity with no failure occurring. Also, test evidence CFR1808311 was tested on a ULSADD doorset opening out and achieved 41 minutes fire integrity with no failure occurring. Both doors give confidence that the opening in direction (i.e. leaves opening towards the fire test conditions) is the most onerous direction for fire testing timber doorsets as the opening away results were well in excess of 30 minutes.

4.5.3 Configuration

The table below shows the permitted configurations for the Prima 30 doorsets, with abbreviation and full description of each configuration.

Doorset Configurations			
Ref.	Depiction	Abbreviation	Description
A		LSASD	Latched Single Acting Single Doorset
B		ULSASD	Unlatched Single Acting Single Doorset
C		DASD	Double Acting Single Doorset
D		LSASD+OP	Latched Single Acting Single Doorset + Flush Overpanel
E		ULSASD+OP	Unlatched Single Acting Single Doorset + Flush Overpanel
F		DASD + OP	Double Acting Single Doorset + Flush Overpanel
G		LSADD	Latched Single Acting Double Doorset
H		ULSADD	Unlatched Single Acting Double Doorset
I		DADD	Double Acting Double Doorset
J		LSADD+OP	Latched Single Acting Double Doorset + Flush Overpanel

K		ULSADD+OP	Unlatched Single Acting Double Doorset + Flush Overpanel
L		DADD + OP	Double Acting Double Doorset + Flush Overpanel

Note:

A table of essential hardware is given in section 11.3 as a baseline for the doorset configurations described above. The essential hardware contributes significantly in the performance of the doorset and changes in hardware will require the intumescent specification and frame details to be evaluated. The suitability of the item of hardware is given in the appropriate subsection in section 11.

Appendix D presents tables which indicate which configuration is covered by particular door leaf and frame combinations.

4.5.4 General Notes on Leaf Sizes & Intumescent

The following sections detail the door leaf size envelopes which indicates the permitted leaf sizes for the listed configurations based on the intumescents, door leaf option and door frame option.

For Double Doors:

1. When using these envelopes for double doorsets, the meeting edge intumescent detail must be adequate to contribute to the protection of any hardware present.
2. The requirements for intumescent strips when a lock is fitted are given in section 11.4 and supercede any single strip specification given in section 4.5.15 to 4.5.20.
3. Unequal leaf double doorsets are covered by this Field of Application. The smaller door leaf must be no less than 300mm.
4. For double doorsets both leaves must comply with the door leaf envelope size limitations.

For Leaf 1 & Leaf 2:

Leaf sizes and intumescent, where specified for Leaf 1, are also applicable to Leaf 2.

For Intumescent Seals:

1. Intumescent seals are considered to be fitted centrally unless stated otherwise.
2. Intumescent seals are fully interrupted at hardware locations unless stated otherwise.

4.5.5 Specific Leaf Size Limitations

A number of specific design features introduce a size limitation associated with the different door leaf types. These aspects are considered here and take precedence to the sizes listed in section 4.5.9 to 4.5.20.

4.5.5.1 Feature Grooves: Size Limitation

The maximum leaf dimensions associated with each configuration are specified in the table below. See section 5.7 for further details relating to the different groove option.

Maximum Leaf Size with Feature Groove A		
Configuration	Leaf 1	Leaf 2
LSASD & ULSASD	2400mm (h) x 975mm (w)	2400mm (h) x 975mm (w)
LSADD & ULSADD		

Maximum Leaf Size with Feature Groove B		
Configuration	Leaf 1	Leaf 2
LSASD & ULSASD	2135mm (h) x 926mm (w)	2135mm (h) x 926mm (w)

Maximum Leaf Size with Feature Groove C		
Configuration	Leaf 1	Leaf 2
LSASD & ULSASD	2250mm (h) x 1050mm (w)	2250mm (h) x 1050mm (w)
LSADD & ULSADD		

Maximum Leaf Size with Feature Groove D		
Configuration	Leaf 1	Leaf 2
LSASD & ULSASD	2250mm (h) x 950mm (w)	2250mm (h) x 950mm (w)

Maximum Leaf Size with Feature Groove E		
Configuration	Leaf 1	Leaf 2
LSASD & ULSASD	2250mm (h) x 975mm (w)	2250mm (h) x 975mm (w)

4.5.5.2 3 Point Locking System: Size Limitation

The following 3-point locking systems are permitted for use with doorsets that comply with the details for Leaf, Frame and configuration as given in the following sections:

- ERA 6945-80-85 MA – see section 11.4.2.1
- GU Ferco 3 – see section 11.4.2.2
- Winkhaus AV2/AV2e – see section 11.4.2.3

Size limitations and intumescents for these leaves are given and must be complied with.

4.5.5.3 Cableway & Cable Loop: Size Limitation

The following cable loops are permitted for use with doorsets that comply with the details for Leaf, Frame and configuration as given in the following sections:

- Abloy EA280 – see section 11.10.1
- Dorma KU 260 – see section 11.10.2
- Gianni DL-500 and DL-417ST – see section 11.10.3
- Gianni DL-500 and DL-417ST – see section 11.10.4

Additionally, the permitted cableways are detailed in section 11.10.5.

Any size limitations and intumescents for these leaves are given, and care must be taken to ensure that all requirements for both the cableway and cable loop are complied with.

4.5.5.4 'T' Lippings: Size Limitation

The maximum leaf dimensions associated with each configuration are specified in the table below. See section 5.4.5 for further details relating to the 'T' Lippings.

Maximum Leaf Size with 'T' Lippings	
Configuration	Leaf 1
LSASD & DASD	2040mm (h) x 926mm (w)
DADD	

4.5.5.5 Decorative Steel Bar Inserts: Size Limitation

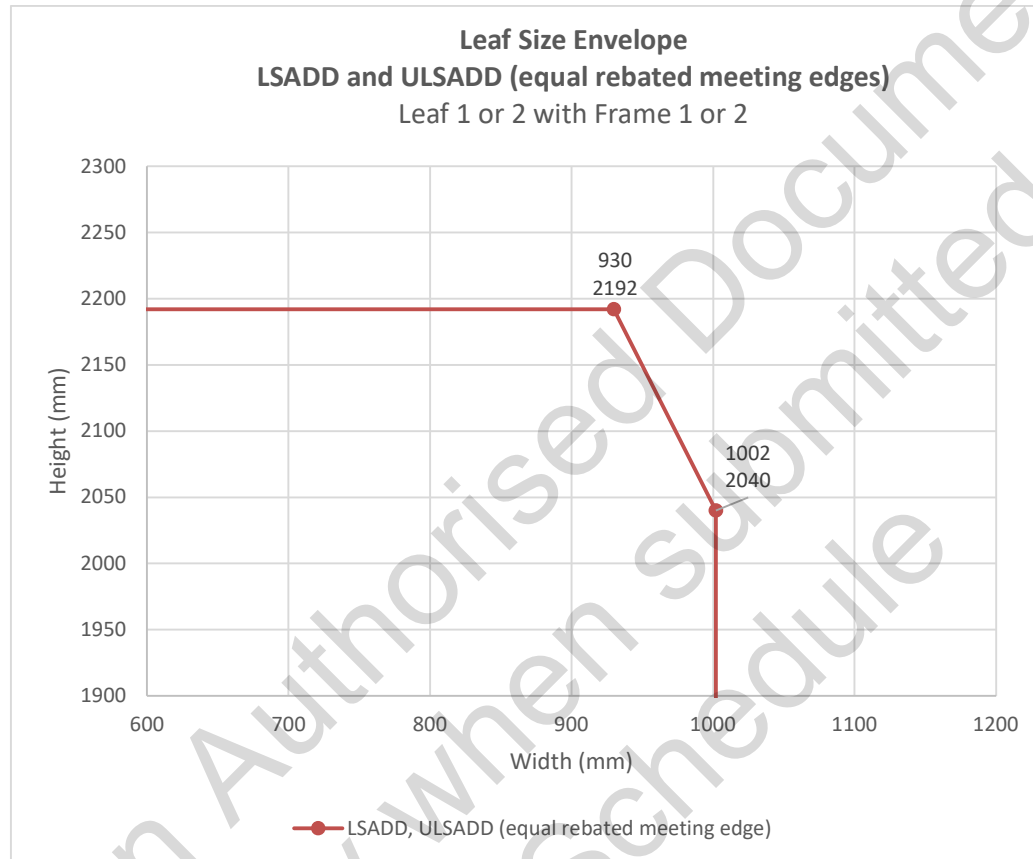
The maximum leaf dimensions associated with each configuration are specified in the table below. See section 5.8 for further details relating to decorative steel inserts.

Maximum Leaf Size with Decorative Steel Bar Inserts	
Configuration	Leaf 1 & 2
LSASD	2200mm (h) x 1000mm (w)

4.5.5.6 Equal rebated meeting edge: Leaf Size & Intumescent Specifications

Based on the test evidence WF131998 (doorset B) incorporating equal rebated meeting edges, the following is permitted for Leaf 1 and 2 double doorsets with rebated meeting edges, for leaf sizes shown below.

The use of equal rebated meeting edges (see section 5.4.1) is permitted with Frame 1 and 2 only and must use the intumescent seal specification given below.

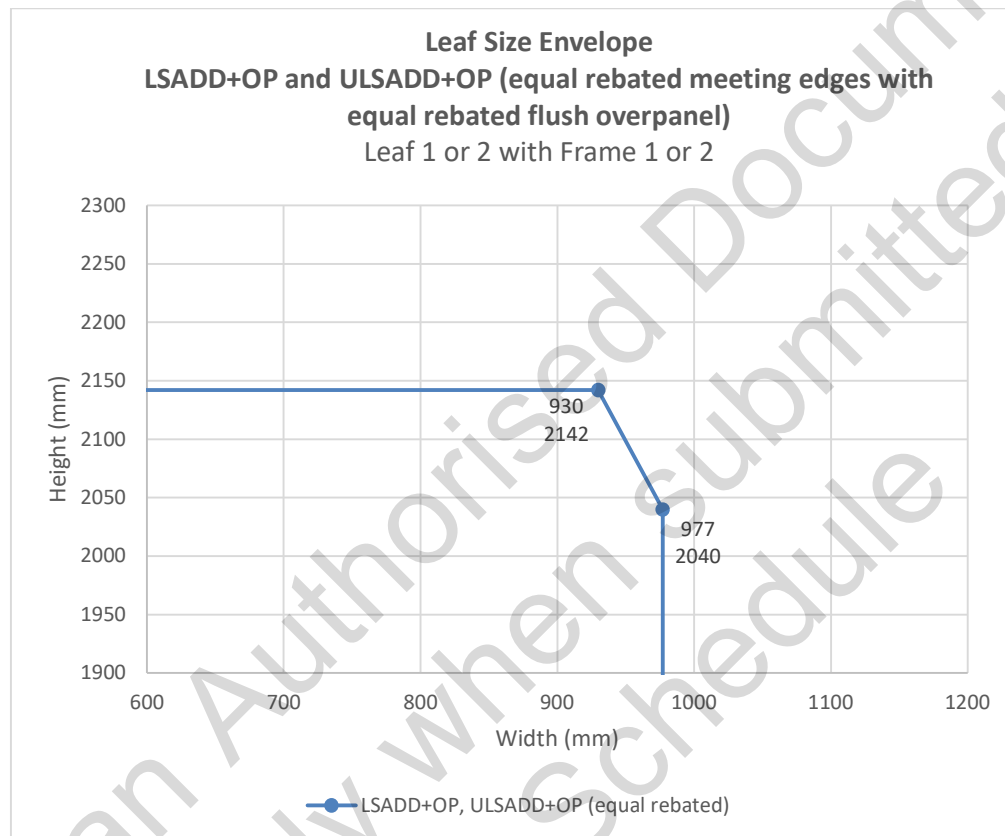


Intumescent Specification for equal rebated meeting edge			
Configurations	Make / Type	Manufacturer / Supplier	Location & Size
LSADD, ULSADD	LP1004	Lorient Polyproducts Ltd	Head & Jambs: Head 2no 10x4mm fitted 12mm apart and centrally in frame reveal. Jamb 1no 10x4mm fitted centrally in frame reveal. Meeting Edges: 1no 10x4mm Lorient LP1004 fitted centrally in the rebate of each leaf (2No. total)

4.5.5.7 Equal rebated meeting edge with equal rebated flush overpanel: Leaf Size & Intumescent Specifications

Based on the test evidence WF131998 (doorset B) incorporating rebated meeting edges and overpanel junction, the following is permitted for Leaf 1 and 2 double doorsets with rebated meeting edges with a rebated flush overpanel, for leaf sizes shown below. The use of equal rebated meeting edges (see section 5.4.1) with rebated flush overpanel junction is permitted with Frame 1 and 2 only and must use the intumescent seal specification given below.

The permitted height for the rebated flush overpanel is 693mm maximum.



Intumescent Specification for equal rebated meeting edge			
Configurations	Make / Type	Manufacturer / Supplier	Location & Size
LSADD+OP, ULSADD+OP	LP1004	Lorient Polyproducts Ltd	<p>Frame reveal: Jamb 1no 10x4mm fitted centrally in frame reveal.</p> <p>Rebated overpanel: 1no 10x4mm fitted centrally in the rebate in lipping of bottom edge of overpanel. 1no 10x4mm fitted centrally in the rebate in lipping of bottom edge of overpanel.</p> <p>Meeting Edges: 1no 10x4mm Lorient LP1004 fitted centrally in the rebate of each leaf (2No. total)</p>

4.5.6 Frame 4: Leaf Size & Intumescent Specifications

Based on the test evidence WF393430 and WF393450 for Frame 4 (Morland firecheck frame), the following is permitted for doorsets with Frame 4.

Specifications for Frame 4			
Configuration	Leaf	Leaf Size (mm)	Intumescent
LSASD ULSASD	Leaf 1 & 2	2400 (h) x 926 (w)	1No 15x4mm Mann Mcgowan (Certifire Certificate of Approval: CF356) Fitted centrally in frame reveal or leaf edges.

4.5.7 Frame 7: Leaf Size, Configurations & Intumescent Specifications

The WoodEx frame (Frame 7) has been successfully tested in 3 different types of engineered timber, as reported in test evidence BMT/FEP/F14102, BMT/FEP/F16037 and WF420277.

The use of WoodEx frames has been assessed against door designs based upon Halspan Prima, and is permitted for use as given in the analysis in section 4.4.7.

The following configurations, leaf sizes and intumescent specification is therefore permitted for doorsets with Frame 7.

The test evidence listed above has demonstrated that the WoodEx frame can be considered similar in performance to Frame 1 but can only be used for LSASD, ULSASD, LSADD and ULSADD.

Intumescent seals used in the frame reveal or leaf edges of less than 15mm wide x 4mm thick are not permitted in conjunction with Frame 7.

The leaf size envelopes for these configurations, with intumescent seals of a minimum size of 15mm wide x 4mm thick for Leaf 1 and 2 and Frame 1, can be used for Leaf 1 and 2 in conjunction with Frame 7.

The use of concealed intumescent is not permitted in conjunction with Frame 7.

See section 7.5 for further restrictions.

4.5.8 Explanation for the Following Sections

The performance of a doorset in terms of configuration and size is dependent on the leaf type, intumescent and frame type and are not automatically interchangeable. The following sections present the envelopes for the 2 leaf types and 7 frame types. Each envelope is linked to a specific intumescent which is given a unique reference and is based directly on test evidence. Appendix D indicates which configuration is covered for each of the 2 leaf types and 7 frame types.

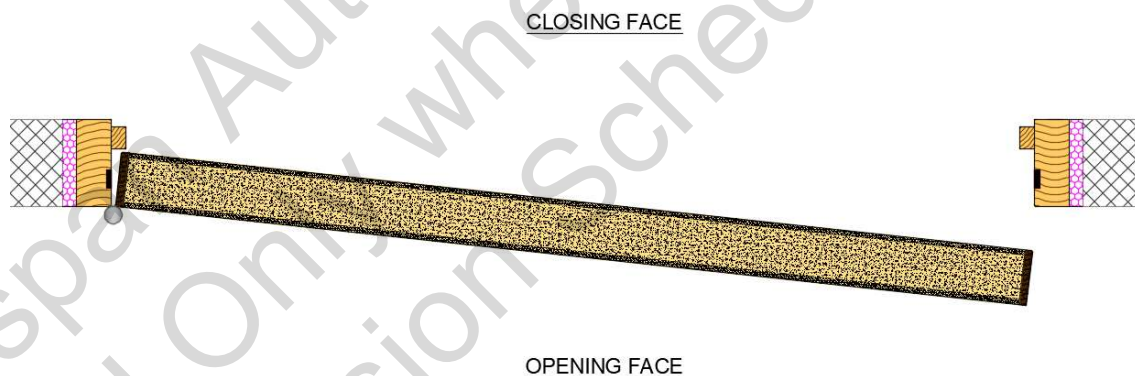
The envelopes are presented as follows:

- for LSASD increasing in configuration complexity up to ULSADD+OP/DADD+OP
- the permitted configuration for each leaf type and frame type combination is considered separately
- and a unique envelope of permitted leaf sizes is presented based on the configuration, leaf type, frame type and intumescent and the envelope is directly linked to a unique test.

More envelopes are presented for single doorsets for two reasons

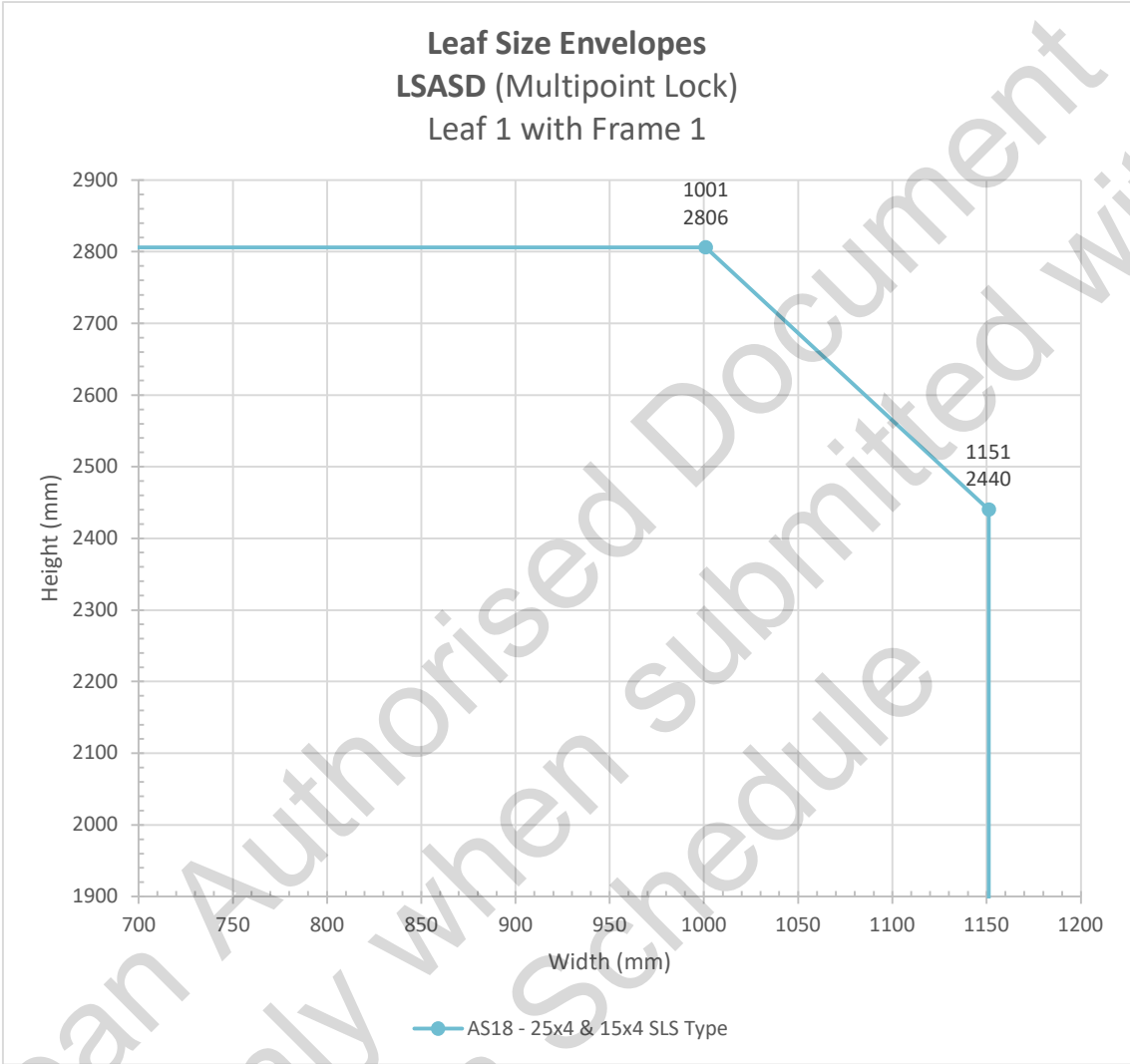
- more single doorsets have been tested
- the performance from a more complicated configuration can be cascaded down to less onerous configurations following the rules in section 4.5.1 above.

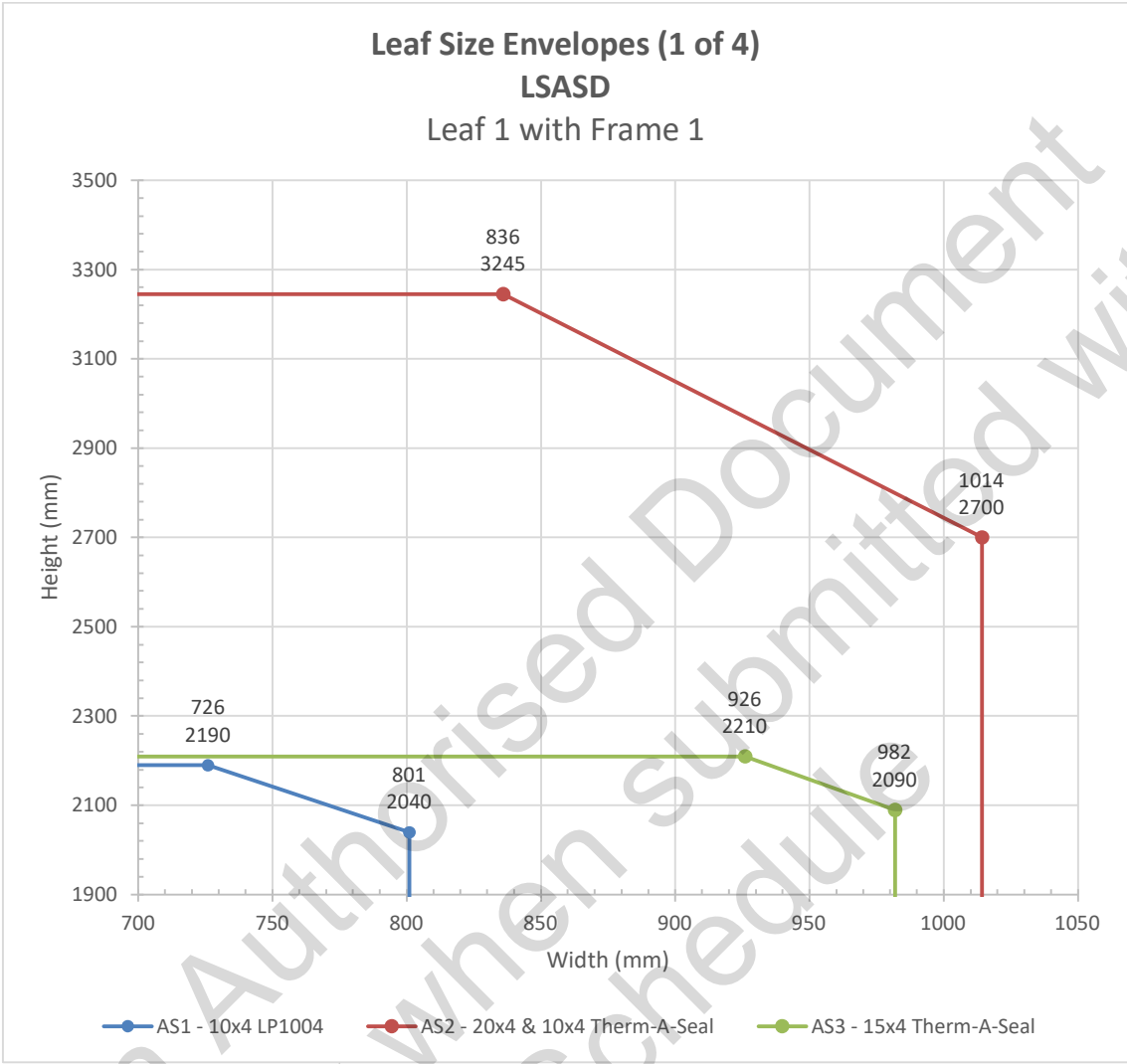
The following tables refer to the opening face of the door in the table cells relating to intumescent location, for clarity the following drawing defines which face is the opening face.

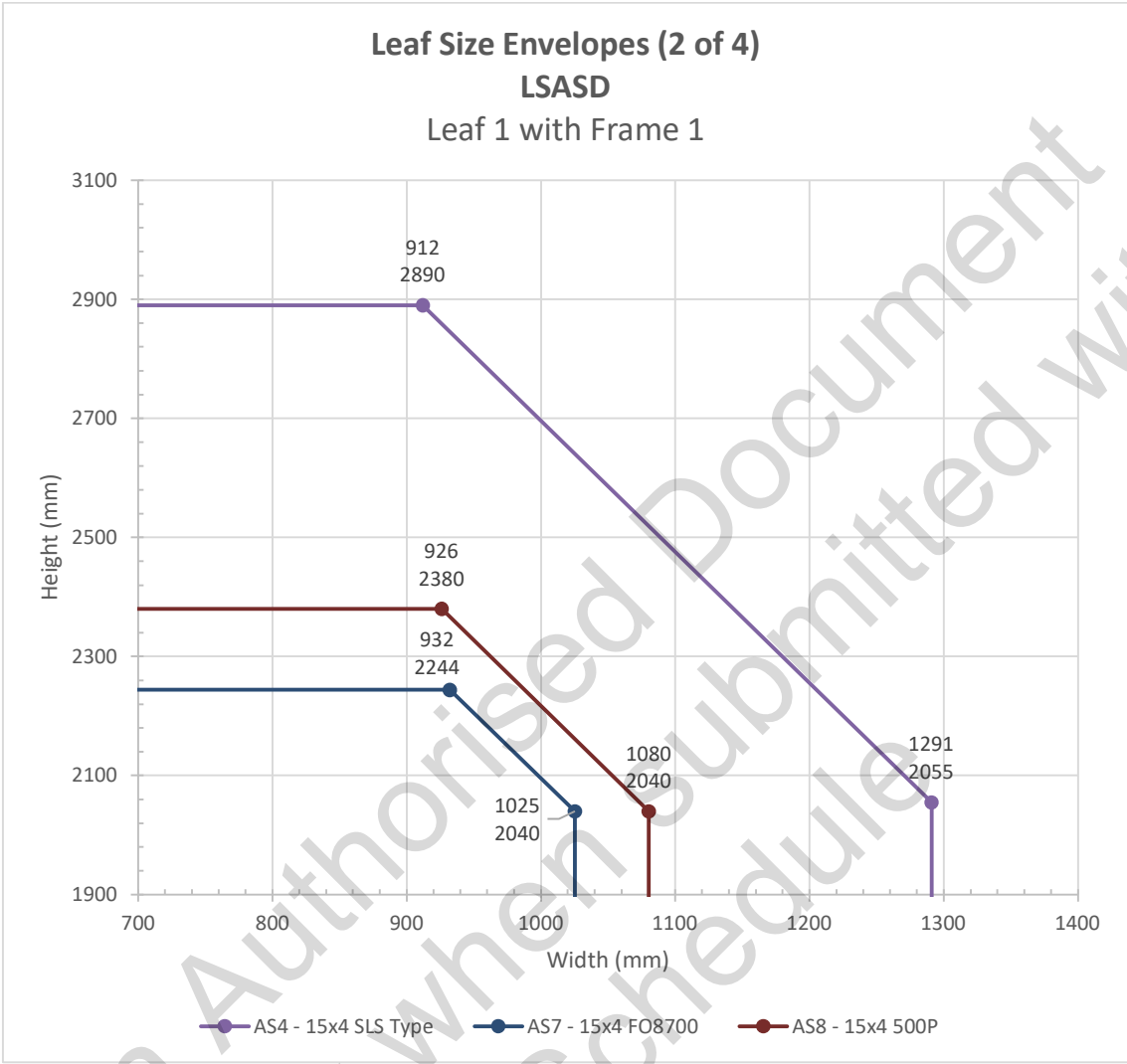


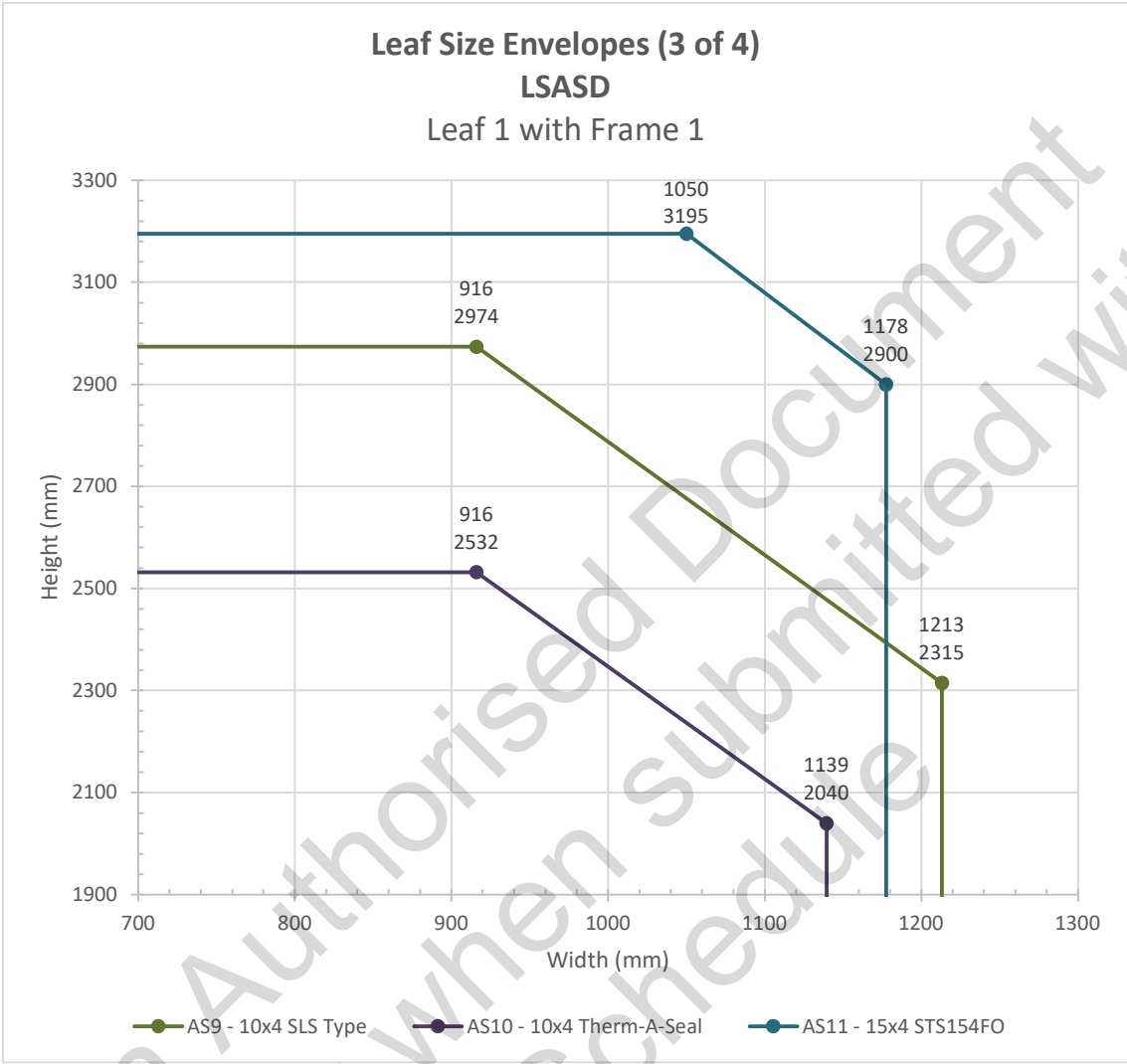
4.5.9 LSASD Configuration: Leaf Sizes & Intumescent Specification

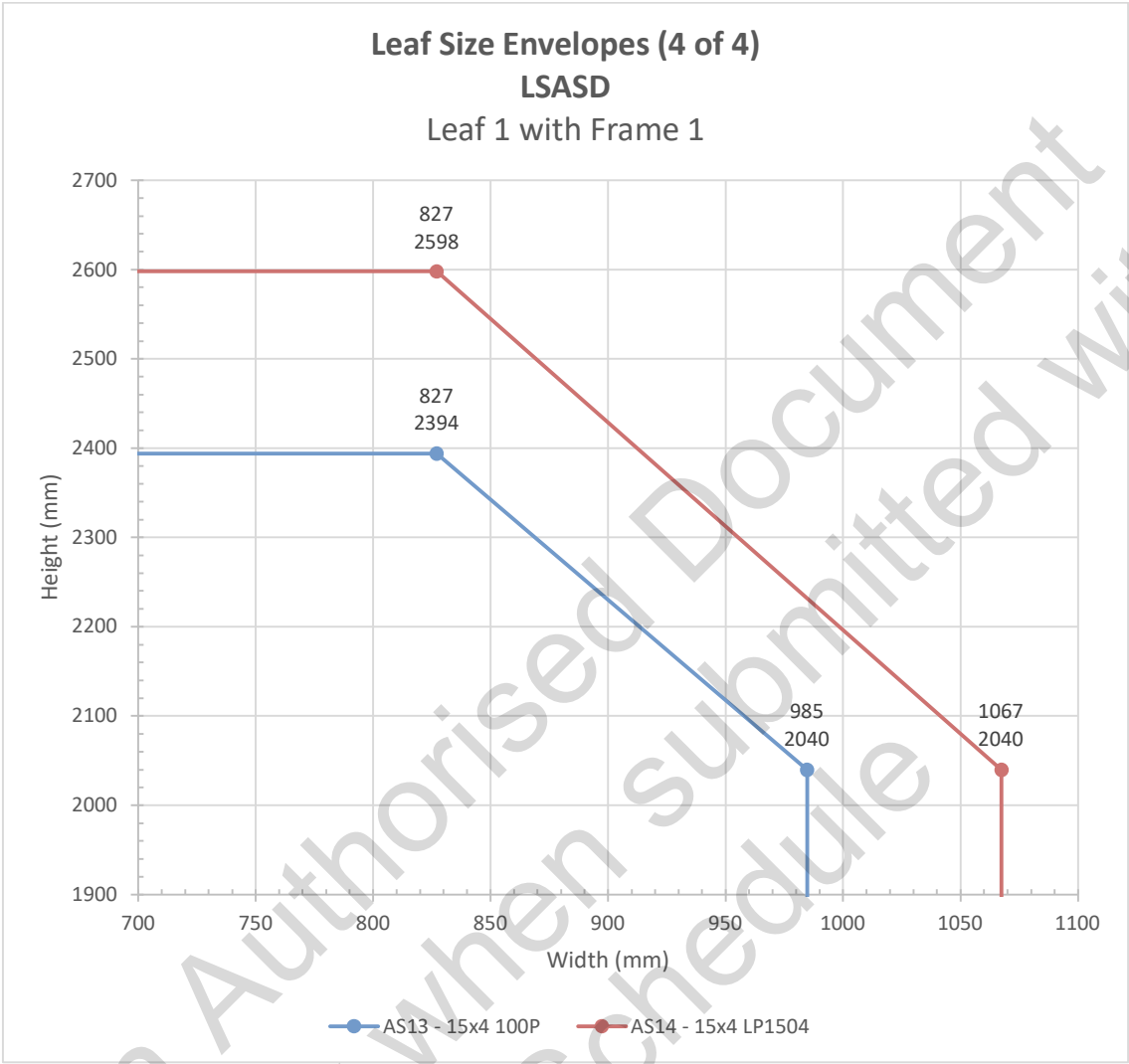
4.5.9.1 Leaf 1 + Frame 1 Doorset











Intumescent seals are to be fitted centrally unless stated otherwise.

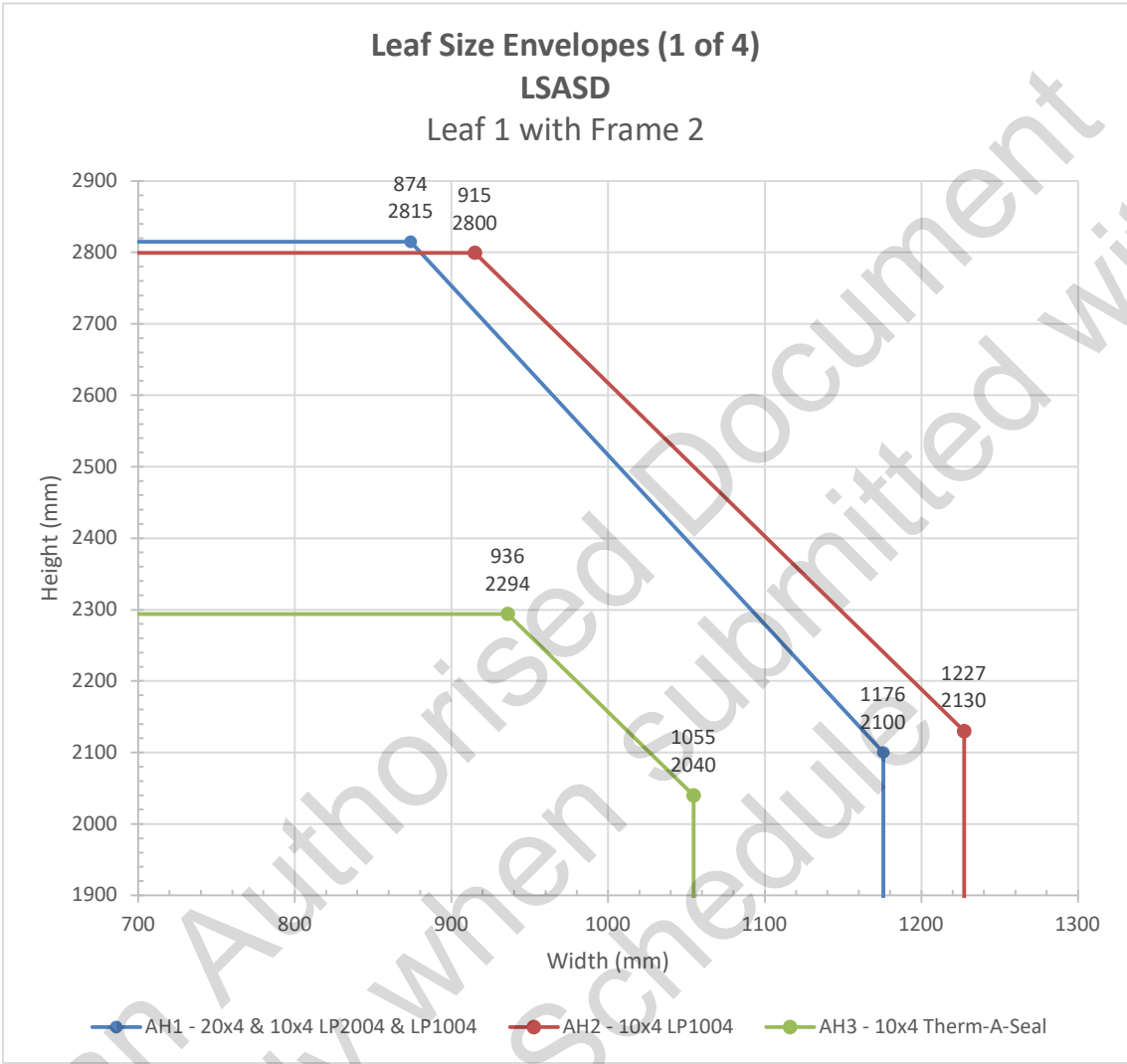
Intumescent Specification for LSASD Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
AS1 (WARRES 112248A)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges
AS2 (WARRES 118409A)	Therm-A- Seal	Intumescent Seals Ltd	Head: 1no 20x4. Fitted in frame or leaf head Jambs: 1no 10x4. Fitted in frame jambs or leaf edges.
AS3 (Chilt/RF06068B)	Therm-A- Seal	Intumescent Seals Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.
AS4 (Chilt/RF08039)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.
AS7 (WF 367904B)	Rigid Box FO8700	Pyroplex Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.
AS8 (WF 391351A)	Palusol 500PSA	Mann Mcgowan Fabrication Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.
AS9 (Chilt/RF08127)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges.
AS10 (Chilt/RF11005A)	Therm-A- Seal	Intumescent Seals Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges.
AS11 (BMT/FEP/F15097)	ST1504FO	Sealed Tight Solutions Ltd	Head & Jambs: 1no 15x4. Fitted 15mm from opening face in frame reveal or leaf edges.
AS13 (Chilt/RF07008A)	Palusol 100P	Mann Mcgowan Fabrications Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.

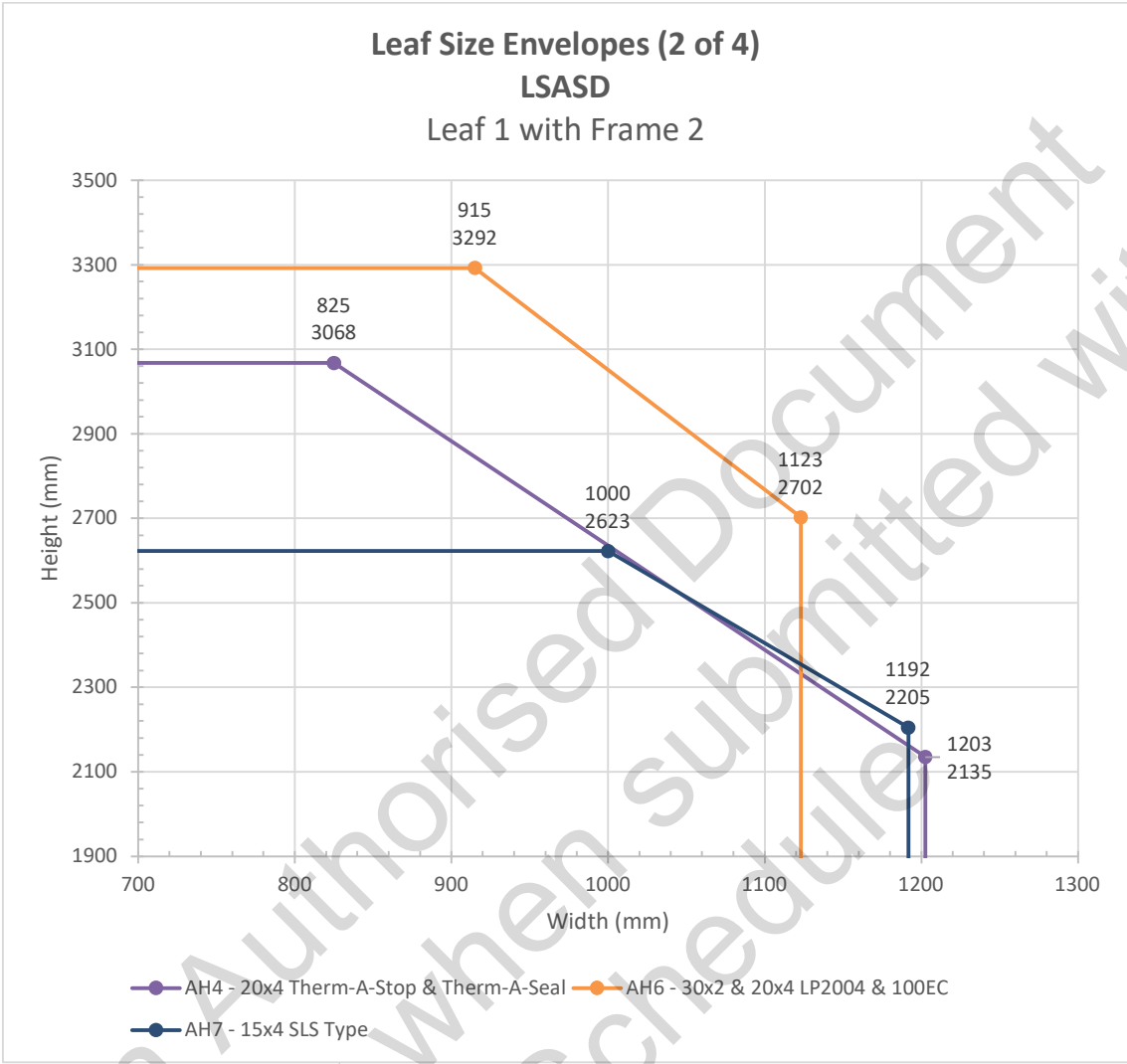
Intumescent Specification for LSASD Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
AS14 (Chilt/RF07008B)	LP1504	Lorient Polyproducts Ltd.	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.
AS18 (CFR1903071) Multipoint Lock	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges. 1no 25x4. Fitted 11mm from hinge knuckle in closing edge only.

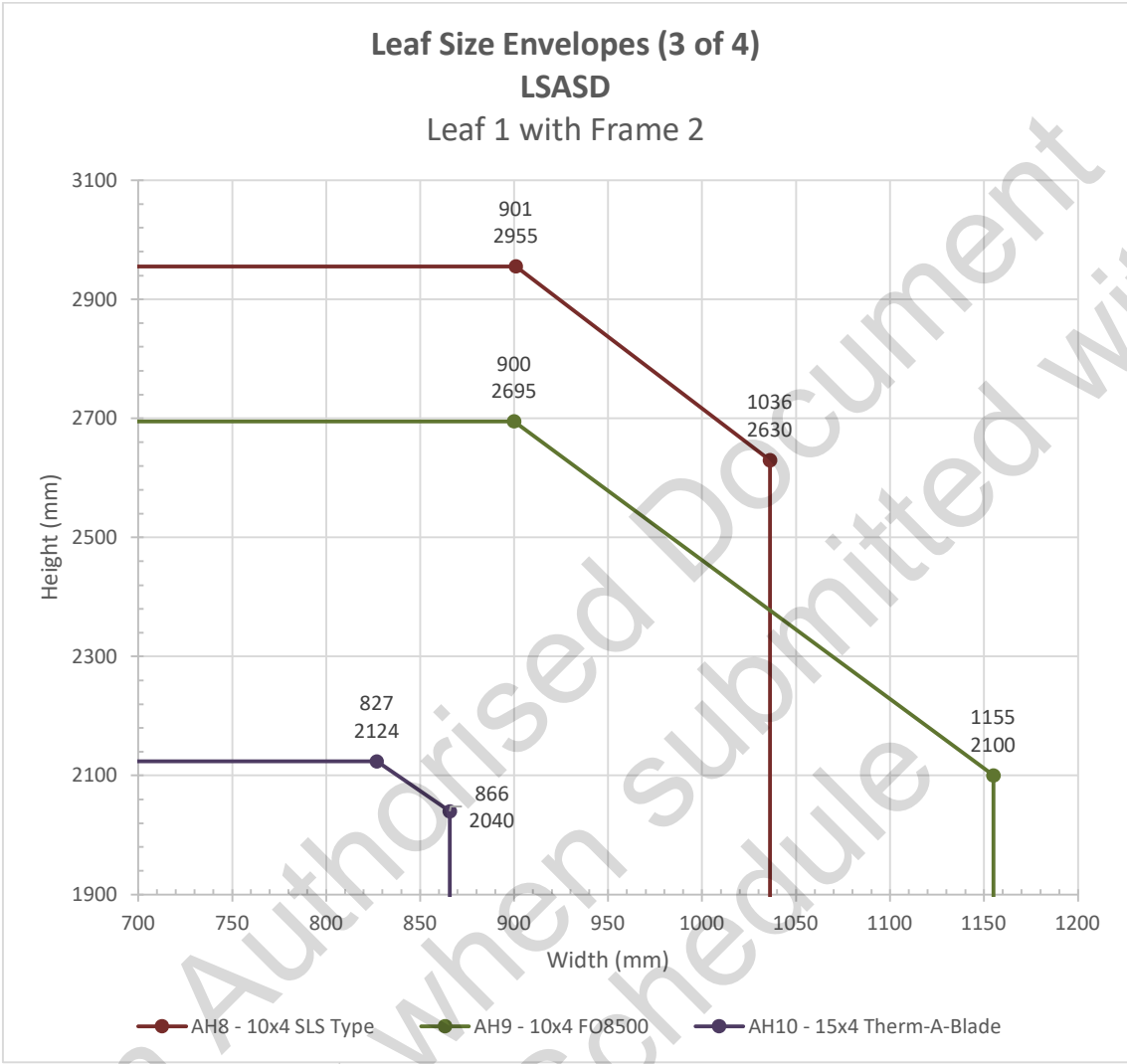
Note:

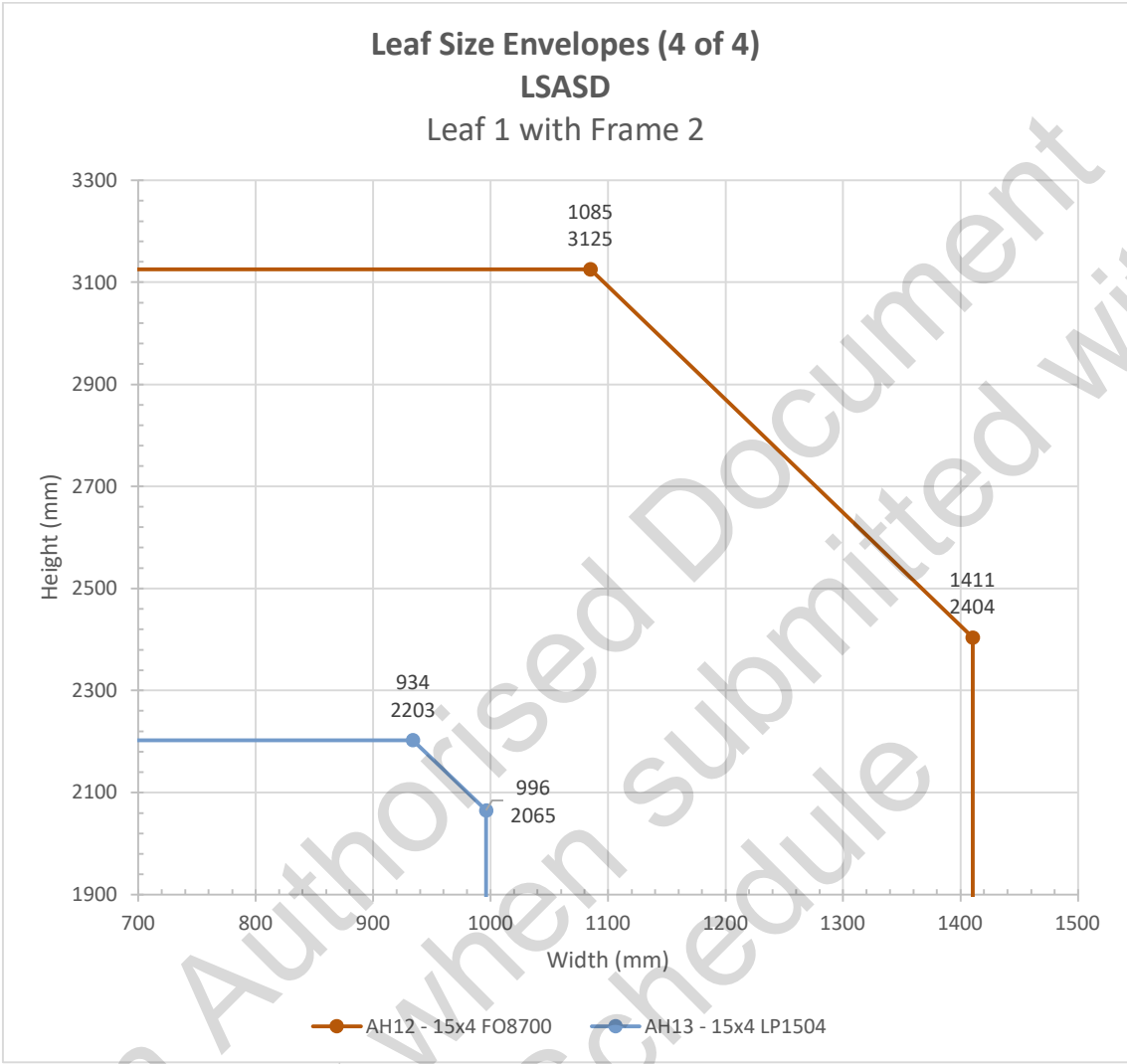
Leaf sizes and intumescent for Leaf 1 + Frame 1 doorset are also applicable to Leaf 1 + Frame 2 doorset.

4.5.9.2 Leaf 1 + Frame 2 Doorset









Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for LSASD Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
AH1 (Chilt/RF95042A)	LP2004, LP1004	Lorient Polyproducts Ltd	Head: 1no 20x4 LP2004. Fitted in frame or leaf head. Jambs: 1no 10x4 LP1004. Fitted in frame jambs or leaf edges.
AH2 (Chilt/RF97091)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges.
AH3 (Chilt/RF02098A)	Therm-A-Seal	Intumescent Seals Ltd	Head & Jambs: 1no 10x4. Offset intumescent – Fitted 36mm from opening face in frame reveal or leaf edges, continuous and uninterrupted by hinges. 1no 15x4 seals are permitted fitted 31mm from opening face and 41mm from the opening face for leaf 1 and leaf 2 respectively. See drawing in section 9.3.
AH4 (Chilt/RF04021A)	Therm-A-Seal, Therm-A-Stop, Therm-A-Flex.	Intumescent Seals Ltd	Head & Jambs: 1no 20x4 Therm-A-Stop & 1no 10x4 Therm-A-Seal. Fitted 8mm apart in frame reveal or leaf edges. The Therm-A-Seal is fitted 5mm from opening face. Leaf Bottom Edge: 1no 38x2 Therm-A-Flex. Fitted in bottom leaf edge.
AH6 (Chilt/RF00068A)	LP2004, 100EC (concealed)	Lorient Polyproducts Ltd	Head: 1no 20x4 LP2004. Fitted in frame or leaf head. Leaf Vertical Edges: 1no 30x2 100EC. Fitted into grooves in the rear face of lipping. Seal is continuous underneath hinges.

Intumescent Specification for LSASD Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
AH7 (BMT/FEP/F15214 AR1)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted 15mm from opening face in frame reveal. Partially interrupted by hinges with 2mm bypassing hinges.
AH8 (BMT/FEP/F15272 AR1)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges.
AH9 (BMT/FEP/F16050B AR1)	FO8500	Pyroplex Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges.
AH10 (CFR 1005241)	Therm-A- Blade	Intumescent Seals Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.
AH12 (WF 372222A AR1)	FO8700	Pyroplex Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.
AH13 (WF 384748A AR1)	LP1504	Lorient Polyproducts Ltd	Head & Jambs: 1no 15x4. Fitted 18mm from opening face. Partially interrupted by hinges with 3mm bypassing hinges.

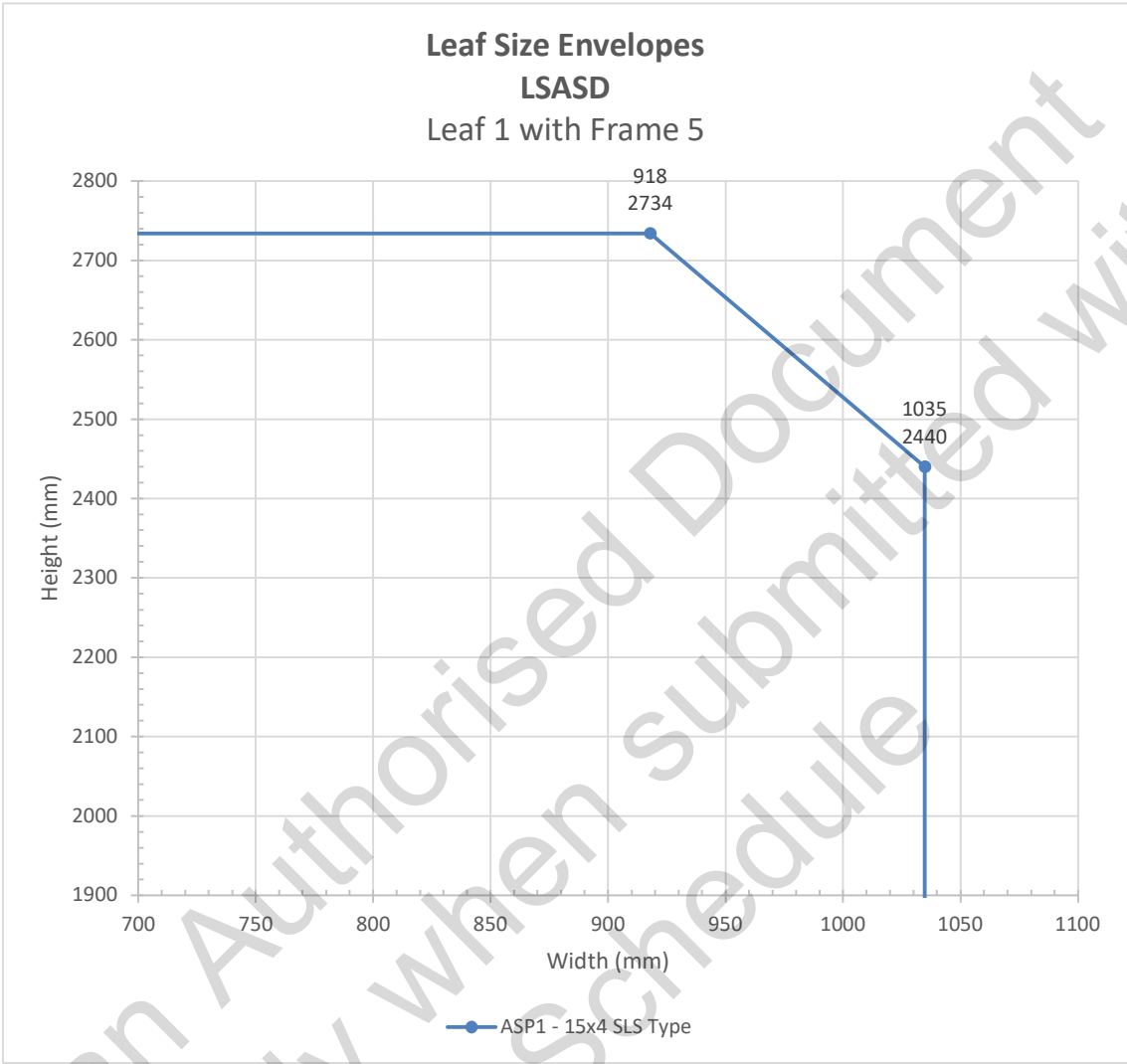
4.5.9.3 Leaf 1 + Frame 3 Doorset

For leaf sizes applicable to Leaf 1 + Frame 3 doorset see section. 4.5.9.1 above

4.5.9.4 Leaf 1 + Frame 4 Doorset

See section 4.5.6 above for permitted leaf size and intumescent specification.

4.5.9.5 Leaf 1 + Frame 5 Doorset



Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for LSASD Leaf 1 with Frame 5			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
ASP1 (CFR1809181_Rev 1)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.

4.5.9.6 Leaf 1 + Frame 6 Doorset

Not permitted.

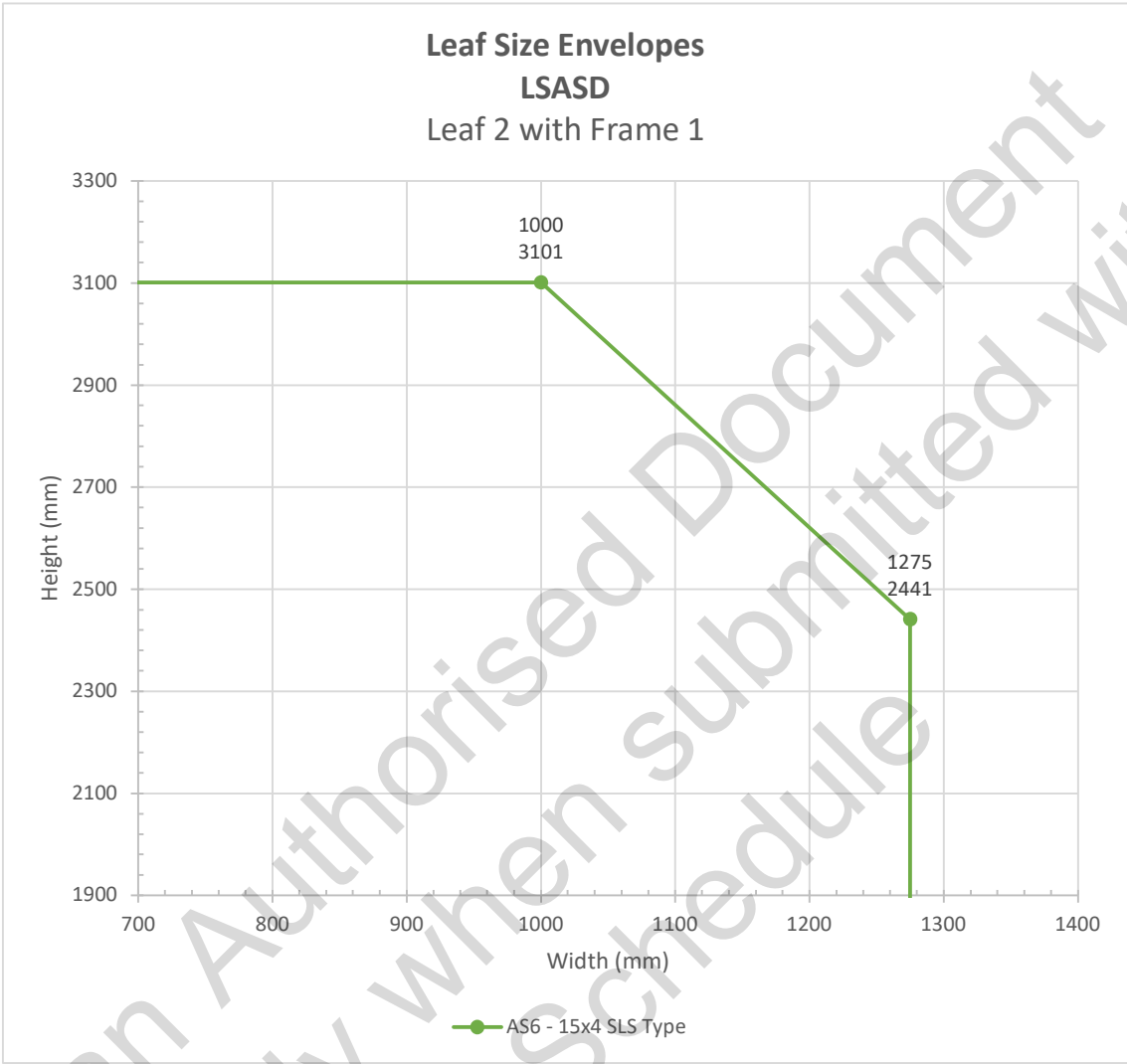
4.5.9.7 Leaf 1 + Frame 7 Doorset

For leaf sizes applicable to Leaf 1 + Frame 7 see section 4.5.9.1.

The use of intumescent specifications AS1, AS2, AS9 & AS10 is not permitted.

See section 7.5 for considerations for specific hardware.

4.5.9.8 Leaf 2 + Frame 1 Doorset



Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for LSASD Leaf 2 with Frame 1			
Intumescent Spec. Reference & (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
AS6 (CFR1909021)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted 20mm from hinge- knuckle face in frame reveal or leaf edges. Seal is partially interrupted by hinges.

Note:

Leaf sizes and intumescent for Leaf 1 + Frame 1 Doorset are also applicable to Leaf 2 + Frame 1 doorset.

4.5.9.9 Leaf 2 + Frame 2 Doorset

This arrangement represents a 54mm thick leaf in a hardwood frame. Any of the envelopes from the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – section 4.5.9.8 above
- Leaf 1 + Frame 2 – section 4.5.9.2 above
- Leaf 1 + Frame 1 – section 4.5.9.1 above

4.5.9.10 Leaf 2 + Frame 3 Doorset

This arrangement represents a 54mm thick leaf in a MDF frame. Any of the envelopes from the the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – section 4.5.9.8 above
- Leaf 1 + Frame 1 – section 4.5.9.1 above

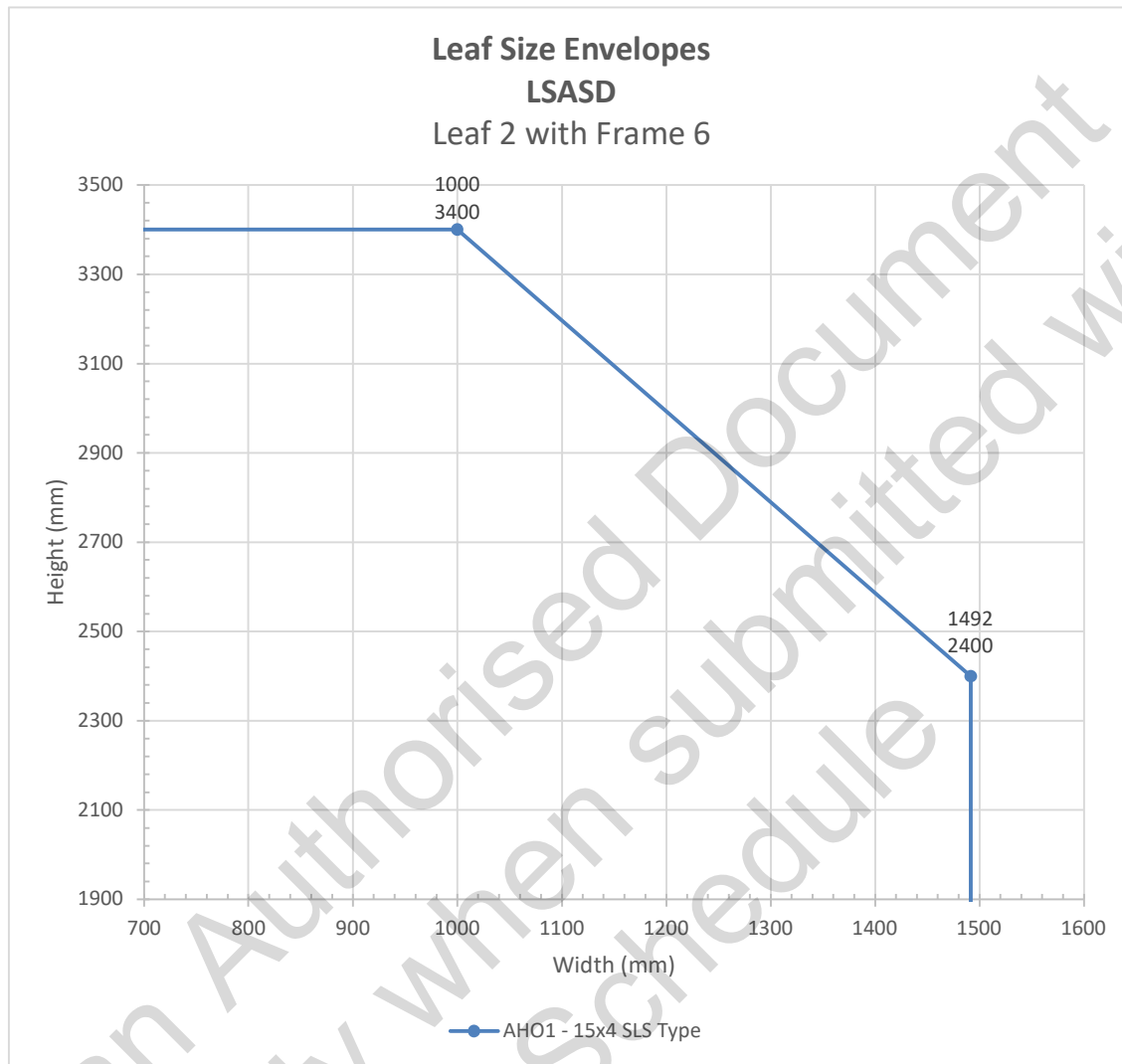
4.5.9.11 Leaf 2 + Frame 4 Doorset

See section 4.5.6 above for permitted leaf size and intumescent specification.

4.5.9.12 Leaf 2 + Frame 5 Doorset

For leaf sizes applicable to Leaf 2 + Frame 5 doorset see section 4.5.9.5 above.

4.5.9.13 Leaf 2 + Frame 6 Doorset



Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for LSASD Leaf 2 with Frame 6			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
AHO1 (CFR1808101)	SLS Type	Halspan Ltd	Head & Jamb: 2no 15x4. Fitted 21mm and 43mm from closing face. Seal fitted at 21mm is partially interrupted by hinges with 73% bypassing hinges. Second seal is fully interrupted by hinges.

4.5.9.14 Leaf 2 + Frame 7 Doorset

For leaf sizes applicable to Leaf 2 + Frame 7 see section 4.5.9.8 and 4.5.9.1.

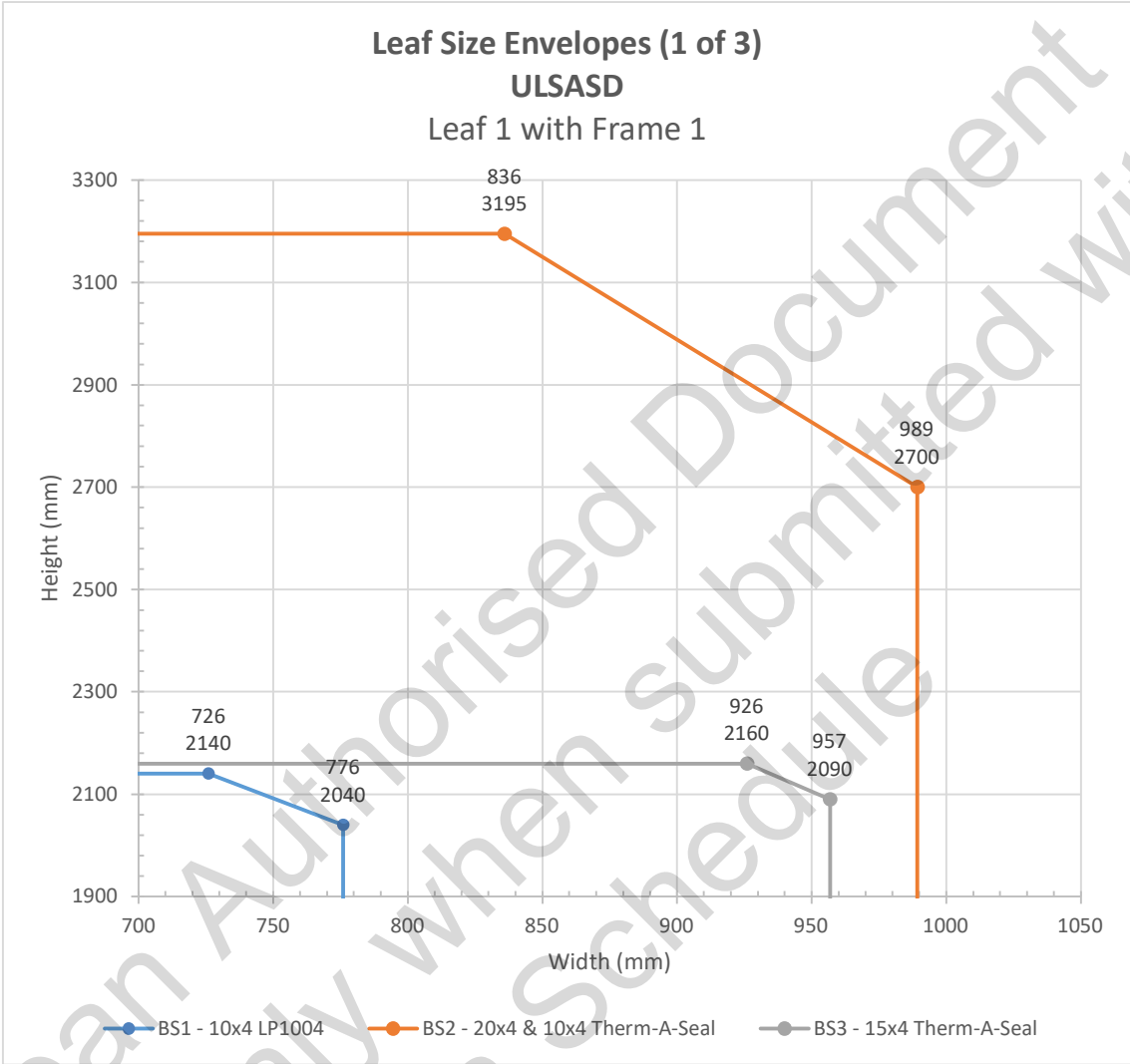
The use of intumescent specifications AS1, AS2, AS9 & AS10 is not permitted.

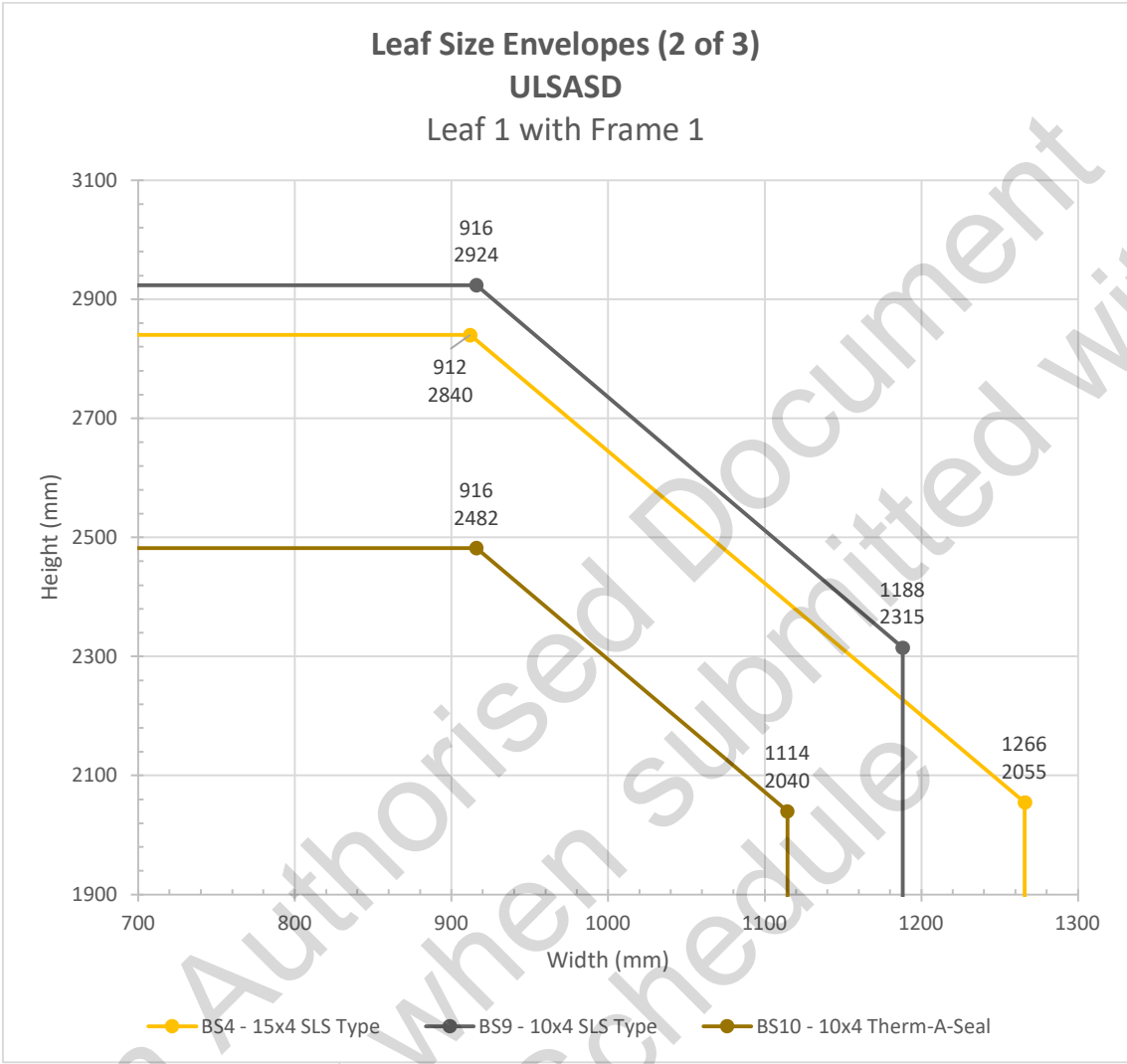
See section 7.5 for considerations for specific hardware.

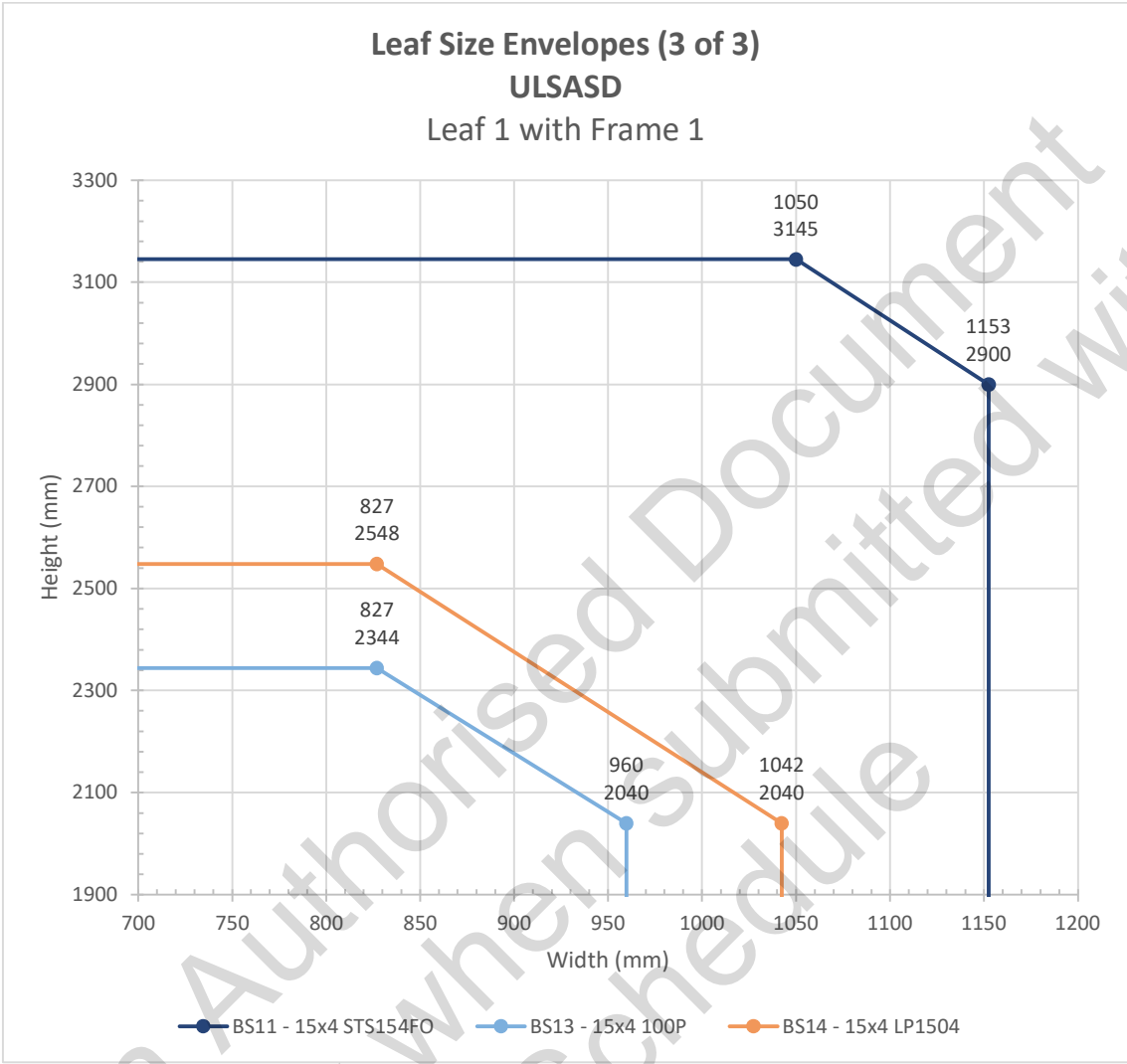
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Valid Only when submitted with
Permission Schedule

4.5.10 ULSASD Configuration: Leaf Sizes & Intumescent Specification.

4.5.10.1 Leaf 1 + Frame 1 Doorset







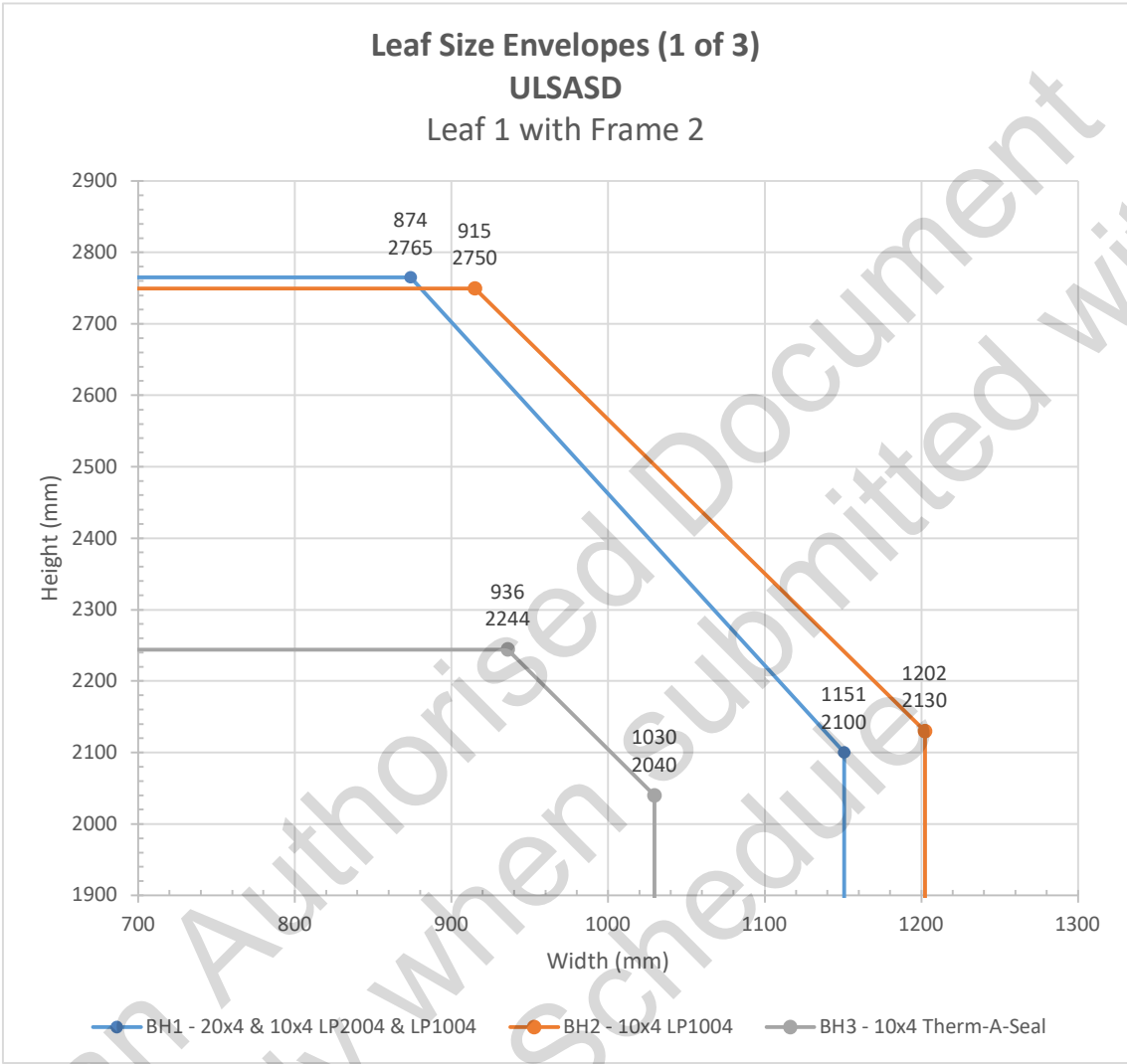
Intumescent seals are to be fitted centrally unless stated otherwise.

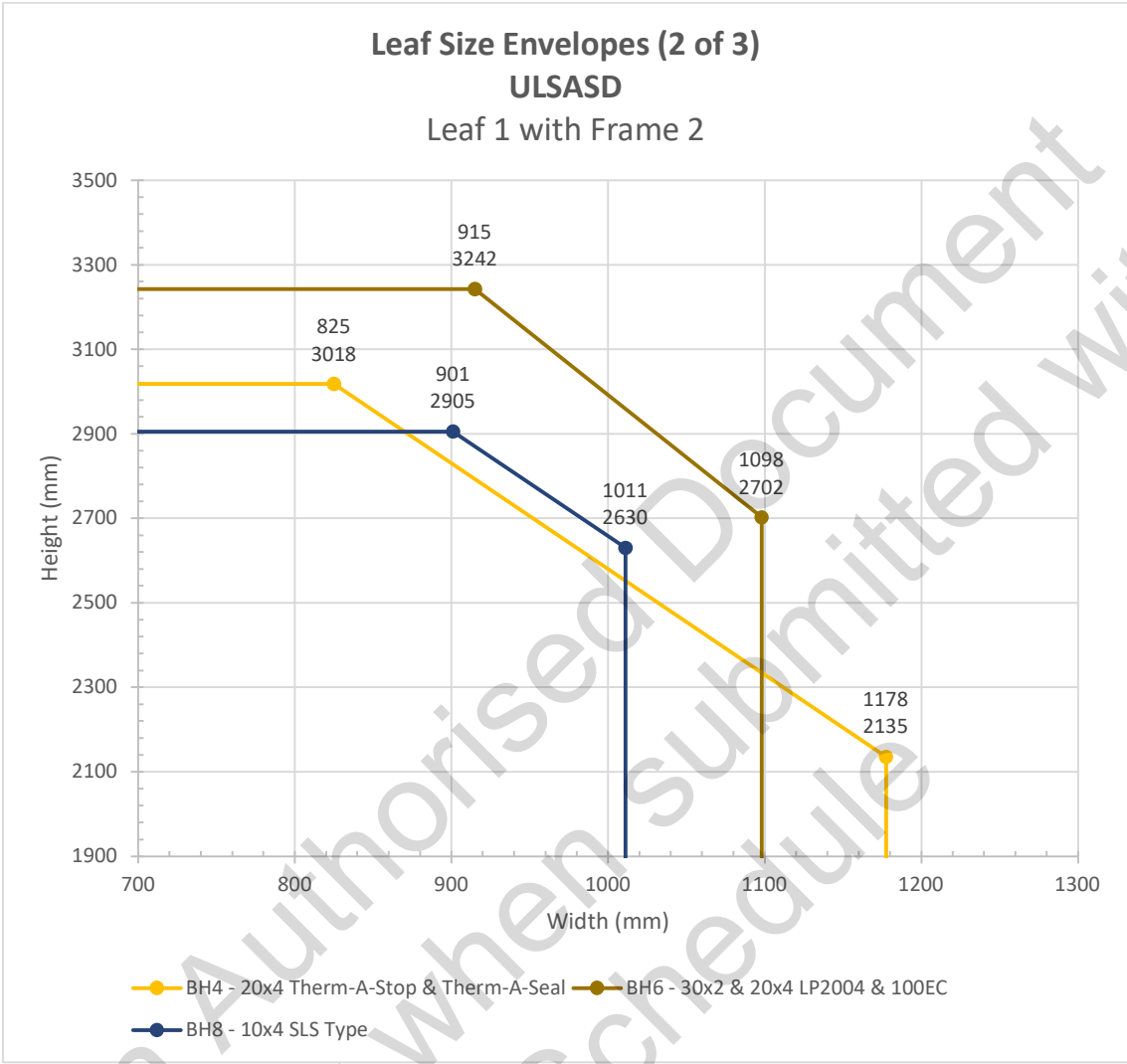
Intumescent Specification for ULSASD Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
BS1 (WARRES 112248A)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges
BS2 (WARRES 118409A)	Therm-A- Seal	Intumescent Seals Ltd	Head: 1no 20x4. Fitted in frame or leaf head Jambs: 1no 10x4. Fitted in frame jambs or leaf edges.
BS3 (Chilt/RF06068B)	Therm-A- Seal	Intumescent Seals Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.
BS4 (Chilt/RF08039)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.
BS9 (Chilt/RF08127)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges.
BS10 (Chilt/RF11005A)	Therm-A- Seal	Intumescent Seals Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges.
BS11 (BMT/FEP/F15097)	ST1504FO	Sealed Tight Solutions Ltd	Head & Jambs: 1no 15x4. Fitted 15mm from opening face in frame reveal or leaf edges.
BS13 (Chilt/RF07008A)	Palusol 100P	Mann McGowan Fabrications Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.
BS14 (Chilt/RF07008B)	LP1504	Lorient Polyproducts Ltd.	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.

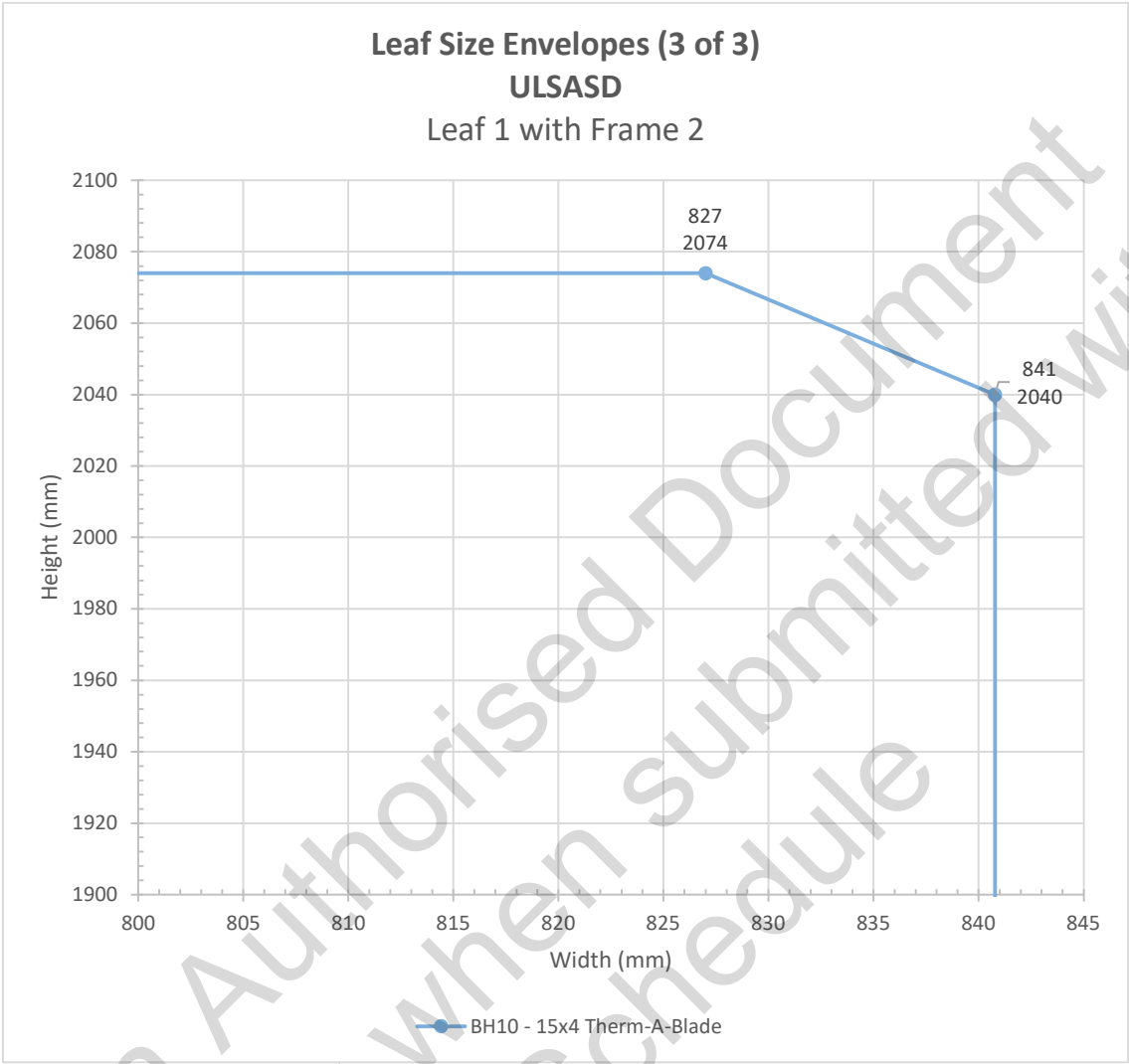
Note:

Leaf sizes and intumescent for Leaf 1 + Frame 1 Doorset are also applicable to Leaf 1 + Frame 2 Doorset.

4.5.10.2 Leaf 1 + Frame 2 Doorset







Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for ULSASD Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
BH1 (Chilt/RF95042A)	LP2004, LP1004	Lorient Polyproducts Ltd	Head: 1no 20x4 LP2004. Fitted in frame or leaf head. Jambs: 1no 10x4 LP1004. Fitted in frame jambs or leaf edges.
BH2 (Chilt/RF97091)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges.
BH3 (Chilt/RF02098A)	Therm-A-Seal	Intumescent Seals Ltd	Head & Jambs: 1no 10x4. Offset - Fitted 36mm from opening face in frame reveal or leaf edges, continuous and uninterrupted by hinges. 1no 15x4 seals are permitted fitted 31mm from opening face and 41mm from the opening face for leaf 1 and leaf 2 respectively. See drawing in section 9.3.
BH4 (Chilt/RF04021A)	Therm-A-Seal, Therm-A-Stop, Therm-A-Flex.	Intumescent Seals Ltd	Head & Jambs: 1no 20x4 Therm-A-Stop & 1no 10x4 Therm-A-Seal. Fitted 8mm apart in frame reveal or leaf edges. The Therm-A-Seal is fitted 5mm from opening face. Leaf Bottom Edge: 1no 38x2 Therm-A-Flex. Fitted in bottom leaf edge.
BH6 (Chilt/RF00068A)	LP2004, 100EC (concealed)	Lorient Polyproducts Ltd	Head: 1no 20x4 LP2004. Fitted in frame or leaf head. Leaf Vertical Edges: 1no 30x2 100EC. Fitted into grooves in the rear face of lipping. Seal is continuous underneath hinges.

Intumescent Specification for ULSASD Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
BH8 (BMT/FEP/F15272 AR1)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges.
BH10 (CFR 1005241)	Therm-A- Blade	Intumescent Seals Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.

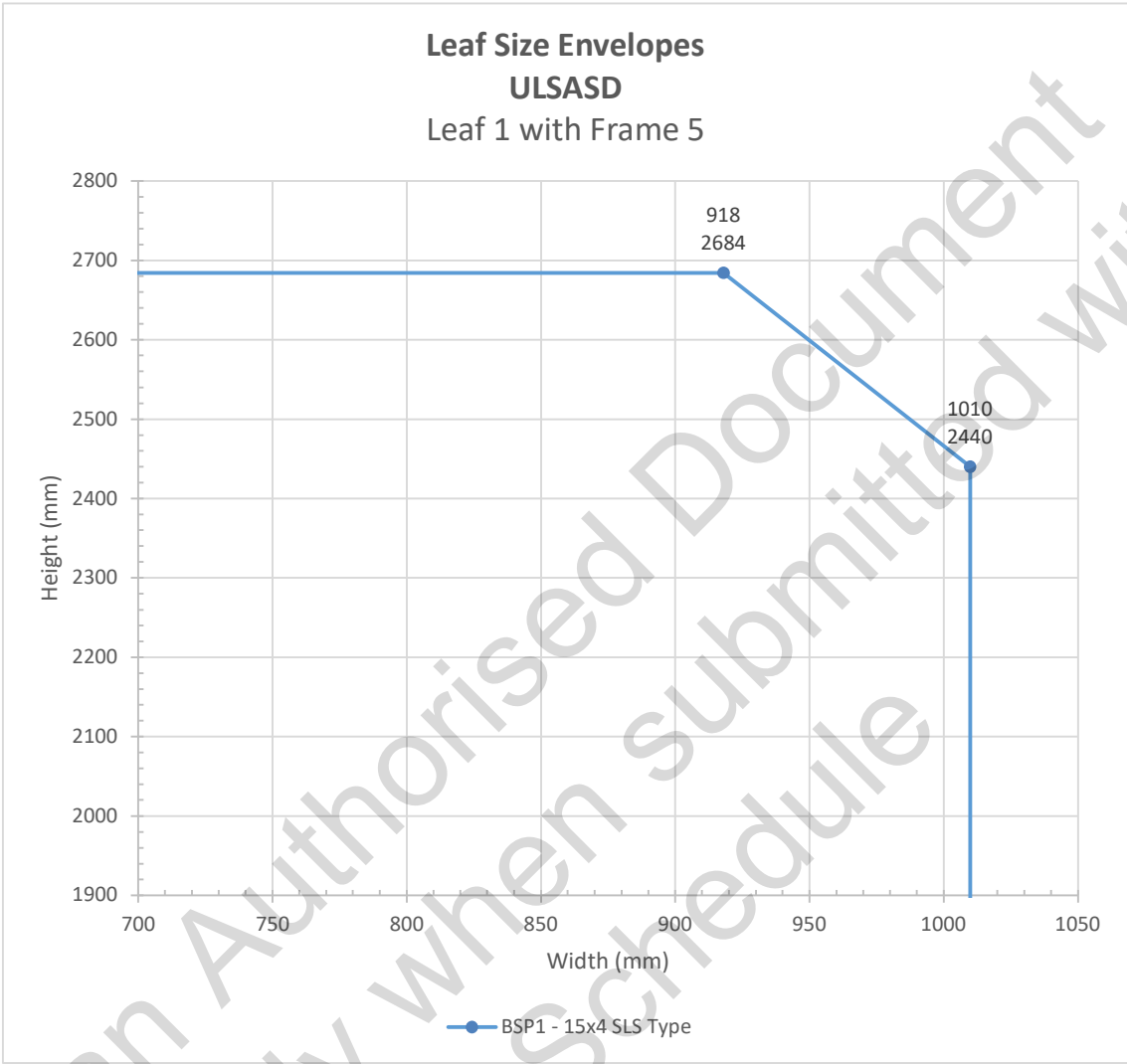
4.5.10.3 Leaf 1 + Frame 3 Doorset

For leaf sizes applicable to Leaf 1 + Frame 3 doorset see section 4.5.10.1 above

4.5.10.4 Leaf 1 + Frame 4 Doorset

See section 4.5.6 above for permitted leaf size and intumescent specification.

4.5.10.5 Leaf 1 + Frame 5 Doorset



Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for ULSASD Leaf 1 with Frame 5			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
BSP1 (CFR1809181_Rev 1)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges.

4.5.10.6 Leaf 1 + Frame 6 Doorset

Not permitted.

4.5.10.7 Leaf 1 + Frame 7 Doorset

For leaf sizes applicable to Leaf 1 + Frame 7 see section 4.5.10.1.

The use of intumescent specifications BS1, BS2, BS9 & BS10 is not permitted.

See section 7.5 for considerations for specific hardware.

4.5.10.8 Leaf 2 + Frame 1 Doorset

For leaf sizes applicable to Leaf 2 + Frame 1 doorset see section 4.5.10.1 above

4.5.10.9 Leaf 2 + Frame 2 Doorset

This arrangement represents a 54mm thick leaf in a hardwood frame. Any of the envelopes from the the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.10.8 above
- Leaf 1 + Frame 2 – see section 4.5.10.2 above
- Leaf 1 + Frame 1 – see section 4.5.10.1 above

4.5.10.10 Leaf 2 + Frame 3 Doorset

This arrangement represents a 54mm thick leaf in a MDF frame. Any of the envelopes from the the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.10.8 above
- Leaf 1 + Frame 1 – see section 4.5.10.1 above

4.5.10.11 Leaf 2 + Frame 4 Doorset

See section 4.5.6 above for permitted leaf size and intumescent specification.

4.5.10.12 Leaf 2 + Frame 5 Doorset

For leaf sizes applicable to Leaf 2 + Frame 5 doorset see section 4.5.10.5 above

4.5.10.13 Leaf 2 + Frame 6 Doorset

Not permitted.

4.5.10.14 Leaf 2 + Frame 7 Doorset

For leaf sizes applicable to Leaf 2 + Frame 7 see section 4.5.10.1.

The use of intumescent specifications BS1, BS2, BS9 & BS10 is not permitted.

See section 7.5 for considerations for specific hardware.

4.5.11 DASD Configuration: Leaf Sizes & Intumescent Specification

4.5.11.1 Leaf 1 + Frame 1 & 2 Doorset

The same Leaf sizes and intumescent specification as the ULSASD Configuration. See section 4.5.10 above

4.5.11.2 Leaf 1 + Frame 3, 4, 5, 6 & 7 Doorset

Not permitted.

4.5.11.3 Leaf 2 + Frame 1 & 2 Doorset

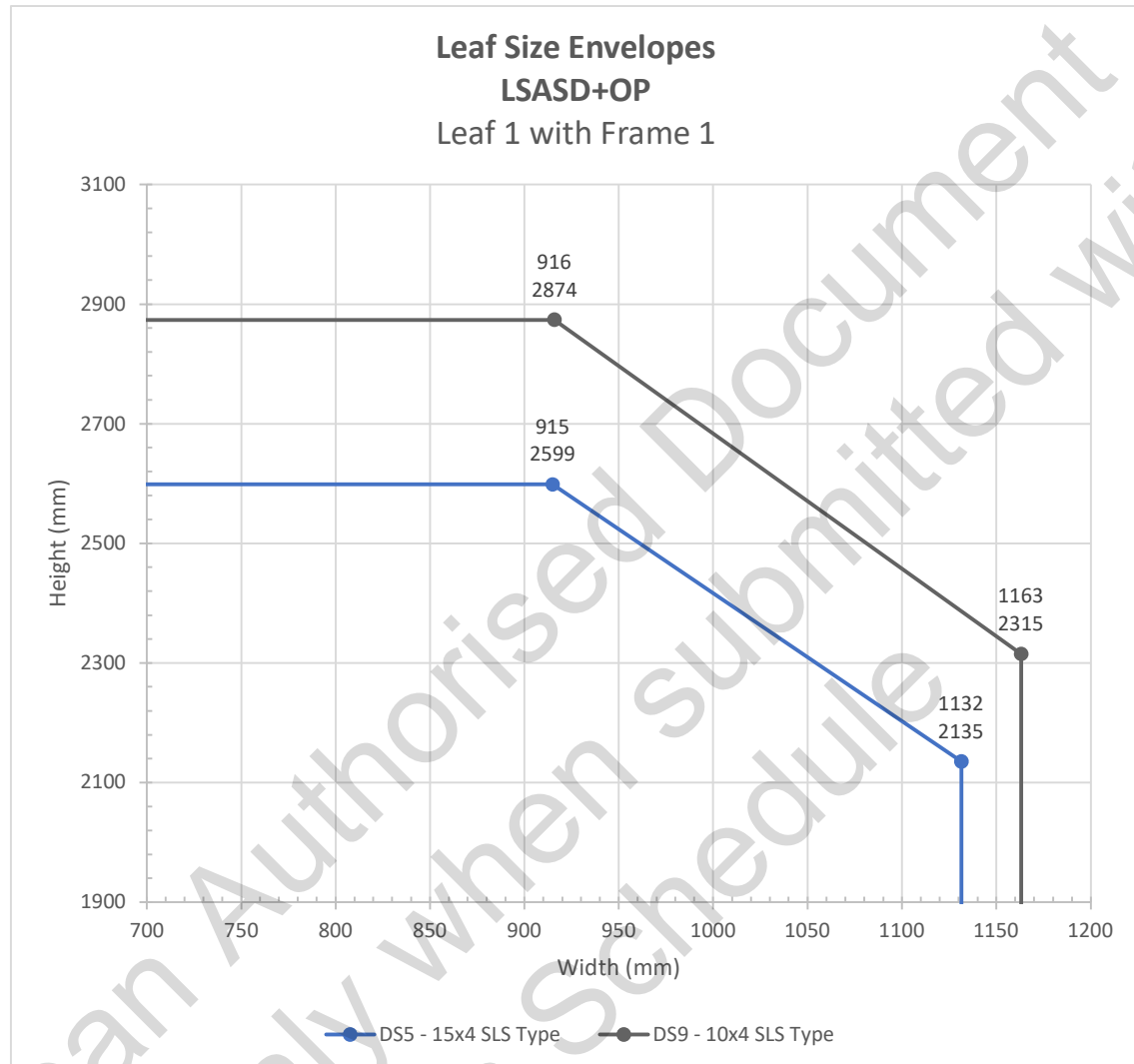
The same Leaf sizes and intumescent specification as the ULSASD Configuration. See section 4.5.10 above

4.5.11.4 Leaf 2 + Frame 3, 4, 5, 6 & 7 Doorset

Not permitted.

4.5.12 LSASD+OP Configuration: Leaf Sizes & Intumescent Specification

4.5.12.1 Leaf 1 + Frame 1 Doorset



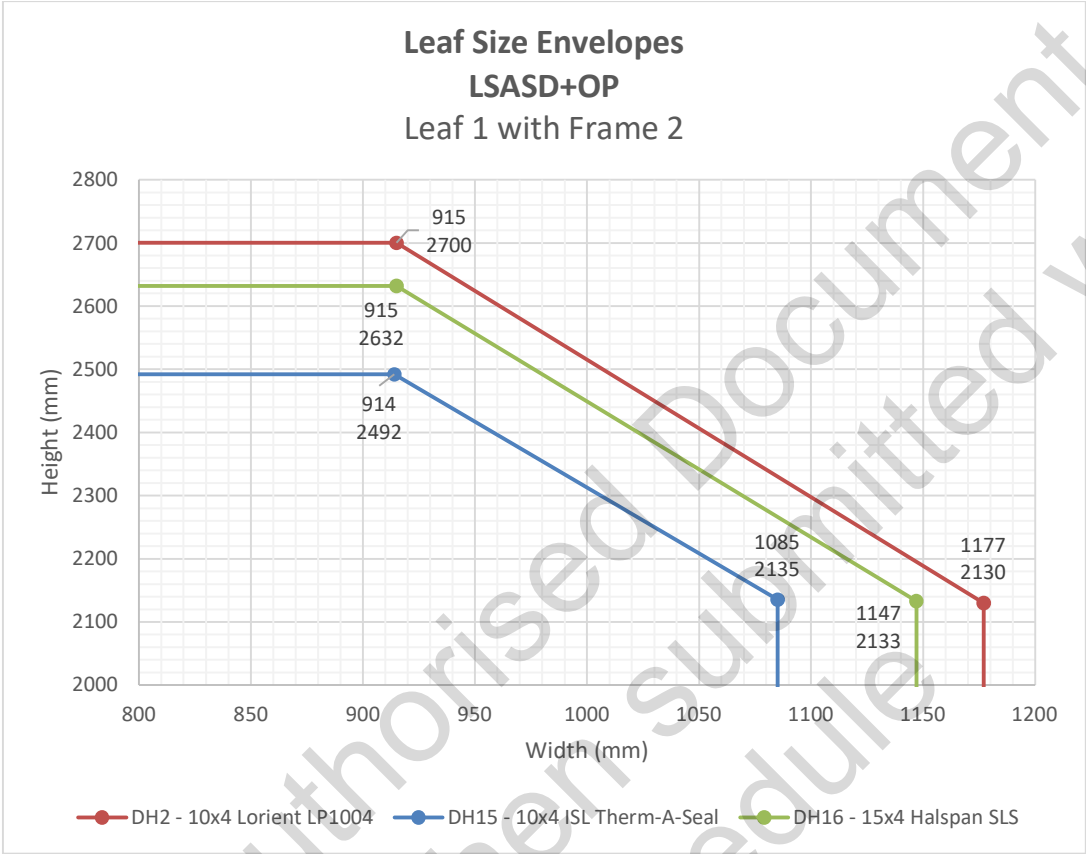
Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for LSASD+OP Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
DS5 (Chilt/RF13063)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal and in leaf head in rebate upstand Overpanel: 1no 15x4. Fitted in rebate of bottom edge and vertical edges.
DS9 (Chilt/RF08127)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal and in leaf head in rebate upstand. Overpanel: 1no 10x4. Fitted in rebate of bottom edge.

Note:

Leaf sizes and intumescent for Leaf 1 + Frame 1 Doorset are also applicable to Leaf 1 + Frame 2 Doorset.

4.5.12.2 Leaf 1 + Frame 2 Doorset



Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification LSASD+OP Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
DH2 (Chilt/RF97091)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal and in rebate in leaf head. Overpanel: 1no 10x4. Fitted in rebate in bottom edge.
DH15 (Chilt/RF01043)	Therm-A- Seal	Intumescent Seals Ltd	Head & Jambs: 10x4 fitted centrally in the frame reveal. Overpanel: 1no 10x4 fitted centrally in the rebate of the overpanel lipping and in the upstand of the overpanel lipping.
DH16 (WF370389)	Halspan SLS	Halspan Ltd	Head & Jambs: 15x4 Halspan SLS fitted centrally in the frame reveal. 10x2 interdents fitted centrally in the rebate of the leaf head. Overpanel: 10x4 Halspan SLS fitted centrally in the rebate of the overpanel lipping and in the upstand of the overpanel lipping.

4.5.12.3 Leaf 1 + Frame 3 Doorset

For leaf size applicable to Leaf 1 + Frame 3 doorset see section 4.5.12.1 above

4.5.12.4 Leaf 1 + Frame 4, 5, 6 & 7 Doorset

Not permitted.

4.5.12.5 Leaf 2 + Frame 1 Doorset

For leaf size applicable to Leaf 2 + Frame 1 doorset see section 4.5.12.1 above

4.5.12.6 Leaf 2 + Frame 2 Doorset

This arrangement represents a 54mm thick leaf in a hardwood frame. Any of the envelopes from the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.12.5 above
- Leaf 1 + Frame 2 – see section 4.5.12.2 above
- Leaf 1 + Frame 1 – see section 4.5.12.1 above

4.5.12.7 Leaf 2 + Frame 3 Doorset

This arrangement represents a 54mm thick leaf in a MDF frame. Any of the envelopes from the following doorset arrangements apply. These are:

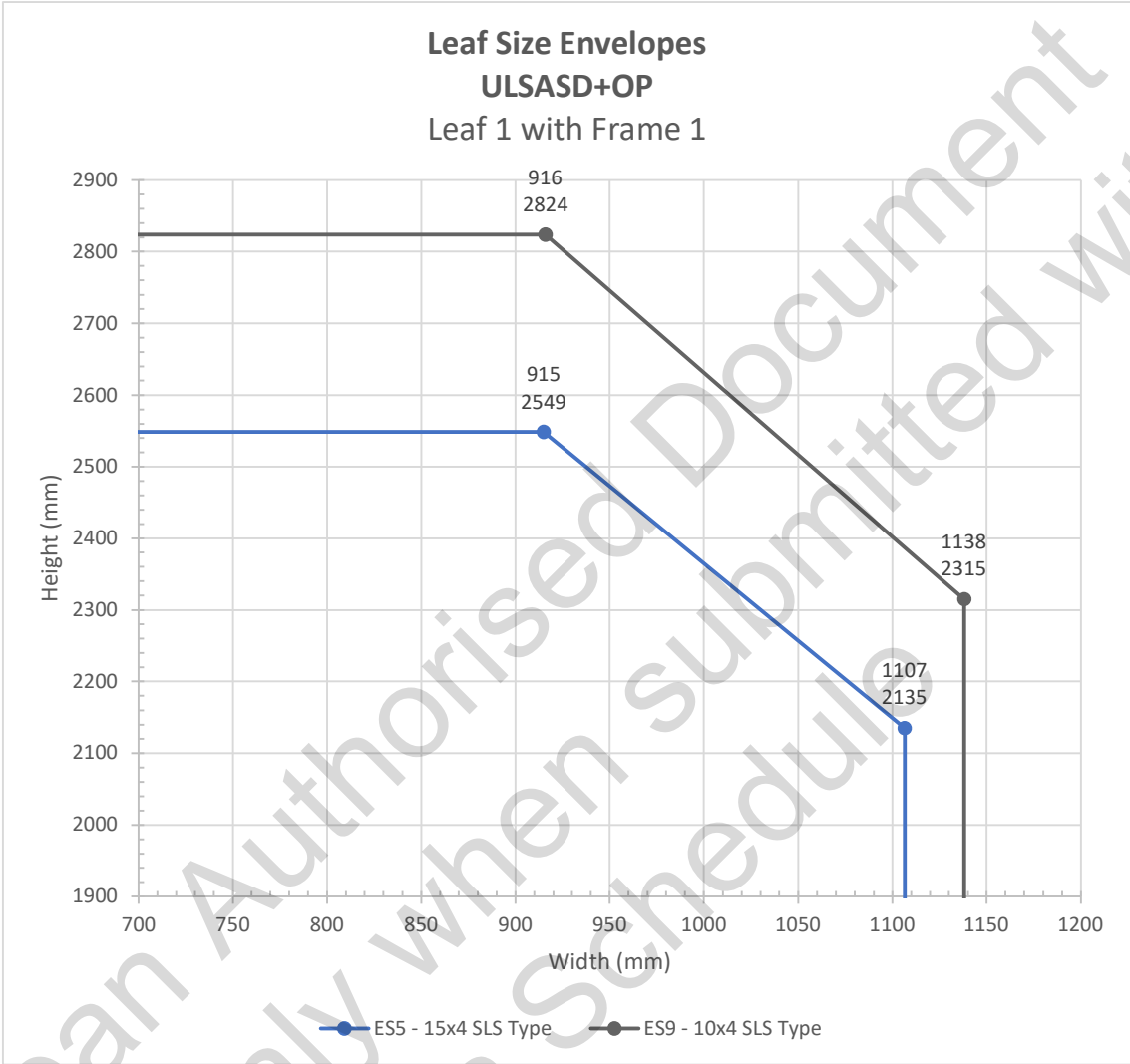
- Leaf 2 + Frame 1 – see section 4.5.12.5 above
- Leaf 1 + Frame 1 – see section 4.5.12.1 above

4.5.12.8 Leaf 2 + Frame 4, 5, 6 & 7 Doorset

Not permitted.

4.5.13 ULSASD+OP Configuration: Leaf Sizes & Intumescent Specification

4.5.13.1 Leaf 1 + Frame 1 Doorset



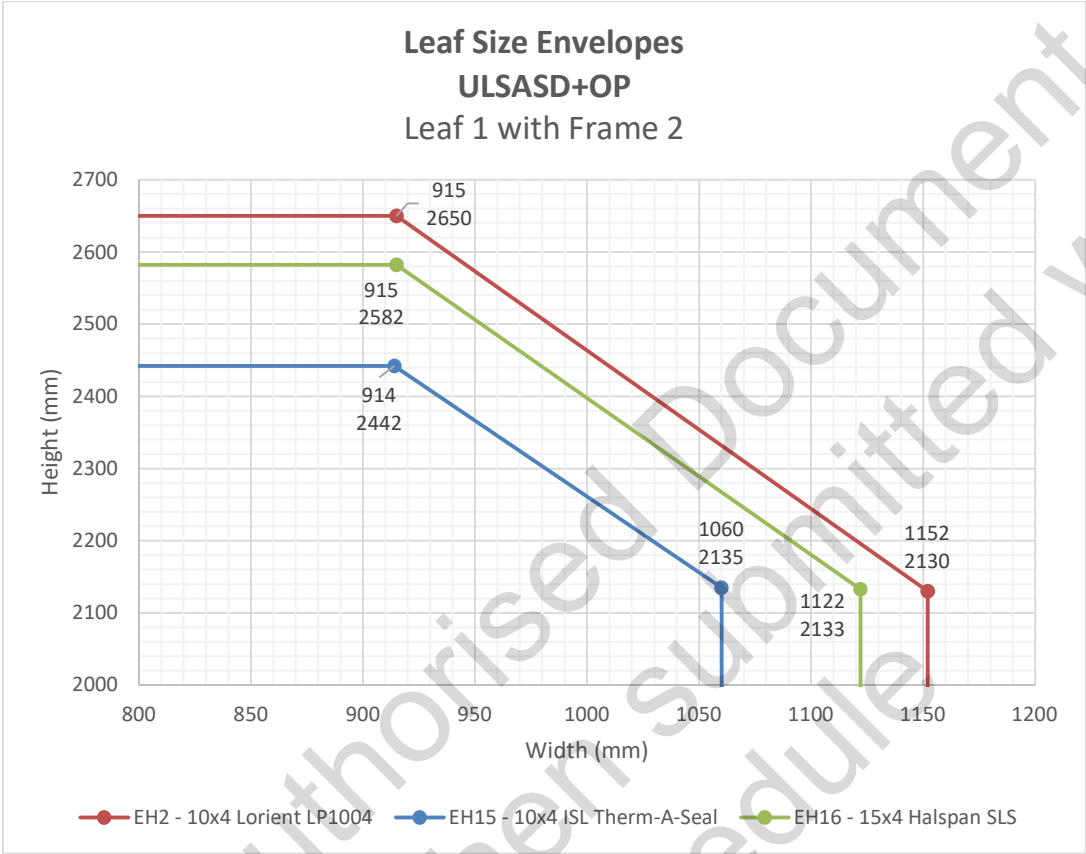
Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for ULSASD+OP Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
ES5 (Chilt/RF13063)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal and in rebate of leaf head. Overpanel: 1no 15x4. Fitted in rebate of bottom edge and vertical edges.
ES9 (Chilt/RF08127)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal and in rebate of leaf head. Overpanel: 1no 10x4. Fitted in rebate of bottom edge.

Note:

Leaf sizes and intumescent for Leaf 1 + Frame 1 Doorset are also applicable to Leaf 1 + Frame 2 Doorset.

4.5.13.2 Leaf 1 + Frame 2 Doorset



Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification ULSASD+OP Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
EH2 (Chilt/RF97091)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal and in rebate in leaf head. Overpanel: 1no 10x4. Fitted in rebate in bottom edge.
EH15 (Chilt/RF01043)	Therm-A-Seal	Intumescent Seals Ltd	Head & Jambs: 10x4 fitted centrally in the frame reveal. Overpanel: 1no 10x4 fitted centrally in the rebate of the overpanel lipping and in the upstand of the overpanel lipping.
EH16 (WF370389)	Halspan SLS	Halspan Ltd	Head & Jambs: 15x4 Halspan SLS fitted centrally in the frame reveal. 10x2 interdents fitted centrally in the rebate of the leaf head. Overpanel: 10x4 Halspan SLS fitted centrally in the rebate of the overpanel lipping and in the upstand of the overpanel lipping.

4.5.13.3 Leaf 1 + Frame 3 Doorset

For leaf size applicable to Leaf 1 + Frame 3 doorset see section 4.5.13.1 above

4.5.13.4 Leaf 1 + Frame 4, 5, 6 & 7 Doorset

Not permitted.

4.5.13.5 Leaf 2 + Frame 1 Doorset

For leaf size applicable to Leaf 2 + Frame 1 doorset see section 4.5.13.1 above

4.5.13.6 Leaf 2 + Frame 2 Doorset

This arrangement represents a 54mm thick leaf in a hardwood frame. Any of the envelopes from the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.13.5 above
- Leaf 1 + Frame 2 – see section 4.5.13.2 above
- Leaf 1 + Frame 1 – see section 4.5.13.1 above

4.5.13.7 Leaf 2 + Frame 3 Doorset

This arrangement represents a 54mm thick leaf in a MDF frame. Any of the envelopes from the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.13.5 above
- Leaf 1 + Frame 1 – see section 4.5.13.1 above

4.5.13.8 Leaf 2 + Frame 4, 5, 6 & 7 Doorset

Not permitted.

4.5.14 DASD+OP Configuration: Leaf Sizes & Intumescent Specification

4.5.14.1 Leaf 1 + Frame 1 & 2 Doorset

The same Leaf sizes and intumescent specification as the ULSASD+OP Configuration. See section 4.5.13 above

4.5.14.2 Leaf 1 + Frame 3, 4, 5, 6 & 7 Doorset

Not permitted.

4.5.14.3 Leaf 2 + Frame 1 & 2 Doorset

The same Leaf sizes and intumescent specification as the ULSASD+OP Configuration. See section 4.5.10 above

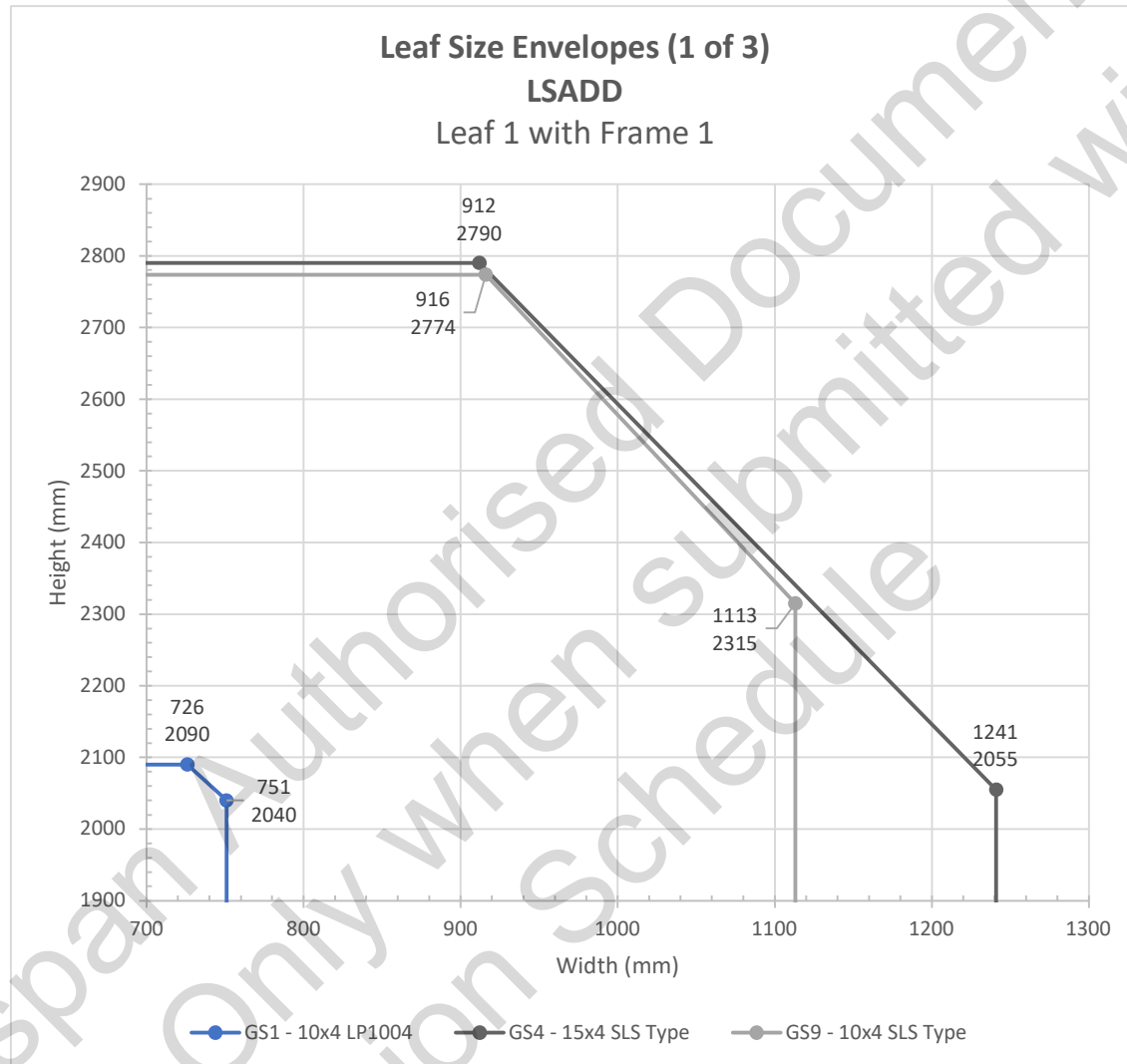
4.5.14.4 Leaf 2 + Frame 3, 4, 5, 6 & 7 Doorset

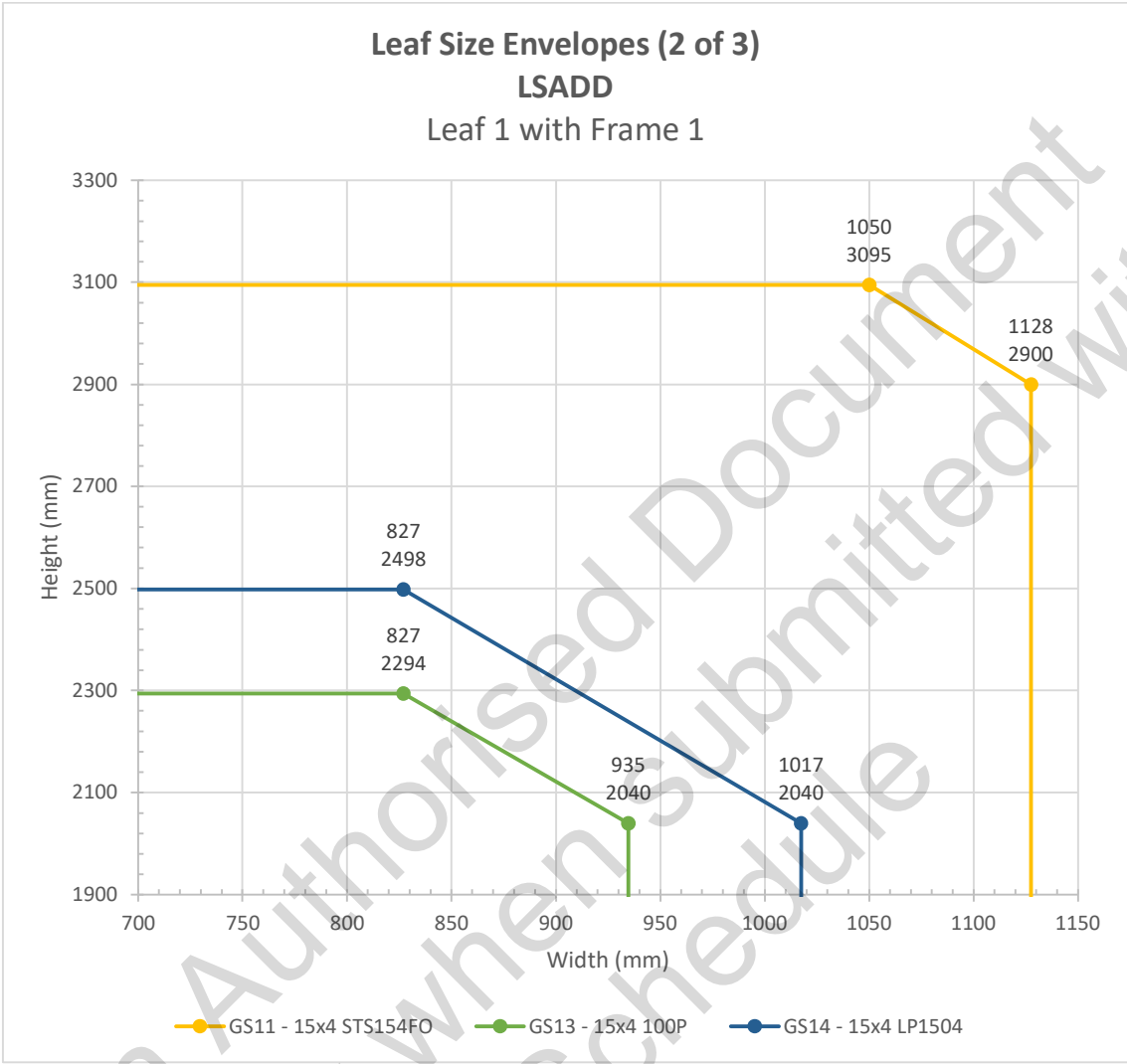
Not permitted.

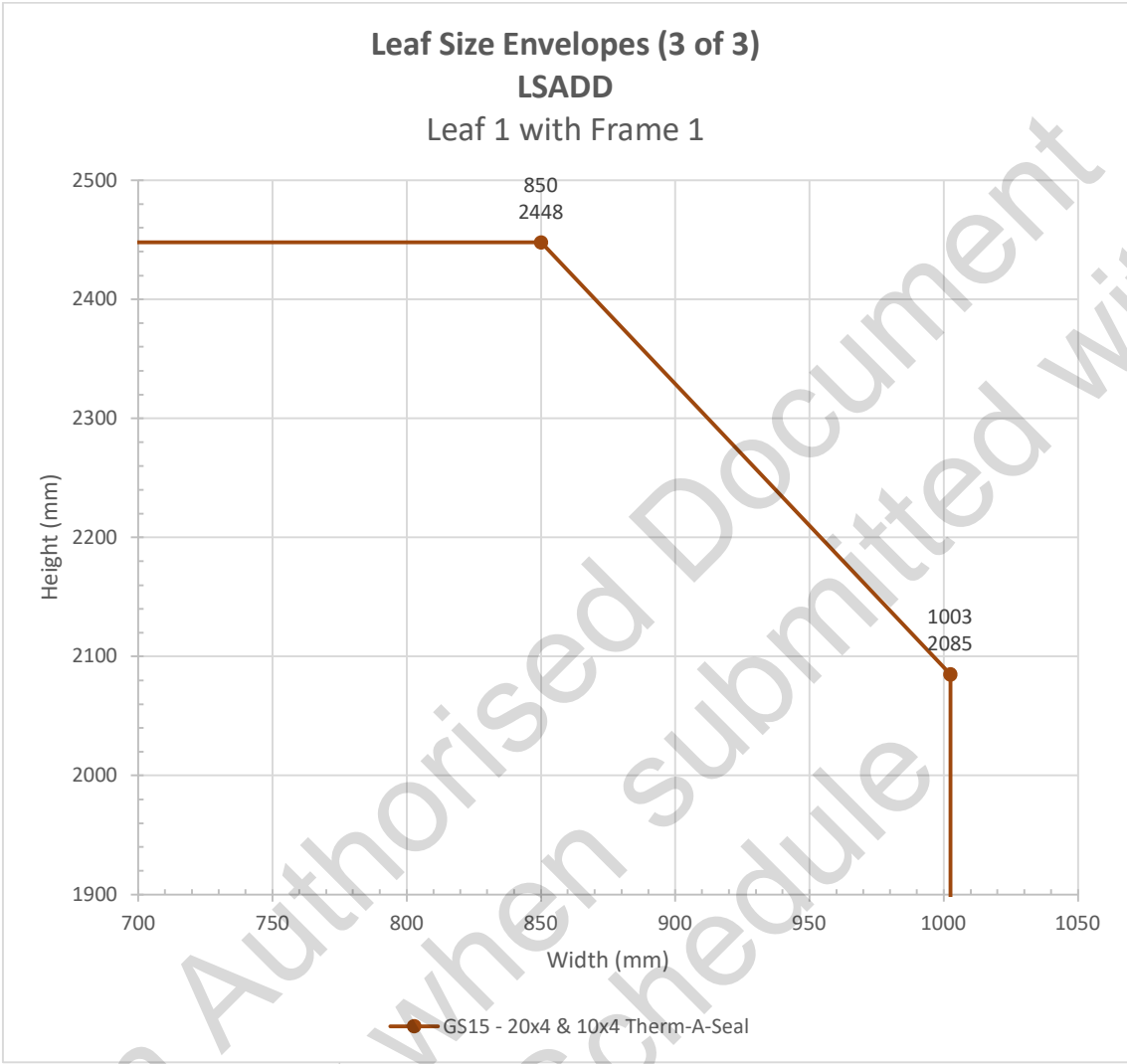
4.5.15 LSADD Configuration: Leaf Sizes & Intumescent Specification

The following permitted leaf size and intumescent specification apply for doorsets with flat lippings to the meeting edges. See section 4.5.6 above and 4.5.5.7 for permitted leaf size and intumescent specification, for use with equal rebated meeting edges.

4.5.15.1 Leaf 1 + Frame 1 Doorset







Intumescent seals are to be fitted centrally unless stated otherwise.

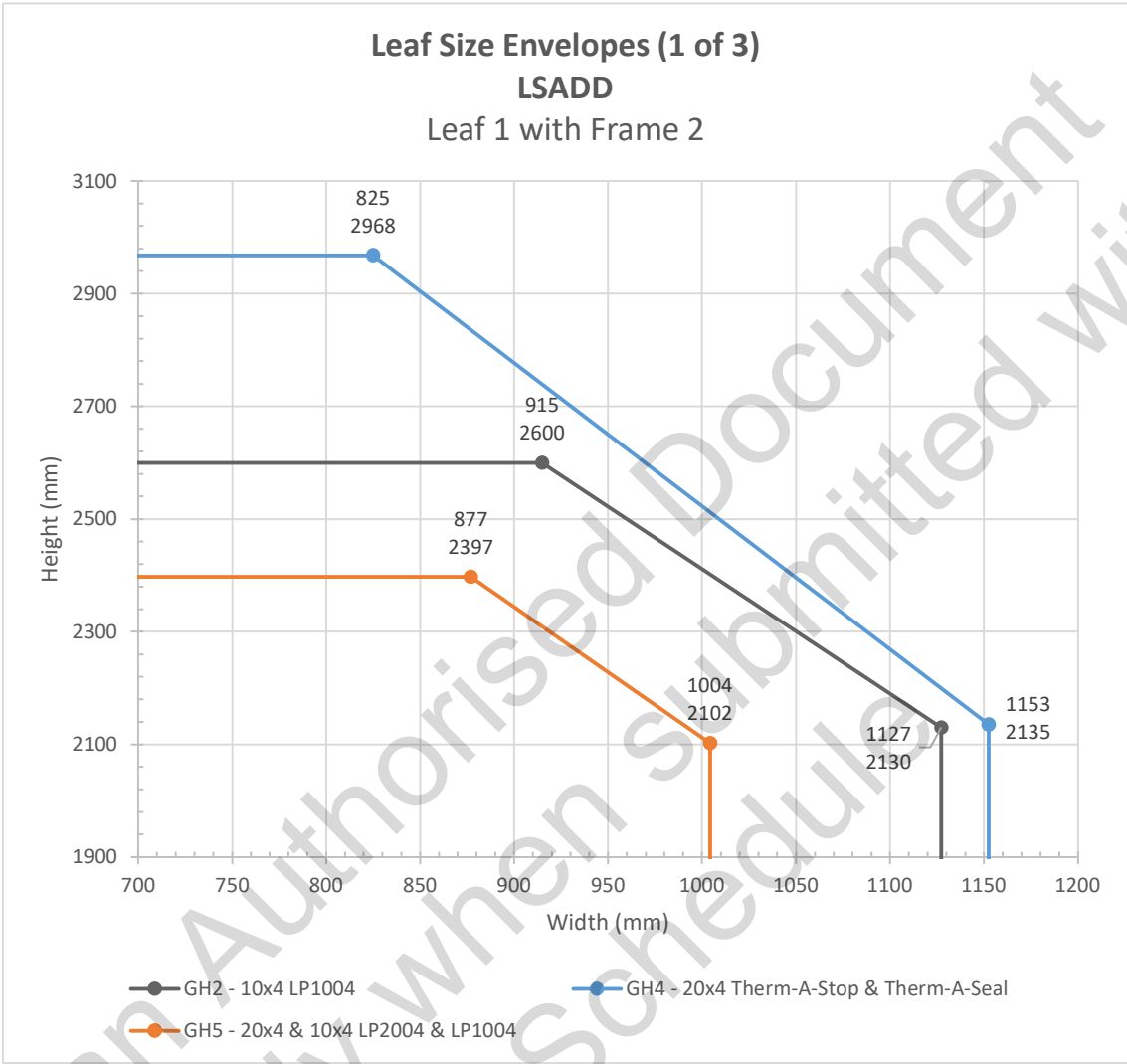
Intumescent Specification for LSADD Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
GS1 (WARRES 112248A)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges. Meeting Edges: 1no 10x4. Fitted in both leaves. <i>SEE GENERAL NOTE IN SECTION 4.5.4</i>
GS4 (Chilt/RF08039)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges. Meeting Edges: 1no 15x4. Fitted in slave leaf. <i>SEE GENERAL NOTE IN SECTION 4.5.4</i>
GS9 (Chilt/RF08127)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges. Meeting Edges: 2no 10x4. Fitted 10mm apart and 8mm from opening face in one leaf.
GS11 (BMT/FEP/F15097)	ST1504FO, ST1004FO	Sealed Tight Solutions Ltd	Head & Jambs: 1no 15x4 ST1504FO. Fitted in frame reveal or leaf edges. Meeting Edges: 2no 10x4 ST1004FO. Fitted 10mm apart and 7mm from opening face in main leaf. Both seals partially interrupted by latch forend with 4mm bypassing it.

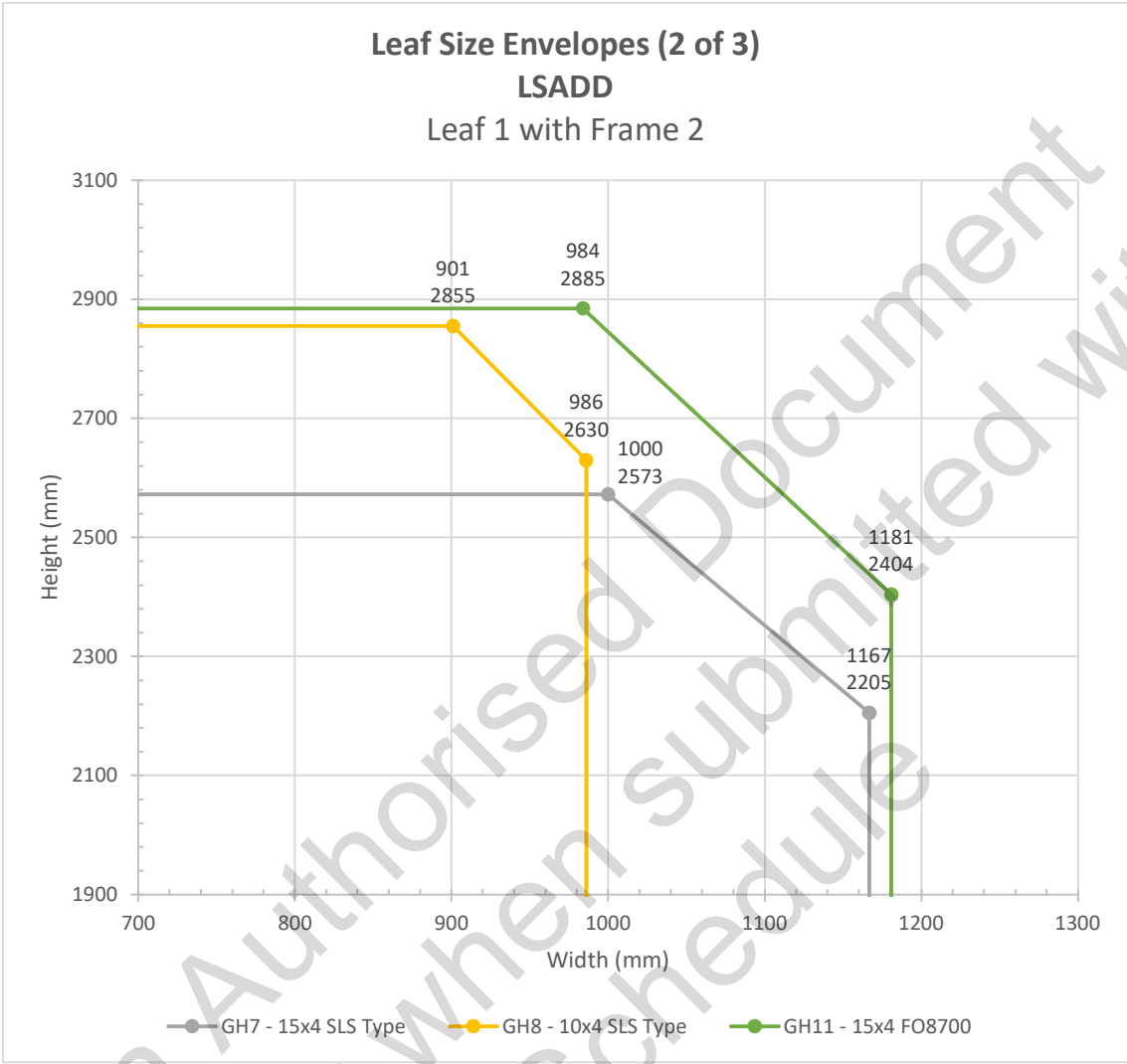
Intumescent Specification for LSADD Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
GS13 (Chilt/RF07008A)	Palusol 100P	Mann Mcgowan Fabrications Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges. Meeting Edges: 2no. 10x4. Fitted 10mm apart and 7.5mm from opening face in main leaf. Both seals partially interrupted by latch forend with 2.5mm bypassing it.
GS14 (Chilt/RF07008B)	LP1504, LP1004	Lorient Polyproducts Ltd.	Head & Jambs: 1no 15x4 LP1504. Fitted in frame reveal or leaf edges. Meeting Edges: 2no 10x4 LP1004. Fitted 10mm apart and 7.5mm from opening face in main leaf. Both seals partially interrupted by latch forend with 2.5mm bypassing it.
GS15 (Chilt/RF01103)	Therm-A-Seal	Intumescant Seals Ltd	Head: 1no 20x4. Fitted in frame or leaf head. Jambs: 1no 10x4. Fitted in frame jambs or leaf edges. Meeting Edges: 1no 10x4. Fitted in both leaves. <i>SEE GENERAL NOTE IN SECTION 4.5.4.</i>

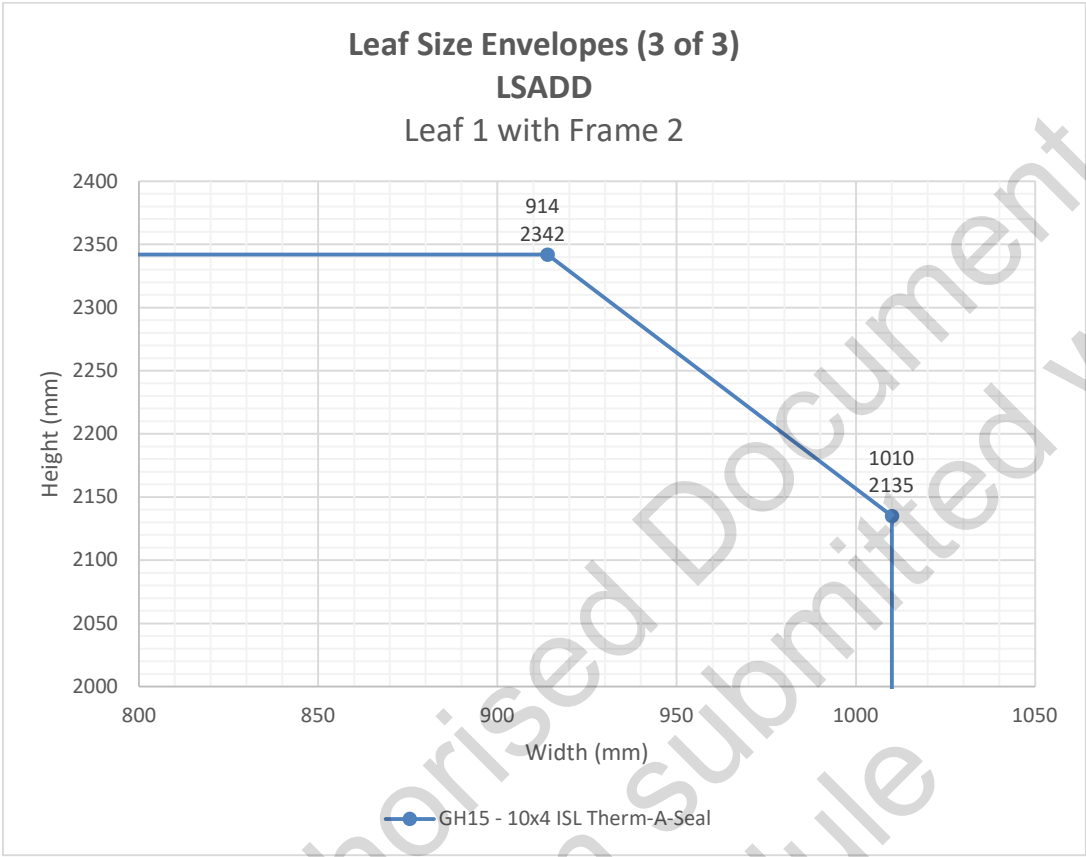
Note:

Leaf sizes and intumescent for Leaf 1 + Frame 1 Doorset are also applicable to Leaf 1 + Frame 2 Doorset.

4.5.15.2 Leaf 1 + Frame 2 Doorset







Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for LSADD Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
GH2 (Chilt/RF97091)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges. Meeting Edges: 2no 10x4. Fitted centrally and 12mm apart in one leaf.
GH4 (Chilt/RF04021A)	Therm-A-Seal, Therm-A-Stop, Therm-A-Flex.	Intumescent Seals Ltd	Head & Jambs: 1no 20x4 Therm-A-Stop & 1no 10x4 Therm-A-Seal. Fitted 8mm apart in frame reveal or leaf edges. The Therm-A-Seal fitted 5mm from opening face. Leaf Bottom Edges: 1no 38x2 Therm-A-Flex. Fitted centrally. Meeting Edges: 1no 20x4 Therm-A-Stop & 1no 10x4 Therm-A-Seal. Fitted 5mm apart, and Therm-A-Seal fitted 5mm from opening face in one leaf.
GH5 (Chilt/RF00067A)	LP2004, LP1004	Lorient Polyproducts Ltd	Head: 1no 20x4 LP2004. Fitted in frame or leaf head. Jambs: 1no 10x4 LP1004. Fitted in jamb reveal or leaf edges. Meeting Edges: 2no 10x4 LP1004. Fitted centrally and 8mm apart in one leaf.

Intumescent Specification for LSADD Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
GH7 (BMT/FEP/F15214 AR1)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges. Partially interrupted by hinges with 2mm bypassing hinges. Meeting Edges: 1no 10x4. Fitted 18mm from closing face in both leaves. <i>SEE GENERAL NOTE IN SECTION 4.5.4</i>
GH8 (BMT/FEP/F15272 AR1)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges. Meeting Edges: 2no 10x4. Fitted centrally and 10mm apart in one leaf.
GH11 (WF 372220 AR1)	FO8700, FO8500	Pyroplex Ltd	Head & Jambs: 1no 15x4 FO8700. Fitted in leaf edges or frame reveal. Meeting Edges: 2no 10x4 FO8500. Fitted 8mm apart in one leaf. One seal partially interrupted by latch keep with 3mm bypassing it. flushbolt body partially interrupts both seals with 2mm bypassing it.
GH15 (Chilt/RF01043)	Therm-A-Seal	Intumescent Seals Ltd	Head & Jambs: 10x4 fitted centrally in the frame reveal. Meeting Edges: 10x4 fitted centrally in the meeting edge of both leaves.

4.5.15.3 Leaf 1 + Frame 3 Doorset

For leaf size applicable to Leaf 1 + Frame 3 doorset see section 4.5.15.1 above

4.5.15.4 Leaf 1 + Frame 4, 5 & 6 Doorset

Not permitted.

4.5.15.5 Leaf 1 + Frame 7 Doorset

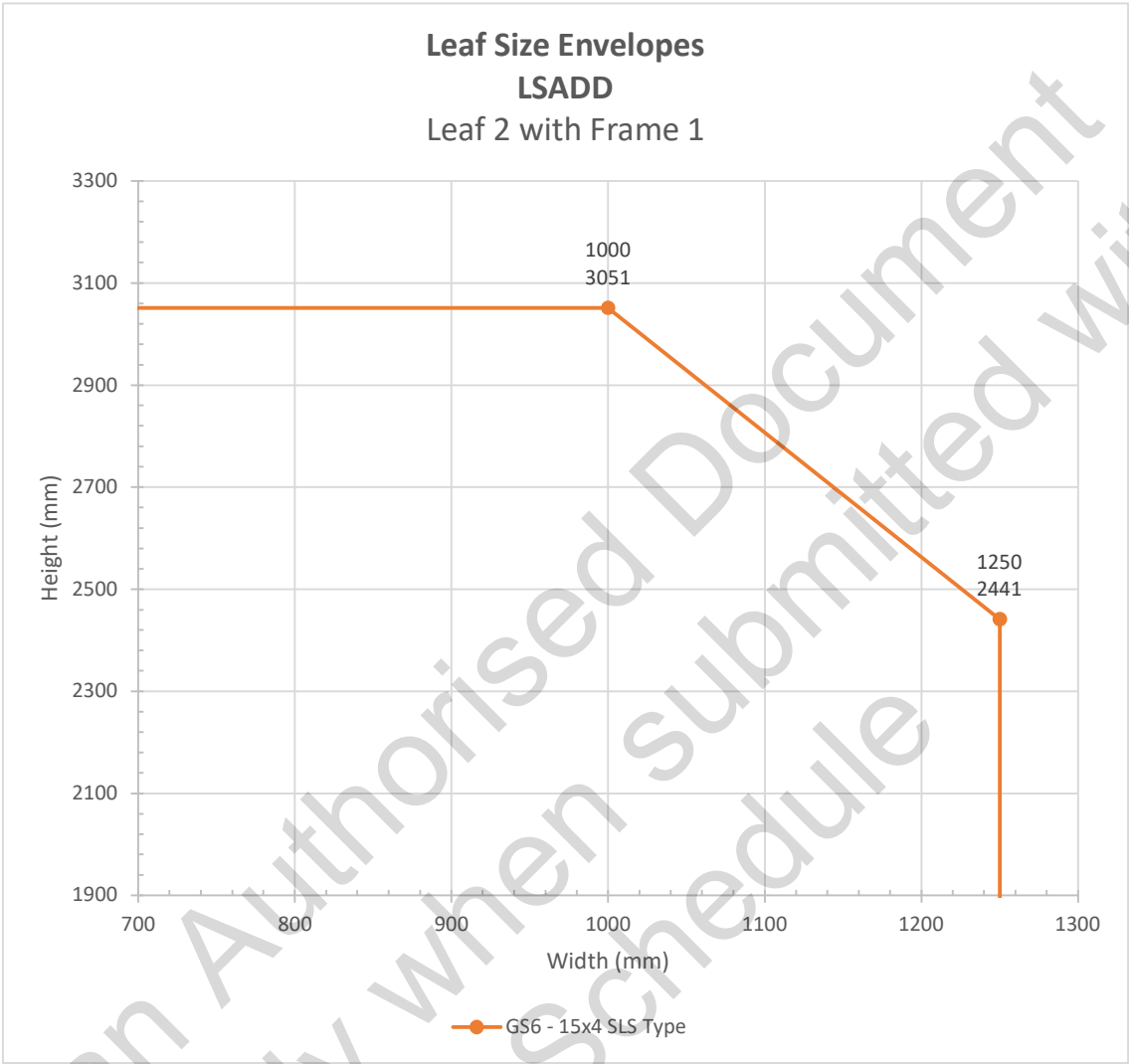
For leaf sizes applicable to Leaf 1 + Frame 7 see section 4.5.15.1.

The use of intumescent specifications GS1, GS9 & GS15 is not permitted.

See section 7.5 for considerations for specific hardware.

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Valid Only when submitted with
Permission Schedule

4.5.15.6 Leaf 2 + Frame 1 Doorset



Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for LSADD Leaf 2 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
GS6 (CFR1909021)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted 20mm from hinge-knuckle face in frame reveal or leaf edges. Partially interrupted by hinges. Meeting Edges: 2no 10x4. Fitted in main leaf. Partially interrupted by latch forend.

Note:

Leaf sizes and intumescent for Leaf 1 + Frame 1 Doorset are also applicable to Leaf 2 + Frame 1 Doorset.

4.5.15.7 Leaf 2 + Frame 2 Doorset

This arrangement represents a 54mm thick leaf in a hardwood frame. Any of the envelopes from the following doorset arrangements apply. These are

- Leaf 2 + Frame 1 – see section 4.5.15.6 above
- Leaf 1 + Frame 2 – see section 4.5.15.2 above
- Leaf 1+ Frame 1 – see section 4.5.15.1 above

4.5.15.8 Leaf 2 + Frame 3 Doorset

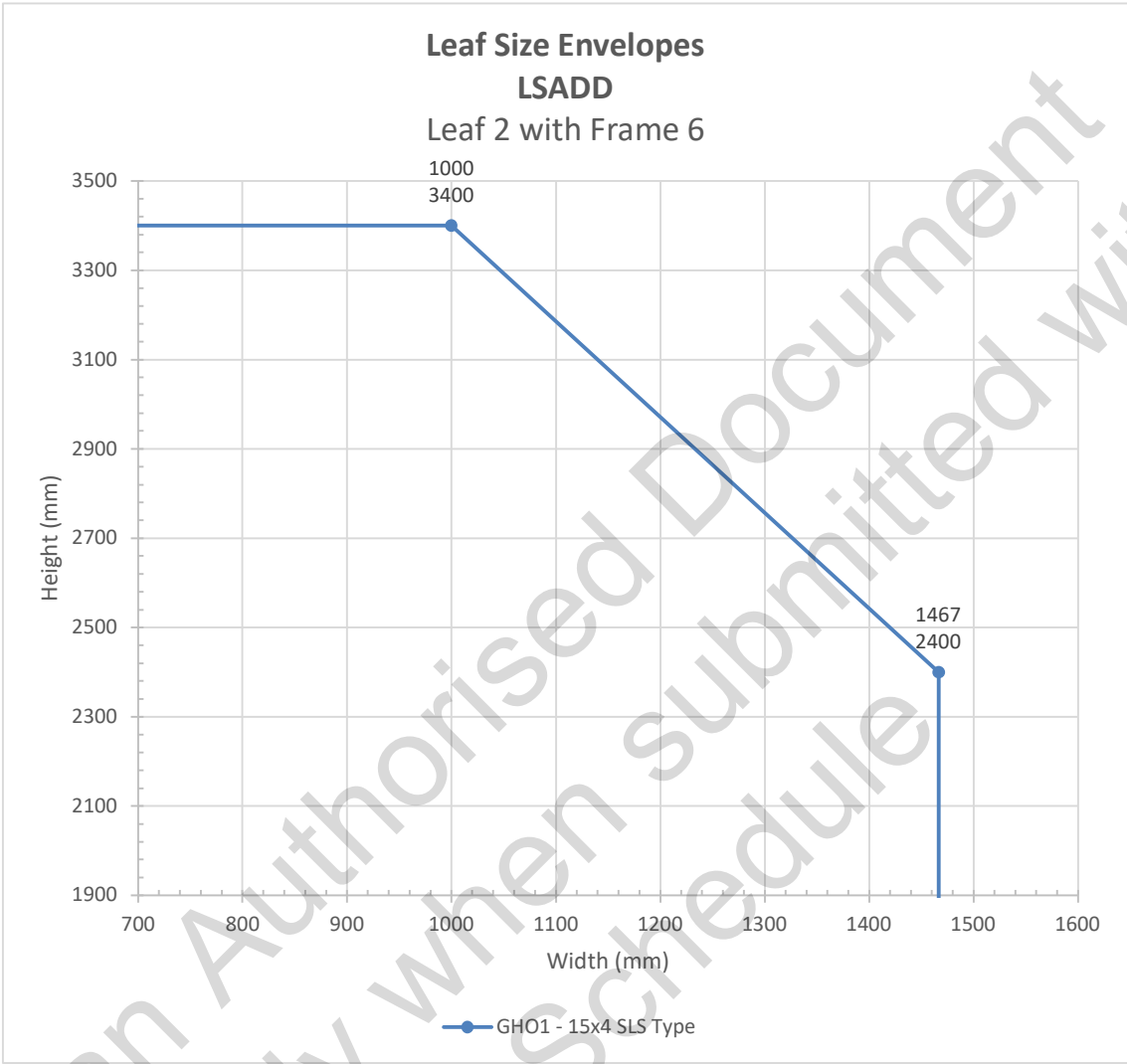
This arrangement represents a 54mm thick leaf in a MDF frame. Any of the envelopes from the following doorset arrangements apply. These are

- Leaf 2 + Frame 1 – see section 4.5.15.6 above
- Leaf 1 + Frame 1 – see section 4.5.15.1 above

4.5.15.9 Leaf 2 + Frame 4 & 5 Doorset

Not permitted.

4.5.15.10 Leaf 2 + Frame 6 Doorset



Intumescent Specification for LSADD Leaf 2 with Frame 6			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
GHO1 (CFR1808101)	SLS Type	Halspan Ltd	<p>Head & Jambs: 2no 15x4. Fitted 21mm and 43mm from opening face in frame reveal or leaf edges. Seal fitted at 21mm is partially interrupted by hinges with 73% bypassing it.</p> <p>Meeting Edges: 2no 15x4. Fitted 4mm and 26mm from opening face in one leaf. Seal fitted at 4mm is partially interrupted by flushbolts with 80% bypassing it. Second seal is partially interrupted by latch keep and flushbolts with 13% and 33% bypassing them respectively.</p>

4.5.15.11 Leaf 2 + Frame 7 Doorset

For leaf sizes applicable to Leaf 2 + Frame 7 see sections 4.5.15.1 and 4.5.15.6.

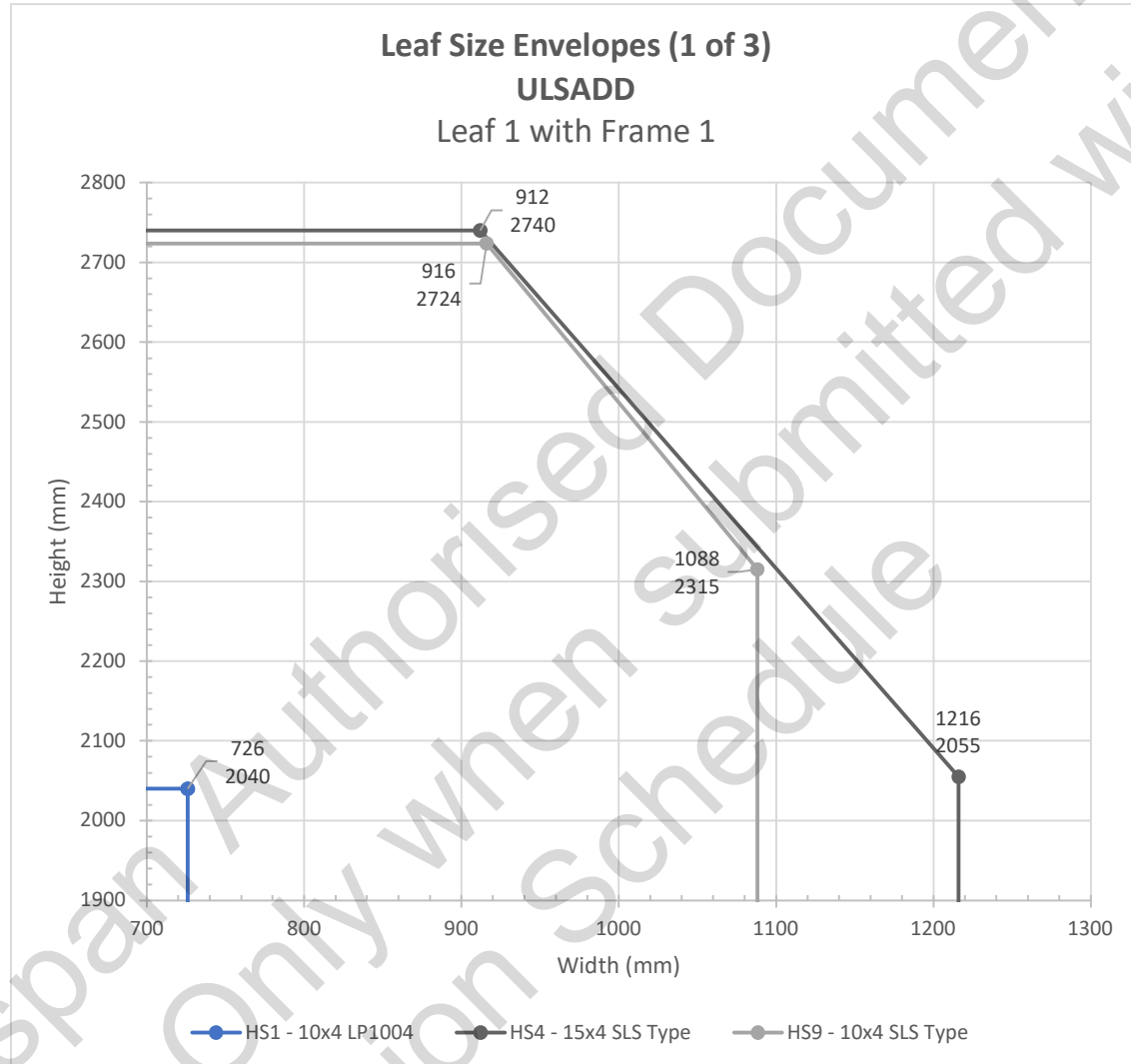
The use of intumescent specifications GS1, GS9 & GS15 is not permitted.

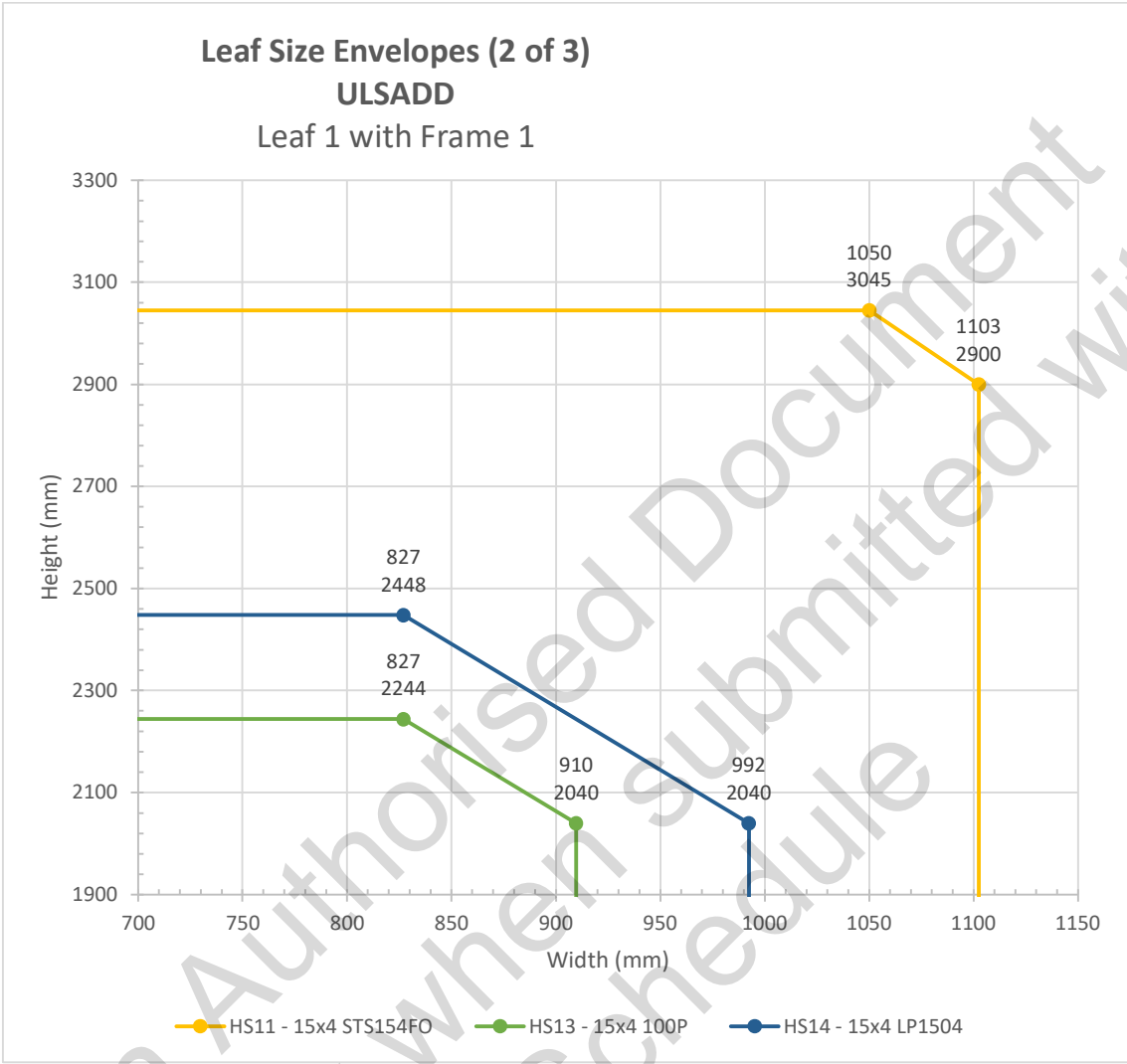
See section 7.5 for considerations for specific hardware.

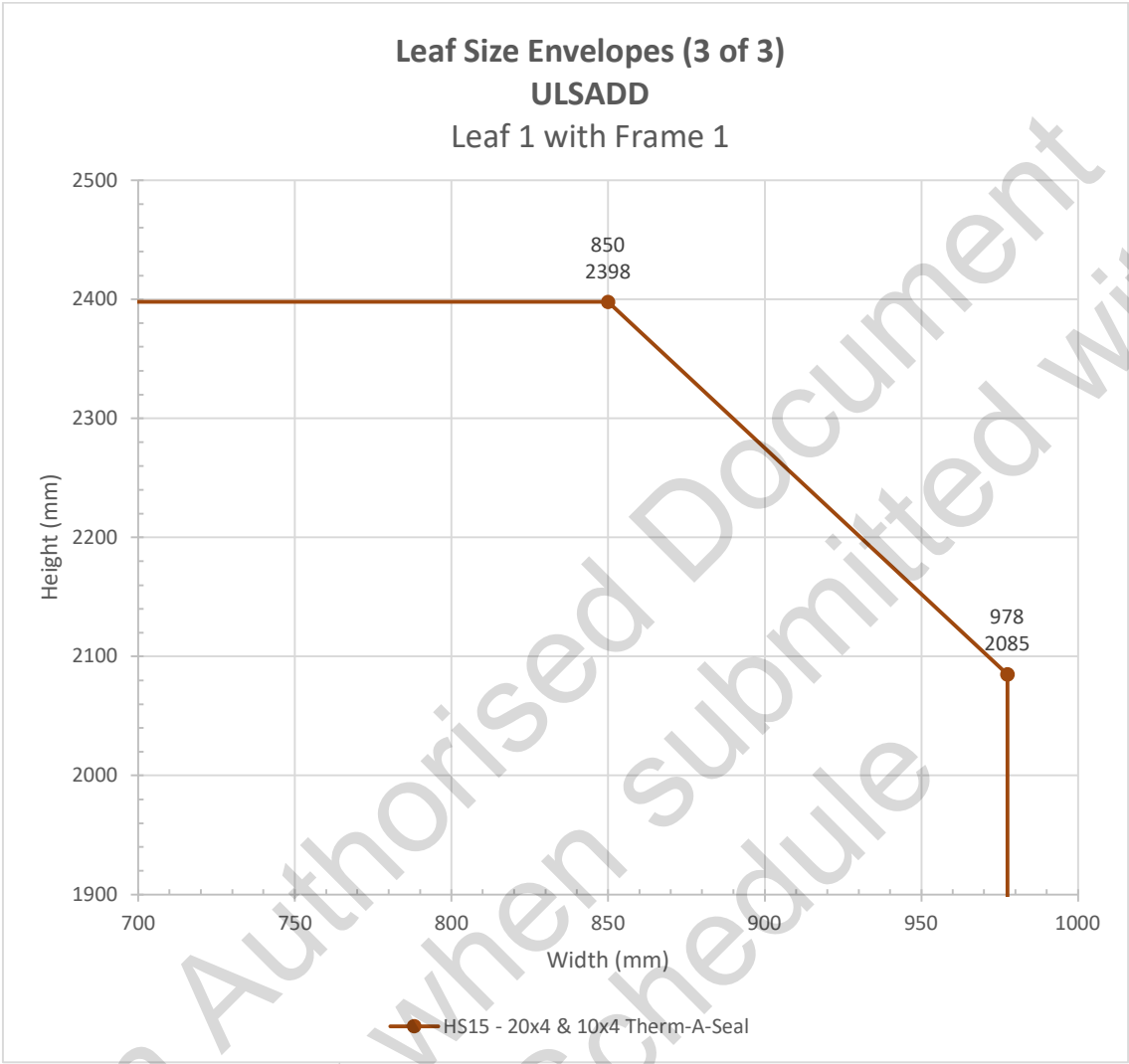
4.5.16 ULSADD Configuration: Leaf Sizes & Intumescent Specification

The following permitted leaf size and intumescent specification apply for doorsets with flat lippings to the meeting edges. See section 4.5.6 above for permitted leaf size and intumescent specification, for use with equal rebated meeting edges.

4.5.16.1 Leaf 1 + Frame 1 Doorset







Intumescent seals are to be fitted centrally unless stated otherwise.

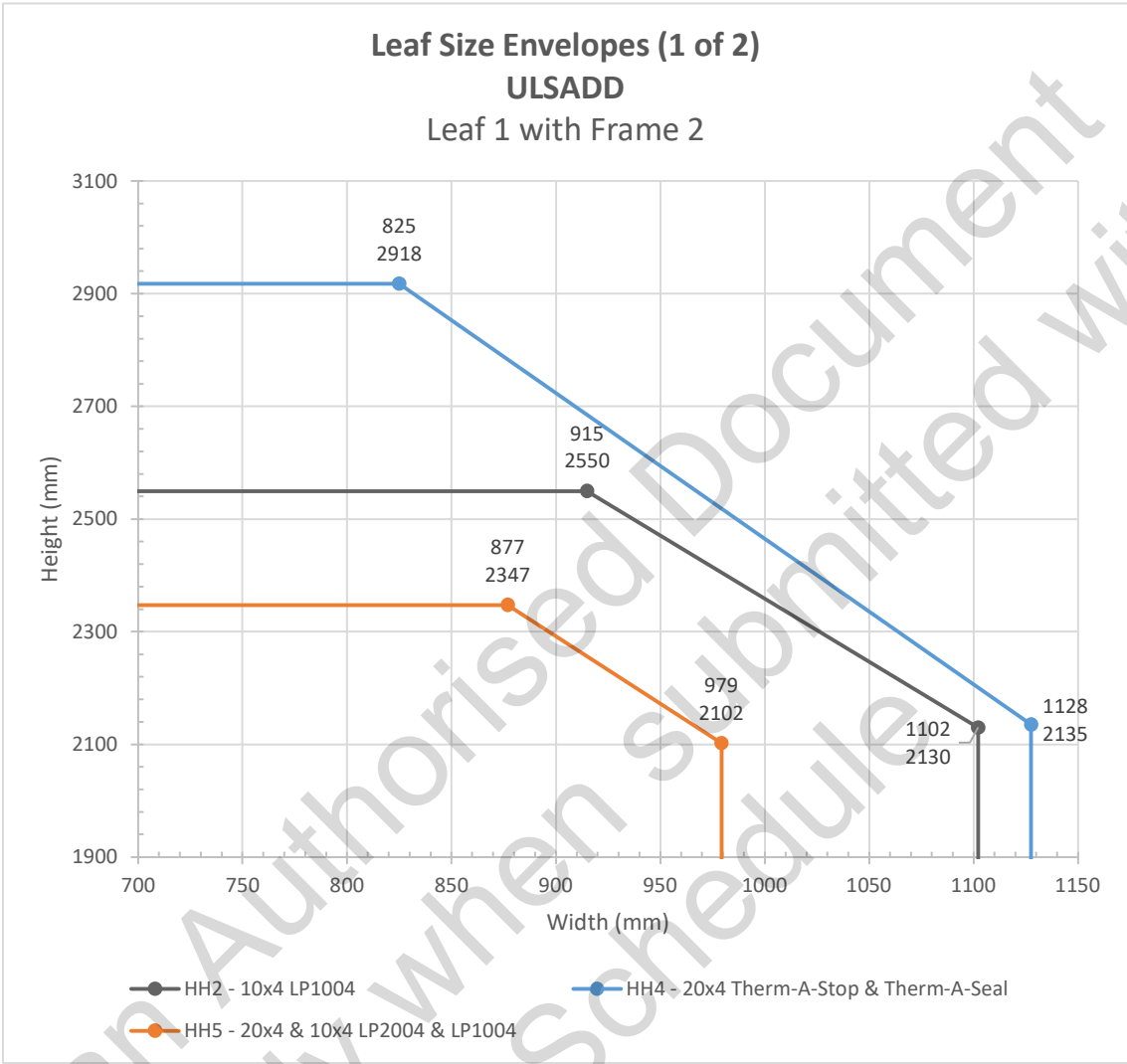
Intumescent Specification for ULSADD Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
HS1 (WARRES 112248A)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges. Meeting Edges: 1no 10x4. Fitted in both leaves. <i>SEE GENERAL NOTE IN SECTION 4.5.4</i>
HS4 (Chilt/RF08039)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges. Meeting Edges: 1no 15x4. Fitted in slave leaf. <i>SEE GENERAL NOTE IN SECTION 4.5.4</i>
HS9 (Chilt/RF08127)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges. Meeting Edges: 2no 10x4. Fitted 10mm apart and 8mm from opening face in one leaf.
HS11 (BMT/FEP/F15097)	ST1504FO, ST1004FO	Sealed Tight Solutions Ltd	Head & Jambs: 1no 15x4 ST1504FO. Fitted in frame reveal or leaf edges. Meeting Edges: 2no 10x4 ST1004FO. Fitted 10mm apart and 7mm from opening face in main leaf. Both seals partially interrupted by latch forend with 4mm bypassing latch forend.

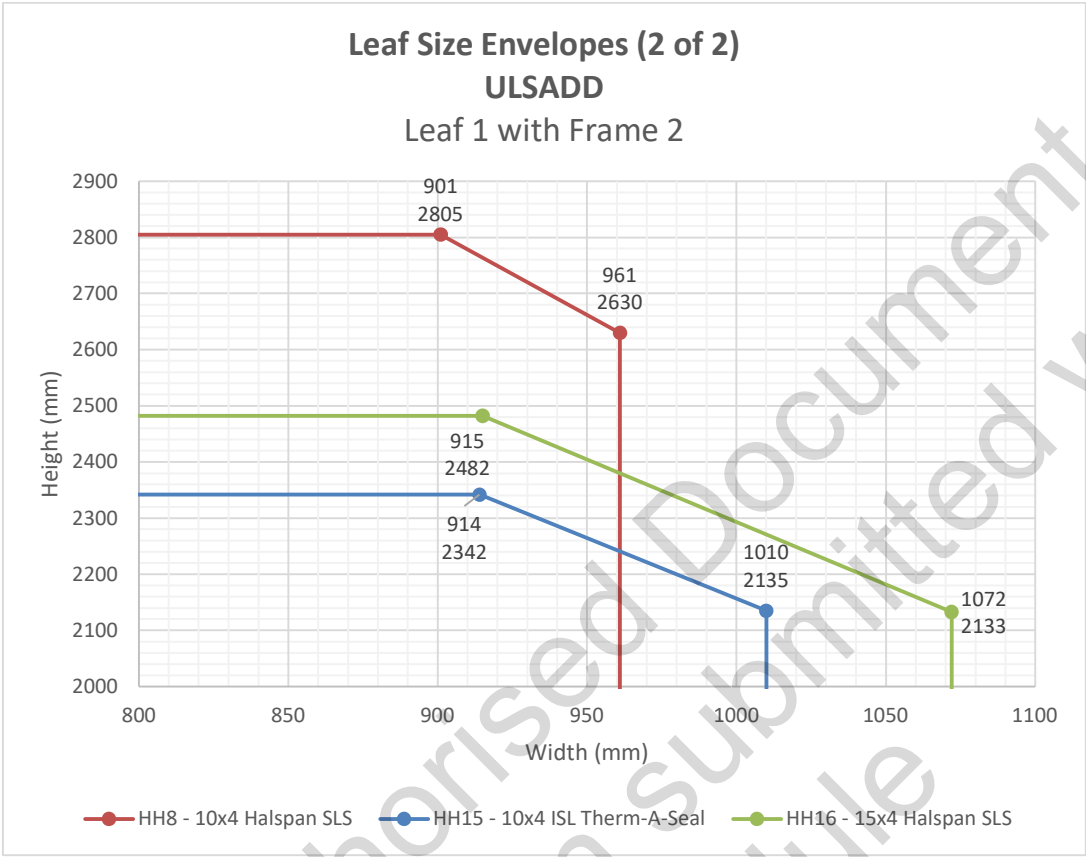
Intumescent Specification for ULSADD Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
HS13 (Chilt/RF07008A)	Palusol 100P	Mann Mcgowan Fabrications Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal or leaf edges. Meeting Edges: 2no. 10x4. Fitted 10mm apart and 7.5mm from opening face in main leaf. Both seals partially interrupted by latch forend with 2.5mm bypassing latch forend.
HS14 (Chilt/RF07008B)	LP1504, LP1004	Lorient Polyproducts Ltd.	Head & Jambs: 1no 15x4 LP1504. Fitted in frame reveal or leaf edges. Meeting Edges: 2no 10x4 LP1004. Fitted 10mm apart and 7.5mm from opening face in main leaf. Both seals partially interrupted by latch forend with 2.5mm bypassing latch forend.
HS15 (Chilt/RF01103)	Therm-A-Seal	Intumescant Seals Ltd	Head: 1no 20x4. Fitted in frame or leaf head. Jambs: 1no 10x4. Fitted in frame jambs or leaf edges. Meeting Edges: 1no 10x4. Fitted in both leaves. <i>SEE GENERAL NOTE IN SECTION 4.5.4</i>

Note:

Leaf sizes and intumescent for Leaf 1 + Frame 1 doorset are also applicable to Leaf 1 + Frame 2 doorset.

4.5.16.2 Leaf 1 + Frame 2 Doorset





Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for ULSADD Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
HH2 (Chilt/RF97091)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges. Meeting Edges: 2no 10x4. Fitted centrally and 12mm apart in one leaf.
HH4 (Chilt/RF04021A)	Therm-A-Seal, Therm-A-Stop, Therm-A-Flex.	Intumescent Seals Ltd	Head & Jambs: 1no 20x4 Therm-A-Stop & 1no 10x4 Therm-A-Seal. Fitted 8mm apart in frame reveal or leaf edges. The Therm-A-Seal fitted 5mm from opening face. Leaf Bottom Edges: 1no 38x2 Therm-A-Flex. Fitted centrally. Meeting Edges: 1no 20x4 Therm-A-Stop & 1no 10x4 Therm-A-Seal. Fitted 5mm apart, and Therm-A-Seal fitted 5mm from opening face in one leaf.
HH5 (Chilt/RF00067A)	LP2004, LP1004	Lorient Polyproducts Ltd	Head: 1no 20x4 LP2004. Fitted in frame or leaf head. Jambs: 1no 10x4 LP1004. Fitted in jamb reveal or leaf edges. Meeting Edges: 2no 10x4 LP1004. Fitted centrally and 8mm apart in one leaf.

Intumescent Specification for ULSADD Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
HH8 (BMT/FEP/F15272 AR1)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal or leaf edges. Meeting Edges: 2no 10x4. Fitted centrally and 10mm apart in one leaf.
HH15 (Chilt/RF01043)	Therm-A-Seal	Intumescent Seals Ltd	Head & Jambs: 10x4 fitted centrally in the frame reveal. Meeting Edges: 10x4 fitted centrally in the meeting edge of both leaves <i>SEE GENERAL NOTE IN SECTION 4.5.4</i>
HH16 (WF370389)	Halspan SLS	Halspan Ltd	Head & Jambs: 15x4 Halspan SLS fitted centrally in the frame reveal. Meeting Edges: 2no 10x4 fitted centrally and 8mm apart in the meeting edge of the active leaf.

4.5.16.3 Leaf 1 + Frame 3 Doorset

For leaf size applicable to Leaf 1 + Frame 3 doorset see section 4.5.16.1 above

4.5.16.4 Leaf 1 + Frame 4, 5 & 6 Doorset

Not permitted.

4.5.16.5 Leaf 1 + Frame 7 Doorset

For leaf sizes applicable to Leaf 1 + Frame 7 see section 4.5.16.1.

The use of intumescent specifications HS1, HS9 & HS15 is not permitted.

See section 7.5 for considerations for specific hardware.

4.5.16.6 Leaf 2 + Frame 1 Doorset

For leaf size applicable to Leaf 2 + Frame 1 doorset see section 4.5.16.1 above

4.5.16.7 Leaf 2 + Frame 2 Doorset

This arrangement represents a 54mm thick leaf in a hardwood frame. Any of the envelopes from the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.16.6 above
- Leaf 1 + Frame 2 – see section 4.5.16.2 above
- Leaf 1 + Frame 1 – see section 4.5.16.1 above

4.5.16.8 Leaf 2 + Frame 3 Doorset

This arrangement represents a 54mm thick leaf in a MDF frame. Any of the envelopes from the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.16.6 above
- Leaf 1 + Frame 1 – see section 4.5.16.1 above

4.5.16.9 Leaf 2 + Frame 4, 5 & 6 Doorset

Not permitted.

4.5.16.10 Leaf 2 + Frame 7 Doorset

For leaf sizes applicable to Leaf 2 + Frame 7 see section 4.5.16.1.

The use of intumescent specifications HS1, HS9 & HS15 is not permitted.

See section 7.5 for considerations for specific hardware.

4.5.17 DADD Configuration: Leaf Sizes & Intumescent Specification

4.5.17.1 Leaf 1 + Frame 1 & 2 Doorset

The same Leaf sizes and intumescent specification as the ULSADD Configuration. See section 4.5.16 above

4.5.17.2 Leaf 1 + Frame 3, 4, 5, 6 & 7 Doorset

Not permitted.

4.5.17.3 Leaf 2 + Frame 1 & 2 Doorset

The same Leaf sizes and intumescent specification as the ULSADD Configuration. See section 4.5.16 above

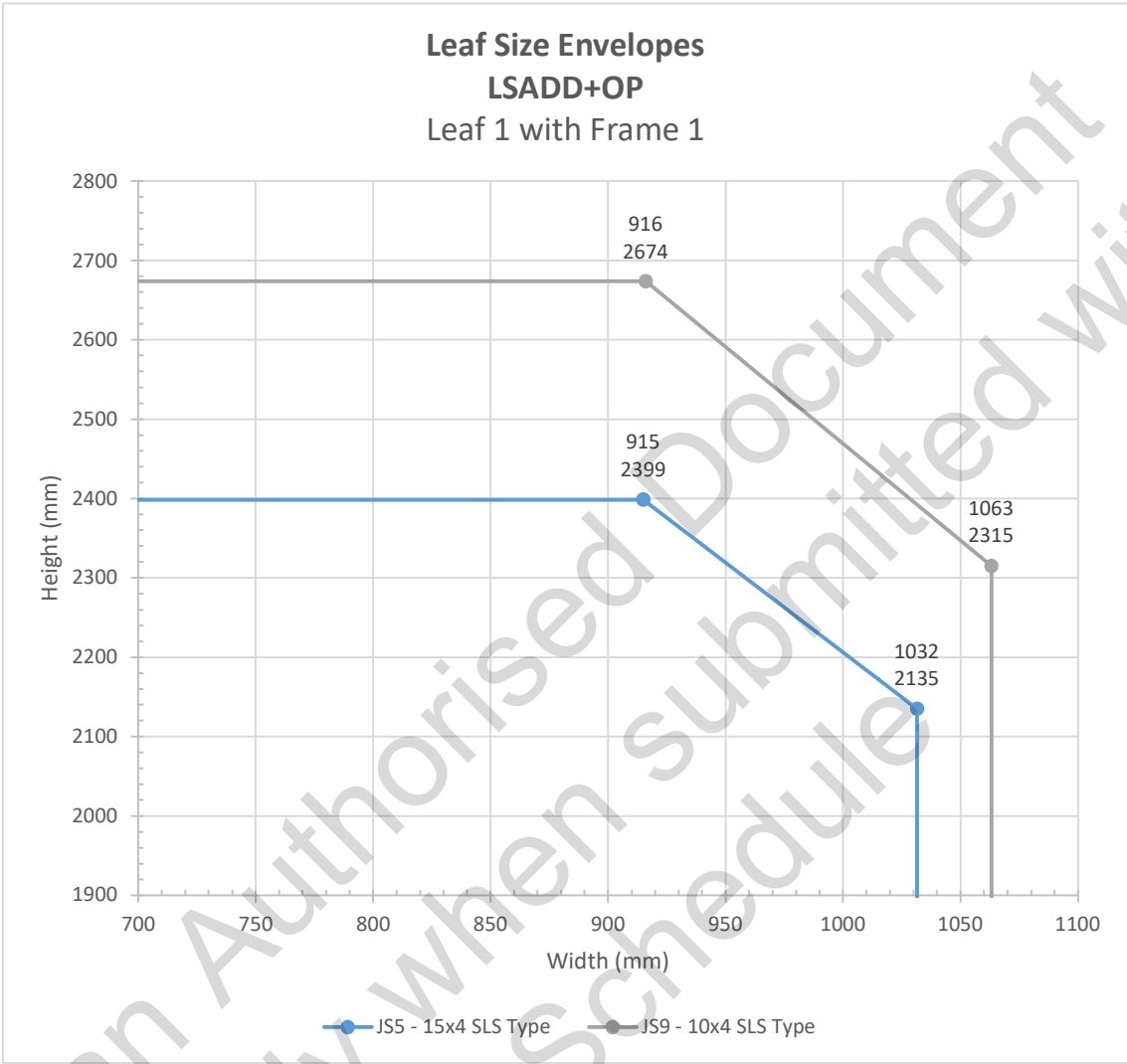
4.5.17.4 Leaf 2 + Frame 3, 4, 5, 6 & 7 Doorset

Not permitted.

4.5.18 LSADD+OP Configuration: Leaf Sizes & Intumescent Specification

The following permitted leaf size and intumescent specification apply for doorsets with flat lippings to the meeting edges. See section 4.5.6 above and 4.5.5.7 for permitted leaf size and intumescent specification, for use with equal rebated meeting edges.

4.5.18.1 Leaf 1 + Frame 1 Doorset



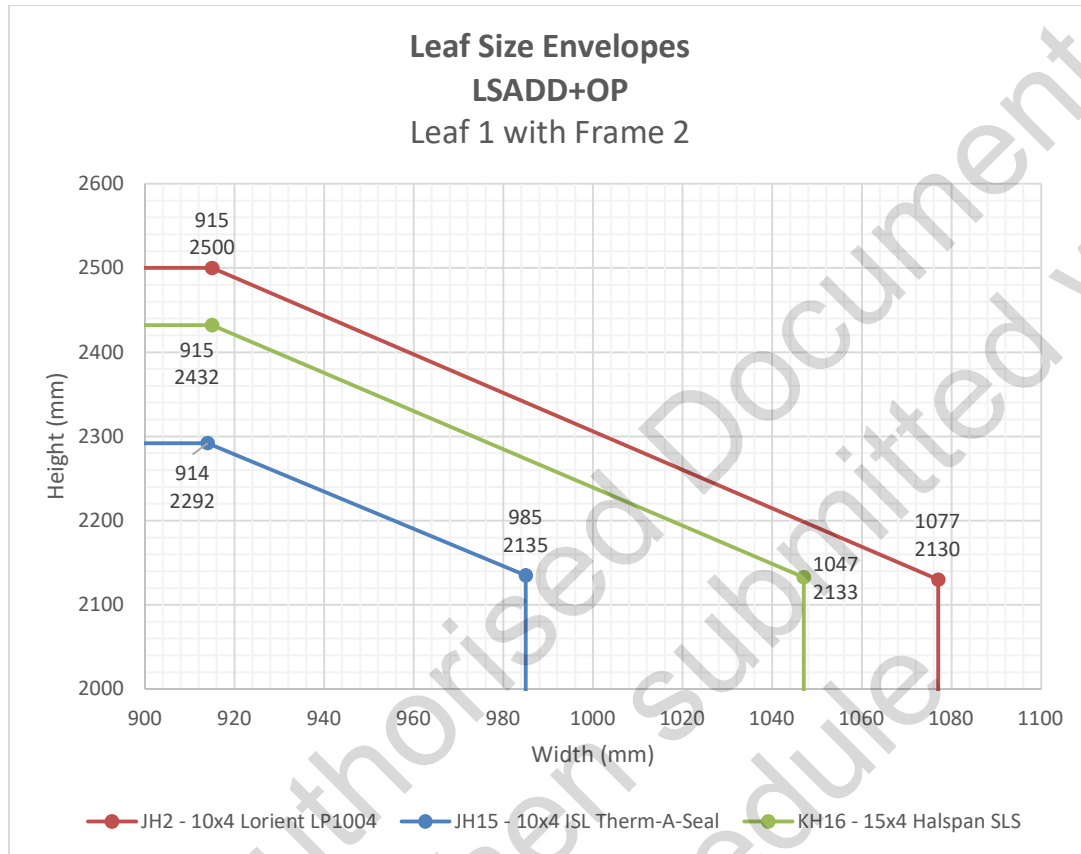
Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for LSADD+OP Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
JS5 (Chilt/RF13063)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal and in rebate of leaf head. Meeting Edges: 1no 15x4. Fitted in one leaf edge. <i>SEE GENERAL NOTE IN SECTION 4.5.4</i> Overpanel: 1no 15x4. Fitted in rebate of bottom edge and vertical edges.
JS9 (Chilt/RF08127)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal and in rebate of leaf head. Meeting Edges: 2no 10x4. Fitted 10mm apart and 8mm from opening face in one leaf only. Overpanel: 1no 10x4. Fitted in rebate of bottom edge.

Note:

Leaf sizes and intumescent for Leaf 1 + Frame 1 doorset are also applicable to Leaf 1 + Frame 2 doorset.

4.5.18.2 Leaf 1 + Frame 2 Doorset



Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for LSADD+OP Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
JH2 (Chilt/RF97091)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 10x4 Fitted in frame reveal and in rebate of leaf head. Meeting Edges: 2no 10x4 Fitted centrally and 12mm apart in the meeting edge of one leaf. Overpanel: 10x4 fitted in the rebate in bottom edge.

JH15 (Chilt/RF01043)	Therm-A-Seal	Intumescent Seals Ltd	Head & Jambs: 10x4 fitted centrally in the frame reveal. Meeting Edges: 10x4 fitted centrally in the meeting edge of both leaves. Overpanel: 1no 10x4 fitted centrally in the rebate of the overpanel lipping and in the upstand of the overpanel lipping.
JH16 (WF370389)	Halspan SLS	Halspan Ltd	Head & Jambs: 15x4 Halspan SLS fitted centrally in the frame reveal. 10x2 interdens fitted centrally in the rebate of the leaf head. Meeting Edges: 2no 10x4 fitted centrally and 8mm apart in the meeting edge of the active leaf. Overpanel: 10x4 Halspan SLS fitted centrally in the rebate of the overpanel lipping and in the upstand of the overpanel lipping.

4.5.18.3 Leaf 1 + Frame 3 Doorset.

For leaf size applicable to Leaf 1 + Frame 3 doorset see section 4.5.18.1 above

4.5.18.4 Leaf 1 + Frame 4, 5, 6 & 7 Doorset.

Not permitted.

4.5.18.5 Leaf 2 + Frame 1 Doorset.

For leaf size applicable to Leaf 2 + Frame 1 doorset see section 4.5.18.1 above

4.5.18.6 Leaf 2 + Frame 2 Doorset.

This arrangement represents a 54mm thick leaf in a hardwood frame. Any of the envelopes from the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.18.5 above
- Leaf 1 + Frame 2 – see section 4.5.18.2 above
- Leaf 1 + Frame 1 – see section 4.5.18.1 above

4.5.18.7 Leaf 2 + Frame 3 Doorset.

This arrangement represents a 54mm thick leaf in a MDF frame. Any of the envelopes from the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.18.5 above
- Leaf 1 + Frame 1 – see section 4.5.18.1 above

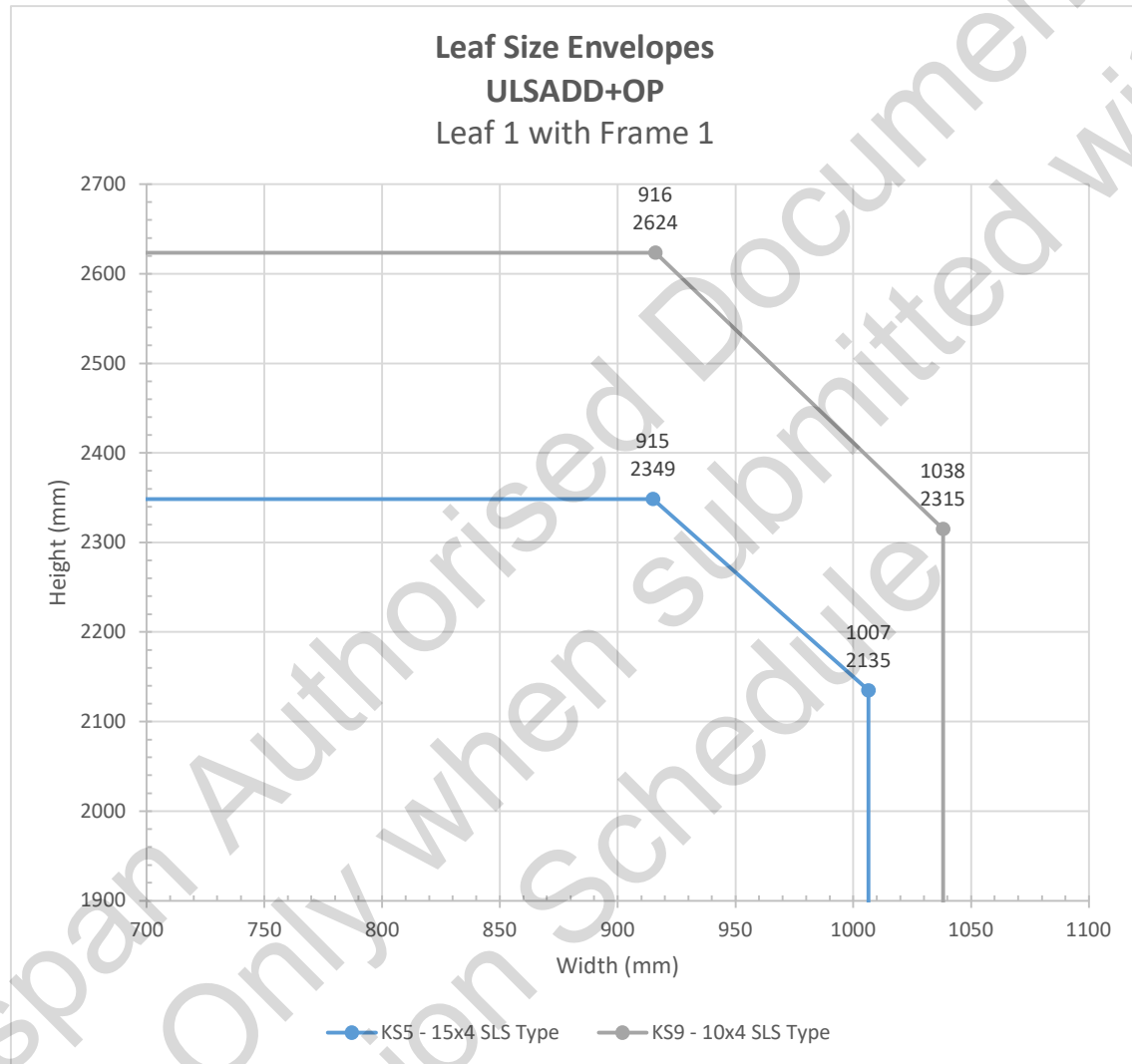
4.5.18.8 Leaf 2 + Frame 4, 5, 6 & 7 Doorset

Not permitted.

4.5.19 ULSADD+OP Configuration: Leaf Sizes & Intumescent Specification

The following permitted leaf size and intumescent specification apply for doorsets with flat lippings to the meeting edges. See section 4.5.6 above and 4.5.5.7 for permitted leaf size and intumescent specification, for use with equal rebated meeting edges.

4.5.19.1 Leaf 1 + Frame 1 Doorset



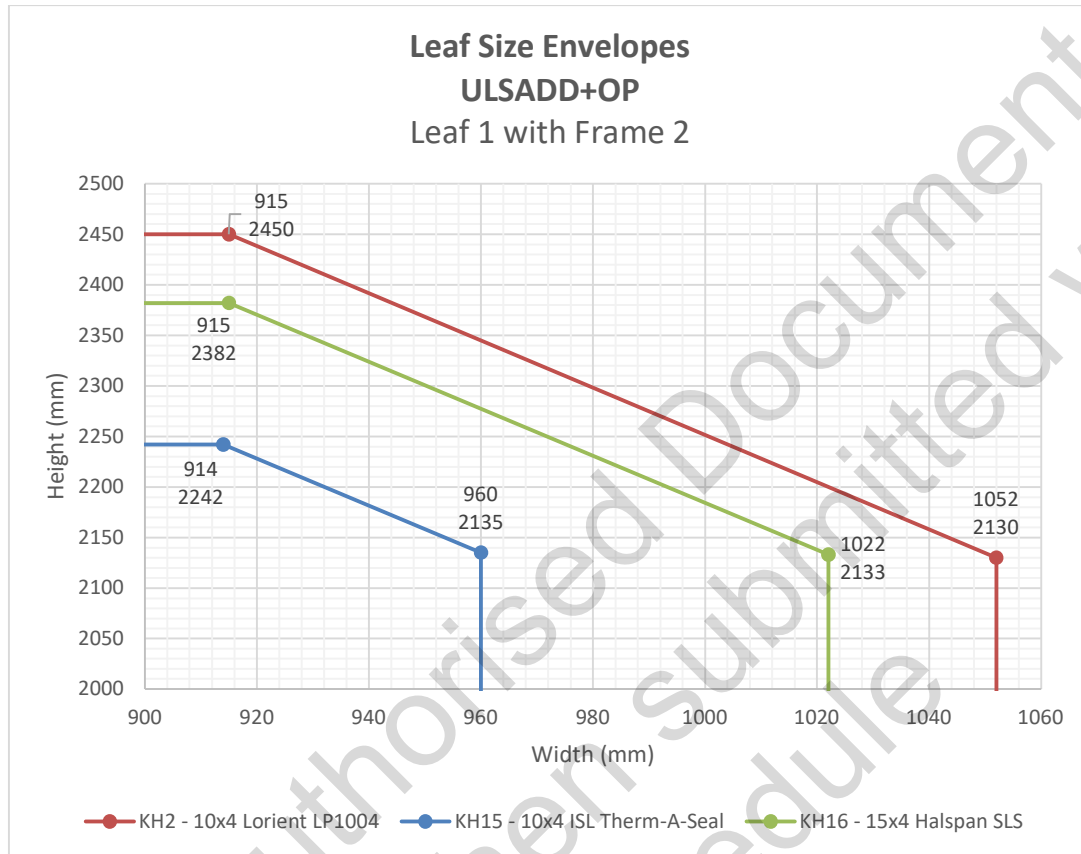
Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for ULSADD+OP Leaf 1 with Frame 1			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
KS5 (Chilt/RF13063)	SLS Type	Halspan Ltd	Head & Jambs: 1no 15x4. Fitted in frame reveal and in rebate of leaf head. Meeting Edges: 1no 15x4. Fitted in one leaf edge. <i>SEE GENERAL NOTE IN SECTION 4.5.4</i> Overpanel: 1no 15x4. Fitted in rebate of bottom edge and vertical edges.
KS9 (Chilt/RF08127)	SLS Type	Halspan Ltd	Head & Jambs: 1no 10x4. Fitted in frame reveal and in rebate of leaf head. Meeting Edges: 2no 10x4. Fitted 10mm apart and 8mm from opening face in one leaf only. Overpanel: 1no 10x4. Fitted in rebate of bottom edge.

Note:

Leaf sizes and intumescent for Leaf 1 + Frame 1 doorset are also applicable to Leaf 1 + Frame 2 doorset.

4.5.19.2 Leaf 1 + Frame 2 Doorset



Intumescent seals are to be fitted centrally unless stated otherwise.

Intumescent Specification for ULSADD+OP Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
KH2 (Chilt/RF97091)	LP1004	Lorient Polyproducts Ltd	Head & Jambs: 10x4 Fitted in frame reveal and in rebate of leaf head. Meeting Edges: 2no 10x4 Fitted centrally and 12mm apart in the meeting edge of one leaf. Overpanel: 10x4 fitted in the rebate in bottom edge.

Intumescent Specification for ULSADD+OP Leaf 1 with Frame 2			
Intumescent Spec. Reference (Test Reference)	Make / Type	Manufacturer / Supplier	Location & Size
KH15 (Chilt/RF01043)	Therm-A-Seal	Intumescent Seals Ltd	<p>Head & Jambs: 10x4 fitted centrally in the frame reveal.</p> <p>Meeting Edges: 10x4 fitted centrally in the meeting edge of both leaves.</p> <p>Overpanel: 1no 10x4 fitted centrally in the rebate of the overpanel lipping and in the upstand of the overpanel lipping.</p>
KH16 (WF370389)	Halspan SLS	Halspan Ltd	<p>Head & Jambs: 15x4 Halspan SLS fitted centrally in the frame reveal. 10x2 interdens fitted centrally in the rebate of the leaf head.</p> <p>Meeting Edges: 2no 10x4 fitted centrally and 8mm apart in the meeting edge of the active leaf.</p> <p>Overpanel: 10x4 Halspan SLS fitted centrally in the rebate of the overpanel lipping and in the upstand of the overpanel lipping.</p>

4.5.19.3 Leaf 1 + Frame 3 Doorset

For leaf size applicable to Leaf 1 + Frame 3 doorset see section 4.5.19.1 above

4.5.19.4 Leaf 1 + Frame 4, 5, 6 & 7 Doorset

Not permitted.

4.5.19.5 Leaf 2 + Frame 1 Doorset

For leaf size applicable to Leaf 2 + Frame 1 doorset see section 4.5.19.1 above

4.5.19.6 Leaf 2 + Frame 2 Doorset

This arrangement represents a 54mm thick leaf in a hardwood frame. Any of the envelopes from the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.19.5 above
- Leaf 1 + Frame 2 – see section 4.5.19.2 above
- Leaf 1 + Frame 1 – see section 4.5.19.1 above

4.5.19.7 Leaf 2 + Frame 3 Doorset

This arrangement represents a 54mm thick leaf in a MDF frame. Any of the envelopes from the following doorset arrangements apply. These are:

- Leaf 2 + Frame 1 – see section 4.5.19.5 above
- Leaf 1 + Frame 1 – see section 4.5.19.1 above

4.5.19.8 Leaf 2 + Frame 4, 5, 6 & 7 Doorset

Not permitted.

4.5.20 DADD+OP Configuration: Leaf Sizes & Intumescent Specification

4.5.20.1 Leaf 1 + Frame 1 & 2 Doorset

The same Leaf sizes and intumescent specification as the ULSADD+OP Configuration. See section 4.5.19 above

4.5.20.2 Leaf 1 + Frame 3, 4, 5, 6 & 7 Doorset

Not permitted.

4.5.20.3 Leaf 2 + Frame 1 & 2 Doorset

The same Leaf sizes and intumescent specification as the ULSADD+OP Configuration. See section 4.5.16 above

4.5.20.4 Leaf 2 + Frame 3, 4, 5, 6 & 7 Doorset

Not permitted.

5 General Description of Leaf Construction

The basic construction for the tested Prima 30 door leaves are detailed below in the following sections.

5.1 Leaf 1: Prima 30 (44mm core)

The basic construction for door leaves of this design comprises the following:

Leaf 1 (Prima 30) Construction Details			
Element	Material	Dimensions (mm)	Minimum Density (kg/m ³)
Core	3 layer solid core particleboard	44 (t)	630±10%

Where specified, the leaves are lipped with hardwood, or 2mm PVC/ABS as detailed in section 5.4.

The minimum leaf thickness after calibration is 43mm (i.e. a maximum of 0.5mm from each side).

The minimum leaf thickness after finishes applied is 44mm.

5.2 Leaf 2: Prima 30 (54mm core)

The basic construction for door leaves of this design comprises the following:

Leaf 2 (Prima 30) Construction Details			
Element	Material	Dimensions (mm)	Minimum Density (kg/m ³)
Core	3 layer solid core particleboard	54 (t)	630±10%

Where specified, the leaves are lipped with hardwood, or 2mm PVC/ABS as detailed in section 5.4.

The minimum leaf thickness after calibration is 53mm (i.e. a maximum of 0.5mm from each side).

The minimum leaf thickness after finishes applied is 54mm.

5.3 Comparison of Prima 30: Leaf 1 & 2

Leaf 1 and leaf 2 are basically the same construction except leaf 1 is 44mm thick and leaf 2 is 54mm thick. The evaluation of leaf size for the 54mm thick leaf for some configurations is based on test evidence, producing an envelope bigger than that achieved with a 44mm thick leaf. Where no test evidence exists for the 54mm leaf the leaf sizes generated for the 44mm leaf have been used, as in the opinion of Warringtonfire they will be conservative. This is because thicker timber leaves are generally accepted to be less onerous due to increased resistance to thermally induced distortion and bow as a greater percentage of the leaf thickness remains uncharred throughout the test. Thicker leaves therefore deflect less during a fire test, providing a more stable junction between the leaf edge and frame reveal.

5.4 Lippings

5.4.1 Timber Lipping

Leaf 1 and 2 must be lipped in accordance with the following specification, for all configurations and solid panels (overpanels or sidepanels) where appropriate.

Timber Lipping Specification for Leaf 1 & 2		
Material	Size (mm)	Minimum Density (kg/m ³)
Hardwood: which must be straight grained joinery quality, free from knots, splits and checks	Flat = 6–18 thick with a maximum of 2mm profiling permitted at corners of lipping (see section 7.1)	500 (see note 9)
	Rounded = 8–18 thick with a radius matching the distance between leaf edge and floor pivot (see section 7.1)	
	Rebated = 18-28 thick with a 13mm deep equal rebate	

Note:

1. Overpanels separated from the leaf heads with a transom do not need to be lipped.
2. Overpanels flush with the leaf heads must be lipped on their bottom edge but may additionally be lipped on all edges if required.
3. Single and double doorsets without flush overpanels or with transomed overpanels only require lipping on the vertical edges but may be additionally lipped on the top and bottom edges if required.
4. Leaves to doorsets with flush overpanels must be lipped on the vertical edges and additionally at the bottom edge of the overpanel and top edge of the doors.
5. Double doorsets without flush overpanels may use square or equal rebated meeting edges. For double doorsets with equal rebated meeting edges see section 4.5.6 above.
6. Double doorsets with flush overpanels that use an equal rebated overpanel junction can only be used in conjunction with equal rebated meeting edges, subject to the limitations in section 4.5.5.7. To apply the leaf dimensions for double doorsets with flush overpanels in sections 4.5.18 and 4.5.19 when using an equal rebated overpanel junction, the meeting edges of double doors must be square.

7. A 2.5° chamfer is permitted to the lipping at the leading edge of leaves providing the door gaps meet the requirements of section 12.11 below (i.e. the gap does not exceed 4mm).
8. Lippings can be bonded with UF, PF, PU, PVA, PVAc or PU hotmelt see adhesive section 10 below.
9. The fitting of some items of hardware comes with a requirement to increase the minimum lipping density. This will be defined in the relevant part of section 11.

5.4.2 Timber Lipping with Concealed Intumescent: Leaf 1 Only

When a concealed intumescent is used it can only be used in Leaf 1 and must be lipped in accordance with the following specification based on test Chilt/RF00068A.

Timber Lipping Specification for Leaf 1 (with Concealed Intumescent)		
Material	Size (mm)	Minimum Density (kg/m ³)
Hardwood: which must be straight grained joinery quality, free from knots, splits and checks	Flat = 8–10 thick with a maximum of 2mm profiling permitted at corners of lipping (see section 7.1)	640

Note:

1. The door must only be lipped on the vertical edges and glued using PVA type adhesive.

5.4.3 Unequal rebated timber lipping: Leaf 2, Frame 6 Only

When the design is based on Leaf 2, Frame 6, unequal rebated timber lippings, as successfully tested in test reference CFR1808101 must be used.

Timber Lipping Specification for Leaf 2 (for use with Frame 6)		
Material	Size (mm)	Minimum Density (kg/m ³)
Hardwood: which must be straight grained joinery quality, free from knots, splits and checks	Unequal Rebated = 18-23 thick with a 13 x 12 mm rebate as shown in the drawings (S), (T) and (U) in section 5.4.6	640

Note:

The vertical edges (including meeting edges) and the top edge of the door must be lipped using this lipping design and glued using PU type adhesive.

5.4.4 PVC & ABS Lipping

Leaf 1 and 2 may be lipped with PVC in accordance with the following specification based on test evidence Chilt/RF09010 and Chilt/RF08039 and ABS in accordance with WF393430.

PVC Lipping Specification for Leaf 1 & 2		
Material	Size (mm)	Min Density (kg/m ³)
PVC/ABS	2 thick	-

Can be fitted directly to the core or onto hardwood lippings as per section 5.4.1. Only to be used in conjunction with flat lipping.

PVC – Single and double leaf doorsets bonded with PU was used in Chilt/RF09010, Hotmelt EVA used in Chilt/RF08039. (LSASD, ULSASD, LSADD, ULSADD)

ABS – Single leaf doorsets bonded with PUR was used in WF393430. (LSASD, ULSASD)

5.4.5 'T' Section Lipping: Leaf 1 & 2

Based on test report Chilt/RF06048A a hardwood 'T' lipping of minimum density 640 kg/m³ can be used as follows:

- Maximum Leaf Size: 2040mm (h) x 926mm (w)
- Configuration: LSASD, DASD & DADD
For DASD and DADD – the lipping is fitted in the top and bottom edges of the leaf only.
For LSASD – the lipping is fitted in both vertical edges of the leaf only

Any grooving cannot be within 90mm of a 'T' lipping.

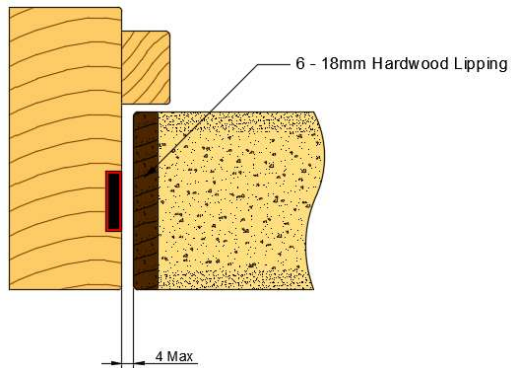
In certain circumstances, a 'T' section lipping may be required which will be bonded into a groove machined in the edge of the leaf.

This option is acceptable providing the tongue is a maximum of 38mm wide x 15mm deep and otherwise meets the specification given in section 5.4.1, subject to a minimum density of the hardwood of 640 kg/m³.

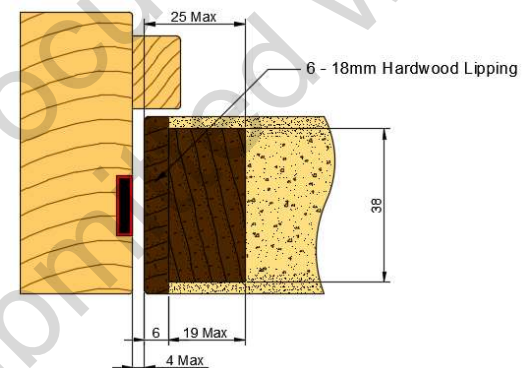
The 'T' section lipping may be in two sections with the exposed lipping being within the range of 6 – 10mm thick. See drawing below.

Lippings can be bonded with UF, PF, PVA, PVAc, PU adhesives.

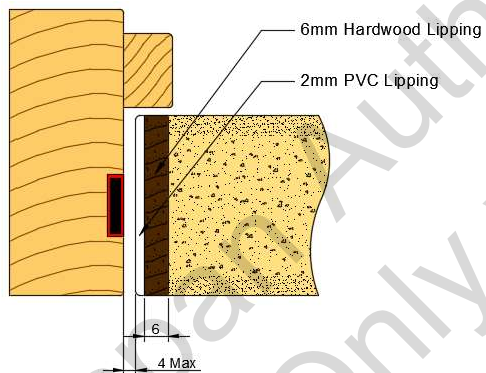
5.4.6 Drawing of Permitted Lipping Types



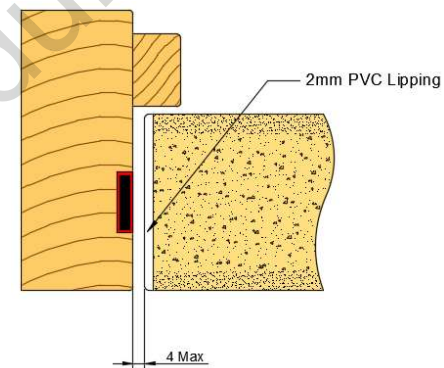
(A): Standard lipping



(B): T Section lipping

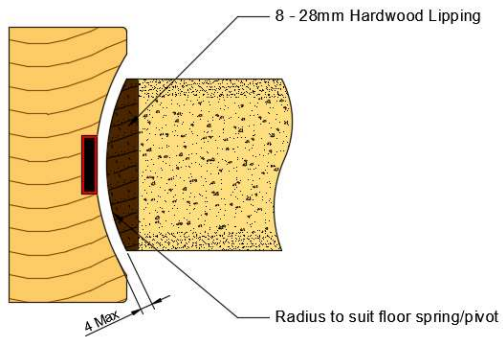


(C): PVC lipping option 1

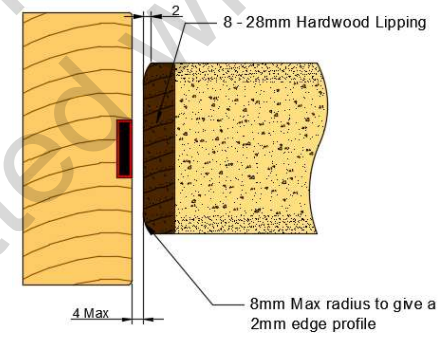


(D): PVC lipping option 2

Example of lipping details for single acting doors

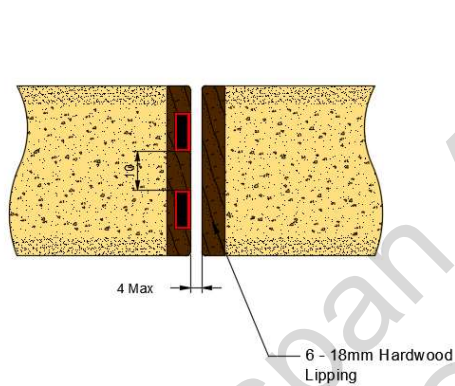


(E): Standard lipping

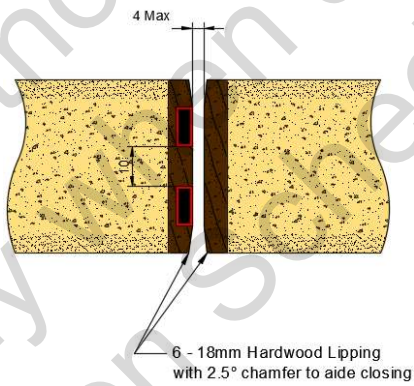


(F): Radiused profile

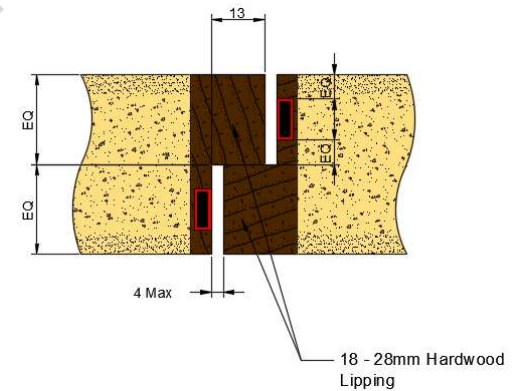
Example of lipping details for double acting doors



(G): Flush meeting edge lipping

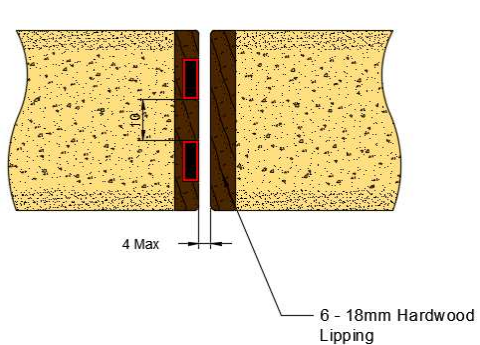


(H): Flush meeting edge lipping with leading edge

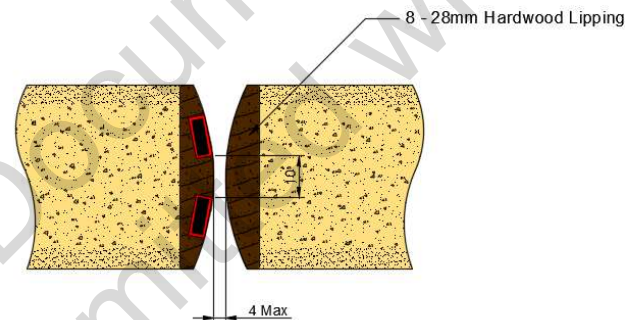


(I): Equal Rebated meeting edge lipping

Example of lipping details for single acting double doors

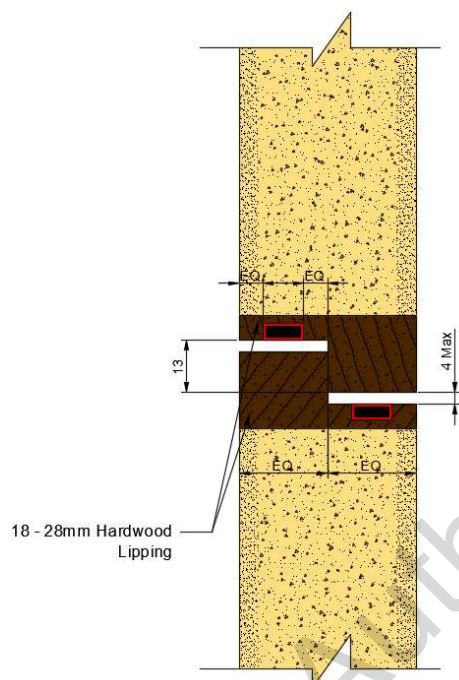


(J): Flush meeting edge lipping

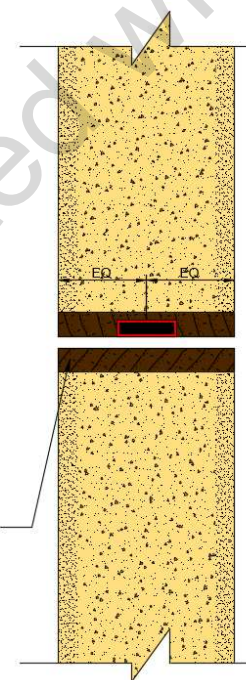


(K): Radius meeting edge lipping

Example of lipping details for double acting double doors

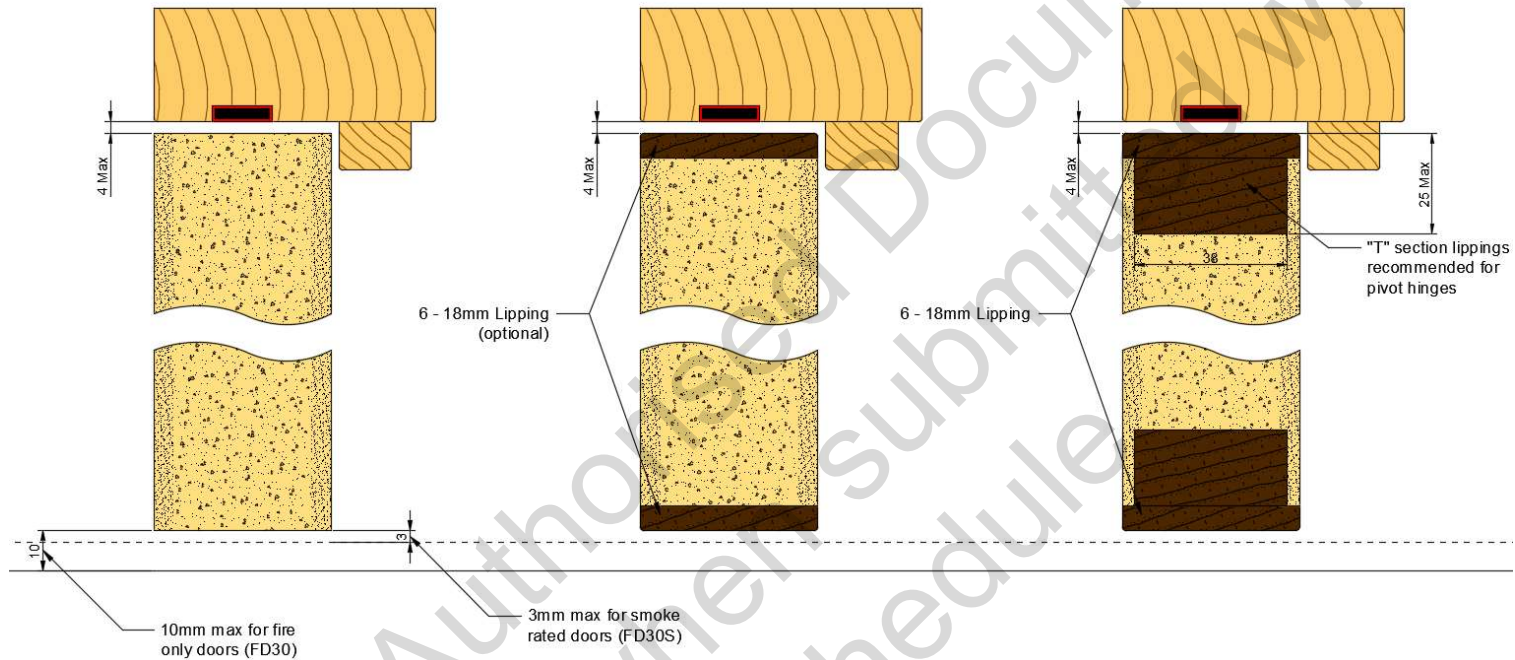


(L): Equal Rebated overpanel lipping



(M): Flush overpanel lipping

Example of overpanel lipping details

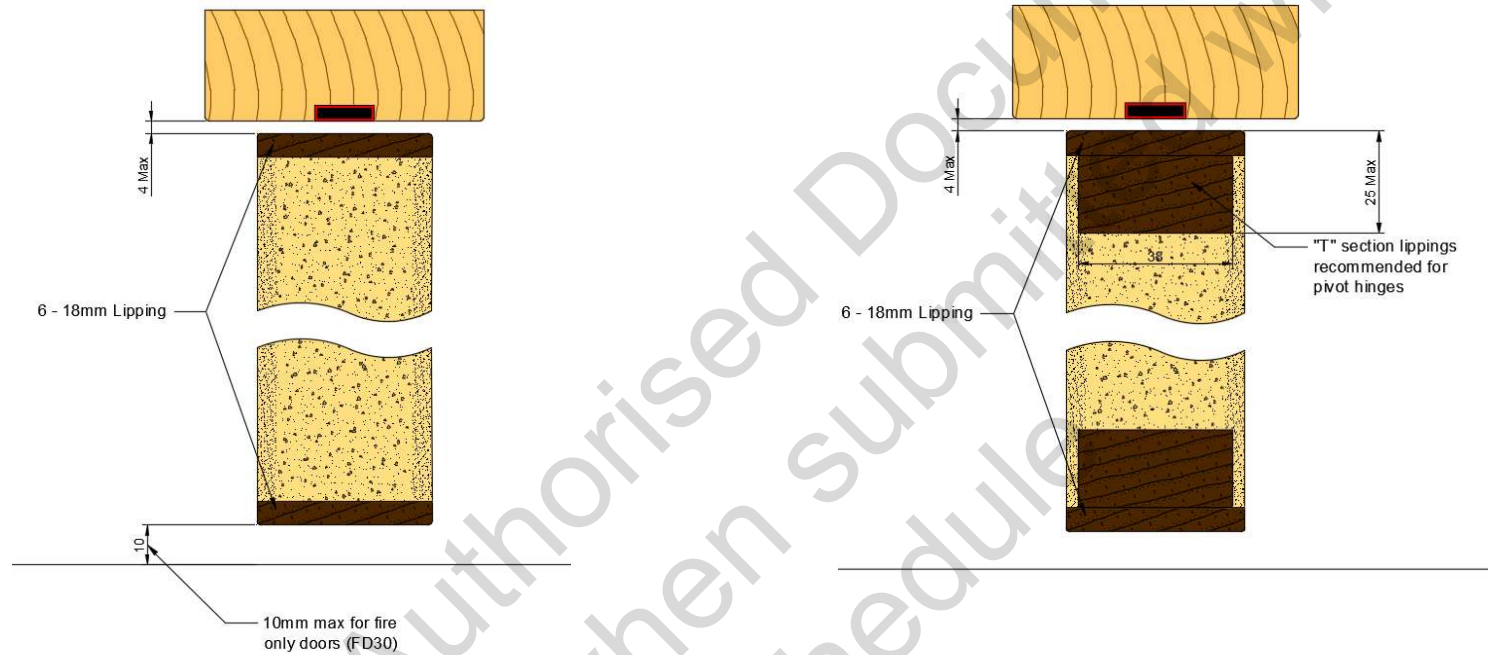


(N): No head & threshold lipping

(O): Standard lipping

(P): T Section lipping

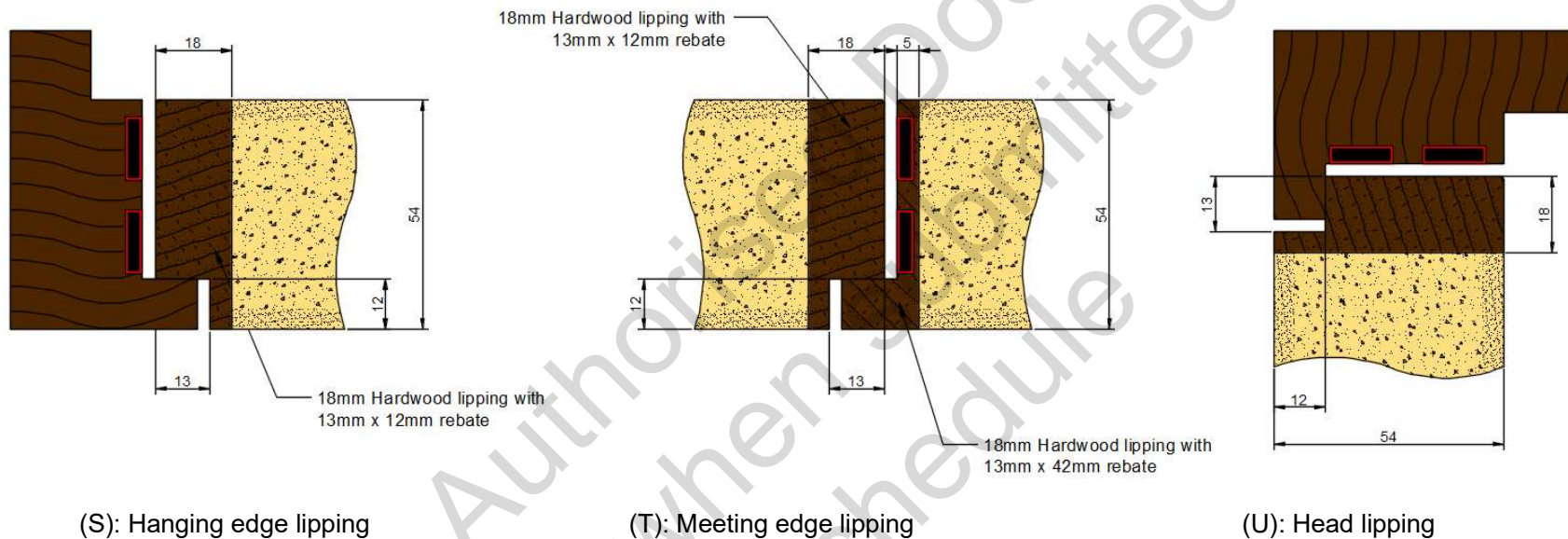
Example of head and threshold lipping details for single acting doors



(Q): Standard lipping

(R): T Section lipping

Example of head and threshold lipping details for double acting doors



Example of hanging edge, meeting edge and head lipping details for unequal rebated timber lippings

5.5 Edge Protectors

Note: The use of Edge Protectors with Prima 30 is addressed in part 4 of the suite of FEA/F97174 field of applications for the Prima product family.

5.6 Leaf Facing Materials

There are 2 types of facings:

- Additional MDF facings which are bonded to the Leaf 1 and are used to permit decorative features to be machined into the surfaces
- Decorative or Protective facings which are bonded directly to the leaf can be applied to Leaf 1 and 2.

Decorative mouldings can be applied to the faces of Leaf 1 and 2.

The following sections give the limitations associated with the above.

5.6.1 Additional 12mm MDF Facings

Based on test evidence CFR2004171 (left hand doorset), additional MDF facings can be applied to door Leaf 1.

Additional MDF Facing Specification		
Facing Material	Thickness (mm)	Min Density (kg/m ³)
MDF	12 thick	600

Note:

1. The additional MDF facings must be bonded to the core using any of the adhesives for Additional MDF Facings specified in section 10.
2. Use is permitted with Frame 1 and 2, for use with configurations LSASD, ULSASD, DASD, LSADD, ULSADD, DADD.
3. Facings may be fixed to the core before or after edges/lippings are applied.
4. Intumescent materials specified in section 4 must be fitted in line with the core thickness whether located in the leaf edge or frame reveal (i.e. the grooves for the intumescent seals must not cut into the facing or be located in the area of the frame reveal that is in line with the facing).
5. Facings must be balanced (i.e., the same thickness and material applied to both faces).
6. Decorative facings in section 5.6.2 may be applied in addition to these MDF facings.
7. Plant on mouldings may be applied in addition to these MDF facings. The mouldings may be no higher than 18mm proud of the 12mm MDF facing of the leaf, with all other restrictions for timber mouldings stated in section 5.6.3 applying.
8. Hardware incorporated into the doorset must be capable of accommodating the adjusted weight and thickness after additional facings are applied.
9. The finished thickness of Leaf 1 is minimum 68mm +/- 1mm, excluding decorative facings.

NOTE Doors of this thickness must still comply with the gap requirements of section 12.11.

10. Due to the thickness of the facing, it is permitted to machine the 12mm MDF facings to create decorative grooves in accordance with section 5.6.1.1.
11. The Prima 30 bond up construction, including alternate dimensions of decorative facings, is addressed in part 3 of the suite of FEA/F97174 field of applications for the Prima product family.

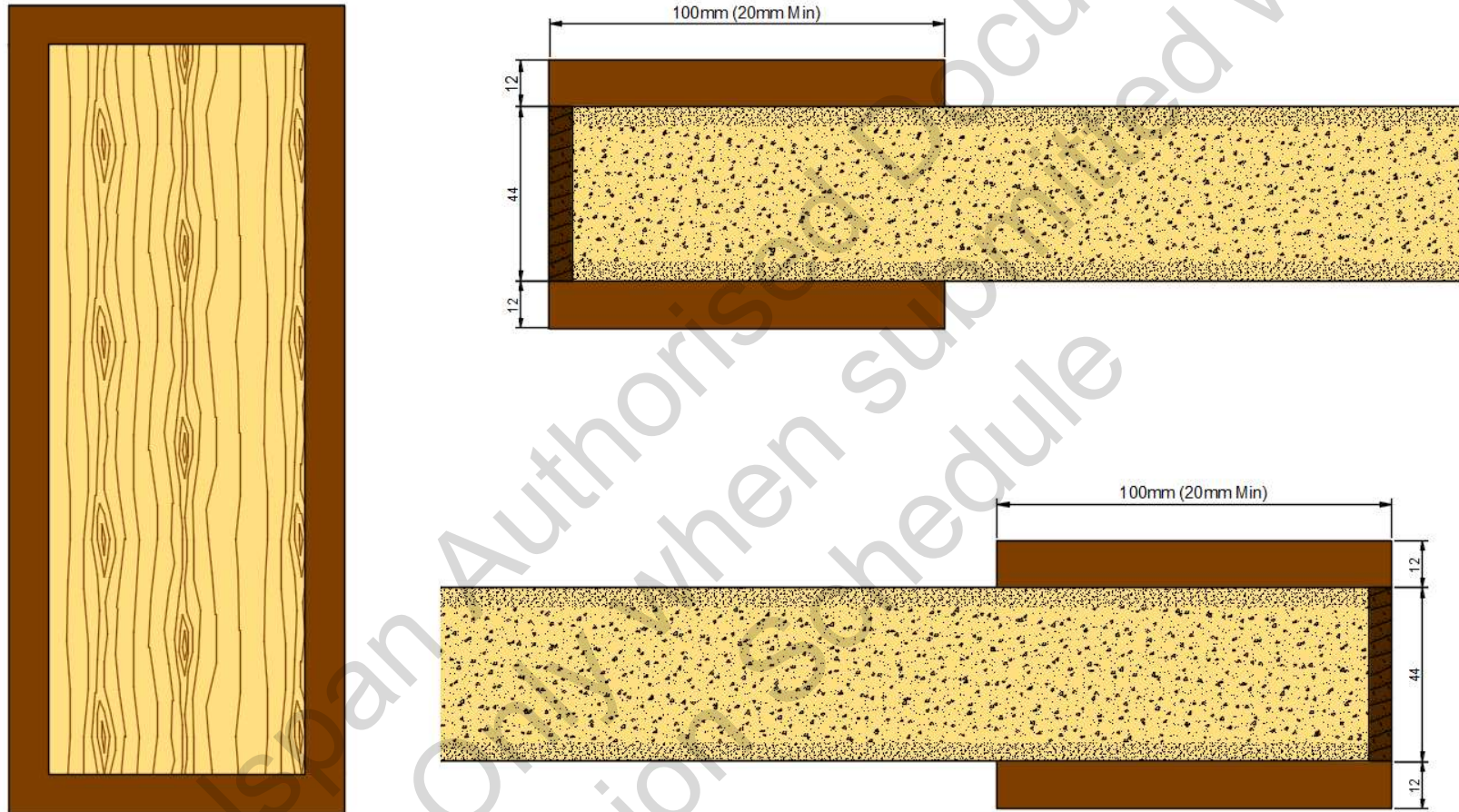
5.6.1.1 Recessed area and/or Grooves for Leaf 1 with 12mm MDF facings

When Leaf 1 is faced with with 12mm MDF facings, as detailed in section 5.6.1, any recessing and/or groove patterns are permitted subject to the following limitations:

In the following points when referring to leaf it means the total leaf thickness including the 12mm MDF facing.

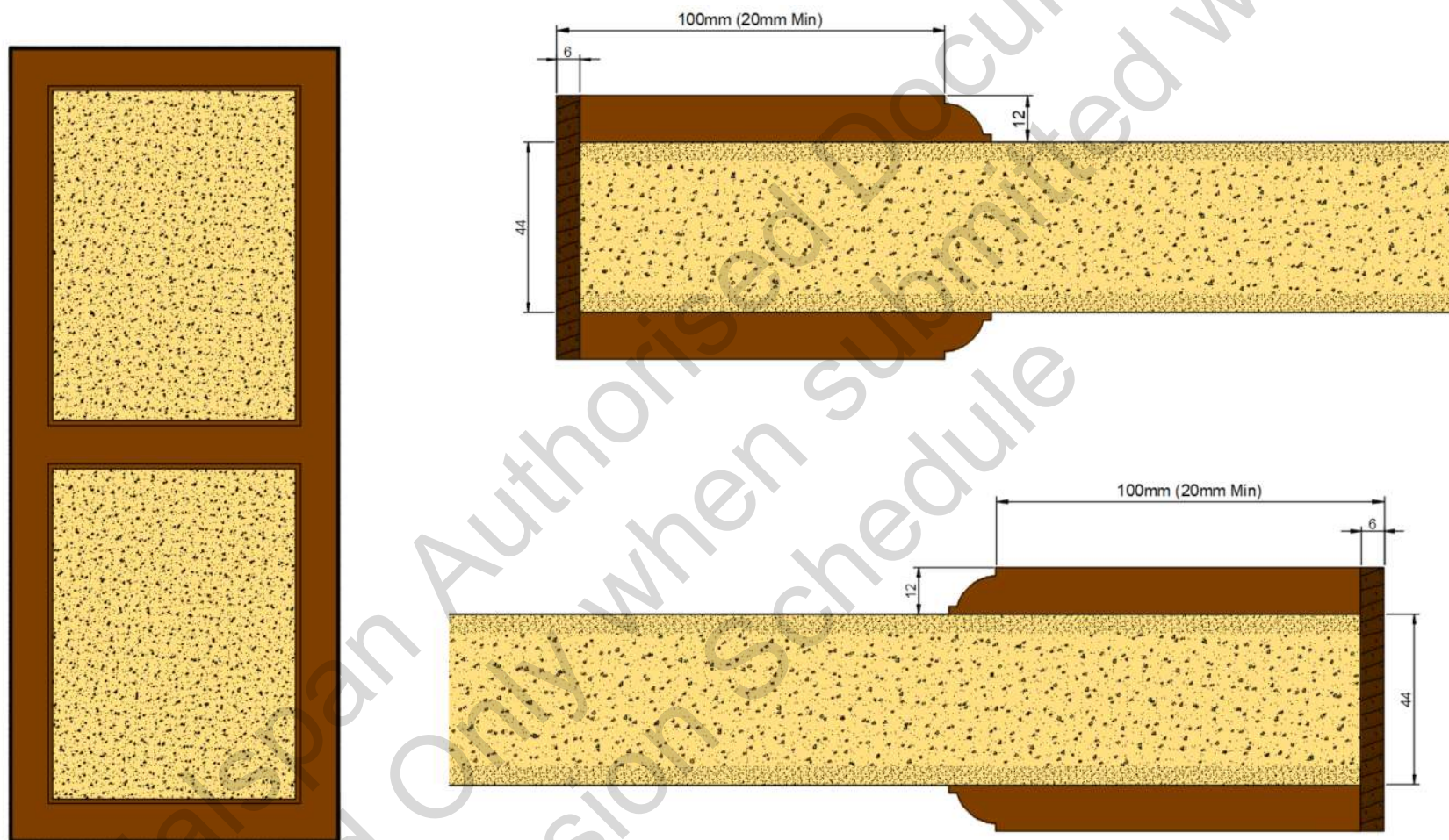
- The recessed area or grooves must not go within 20mm of the edge of the door leaf
- Any shape of recess area or groove is permitted. Grooves may be horizontal, vertical, diagonal, curved, circular or elliptical for example.
- The recess or groove cannot be deeper than 12mm (i.e. cannot remove any material from the core underneath the 12mm MDF facing). The minimum leaf thickness at any position will not be less than 44mm and therefore it is assessed that hardware that is permitted with Leaf 1 may be fitted without additional positioning restrictions in relation to these recessed area or grooves.
- Grooves may coincide with the glazed apertures, but the beading must be modified as given in section 6.3.3, consequently can only be used with modified bolelection moulding or modified square moulding.
- It is permitted to line the bottom of the recess or groove and fit inserts to provide a decorative detail if required. These may be MDF, HDF, plywood, softwood or hardwood and must be of 510kg/m³ minimum density. The liner or insert can be up to 12mm thick, such that it does not protrude above the 12mm MDF facing of the leaf, and may be moulded, grooved or recessed providing the core remains intact. Any inserts must be tightly fitted and glued on into the door core on all edges using a PVA, PU or UF adhesive.
- Timber mouldings and/or Bolelection mouldings of softwood, hardwood or MDF (minimum density 510kg/m³) can be applied to the leaf and/or edges of the recessed areas to create a panelled effect. The mouldings may be no higher than 18mm proud of the 12mm MDF facing of the leaf, with all other restrictions for timber mouldings stated in section 5.6.3 applying.
- The 12mm MDF facing can be recessed prior to bonding to the Leaf 1 core.
- It is permitted to apply timber veneer of maximum 0.6mm to the Leaf 1 core before bonding the 12mm MDF facing.
- Recessed areas can be included in doorsets with configurations as listed in section 5.6.1.
- Recessed areas can be included in an overpanel bonded with additional MDF facings when a transom is present. The over panel may contain recessed areas following the limitations above. Flush overpanels are not permitted.
- Attention should be paid to the groove designs on both faces to ensure a balanced design is achieved.

5.6.1.2 Example Drawing A of Permitted recessed area for use with additional 12mm MDF Facings



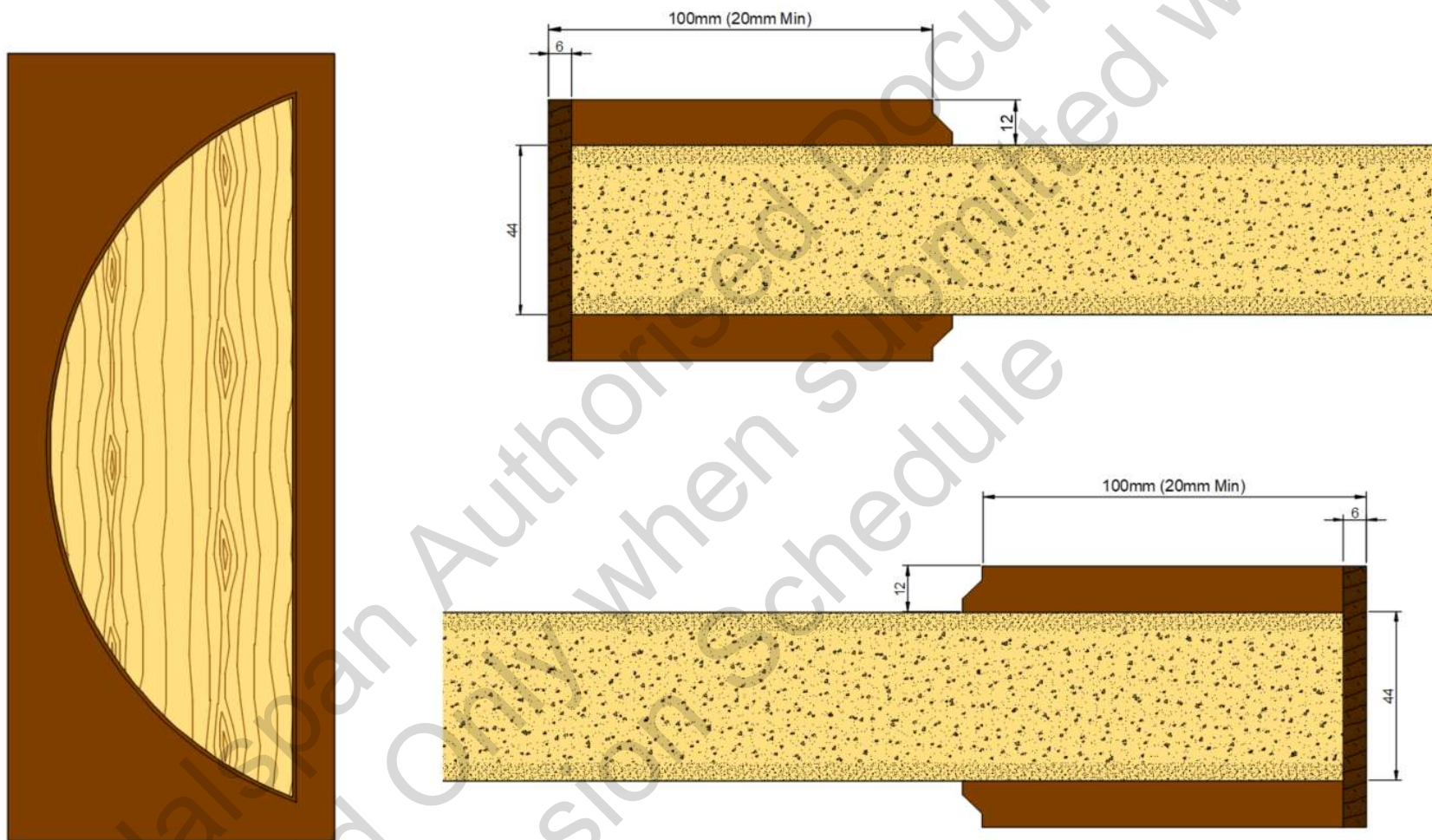
Example Design A

5.6.1.3 Example Drawing B of Permitted recessed area for use with additional 12mm MDF Facings



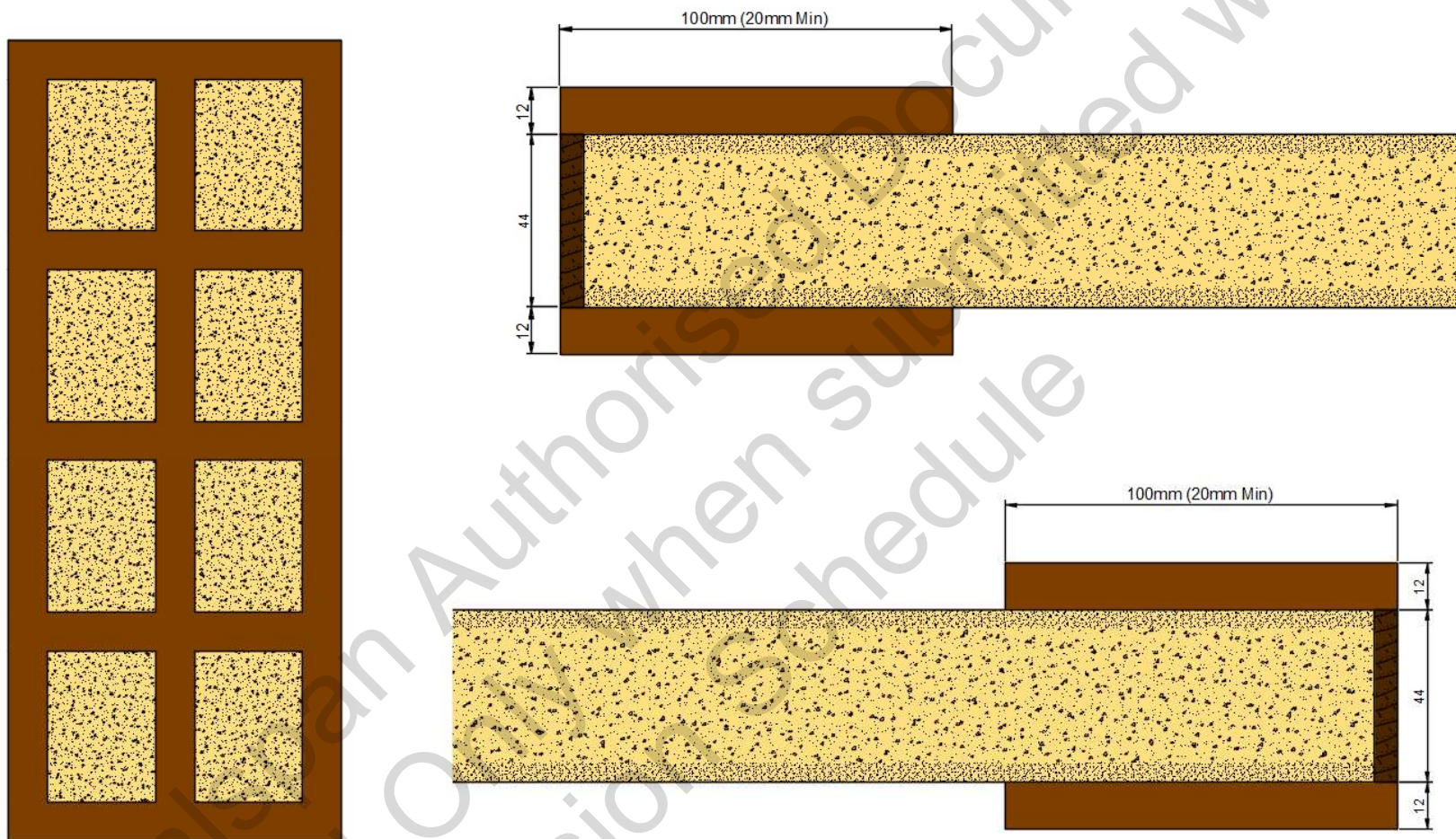
Example Design B

5.6.1.4 Example Drawing C of Permitted recessed area for use with additional 12mm MDF Facings



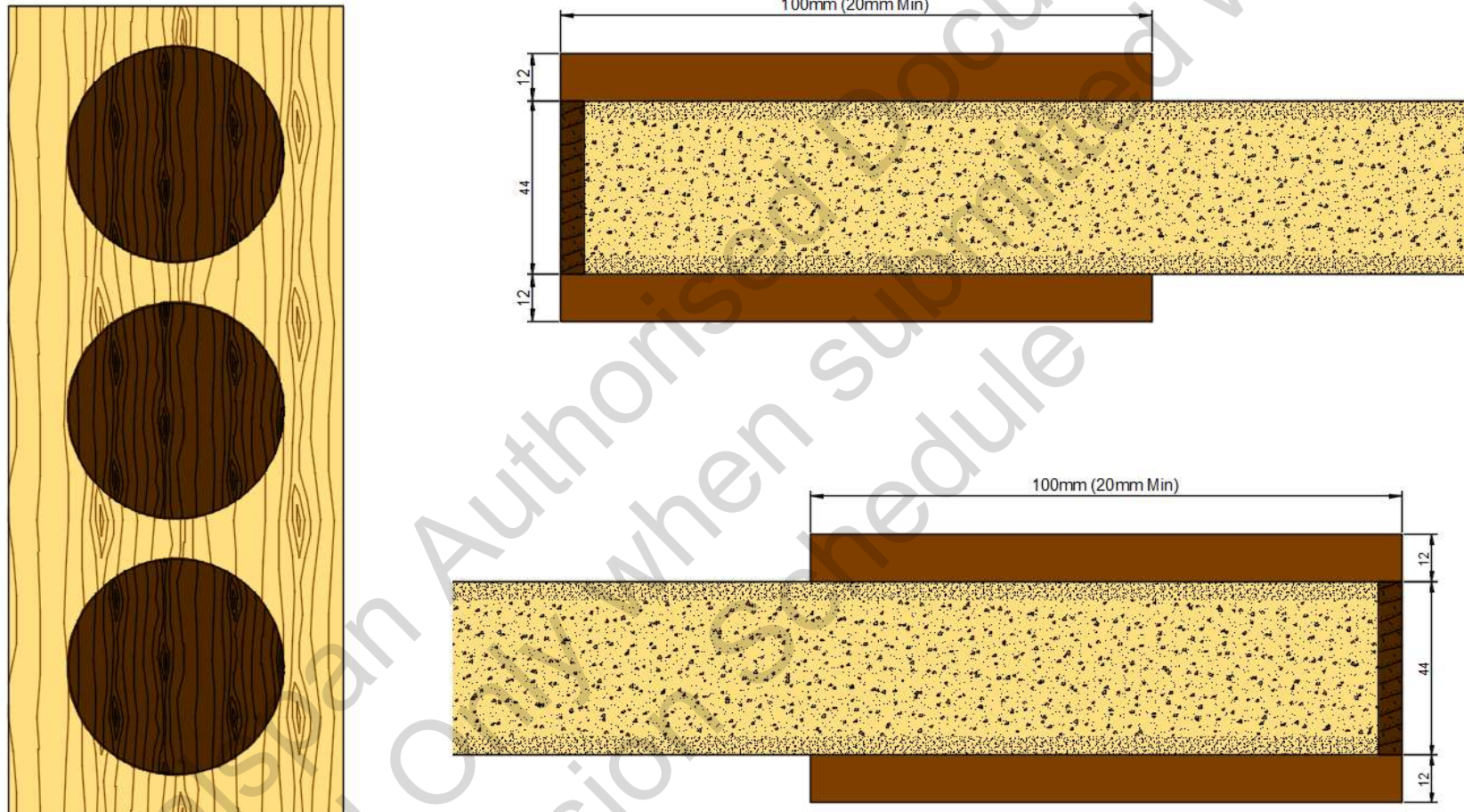
Example Design C

5.6.1.5 Example Drawing D of Permitted recessed area for use with additional 12mm MDF Facings



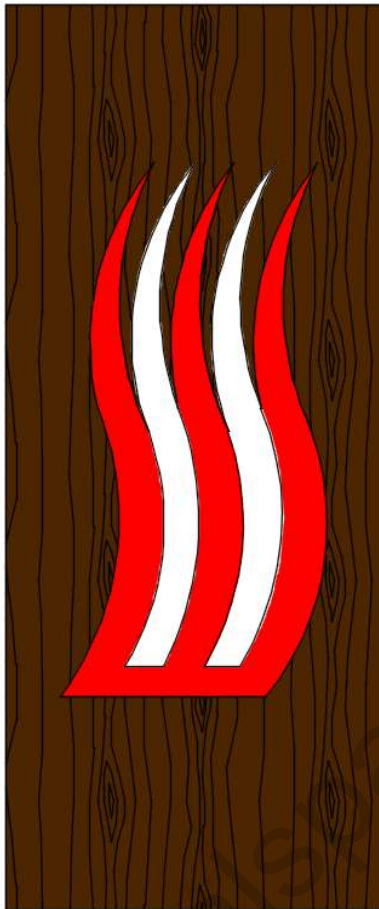
Example Design D

5.6.1.6 Example Drawing E of Permitted recessed area for use with additional 12mm MDF Facings

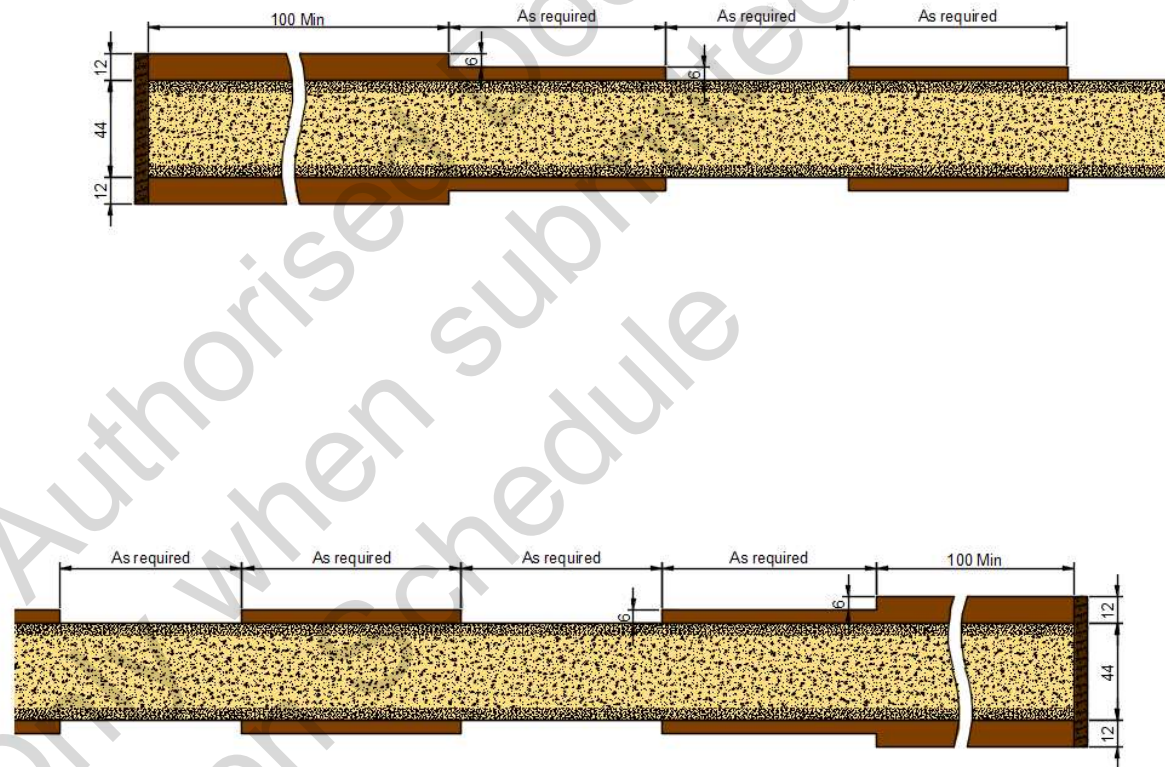


Example Design E

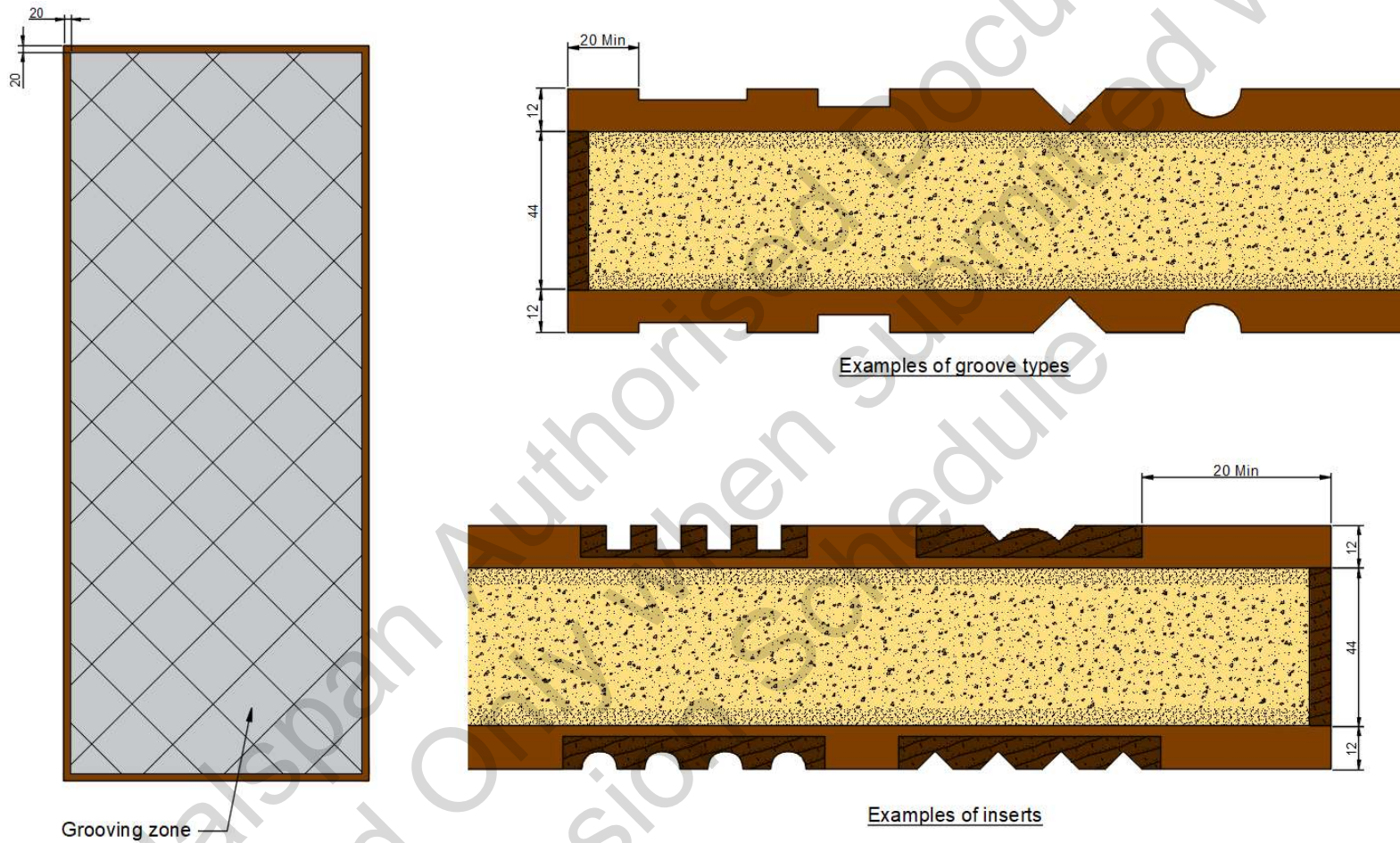
5.6.1.7 Example Drawing F of Permitted recessed area for use with additional 12mm MDF Facings



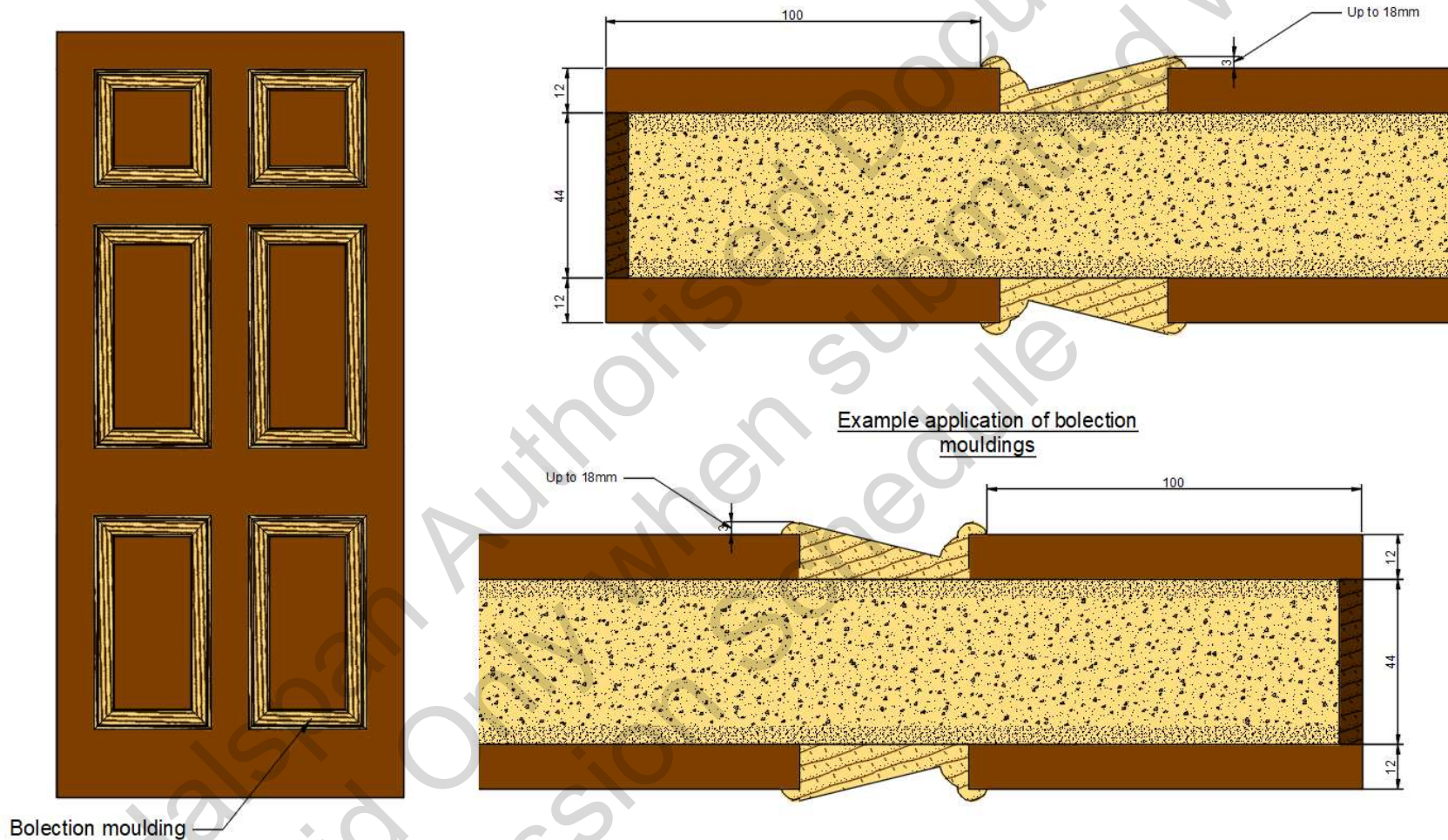
Example Design F



5.6.1.8 Example Drawing showing grooves and inserts with additional 12mm MDF Facings



5.6.1.9 Example Drawing showing bolection mouldings with additional 12mm MDF Facings



5.6.2 Decorative & Protective Facings

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

Decorative & Protective Facing Specification	
Facing Material	Maximum Permitted Thickness (mm)
Paint (including lacquer and varnishes)	0.5
Timber veneers	2
Plastic laminates	2
PVC	2
Cellulosic (including paper) and non-metallic foils	0.4

Note:

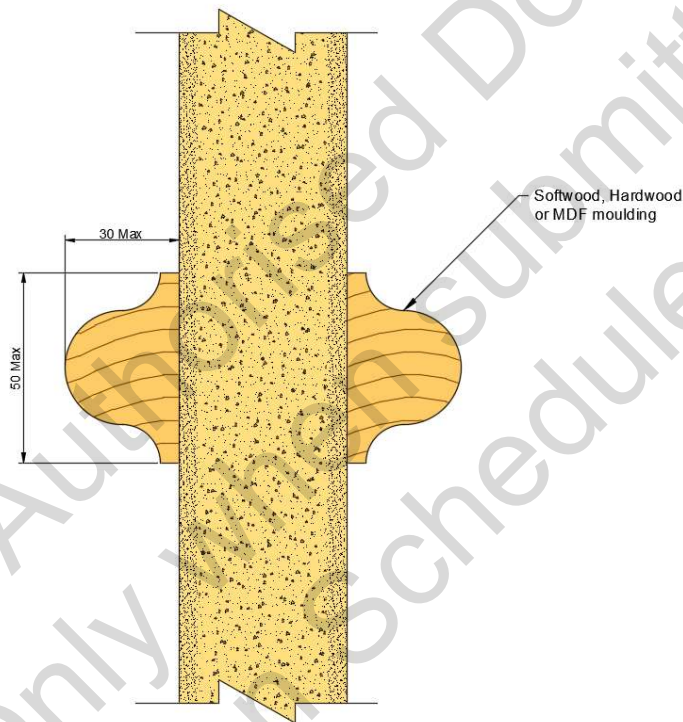
1. Metallic facings are not permitted except for push plates and kick plates
2. Materials must not return around leaf edges
3. Materials must not conceal intumescent strips
4. The facings are bonded using the decorative facing adhesives listed in the table in section 10

5.6.3 Decorative Planted-on Timber Mouldings

Decorative mouldings can be applied to door leaf 1 and 2 providing the following criteria is adhered to.

The mouldings:

- Are surface applied to the door
- Are no higher than 30mm i.e. proud of the door
- Are no wider than 50mm
- Cover no more than 20% of the door leaf area
- Are no closer than 80mm to the door leaf edge
- Are bonded into position and small pins may be used up to 12mm penetration into door core.
- The mouldings are bonded using any glue which is suitable for bonding the lipping.



Example detail of the timber moulding

5.7 Feature Grooves

There are a number of options for feature grooves and the following section detail the limitations associated with each option.

- Feature grooves cannot be located within 100mm of cableways.
- Feature grooves cannot be located within 20mm of the mortice for hardware.
- Grooves may coincide with the glazed apertures, but the beading must be modified as given in section 6.3.3, consequently can only be used with modified bolection moulding or modified square moulding.

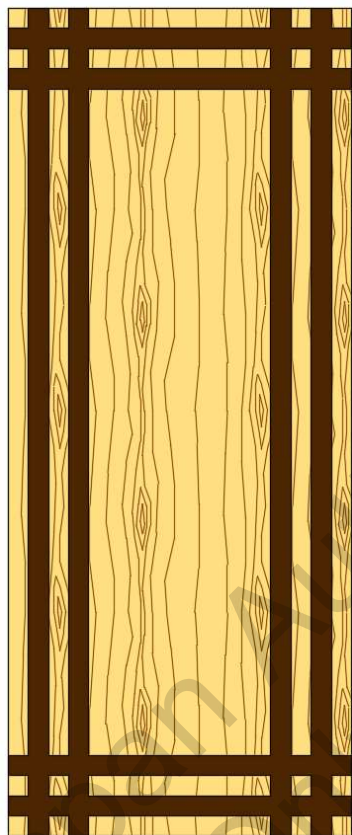
The following sections shows the tested grooving arrangement and the limitations associated with each groove option.

5.7.1 Groove Option A

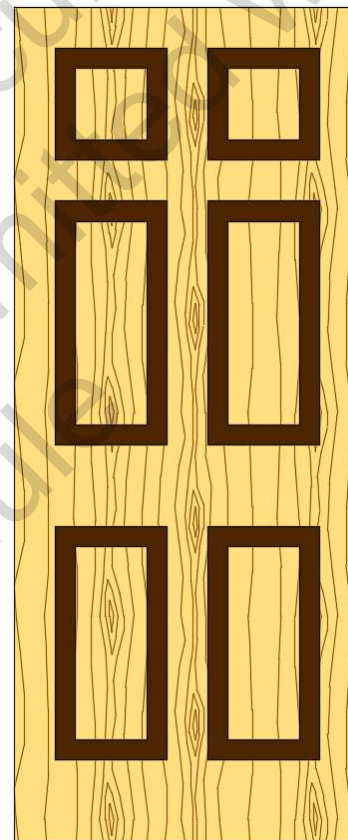
This grooving option has not been explicitly tested but is based on test Chilt/RF02082A where a 38mm thick core was successfully tested. The groove arrangement detailed below is based on the grooves being no deeper than 3mm so at least 38mm of the core remains unaffected by the grooving, which has been demonstrated to work. The configuration, size and intumescent limitations are based on this test, and are detailed in the following table.

Groove Option A		
Element	Details	
Maximum groove size (mm)	50mm wide x 3mm deep	
Inserts	Not essential. Inserts are permitted to provide a decorative detail if required. Inserts must be Hardwood (minimum density 640kg/m ³) or MDF. The insert can be grooved without restriction.	
Adhesive	The insert must be tightly fitted and glued on into the door core on all edges using a PVA, PU or UF adhesive.	
Maximum number of full height or full width Grooves – Type I	Horizontal Grooves	6 Nos
	Vertical Grooves	6 Nos
Maximum number of grooves which combine to create a panel feature. – Type 2	Horizontal Grooves	12 Nos
	Vertical Grooves	12 Nos
Groove spacing (mm) – Type I	No closer than 50mm to each other or the door edges. Vertical and horizontal grooves may intersect each other.	
Groove spacing (mm) – Type 2	No closer than 70mm of adjacent groove or door edge but vertical and horizontal grooves can combine at ends to create a 4 sided feature.	
Orientation	Horizontal or Vertical	
Configuration	Latched & unlatched, single & double acting, single & double leaf doorsets	
Leaf	Leaf 1 & 2	
Maximum Leaf size (mm)	2400 x 975	
Intumescent seal dimensions (mm)	Head and Jamb – 20 x 4 Meeting edge – 2 number 10 by 4 in lock side centrally placed 5mm either side of centre line	
Frame	Frame 1 & 2 only	

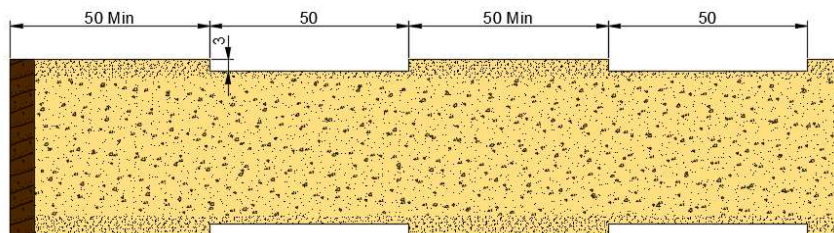
5.7.1.1 Drawing of Permitted Groove Option A



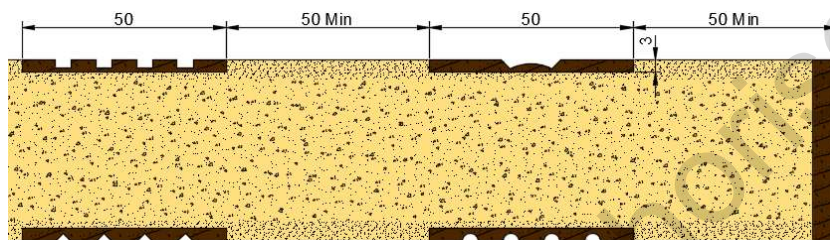
(A): Example application 1



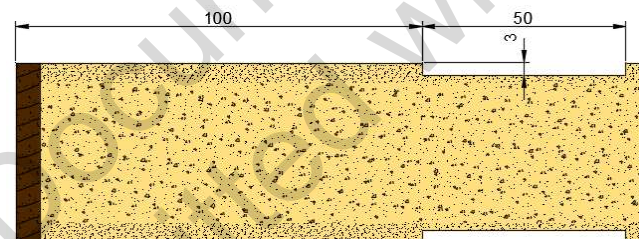
(B): Example application 2



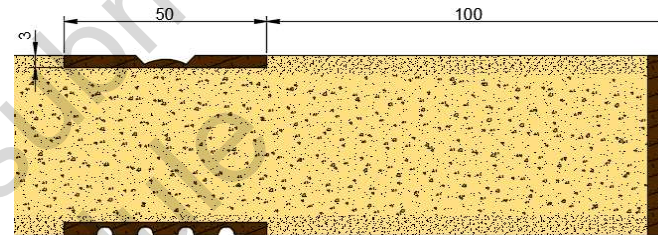
(C): Groove detail 1



(E): Example insert detail 1



(D): Groove detail 2



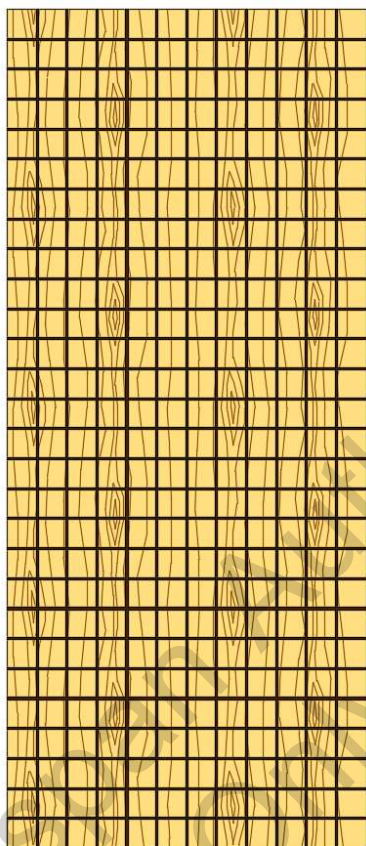
(F): Example insert detail 1

5.7.2 Groove Option B

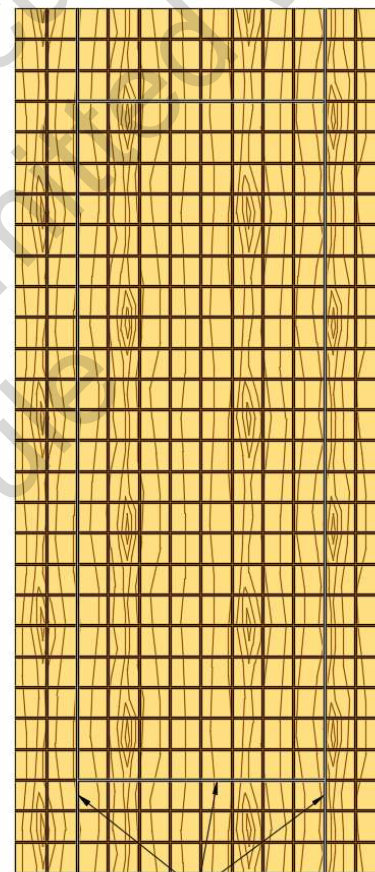
Tested grooving arrangement from WF412654B. This groove arrangement was tested on a 38mm thick Halspan Prima 30 leaf construction bonded up with 3mm MDF facings, which is considered to be a more onerous than the 44mm thick (Leaf 1) and 54mm thick (Leaf 2) constructions due to its reduced thickness. This groove arrangement is therefore permitted for use on the Prima 30 Leaf 1 and 2 constructions, as detailed in the following table.

Groove Option B		
Element	Details	
Maximum groove size (mm)	10mm wide x 5mm deep, including 5mm deep 'V' grooves.	
Inserts	Optional aluminium inserts 10mm wide x 1mm deep permitted.	
Adhesive	The insert must be tightly fitted and glued on into the door core on all edges using a thermally softening adhesive such as PVA or contact adhesive.	
Proximity to door edges (mm)	Horizontal Grooves	May extend full width
	Vertical Grooves	May extend full height
Groove spacing (mm)	No closer than 75mm apart. Vertical and horizontal grooves may intersect each other.	
Orientation	Horizontal or Vertical	
Configuration	Latched, single acting, single leaf doorsets	
Leaf	Leaf 1 & 2	
Leaf size max (mm)	2135 x 926	
Intumescent seal dimensions (mm)	Head and Jamb - 15 x 4	
Frame	Frame 1, 2 & 3 only	

5.7.2.1 Drawing of Permitted Groove Option B

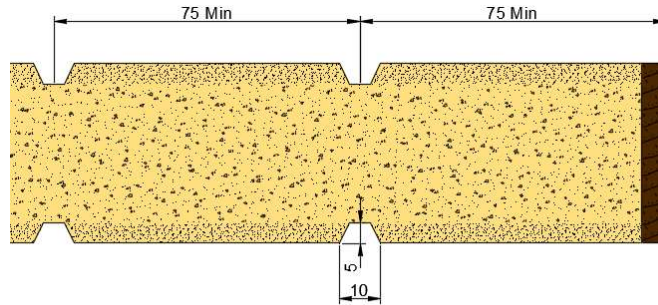


(A): Tested groove arrangement 1

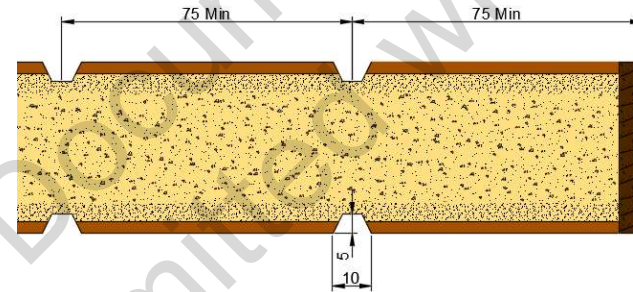


10 x 1 Aluminium insert

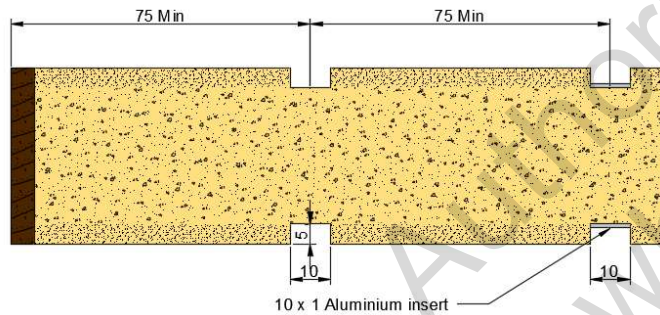
(B): Tested groove arrangement 2



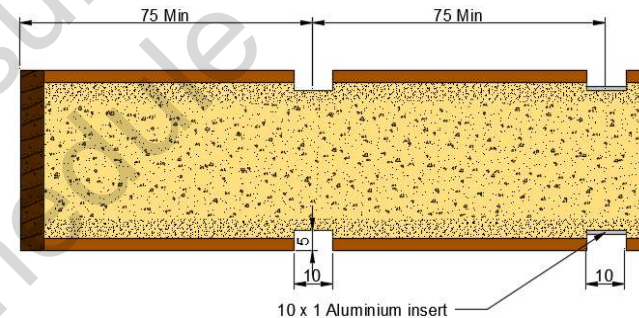
(C): Groove detail 1



(D): Groove detail 2



(E): Groove and insert detail 1



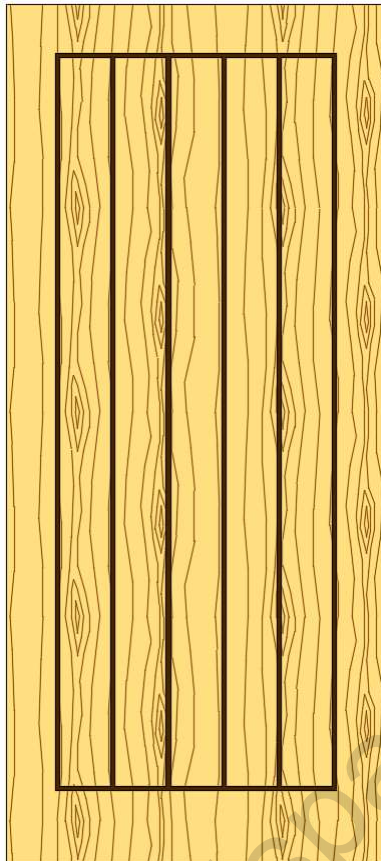
(F): Groove and insert detail 2

5.7.3 Groove Option C

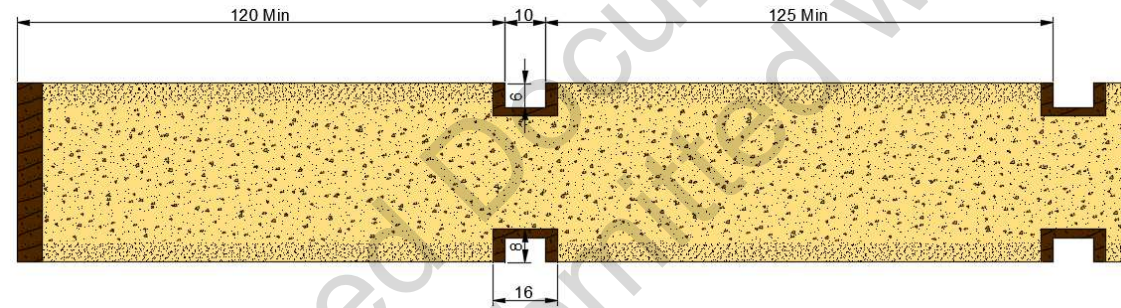
Tested grooving arrangement from CFR1803021A.

Groove Option C		
Element	Details	
Maximum groove size (mm)	10mm wide x 6mm deep, including 6mm deep 'V' grooves.	
Inserts	Inserts must be Hardwood or MDF (minimum density 640kg/m ³). Maximum size 16mm wide x 8mm deep.	
Adhesive	The insert must be tightly fitted and glued on into the door core on all edges using a PU or UF adhesive.	
Proximity to door edges (mm)	Horizontal Grooves	≥ 120mm from top and bottom
	Vertical Grooves	≥ 120mm from sides
Groove spacing (mm)	Maximum 8no. Grooves divided between horizontal and vertical orientations as required and spaced minimum 125mm apart.	
Orientation	Horizontal or Vertical	
Configuration	Latched & unlatched, single & double acting, single & double leaf doorsets	
Leaf	Leaf 1 & 2	
Leaf size max (mm)	2250 x 1050	
Intumescent seal dimensions (mm)	Head and Jamb - 15 x 4 Meeting edge – 2 number 10 by 4 in lock side centrally placed 5mm either side of centre line	
Frame	Frame 1, 2 & 3 only	

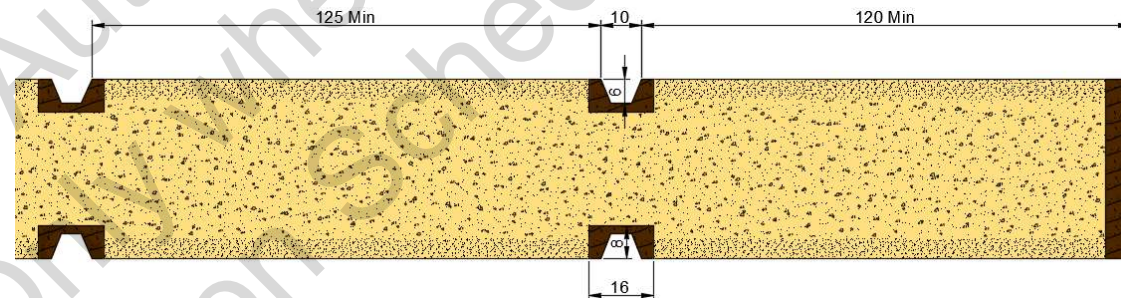
5.7.3.1 Drawings of Permitted Groove Option C



(A): Tested groove arrangement



(B): Groove and insert detail 1



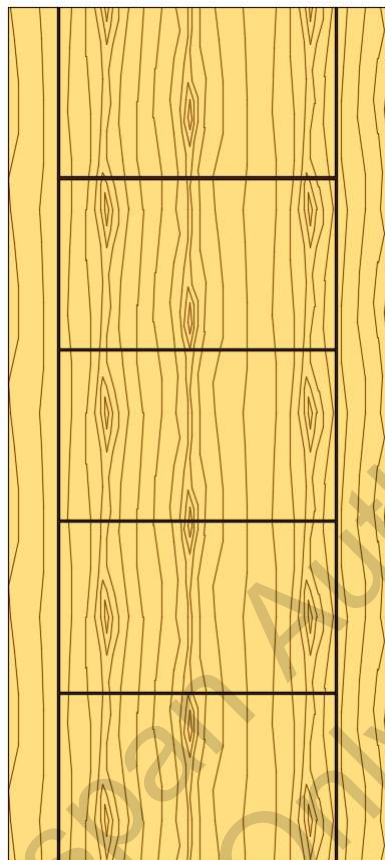
(C): Groove and insert detail 2

5.7.4 Groove Option D

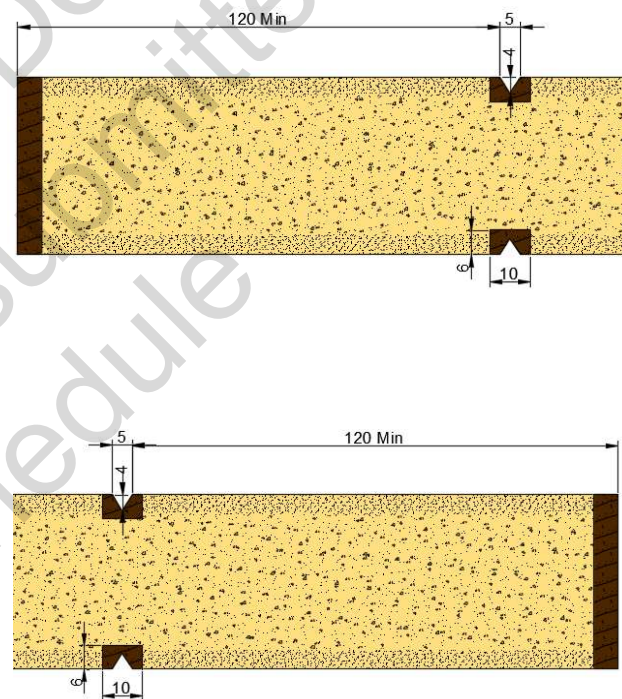
Tested grooving arrangement from CFR1803021B

Groove Option D		
Element	Details	
Maximum groove size (mm)	5mm wide x 4mm deep 'V' grooves.	
Inserts	Inserts must be Hardwood or MDF (minimum density 640kg/m ³). Maximum size 10mm wide x 6mm deep.	
Adhesive	The insert must be tightly fitted and glued on into the door core on all edges using a PU or UF adhesive.	
Proximity to door edges (mm)	Horizontal Grooves	≥ 120mm from top and bottom
	Vertical Grooves	≥ 120mm from sides, may extend full height
Groove spacing (mm)	Maximum 2no. Vertical grooves which may extend to leaf edges. Maximum 4no. Horizontal grooves between the vertical grooves.	
Orientation	Horizontal and Vertical	
Configuration	Latched, single acting, single leaf doorsets	
Leaf	Leaf 1 & 2	
Leaf size max(mm)	2250 x 950	
Intumescent seal dimensions (mm)	15 x 4	
Frame	Frame 1, 2 & 3 only	

5.7.4.1 Drawing of Permitted Groove Option D



(A): Tested groove arrangement



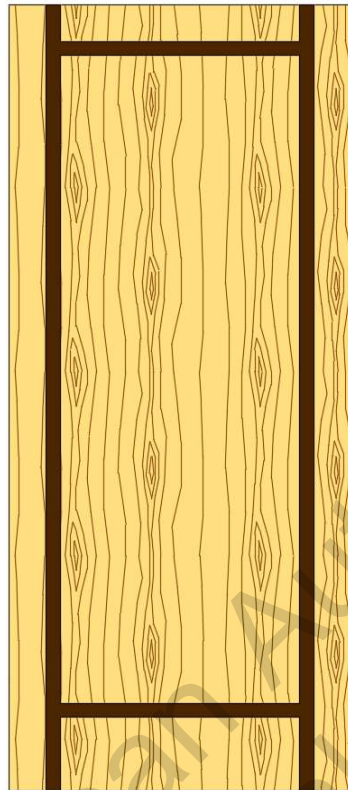
(B): Groove and insert detail

5.7.5 Groove Option E

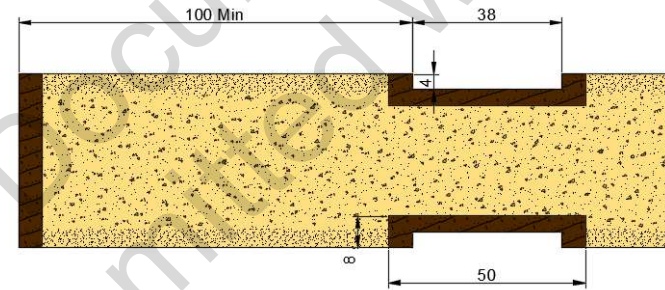
Tested grooving arrangement from WF426991.

Groove Option E		
Element	Details	
Maximum groove size (mm)	50mm wide x 8mm deep in-filled with hardwood timber (min. 510kg/m ³). The hardwood insert can be machined with a decorative groove with maximum dimensions of 38mm wide x 4mm deep. Multiple grooves with maximum dimensions of 5mm wide x 4mm deep or 4mm deep "V" grooves can also be machined into each hardwood insert.	
Inserts	Inserts must be Hardwood or MDF (minimum density 510kg/m ³). Maximum size 50mm wide x 8mm deep.	
Adhesive	The insert must be tightly fitted and glued on into the door core on all edges using a PU or UF adhesive.	
Proximity to door edges (mm)	Horizontal Grooves	≥ 100mm from top and ≥ 200mm from bottom
	Vertical Grooves	≥ 100mm from sides, may extend full height
Groove spacing (mm)	Maximum 2no. Vertical grooves which may extend to leaf edges. Maximum 2no. Horizontal grooves between the vertical grooves.	
Orientation	Horizontal and Vertical	
Configuration	Latched, single acting, single leaf doorsets	
Leaf	Leaf 1 & 2	
Leaf size max (mm)	2250 x 975	
Intumescent seal dimensions (mm)	15 x 4	
Frame	Frame 1, 2 & 3 only	

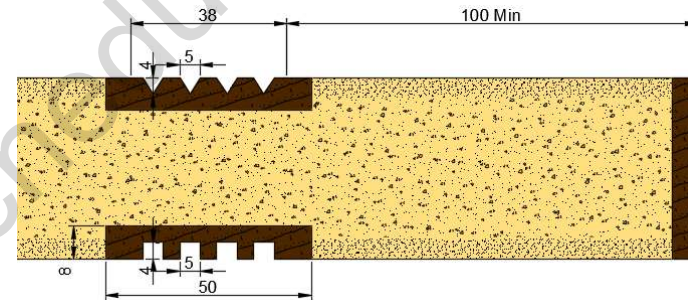
5.7.5.1 Drawing of Permitted Groove Option E



(A): Tested groove arrangement



(B): Groove and insert detail 1



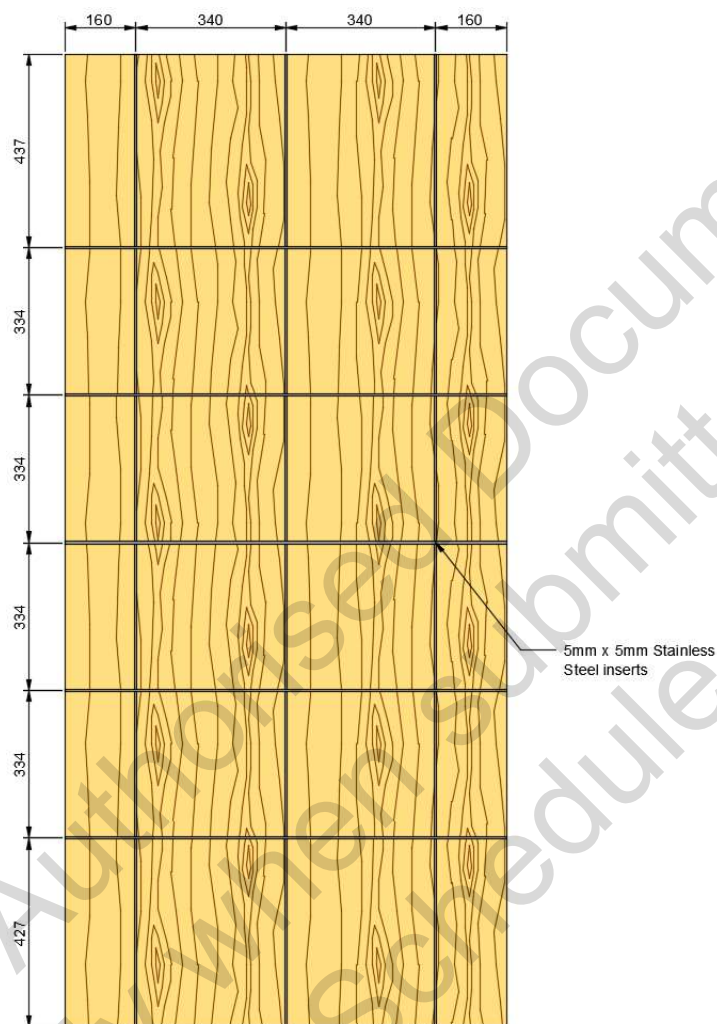
(C): Groove and insert detail 2

5.8 Decorative Steel Inserts

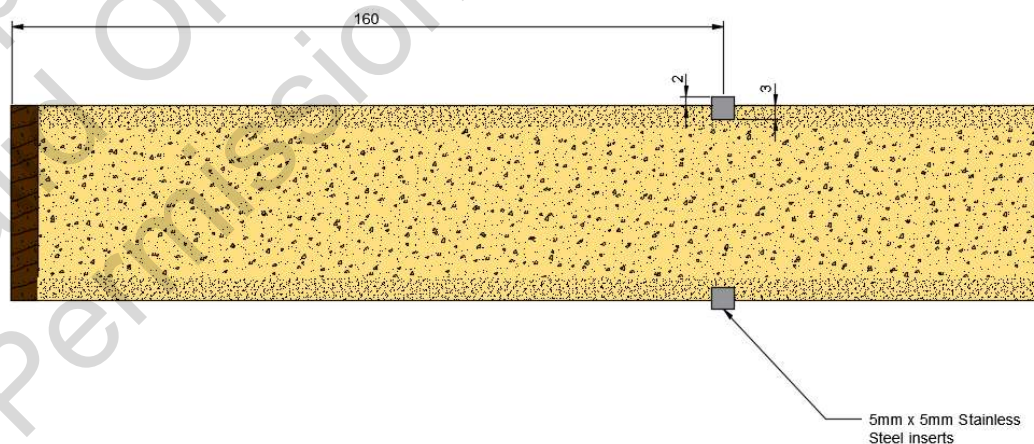
Below are the tested decorative steel insert details from test report TI091-2B.

Steel Insert Specification		
Element	Details	
Maximum groove size (mm)	5mm wide by 3mm deep in-filled with stainless steel bars. Assessment is made that these may be grooved to both faces of the door leaf.	
Inserts	5mm wide x 5mm deep square stainless steel bars. Assessment is made that these may be fitted to both faces of the door leaf.	
Adhesive	The insert must be tightly fitted and glued on into the door core on all edges using araldite epoxy adhesive.	
Proximity to door edges (mm)	Horizontal Grooves	≥ 427mm from top and bottom edges, may extend full width of the door leaf. They must not extend below the stops.
	Vertical Grooves	≥ 160mm from both sides, may extend full height of the door leaf. They must not extend below the stops.
Groove spacing (mm)	Maximum 3no vertical grooves spaced 340mm minimum from centre to centre between inserts. Maximum 5no horizontal grooves spaced 334mm minimum from centre to centre between inserts. Vertical and horizontal grooves may intersect each other. If intersections occur, one set of insert bars are non-continuous and butt to the other set.	
Orientation	Horizontal and Vertical	
Configuration	Latched, single acting, single leaf doorsets.	
Leaf	Leaf 1 & 2	
Leaf size max (mm)	2200 x 1000	
Intumescent seal dimensions (mm)	1no 20 x 4 Lorient LP2004	
Frame	Frame 2 only	

5.8.1 Drawing of Permitted Steel Inserts



(A): Tested insert arrangement



(B): Assessed insert detail

5.9 Leaf Size Adjustment Prior To Machining

Leaf 1 and 2 may be altered as follows prior to the machining for hardware.

Pre-Machining Leaf Size Adjustment Specification	
Element	Reduction
Leaf	The size of the leaf may be reduced in height or width without restriction for manufacturing purposes, providing the finished leaf is lipped in accordance with section 5.4
Timber Lipping	The timber lipping thickness can be reduced after it has been glued in place, providing it is not reduced below the minimum stated in section 5.4

6 Glazing

6.1 General

The testing conducted on leaf 1 and 2 has demonstrated that the design is capable of tolerating glazed apertures, whilst providing a margin of over performance.

Glazing is therefore acceptable within the following parameters:

- The maximum assessed glazed area for all configurations is 1.75m² (Reference test: Chilt/RF06068B).
- Glazed openings must not be less than 90mm from top and side edges and 200mm from the bottom edge.
- Multiple apertures are acceptable within the permitted glazed area, with a minimum dimension of 80mm between apertures.
- Aperture shape is not restricted, providing the glazing system and beads are compatible with that shape, but no aperture angle must be less than 60 degrees
- Timber for glazing beads must be straight grained joinery quality, free from knots, splits and checks.

The following sections consider the following:

- Which glass and glazing system can be used together and the associated pane size limitation
- The bead details for chamfered and square beads and a security bead.
- Which glass type can be used with square beads
- The use of an aperture liner
- Bead fixings
- Specific glazing systems for specialist glasses

6.2 Glass & Glazing Systems

The table below specifies the maximum assessed area of glazing for each permitted glass type and glazing system.

		Glass & Glazing System Specification Max. Assessed Area (m ²)									
Glass Type & Manufacturer		Glazing System & Manufacturer									
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
		Fireglaze 30 Sealmaster UK Ltd	Therm A Strip Intumescent Seals Ltd	Firestrip 30 Hodgson Sealants Ltd	FlexibleFigure 1 Lorient Polyproducts Ltd	System 36 Plus Lorient Polyproducts Ltd	Pyroglaze 30 Mann McGowan Ltd	R8193 Pyroplex Ltd	30049 Pyroplex Ltd	Halspan 30 Halspan Ltd	STS105GT Sealed Tight Solutions Ltd
1.	6mm Pyroshield 2 Pilkington UK Ltd	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	0.4
2.	6mm Pyran S Schott Glass Ltd	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	0.4
3.	5mm Firelite Ceramics Glass Ltd	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4
4.	6mm Pyrostem Pyroguard UK Ltd	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	0.4
5.	7mm Pyroguard EW30 Pyroguard UK Ltd	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.24
6.	7mm Pyrobelite 7 AGC Flat Glass UK	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	1.24
7.	7mm Pyrodur Plus 30-104 Pilkington UK Ltd	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	1.24

Glass & Glazing System Specification Max. Assessed Area (m ²)											
Glass Type & Manufacturer		Glazing System & Manufacturer									
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
		Fireglaze 30 Sealmaster UK Ltd	Therm A Strip Intumescent Seals Ltd	Firestrip 30 Hodgson Sealants Ltd	FlexibleFigure 1 Lorient Polyproducts Ltd	System 36 Plus Lorient Polyproducts Ltd	Pyroglaze 30 Mann McGowan Ltd	R8193 Pyroplex Ltd	30049 Pyroplex Ltd	Halspan 30 Halspan Ltd	STS105GT Sealed Tight Solutions Ltd
8.	7mm Pyrodur 30-105 Pilkington UK Ltd	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	1.24
9.	10mm Pyrodur 60-10 Pilkington UK Ltd	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	1.24
10.	11mm Pyroguard EW Maxi Pyroguard UK Ltd	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.24
11.	11mm Pyranova 15- S2.0 Schott Glass Ltd	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	1.24
12.	12mm Pyrobelite 12 AGC Flat Glass UK	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	1.24
13.	15mm Pyroguard EI30 Pyroguard UK Ltd	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	1.24
14.	15mm Pyrostop 30- 10 Pilkington UK Ltd	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	1.24
15.	16mm Pyrobel 16 AGC Flat Glass UK	1.75	1.75	1.75	1.75	1.25	1.25	1.25	1.25	1.25	1.24

Note:

1. All glass types must be fitted fully in accordance with the manufacturers' tested details/installation requirements, particularly with respect to edge cover and expansion tolerances.
2. In accordance with the requirements of Approved Document N: Glazing – safety in relation to impact, opening and cleaning, panes of Firelite glass are limited to a smaller dimension not exceeding 250mm in height or width and an area not exceeding 0.5m² (see Approved Document N for details).
3. Glass types 11, 13-15 are fully insulating for 30 minutes in terms of the criteria set out in BS 476: Part 20: 1987.

6.3 Glazing Beads & Installation Detail

6.3.1 Chamfered Bead

These are permitted on all glass types and glazing systems listed in the table in section 6.2.

The enhanced security bead has been assessed by Warringtonfire to be suitable as the glass and glazing system and beading is based on the standard chamfered bolection bead but with an integral liner which will further protect the glazing pocket. Section 6.3.7 gives information on bead fixings, however, note the length of the pins should be increased to 50mm for the enhanced security bead so as to penetrate the door core to a sufficient depth.

Bead material is as specified below:

Bead Material Specification	
Material	Minimum Density (kg/m ³)
Hardwood: must be straight grained joinery quality, free from knots, splits and checks.	640
MDF: not for Security bead	700

The hardwood bead can be PVC clad as tested in Chilt/RF2083A but can only be used with glazing system 1 in section 6.2 and glass types 1 to 15.

The key dimensions are shown on the drawing which are:

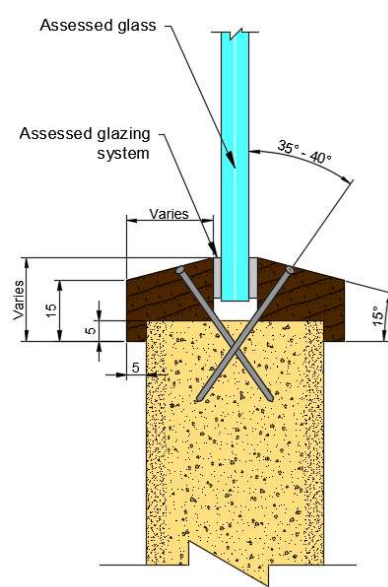
- the bolection size 5 x 5mm
- The face dimension 15mm including the bolection return increased to 24mm in the security bead
- 15 degree chamfer
- The dimension between face and glass varies to accommodate different thickness of door leaf, glass and glazing medium.

Note:

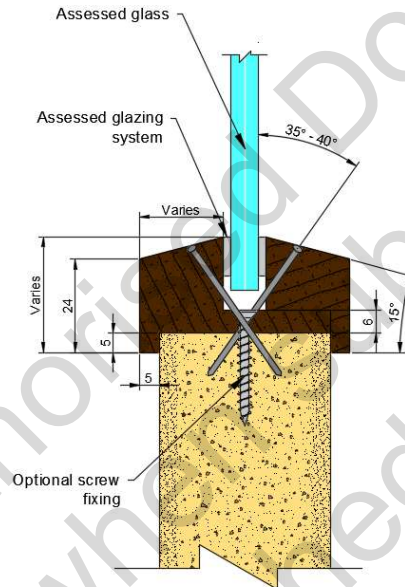
Setting blocks and glass expansion allowances are not detailed as these are recommended by the glass manufacturer

6.3.1.1 Drawing of Permitted chamfered beads

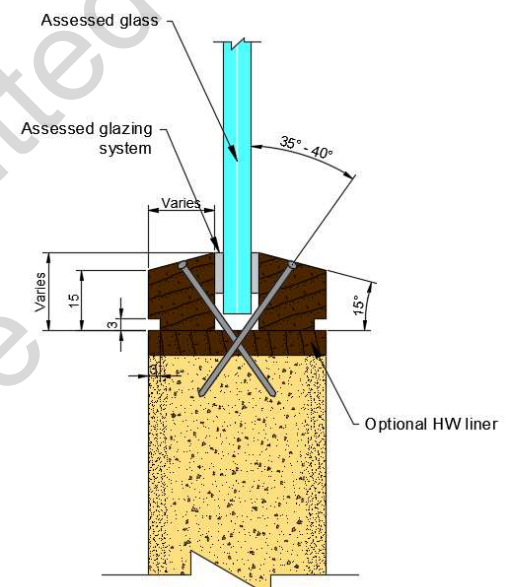
Details of the glazing system are shown below.



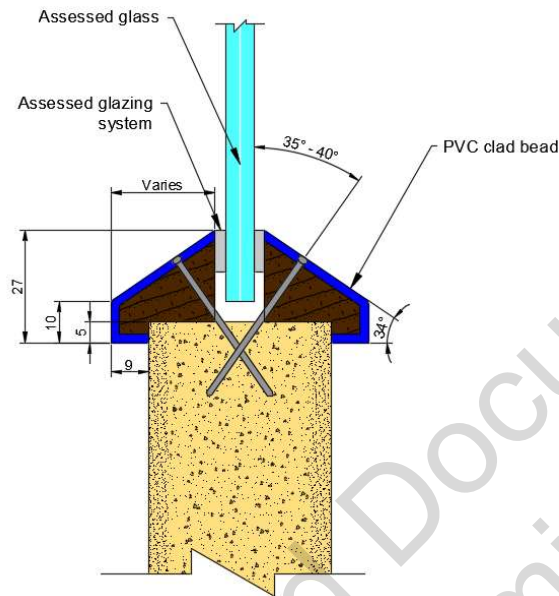
(A): Standard chamfered bevel bead



(B): Enhanced security bead



(C): Chamfered flush bead



(D): PVC clad chamfered bolection bead

6.3.2 Square Beads

6.3.2.1 Square Beads with partially or fully insulating glass

These are permitted on glass types 6 – 15 and all glazing systems listed in the table in section 6.2.

Bead material is as specified below:

Bead Material Specification	
Material	Minimum Density (kg/m ³)
Hardwood: must be straight grained joinery quality, free from knots, splits and checks.	640
MDF	700

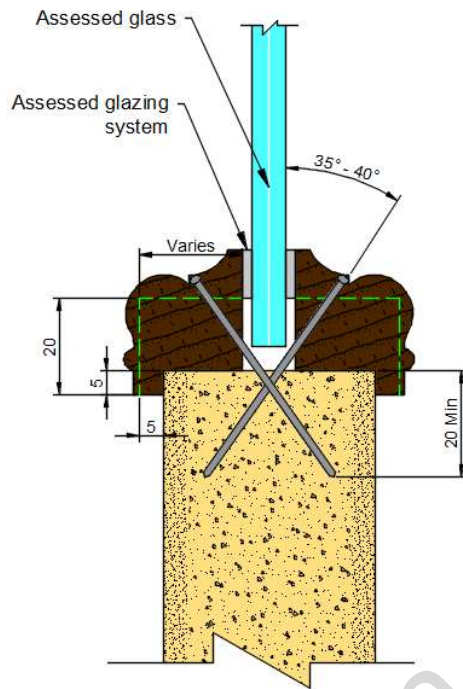
The key dimensions are shown on the drawing which are:

- The face dimension 15mm
- The glasses used with square beads are partially or fully insulating and provided the 15mm is complied with the quirk and bolection return as shown below are optional.
- The dimension between face and glass varies to accommodate different thickness of door leaf, glass and glazing medium.
- Glazing beads with an integral decorative moulding may be used provided the minimum dimensions for square beads are maintained. The bead fixings must also be of a sufficient length to penetrate the door core by at least 20mm

Note:

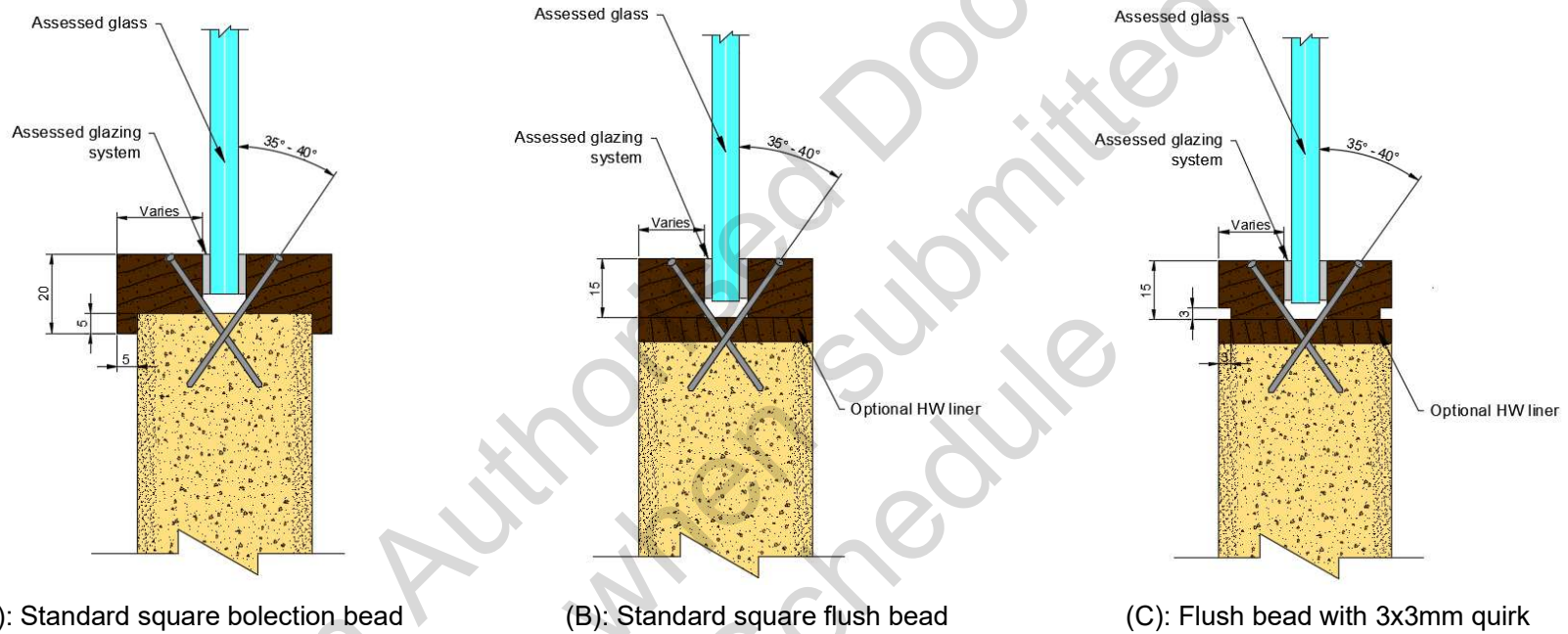
Setting blocks and glass expansion allowances are not detailed as these are recommended by the glass manufacturer.

6.3.2.2 Example of moulded bolected bead permitted with partially or fully insulated glass



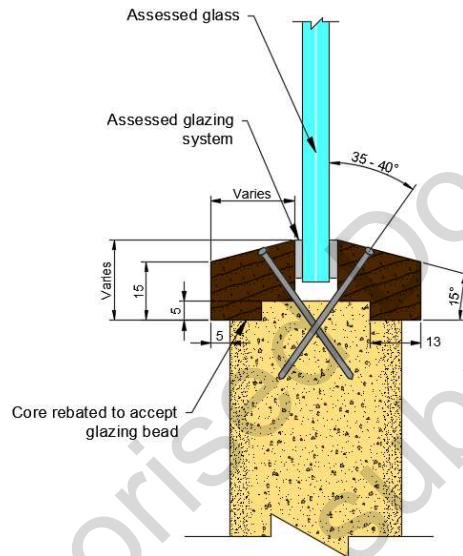
6.3.2.3 Drawing of Permitted Square Bead with partially or fully insulating glass

Details of the permitted glazing systems with square beads for partially or fully insulated glass are shown below

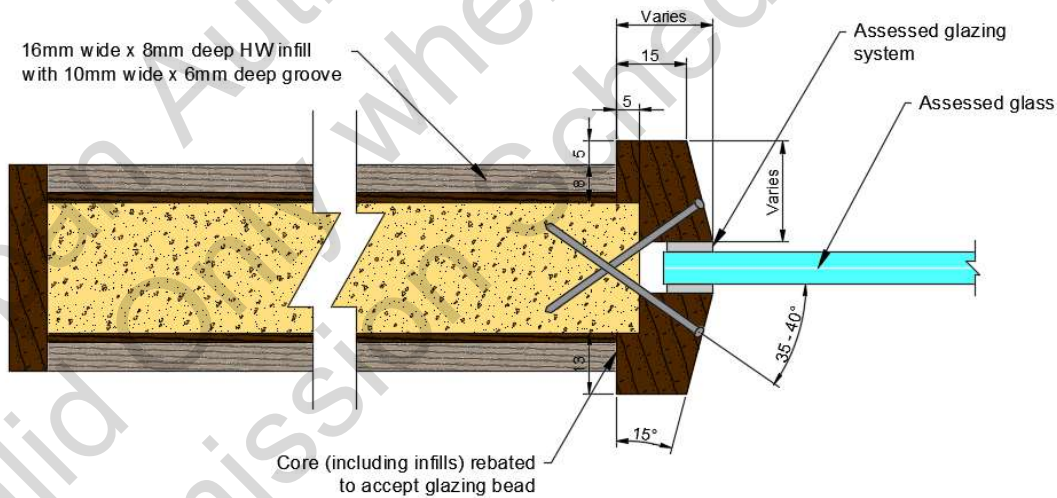


6.3.3 Glazing Beads to use with Grooves

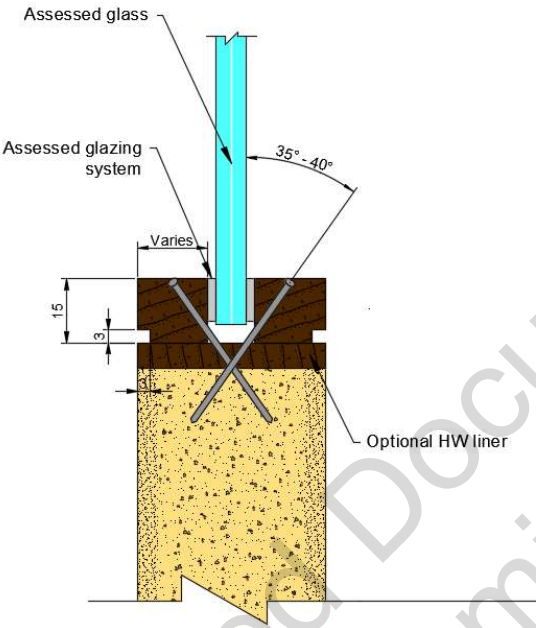
The square and chamfered beads shown below are specially designed to compensate for the effect of the grooving and prevent the risk of a groove undermining the glazing pocket. The drawing below shows the modification to the glazing bead. In addition the requirements of section 6.3.1 must be complied with.



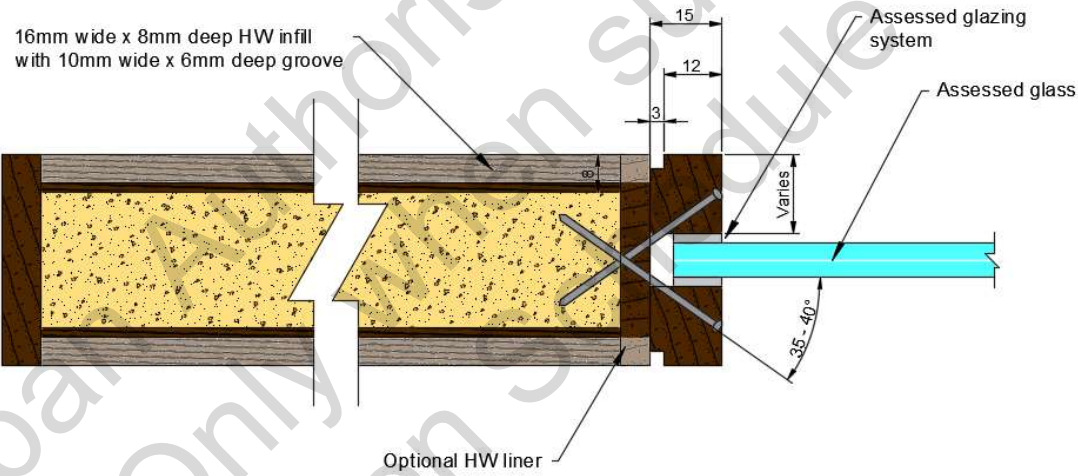
(A): Chamfered bead detail with rebated core



(B): Chamfered bead detail with groove infills



(C): Square bead detail

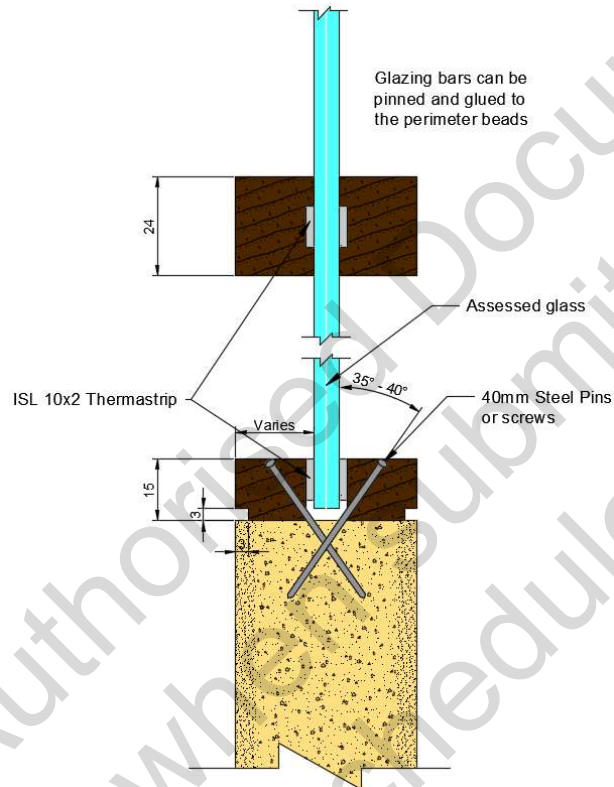


(D): Square bead detail with groove infills

6.3.4 Halspan 30 Cassette System: False Beads

False timber beads may be bonded to the glass face with a 10 x 2 Therm-A-Strip intumescent strip, based on tests WARRES 112248A and WF412654B. For this application partially insulating glasses are required and suitable glasses for this application are glass types 6 – 15.

Timber for glazing beads must be straight grained joinery quality, free from knots, splits and checks. The Halspan cassette system based on this principle is given below.



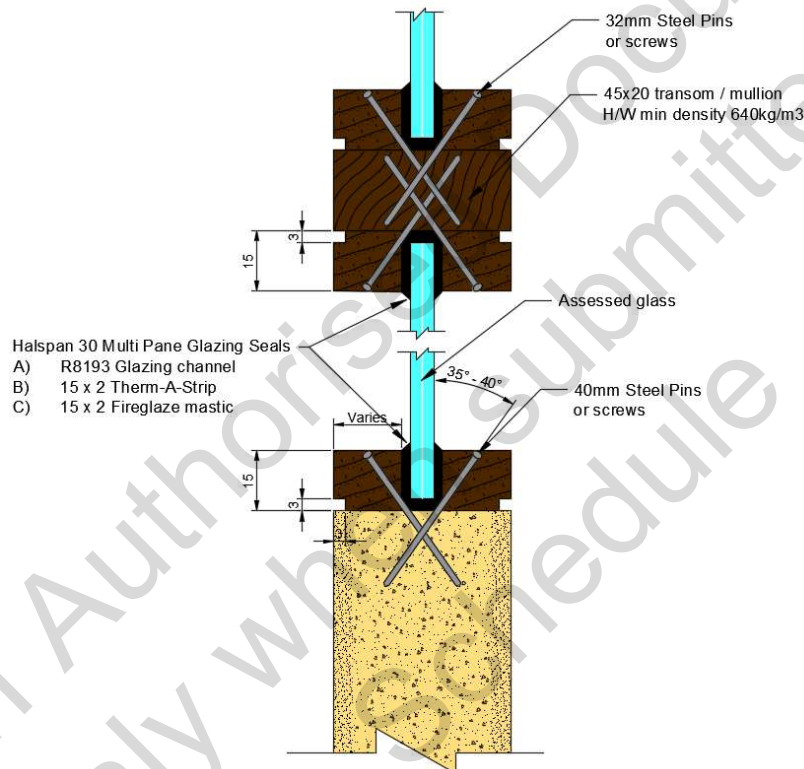
False bead detail – Halspan 30 cassette system

6.3.5 Halspan 30 Multi-Pane Glazing System

Halspan has tested the multi-pane system shown below in test reference Chilt/RF99036. For this application partially insulating glasses are required and suitable glasses for this application are glass types 6 – 15 used with one of the following glazing strip.

- R8193 glazing channel
- Therm-A-Strip
- Fireglaze mastic

Timber for glazing beads must be straight grained joinery quality, free from knots, splits and checks. The Halspan multi-pane glazing system based on this principle is given below.



Multi-pane bead detail – Halspan 30 multi-pane glazing system

6.3.6 Optional Glazing Liner

A 6 – 10mm thick square aperture liner is permitted for use with square beads, see section 6.3.2, and option C of chamfered beads, see section 6.3.1.1, providing it is constructed from hardwood of minimum density 640kg/m³ and glued in position using a UF, PVA or PU type adhesive.

6.3.7 Bead Fixings

Glazing beads must be retained in position with 40mm long steel pins or 40mm long No. 6 – 8 screws, inserted at 35-40° to the vertical. Fixings must be at 150mm maximum centres and no more than 50mm from each corner.

When using the security beading system shown in 6.3.1.1 (B), this required a 50mm long fixing.

Pneumatically fired pins are acceptable providing the pins meet the specification given in section 6.3.7.1 below.

6.3.7.1 Gun (Pneumatically) Fired Pins

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

Option 1: Round, Oval & Rectangular Pins

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

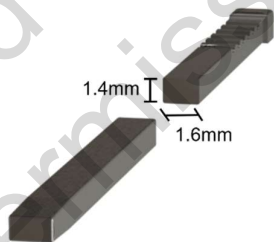
- Minimum Standard Wire Gauge (SWG) 16.
- Minimum cross section area of 2.03mm².
- Minimum linear dimension of 1.6mm in any direction.



Option 2: Rectangular Pins

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 2.24mm².
- Minimum linear dimension of 1.4mm.



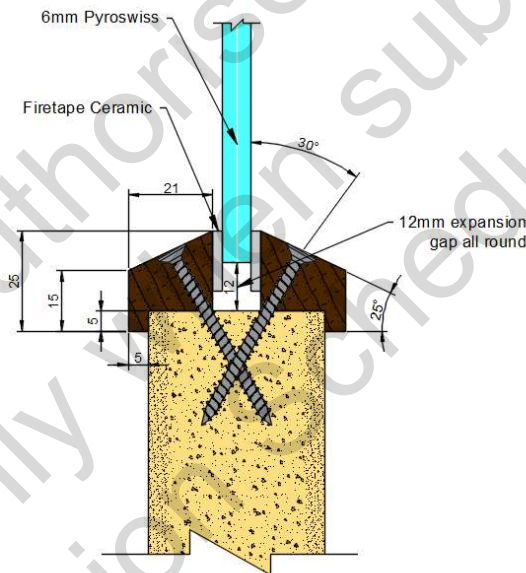
Note of Caution:

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

6.4 Pyroswiss Glazed with Hodgson Firesealants Firetape Ceramic

Pyroswiss (6mm) glass has been successfully tested in test reference Chilt/RFO2110, with further support for Leaf 1 with reference to Certifire Certificate CF684, and is assessed as suitable for use within the following scope:

- Maximum glazed area: 0.8 m²
- Leaf: 1 and 2
- Glazing System: 15 x 3mm Hodgson Sealants Firetape Ceramic, between the glass and bead.
- Glazing Beads:
 - (a) 25 x minimum 21 mm (h x w) (including a 5 x 5 mm (h x w) bolection and a 25° chamfer)
 - (b) Hardwood (minimum 650kg/m³)
- Expansion Allowance: 12mm on all edges, with 2no non-combustible or hardwood setting blocks to the bottom edge.
- Edge Cover: 8mm on all edges
- Glazing Liner: Not required, but permitted as detailed in section 6.3.6
- Bead fixings: 50mm long steel screws at 30° to the glass, 50mm from corners and 130 to 150mm centres

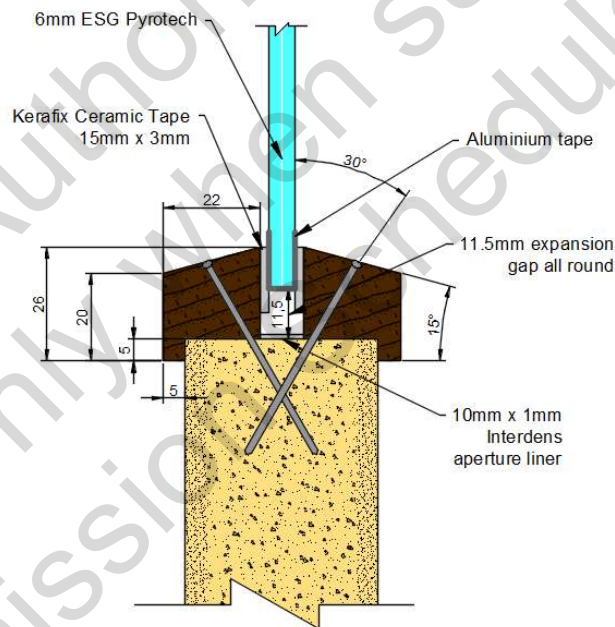


Pyroswiss glazing detail

6.5 ESG Pyrotech Glazed with Kerafix

ESG Pyrotech 630 (6mm) glass has been successfully tested in test reference Chilt/RF08169, and is assessed as suitable for use within the following scope:

- Maximum glazed area: 1.25 m²
- Leaf: 1 and 2
- Glazing System:
 - (a) 15 x 3mm Kerafix ceramic tape, between the glass and bead.
 - (b) 10 x 1mm Dufaylite Interdens, fitted around the glazing perimeter.
- Glazing Beads:
 - (a) 26 x minimum 22 mm (h x w) (including a 5 x 5 mm (h x w) bolection and a 15° chamfer)
 - (b) Hardwood (minimum 640kg/m³)
- Expansion Allowance: 11.5mm on all edges, with 2no non-combustible or hardwood setting blocks to the bottom edge.
- Edge Cover: 9.5mm on all edges
- Glazing Liner: Not required, but permitted as detailed in section 6.3.6
- Bead fixings: 2mm diameter x 50mm long steel pins, at 30° to the glass, 50mm from corners and 150mm centres
- Glass must include aluminium foil edge protection with returns of 12mm high to each face.



6.6 Hygeno Intavista & Flushview Units: Leaf 2 only

These glazing units have been successfully tested in test reference CFR1909241 at sizes 750mm high by 500mm wide, with the fitting of the glazing units witnessed by a representative of BM Trada on 17/09/2019 under contract reference PS190901, and are therefore permitted for use within the following specification as detailed within the sampling report:

- Maximum glazed area: 0.375 m²
- Leaf: 2 only
- The maximum height of glazing unit : 750mm
- The maximum width of glazing unit: 500mm
- Glazing aperture must be rectilinear and positioned no closer than 150mm from vertical leaf edges, and no closer than 377mm from the head of the leaf. Aperture size is 8mm higher and 8mm wider than the glazing unit dimensions.
- The glazing aperture is routed 12mm deep x 40mm wide positioned centrally to on all edges of the glazing aperture. The vertical edges must be fitted with 12mm x 40mm MgO boards and each horizontal edge must be fitted with 2no 12mm x 14mm MgO boards with the 12mm x 12mm void completely filled with Everbuild Fire Mate intumescent sealant. The pre-drilled MgO boards must be held in place with either 50mm pins (complying with the requirements of section 6.3.7.1) or 50mm steel countersunk wood screws.
- The glazing unit is fitted with central glazing pane projecting into the Everbuild Fire Mate sealant on the horizontal edges.
- Glazing System:
 - (a) 50 x 3mm (comprising 50 x 2mm + 50 x 1mm) Interdens® fitted centrally to the leaf thickness and interrupted by the central glazing pane at the horizontals.
 - (b) Edge of liner capped with Otto Chemie S94 silicone sealant, finished flush on both leaf faces.

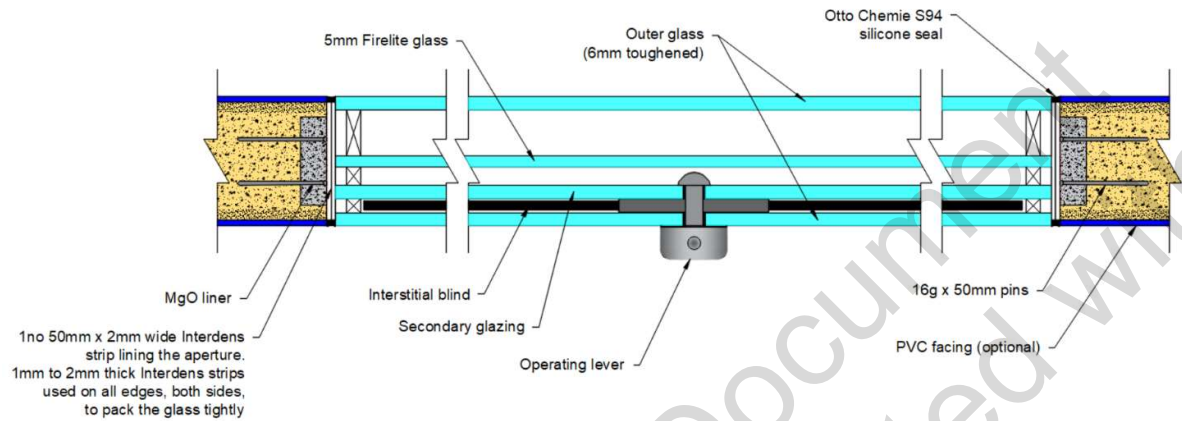
Description of the units follows in sections 6.6.1 and 6.6.2.

Additionally to the above requirements, due to the complex nature of these glazing units, further installation guidance for both the FlushView and Intavista glazing systems should be sought from Hygeno.

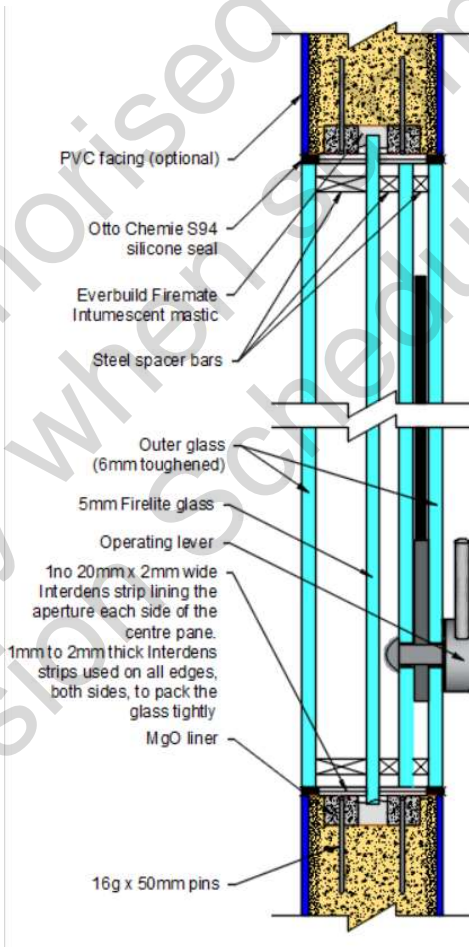
6.6.1 Hygeno Intavista Unit: Leaf 2 only

- Hygeno Flush Fit Invista is supplied as a unit and comprises a central 5mm FireLite pane, with one pane of 6mm toughened glass to one side and with 2 panes of 6mm toughened glass, with an extra layer of movable obscuring glass with a stainless steel handle to the other side.
- This unit has been tested with the operating lever to the furnace side. On the basis that the toughened glass layers are essentially sacrificial layers, which are not essential to maintain the integrity performance of the unit in fire test conditions and the integrity performance shall be maintained by the Firelite ceramic glass centrally within the build-up of the unit. It is therefore assessed that subject to the Firelite remaining uninterrupted. the unit can be considered fire resisting from both sides.

A): Horizontal section detail



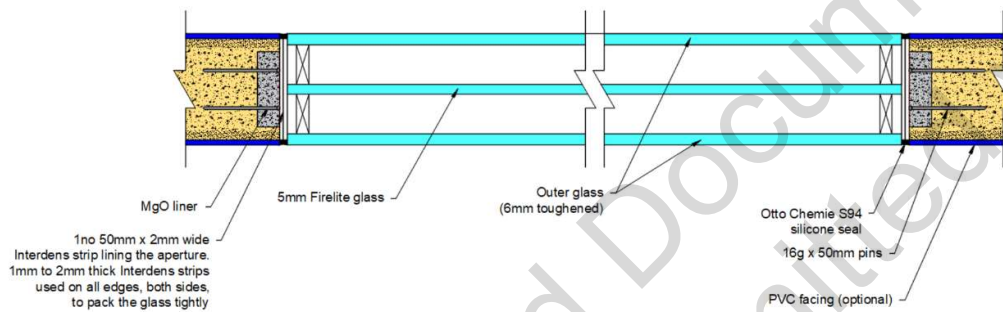
B) Vertical section detail



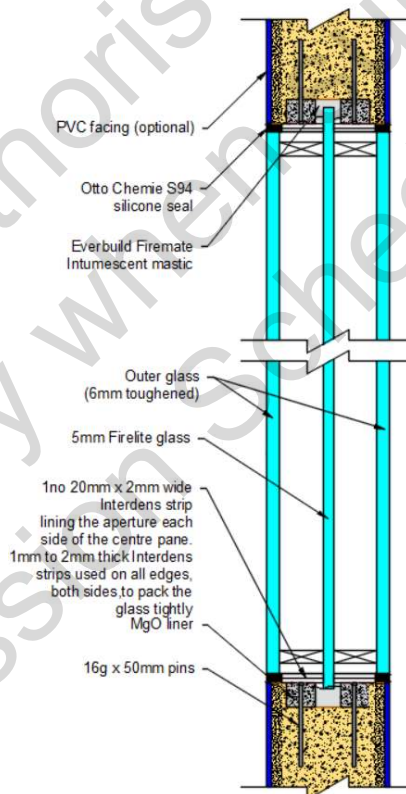
6.6.2 Hygeno Flushview Unit: Leaf 2 only

- Hygeno Flush fit Flushview is supplied as a unit and comprises a central 5mm FireLite glass pane with 6mm toughened glass to either face.
- This unit is symmetrical and therefore can be considered fire resisting from both sides.

A): Horizontal section detail



B) Vertical section detail



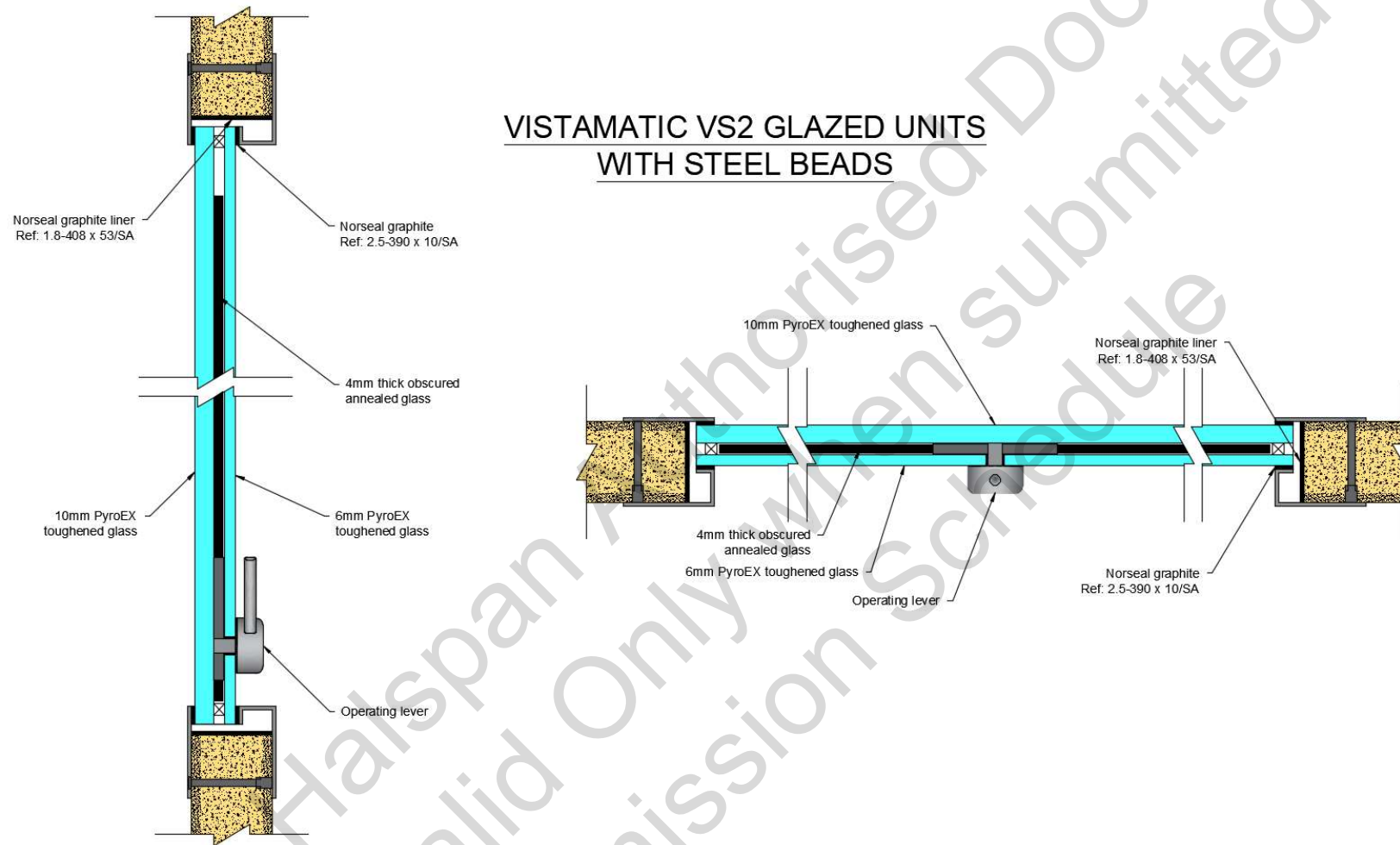
6.7 Vistamatic VS2 Secure Vision Panel

These glazing units have been successfully tested in test reference Chilt/RF12065 Revision B. They are therefore permitted for use within the following specification:

- Maximum total glazed area: 1.1m² per leaf
- The maximum height: 1500mm
- The maximum width: 500mm
- Leaf: 1
- Aperture shape must be rectilinear. Glazed openings must not be less than 100mm from any edge, with a minimum of 80mm between apertures. Multiple apertures are permitted subject to the spacing requirements listed above, with individual panes not exceeding 0.6m² and total glazed area within a leaf not exceeding 1.1m².
- Vistamatic VS2 Secure Vision Panel is supplied as a unit and comprises a double glazed unit with an additional movable centre layer of obscure glass. The 10mm thick toughened glass must be fitted to the fire risk side of the doorset. This unit can only be considered fire resisting from one direction in terms of exposure to fire test conditions (i.e. when the 10mm toughened glass is oriented on the face exposed to fire test conditions).
- The unit must be fitted in accordance with Vistamatics tested details/installation requirements, particularly with respect to edge cover and expansion allowance.
- This unit can be installed with either timber or steel beads, and must be fitted with the appropriate glazing system for the chosen bead, as detailed below.
- Timber bead and Glazing system:
 - (a) Hardwood (minimum 640 kg/m³) timber bead – minimum 20mm high x 17mm wide including a 9x9mm bolection return and 15 deg. chamfer.
 - (b) Bead fixings: 40mm long steel pins, (see section 6.3.7.1) at 35° to the glass located to “cradle” the glazing unit, 50mm from corners and 150mm centres.
 - (c) McGowan Pyroglaze 30 – 10x3mm fitted between glass and bead on both faces.
 - (d) Norseal acrylic intumescent mastic (Fire Wizard) – 3mm thick lining the glazing aperture between the pyroglaze 30 intumescent.
 - (e) Norseal graphite type intumescent sheet – 5mm thick fitted around the spindle lining the aperture in the outer glass layer.
- Steel bead and Glazing system:
 - (a) Stainless steel bead – 50mm high x 2mm thick on the fire-risk side and 50mm high x 20mm wide x 2mm thick on the non fire-risk side.
 - (b) Bead fixings: M5x40 machine security screws fixed from the fire-risk side and fitted 20mm from corners and 170mm from centres. Screws into M5x12 studs welded to non fire-risk side of bead.
 - (c) Norseal raw graphite intumescent (ref. 2.5-390 x 10/SA) – 10x2.5mm fitted between glass and bead spacer bars on both faces.
 - (d) Norseal graphite intumescent liner (ref. 1.8-408 x 53/SA) – 44x1.8mm thick lining the glazing aperture.
 - (e) 2no. Norseal graphite intumescent (ref. 2.5-390 x 10/SA) – 5mm thick fitted around the spindle lining the aperture in the outer glass layer.

The following figures show the example installation drawings of the tested glazing system, when fitted with steel beads.

VISTAMATIC VS2 GLAZED UNITS WITH STEEL BEADS

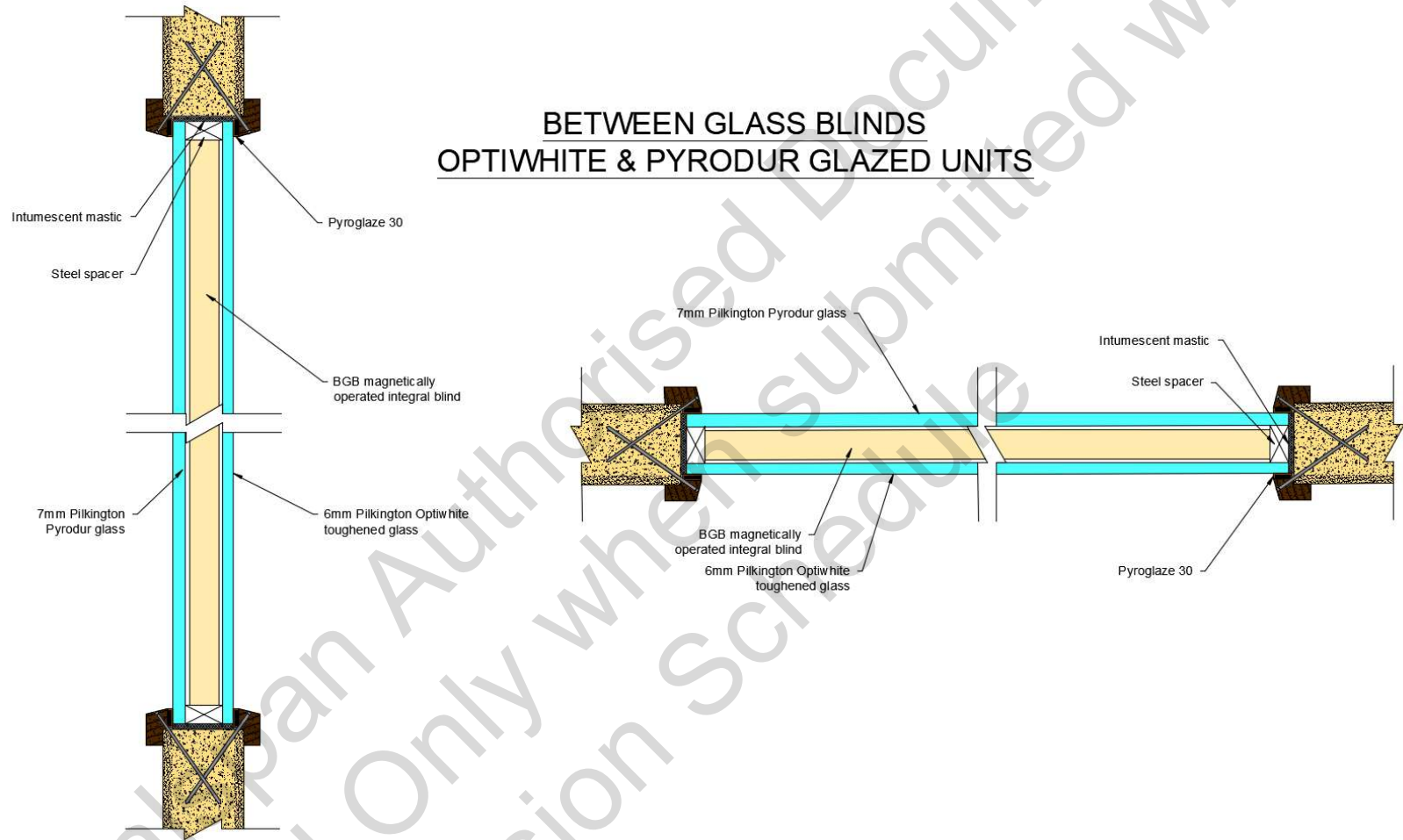


6.8 BetweenGlassBlinds Optiwhite & Pyrodur based Double Glazed Unit

This glazing unit from Between Glass Blinds Ltd has been successfully tested in WF403484 Doorset B. They are therefore permitted for use within the following specification:

- Maximum glazed area: 0.9m²
- The maximum height: 1500mm
- The maximum width: 600mm
- Leaf: 1 and 2
- Aperture shape must be rectilinear. Glazed openings must not be less than 100mm from any edge. Multiple apertures are not permitted.
- BetweenGlassBlinds™ Magnetic Adjustable Vision Panel is supplied as a sealed unit and comprises a double glazed unit with an additional movable magnetically operated internal blind (12.5mm thick) consisting of an aluminium frame and shutter assembly. The 7mm thick Pilkington Pyrodur must be fitted to the fire risk side of the doorset, and the 4mm thick Pilkington Optiwhite toughened glass to the non-fire risk side, with a 20mm steel spacer. This unit can only be considered fire resisting from one direction in terms of exposure to fire test conditions (i.e. when the 7mm Pyrodur glass is oriented on the face exposed to fire test conditions).
- The unit must be fitted in accordance with Between Glass Blinds Ltd tested details/installation requirements, particularly with respect to edge cover and expansion allowance.
- Expansion Allowance: 3mm on all edges
- Glazing System:
 - (a) McGowan Pyroglaze 30 – 10x3mm fitted between glass and bead on both faces.
 - (b) Norseal acrylic intumescent mastic (Fire Wizard) – 3mm thick lining the glazing aperture between the pyroglaze 30 intumescent.
- Glazing Beads:
 - (a) Minimum 20mm x minimum 17mm (h x w) (including a minimum of 9 x 9 mm (h x w) bolection and a 15° chamfer)
 - (b) Hardwood (minimum 640kg/m³)
- Bead fixings: 60mm long steel pins (see section 6.3.7.1) at 35° to the glass, 50mm from corners and 150mm centres.

The following figure shows example installation drawings of the tested glazing system.



BGB Pilkington Optiwhite + Pyrodur double glazed unit detail

7 Door Frame Construction

7.1 Details for Frames 1, 2 & 3

All door frame timber must meet or exceed class J30 as specified in BS EN 942: 2007 (subject to adequate repair of any defects).

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

Frame joints may be mortice and tenoned, mitred, half lapped or butted and with no gaps (see section 7.8). All jointing methods require mechanical fixing with the appropriate size ring shank nails or screws.

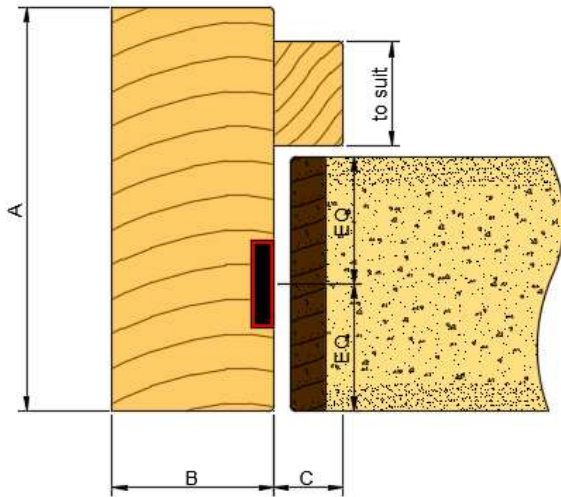
The door frames listed below are the minimum size and density which have been successfully tested. The frame must be constructed to meet the following specification for Single and Double acting frames.

Frame	Single Action (SA) / Double Action (DA)	Minimum Section Size ¹ (mm)	Minimum Density (kg/m ³)
1	SA / DA	70 x 28	510
2	SA / DA	70 x 22	640
3	SA	70 x 30	700

Note:

- When fitting the following items of mortice hardware for all frame options, the frame must be a minimum section size of 32mm x 70mm, unless stated otherwise for each specific item in section 11:
Multi-point locks
Concealed closers
Concealed hinges
Magnetic locks
Cable loops
- If mortice in items of hardware such as those listed in note 1 above are to be fitted then section 11 or the supporting test evidence should be reviewed for the relevant item, for specific installation or intumescent details.
- The cladding of frames with PVC sheeting and/or the use of leaves with edge protectors is addressed in part 4 of the suite of FEA/F97174 field of applications for the Prima product family.

The following diagram depicts the assessed frame profiles and dimensions:



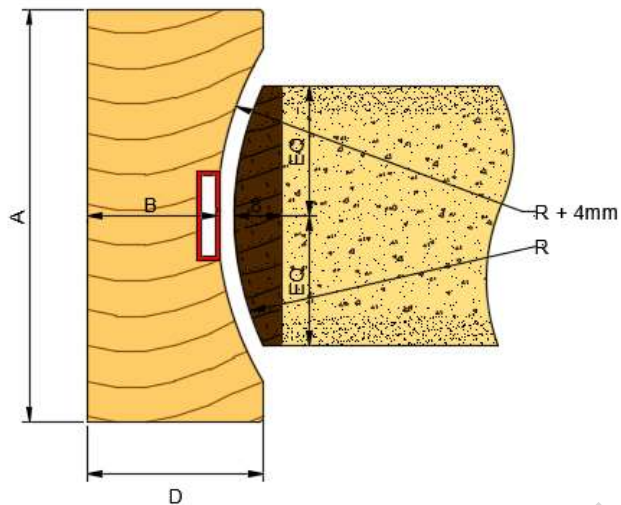
Key:

A = Minimum 70mm.

B = Minimum 22mm for hardwood, or 28mm for softwood.

C = Minimum 12mm.

(A): Standard frame detail



(B): Scalloped frame detail

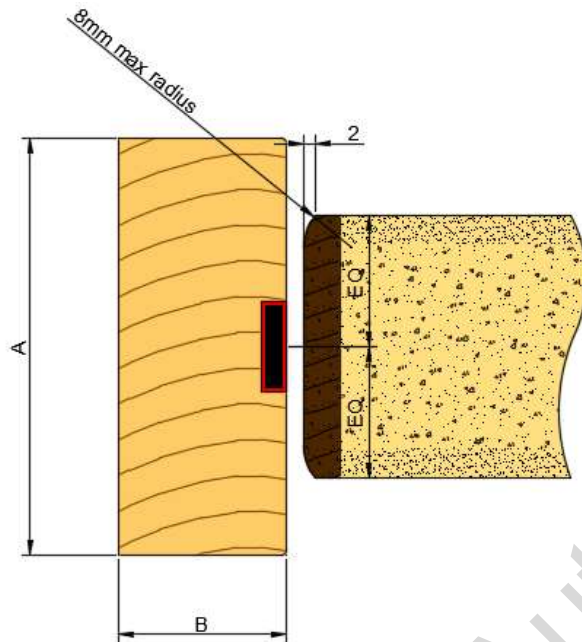
Key:

A = Minimum 70mm.

B = Minimum 22mm for hardwood, or 28mm for softwood.

D = Minimum 30mm for hardwood, or 36mm for softwood.

R = Radius from floor spring.



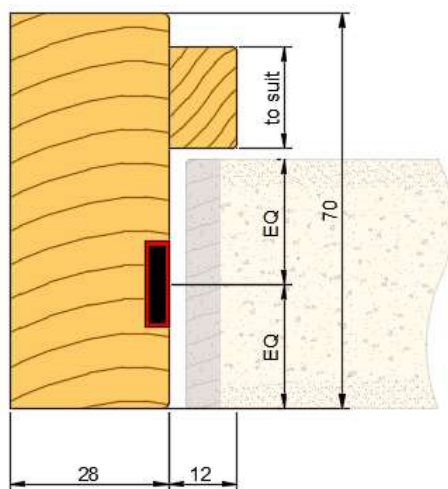
Key:

A = Minimum 70mm.

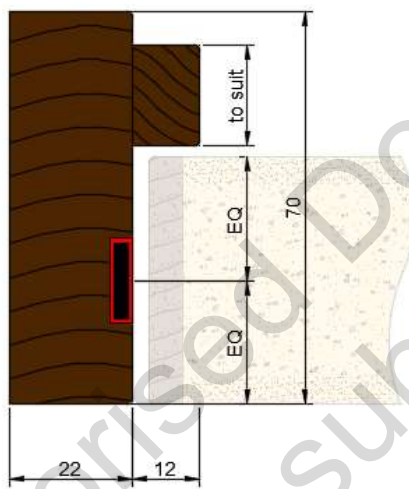
B = Minimum 22mm for hardwood, or 28mm for softwood.

(C): Square frame detail

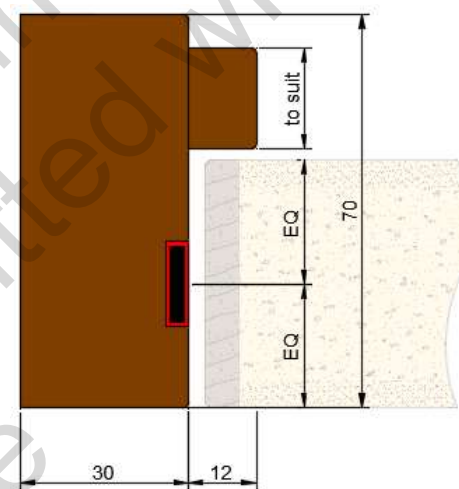
These details have to be carefully considered to ensure the door edge gaps and corner chamfering dimensions are maintained and are unlikely to be achieved at the hanging edge of a double action doorset.



(D): Frame 1

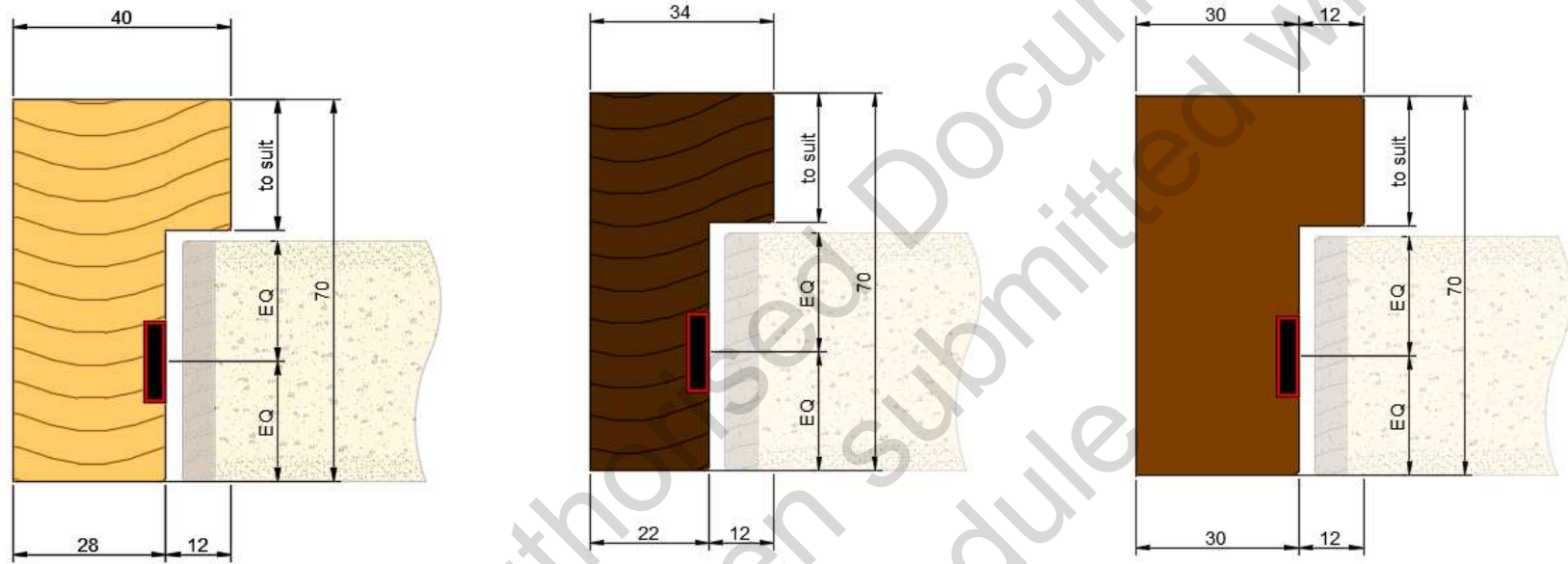


(E): Frame 2



(F): Frame 3

Detail of frames 1, 2 & 3 with planted stop

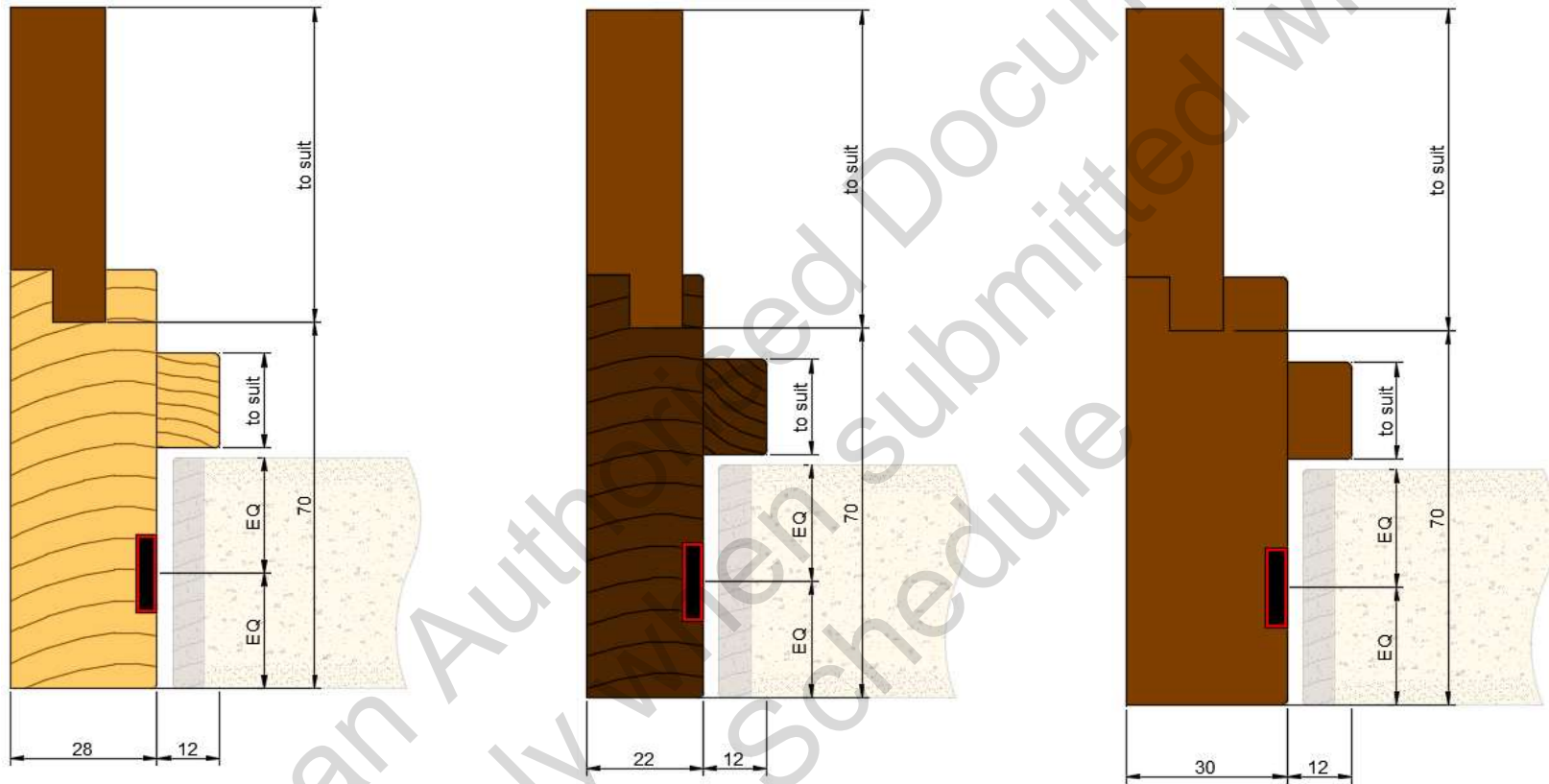


(G): Frame 1

(H): Frame 2

(I): Frame 3

Detail of frames 1, 2 & 3 with integral (rebated) stop



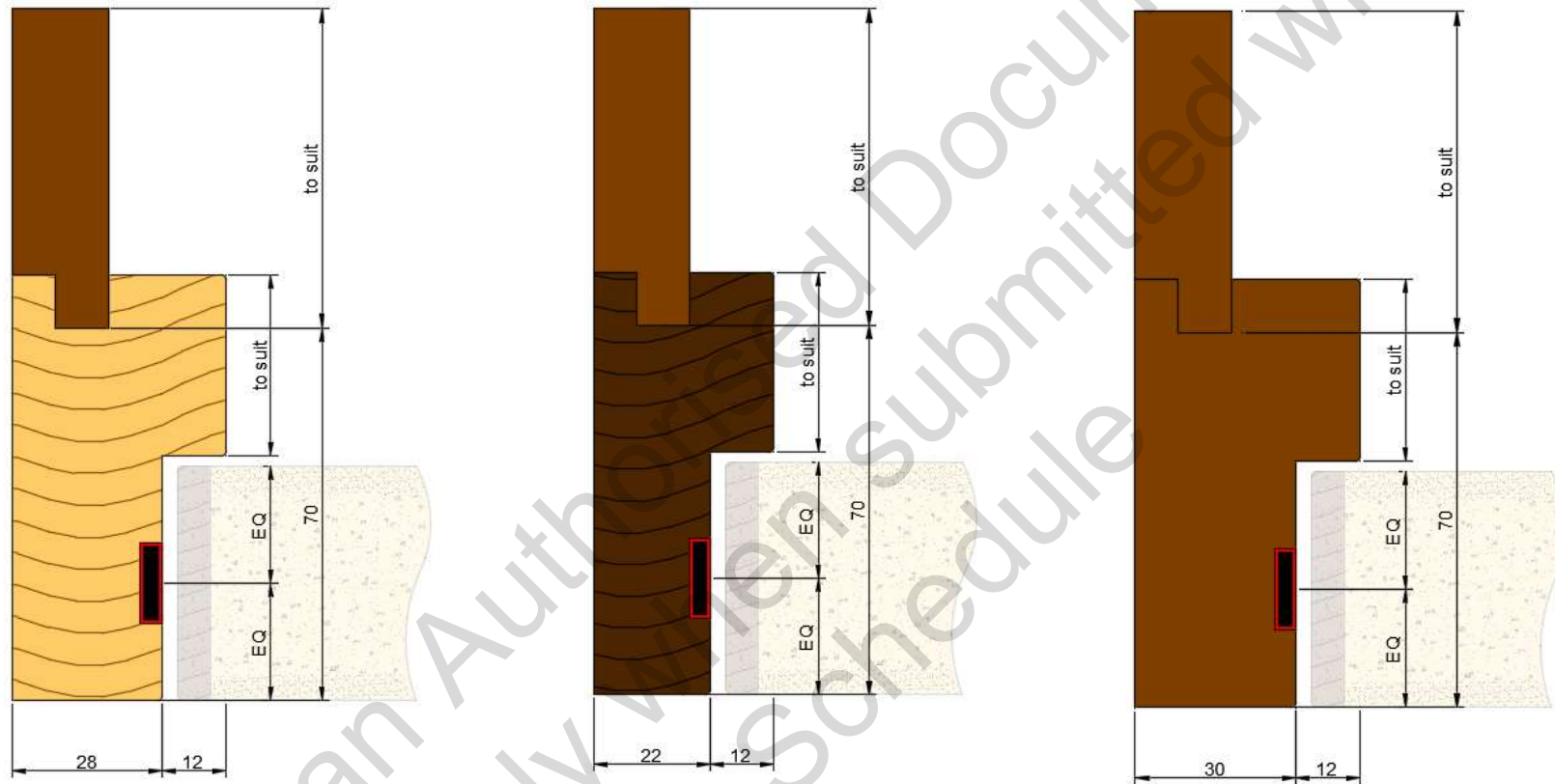
(J): Frame 1

(K): Frame 2

(L): Frame 3

Detail of frames 1, 2 & 3 with basic MDF extension liners with planted stop

Note: See Section 12.2 for possible restrictions associated with extension liners



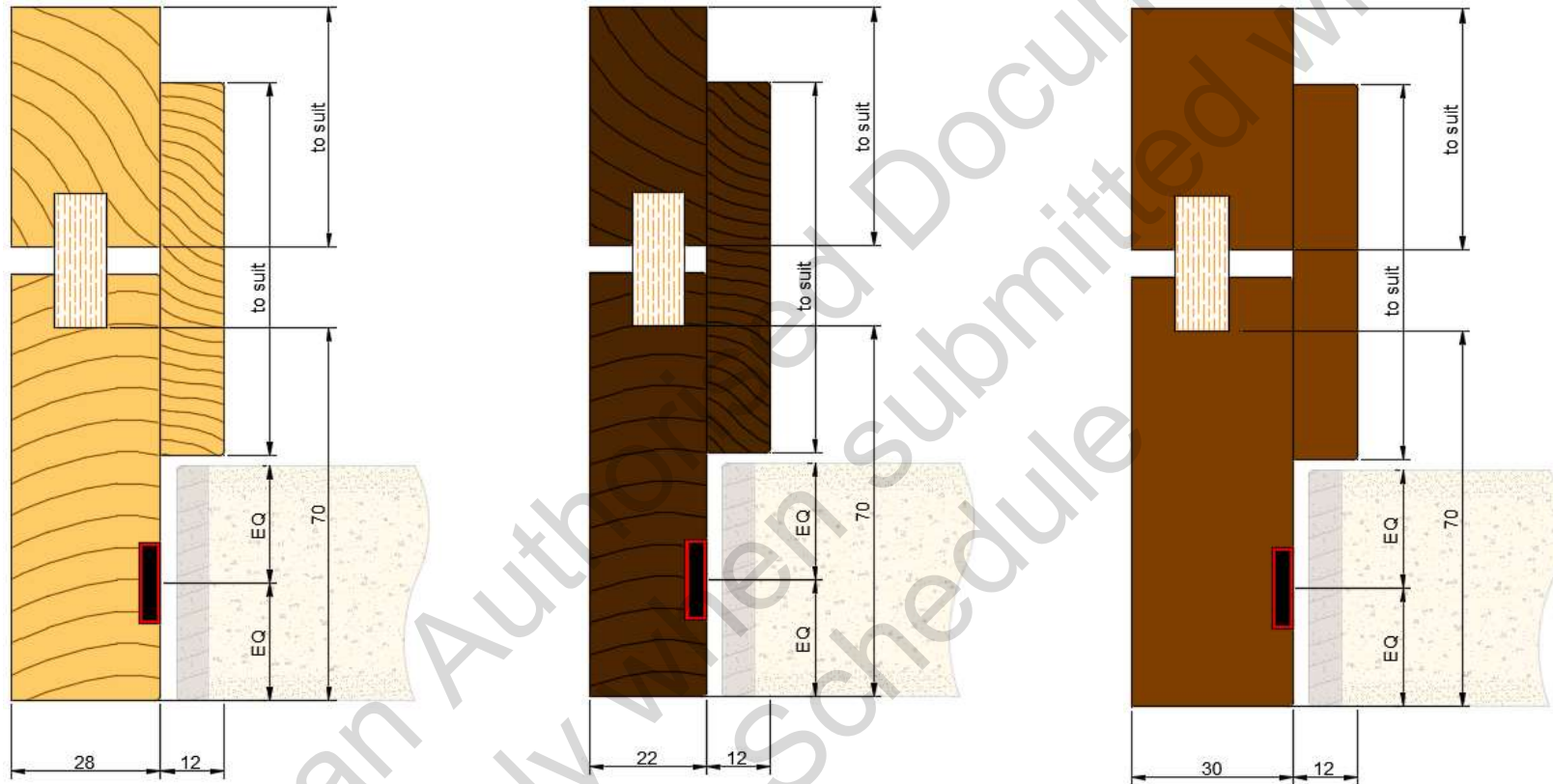
(M): Frame 1

(N): Frame 2

(O): Frame 3

Detail of frames 1, 2 & 3 with basic MDF extension liners with integral (rebated) stop

Note: See Section 12.2 for possible restrictions associated with extension liners



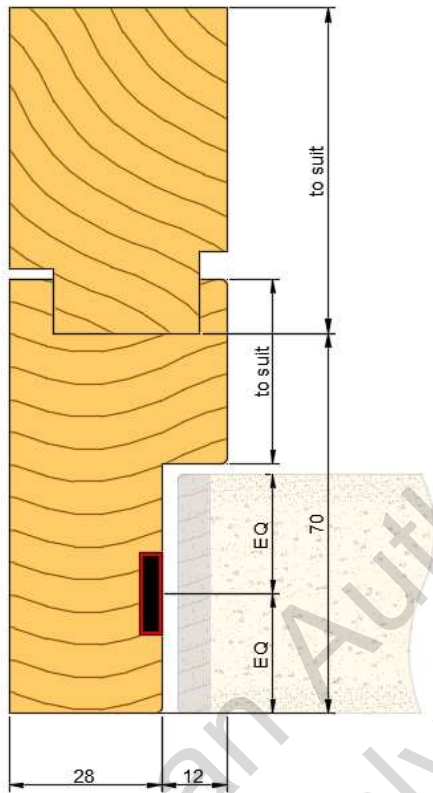
(P): Frame 1

(Q): Frame 2

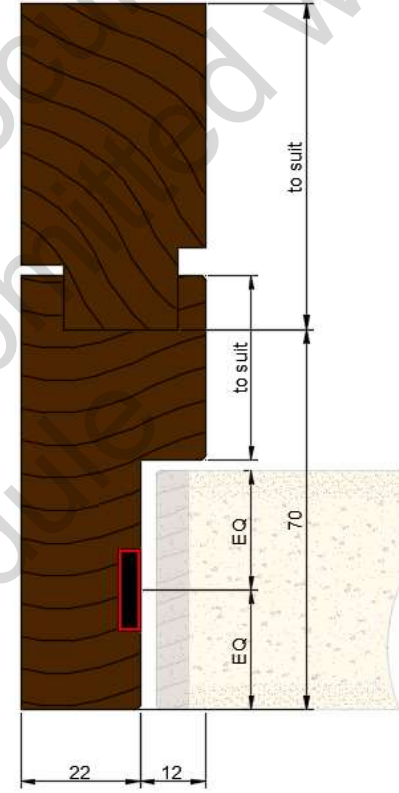
(R): Frame 3

Detail of frames 1, 2 & 3 with premium extension liners and planted stop

Note: See Section 12.2 for possible restrictions associated with extension liners



(S): Frame 1



(T): Frame 2

Detail of frames 1 & 2 with premium extension liners and integral (rebated) stop

Note: See Section 12.2 for possible restrictions associated with extension liners

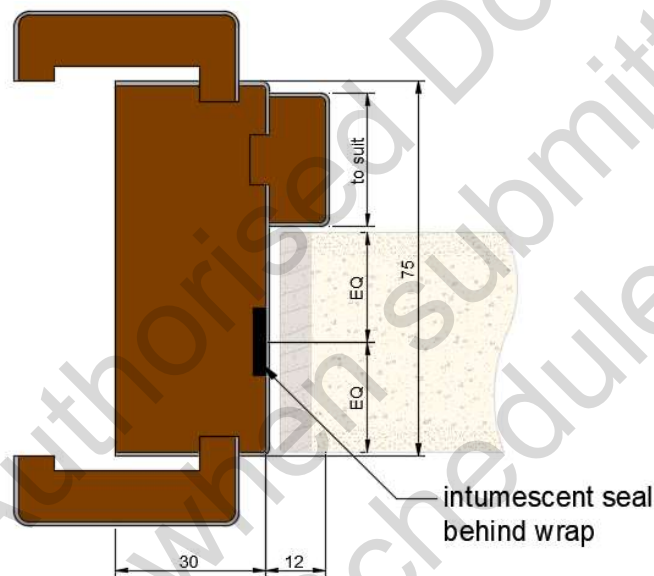
7.2 Details for Frame 4: Morland Firecheck

The Firecheck door frame system is based on MDF frames and architraves decoratively wrapped.

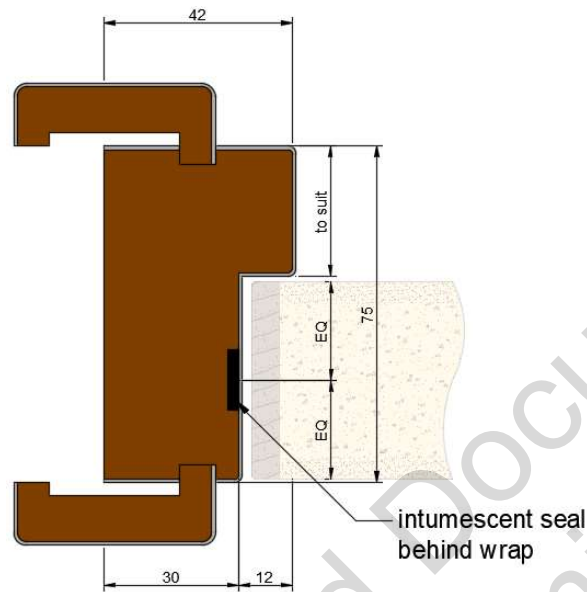
The Morland firecheck frame was tested in WF393430 and WF393450, and the following is permitted:

- Leaf 1 & 2
- Configurations: LSASD, ULSASD
- Maximum Leaf Size: 2400mm (h) x 926mm (w)
- Intumescent seal: 15x4mm Mann McGowan central in frame reveal CF356

The Firecheck frame system is shown in the following drawings and the wall is not shown and the architraves are part of the system



(A): Detail of frame 4 with planted stop



(B): Detail of frame 4 with integral (rebated) stop

The frame can be used with the following hardware:

- Butt Hinges: As described in section 11.5.1
- Single point Lock/latch: As described in section 11.4.1

If following mortice in items of hardware are to be fitted then section 11 or the supporting test evidence should be reviewed for the relevant item, for specific installation or intumescent details:

- Multi-point locks
- Concealed closers
- Concealed hinges
- Magnetic locks
- Cable loops

Transomed or flush overpanels are not permitted

A 12mm deep planted or integral stop is adequate for single acting frames.

Frame joints are as detailed by manufacturer.

7.3 Details for Frame 5: Projecting Softwood, MDF or Hardwood

The projecting frame was tested in CFR1809181_Rev 1 and the following is permitted:

- Leaf 1 & 2
- Configuration: LSASD, ULSASD
- When using frame 5: minimum density of 510 kg/m³ for softwood or Hardwood and 700 kg/m³ for MDF. The maximum projection is 12mm with no cloaking of the wall.
- When using frame 5: minimum density of 510 kg/m³, for softwood or Hardwood and 700 kg/m³ for MDF the maximum project is 18mm with 12mm cloaking of the wall. This is allowed in the opinion of Warrington fire because with a 12mm wrap around piece, this will protect the frame sufficiently that in the opinion of warringtonfire they can be used for this application.

The frame 5 system is shown in the following drawings and the wall/frame relationship is shown in section 12.4.



(A): Detail of frame 5 with planted stop

(B): Detail of frame 5 with integral architrave and planted stop

The test evidence supporting this frame permits a variation to this frame can be used to allow a shadow gap detail the exact details relating to the frame modifications and aperture requirements are detailed in section 12.4

The frame can be used with the following hardware:

- Butt Hinges: As described in section 11.5.1
- Single point Lock/latch: As described in section 11.4.1

Mortice in items of hardware such as:

- Multi-point locks
- Concealed closers
- Concealed hinges
- Magnetic locks
- Cable loops

Are not permitted.

Transomed or flush overpanels are not permitted.

A 12mm deep planted or integral stop is adequate for single acting frames.

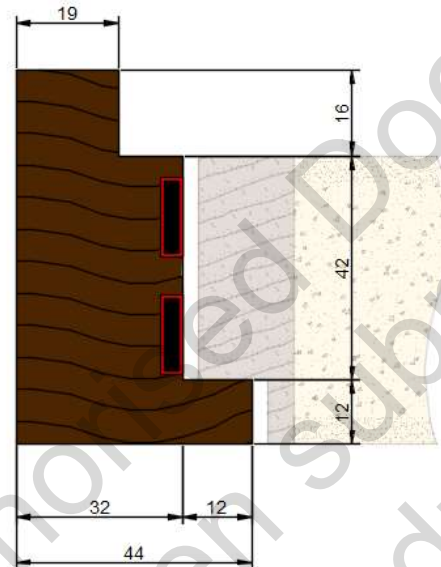
Frame joints may be mortice and tenoned, mitred, half lapped or butted and with no gaps (see section 7.8). All jointing methods require mechanical fixing with the appropriate size ring shank nails or screws.

7.4 Details for Frame 6: Over Rebated Hardwood

The over rebated frame was tested in CFR1808101 and the following is permitted:

- Leaf 2
- Configuration: LSASD, LSADD
- Minimum frame section: 44mm x 70mm (before rebating as shown below)
- Frame material: Hardwood with minimum density of 640 kg/m³

The over rebated frame system is shown in the following drawings and the wall/frame relationship is shown in section 12.5.



Detail of frame 6

The frame can be used with the following standard items of hardware:

- Butt Hinges: As described in section 11.5.1
- Single point Lock/latch: As described in section 11.4.1
- Flush bolts: Maximum size 203mm high, and otherwise as described in section 11.7.2

The frame can be used with the following mortice in items of hardware:

- Single and Multi-point locks
- Concealed closers
- Concealed hinges
- Magnetic locks
- Cable loops

If the above items are to be fitted then section 11 should be reviewed for the relevant item, or the supporting test evidence.

Transomed or flush overpanels are not permitted.

All door frame timber must meet or exceed class J30 as specified in BS EN 942: 2007 (subject to adequate repair of any defects).

7.5 Details for Frame 7: WoodEx Frame

This frame type has been successfully tested in test reference BMT/FEP/F16037 Doorset A, BMT/FEP/F14102 Doorset A & B and WF420277.

The WoodEx door frame is based on engineered softwood or hardwood timber and may be of any of the following specifications.

WoodEx Product	Construction Methods			Minimum Density (kg/m ³)	Moisture content
	Finger jointed (see note 1)	Finger jointed and edge glued (see note 2)	3 layer construction (see note 3)		
Red Grandis	Yes	Yes	Yes	626	12% +/- 2%
Redwood	Yes	Yes	N/A	470 – 520	12% +/- 2%
European Ash	Yes	Yes	Yes	650	12% +/- 2%
European Oak	Yes	Yes	Yes	650	12% +/- 2%
Sapele	Yes	Yes	Yes	650	12% +/- 2%

Notes:

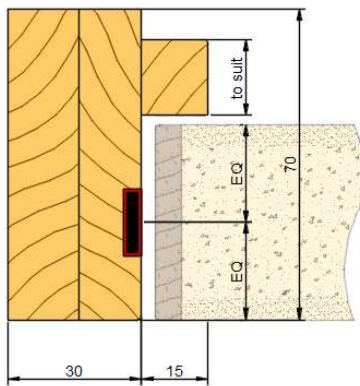
1. Finger jointed lamels are glued together and pressed into long blanks.
2. Finger jointed lamels with additional edge glued timber to provide for wider sections and clear faces.
3. Lamels are pressed and glued together with two high quality clear faces (middle layers may be finger jointed). Alternatively each lamel layer may be finger jointed on request.
4. Lamels may be 20 – 25mm thick. Grandis and Redwood lamels may be 20 – 32mm thick.
5. Construction details for each of the engineered WoodEx products and construction options are held on file at Warringtonfire.
6. Timber source/plantation used for each of the engineered WoodEx products is held in confidence on file at Warringtonfire.
7. Timber for door frames must meet or exceed class J30 as specified in BS EN 942: 2007, providing any defects are adequately repaired.

Based on the test evidence, the use of door frames constructed using the above WoodEx are permitted for the following:

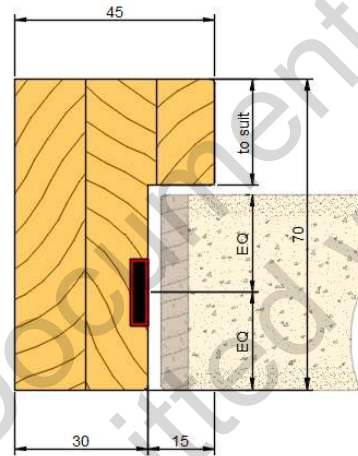
- Leaf 1 & 2
- Configurations: LSASD, ULSASD, LSADD and ULSADD
- Minimum frame section: 30mm x 70mm, plus a minimum 15mm thick planted or integral stop is required.
- Rounded or rebated quirk edges to door frames are not permitted.
- Frame material: WoodEx frames of the specification listed above.

Detail of the WoodEx frame is shown below.

Planted Stop



Integral Stop (rebated)



Detail of frame 7

The frame can be used with the following standard items of hardware:

- Butt Hinges: As described in section 11.5.1
- Single point Lock/latch: As described in section 11.4.1
- Flush bolts: Maximum size 203mm high, and otherwise as described in section 11.7.2
- Mortice in items of hardware listed as follows, are permitted for all WoodEx Frame 7 products listed in the table above:
 - Multi-point locks. As described in section 11.4.2
 - Electro-magnetic locks. As described in section 11.4.3
 - Access control systems. As described in sections 11.4.4.1, 11.4.4.3 and 11.4.4.4
 - Concealed hinges. As described in sections 11.5.2.1, 11.5.2.2, 11.5.2.3 and 11.5.2.5
 - Concealed closers. As described in sections 11.6.2.1 and 11.6.2.2
 - Jamb mounted closers. As described in section 11.6.3
 - Floor springs. As described in sections 11.6.4.1, 11.6.4.2, 11.6.4.4
 - Cable loops. As described in sections 11.10.1, 11.10.3 and 11.10.4

Mortice in items of hardware listed as follows, are not permitted with Redwood, they are only permitted for use with the other WoodEx Frame 7 products listed in the table above:

- Access control system. As described in section 11.4.4.2
- Concealed hinges. As described in sections 11.5.2.4, 11.5.2.6 and 11.5.2.7
- Concealed closers. As described in section 11.6.2.3
- Floor springs. As described in section 11.6.4.3
- Cable loops. As described in section 11.10.2

Transomed or flush overpanels are not permitted.

Frame joints may be mortice and tenoned, mitred, half lapped or butted and with no gaps (see section 7.8). All jointing methods require mechanical fixing with the appropriate size ring shank nails or screws.

7.6 Timber Threshold/Cill: Frame 1, 2 & 3 only

7.6.1 Raised Threshold Detail

A softwood/hardwood timber raised threshold is permitted with these frame types providing it complies with the following:

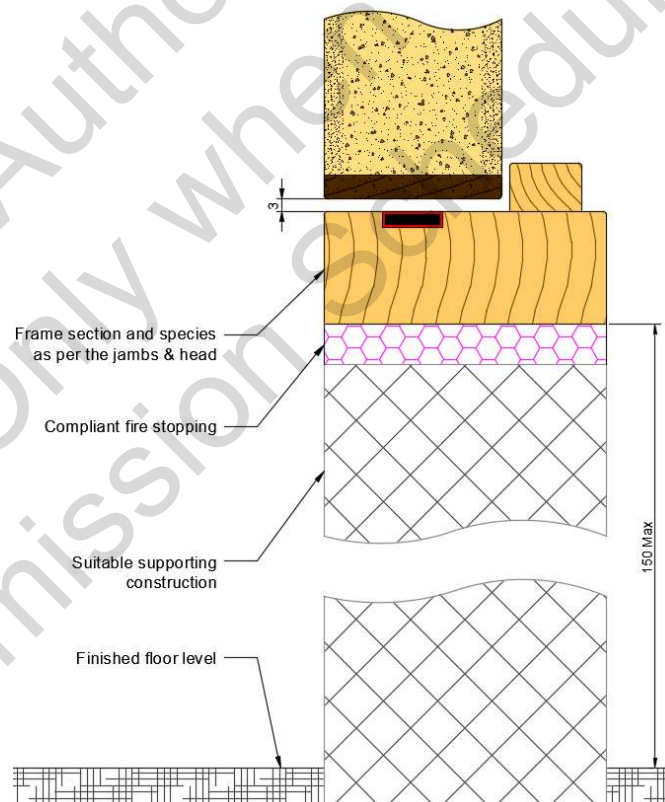
- Leaf 1 & 2
- Configuration: All configurations
- Softwood/Hardwood: minimum density of 510 kg/m³ and 70mm by 32mm raised no more than 150mm from floor level either side.
- Intumescent: 15 x 4 located central in leaf or frame reveal.

7.6.2 Threshold Detail

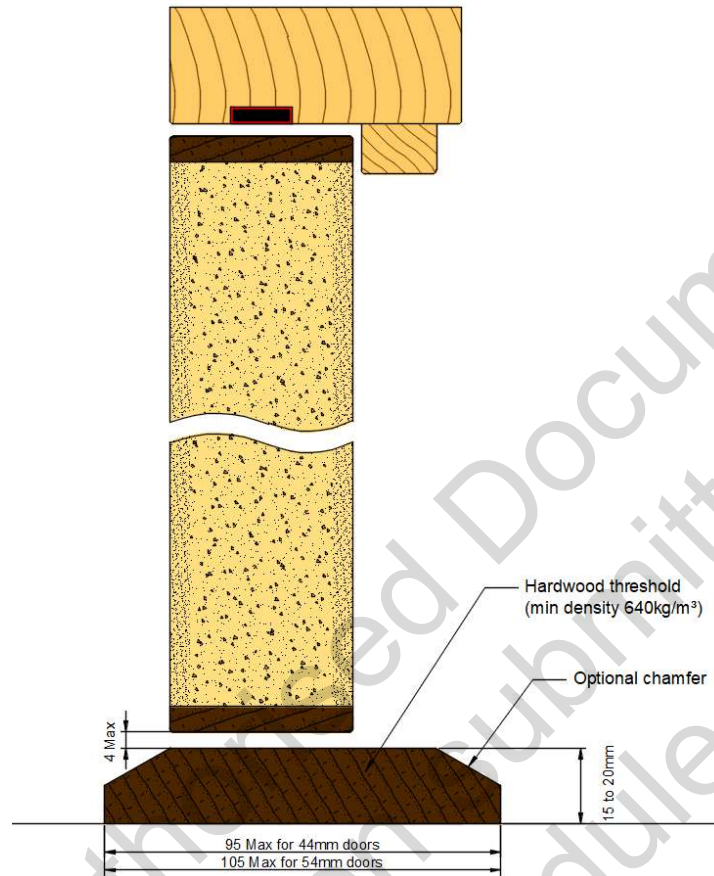
A hardwood timber threshold has been successfully tested with the Prima 30 door blank in test reference PX06466A. A hardwood timber threshold is permitted with these frame types providing it complies with the following:

- Leaf 1 & 2
- Configuration: All configurations
- Hardwood: minimum density of 640 kg/m³ and 15 to 20mm thick.
- Overall depth: 95mm maximum and 105mm maximum for Leaf 1 and 2 respectively.
- Projection of the threshold beyond the closing face of 51mm maximum.
- Optional chamfers as shown in section 7.6.3 are permitted
- The gap between the bottom of the door and the threshold cannot exceed 4mm.

7.6.3 Drawing of Permitted Threshold and cill



(A): Example detail of raised threshold/cill



(B): Example detail of threshold

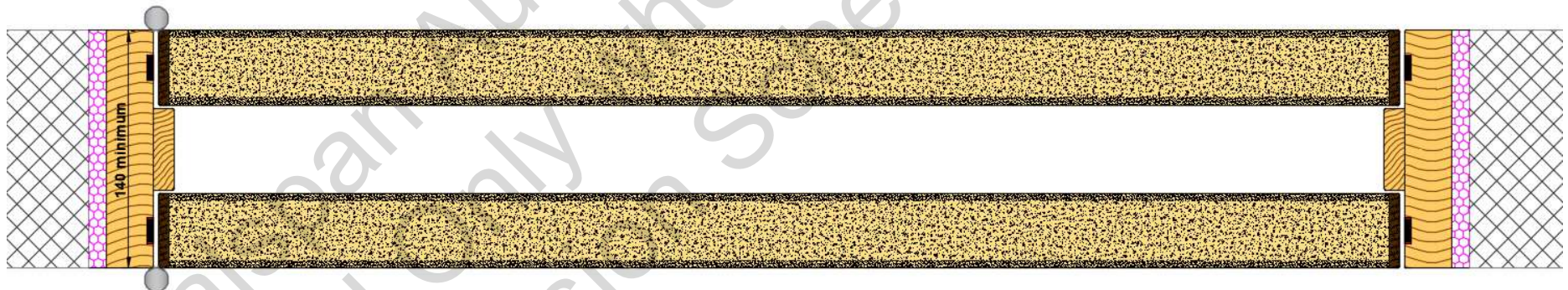
7.7 Interconnecting Doorsets

In certain buildings it may be necessary to provide interconnecting back to back doorsets. These are permitted providing they comply with the following:

- Leaf 1 & 2
- Door Configuration: LSASD
- Frame: Frame 1, 2 & 3
- Minimum frame dimension: 140mm x 32mm (excluding stop)
- Intumescent: 15 x 4 located 15mm from the frame edge on each side (see example drawing)
- Maximum leaf size: 2440mm x 1026mm

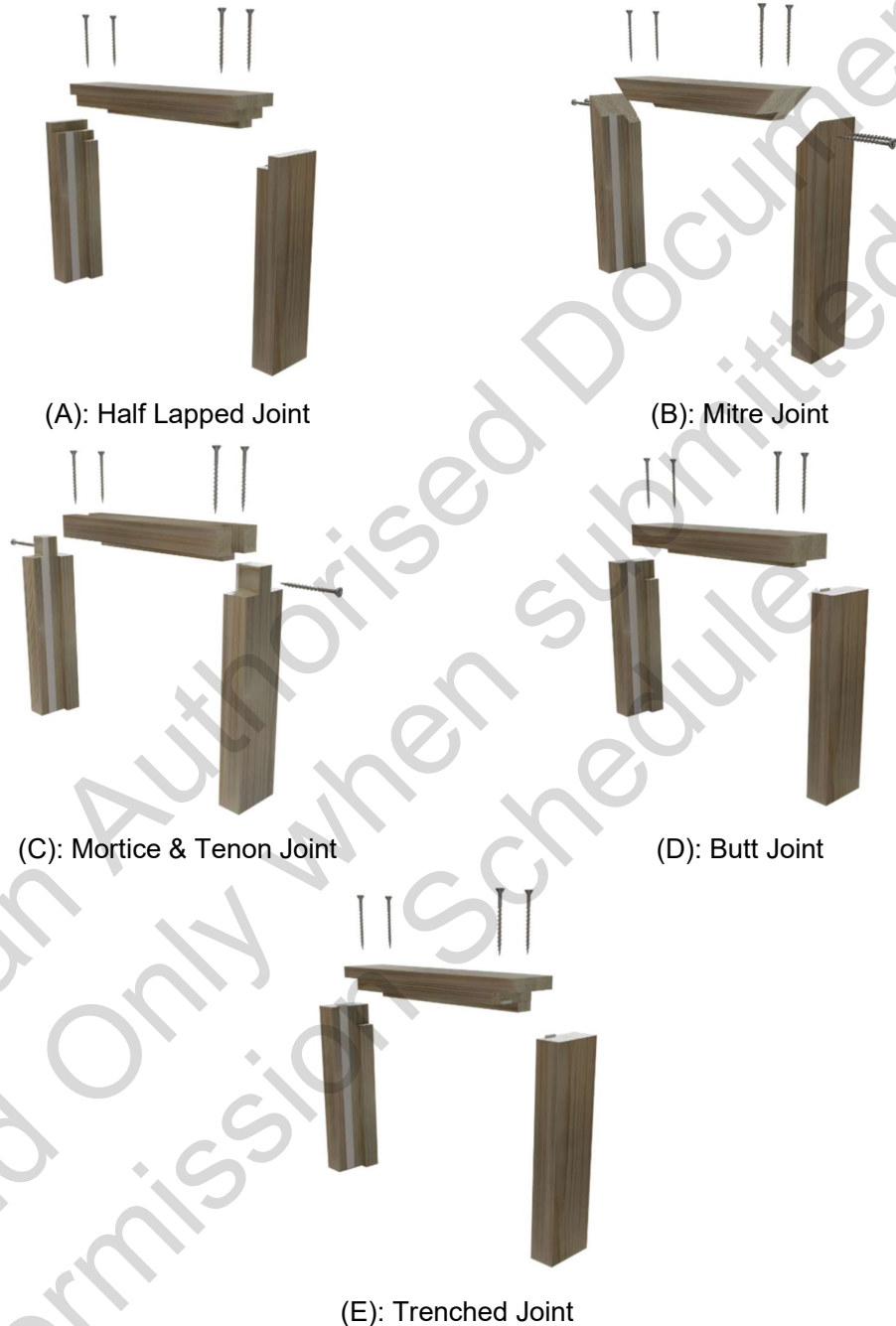
The approval of this design only relates to the fire resisting performance of the interconnecting doorsets for 30 minutes integrity.

Self closing devices are not considered essential for this doorset design provided they are kept locked shut when not in use and the doors carry the appropriate signage.



7.8 Door Frame Joint

The following drawing shows suitable door joint details



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.

8 Overpanels & Sidepanels

There are 2 types of overpanels.

- Transomed overpanels, where the overpanel is fully contained within the doorset.
- Flush overpanels, where the overpanel is flush with the head of the door i.e. no transom present. The head detail between overpanel and the head of the doorset has to be as tested.

Table below specifies the maximum assessed overpanel dimensions.

Maximum Overpanel Dimension		
Configuration	Maximum Overpanel Height (mm)	Width (mm)
Single Leaf doorsets	2000	Overall door width
Double Leaf doorsets	1500	Overall door width

Prima 30 has been tested with an 800mm high flush overpanel in Chilt/RF97091, which provides confidence that the overpanel sizes permitted above will be acceptable. This is because as the overpanel gets higher the influence the increased height has on the bottom edge is minimal as the overpanel is spanning across the doorset.

8.1 Solid Overpanels

The overpanel is to be constructed to the same specification as the door leaf.

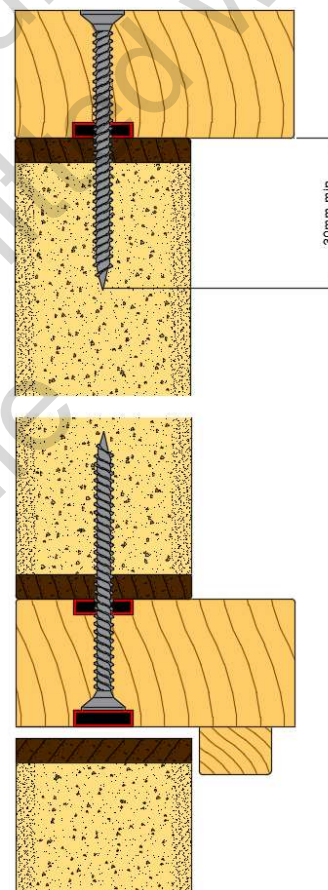
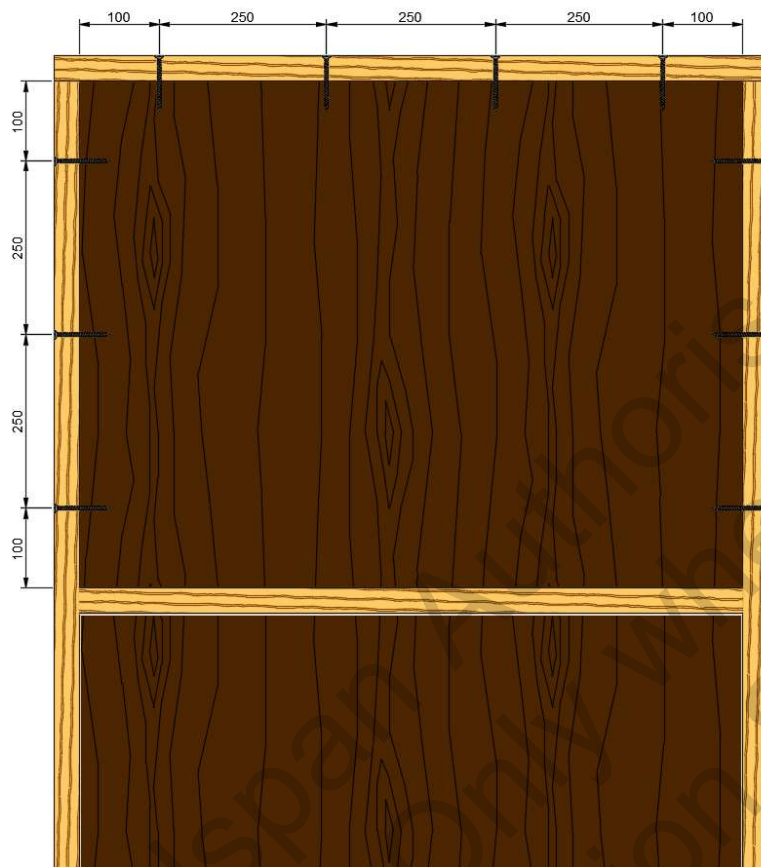
8.1.1 Transom overpanels

These can be supplied for:

- Leaf 1 and 2
- Frame 1 and 2

The transom and door frame must have a minimum dimension of 70mm x 32mm and a minimum density of 510kg/m³. The door frame and transom must meet all the other aspects of the door frame construction and specification, other than the dimensions, door frame material and density stated here.

Transom joints must utilise one of the following methods: mortice and tenon joints or butt joints (see section 7.8). Either method requires 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.



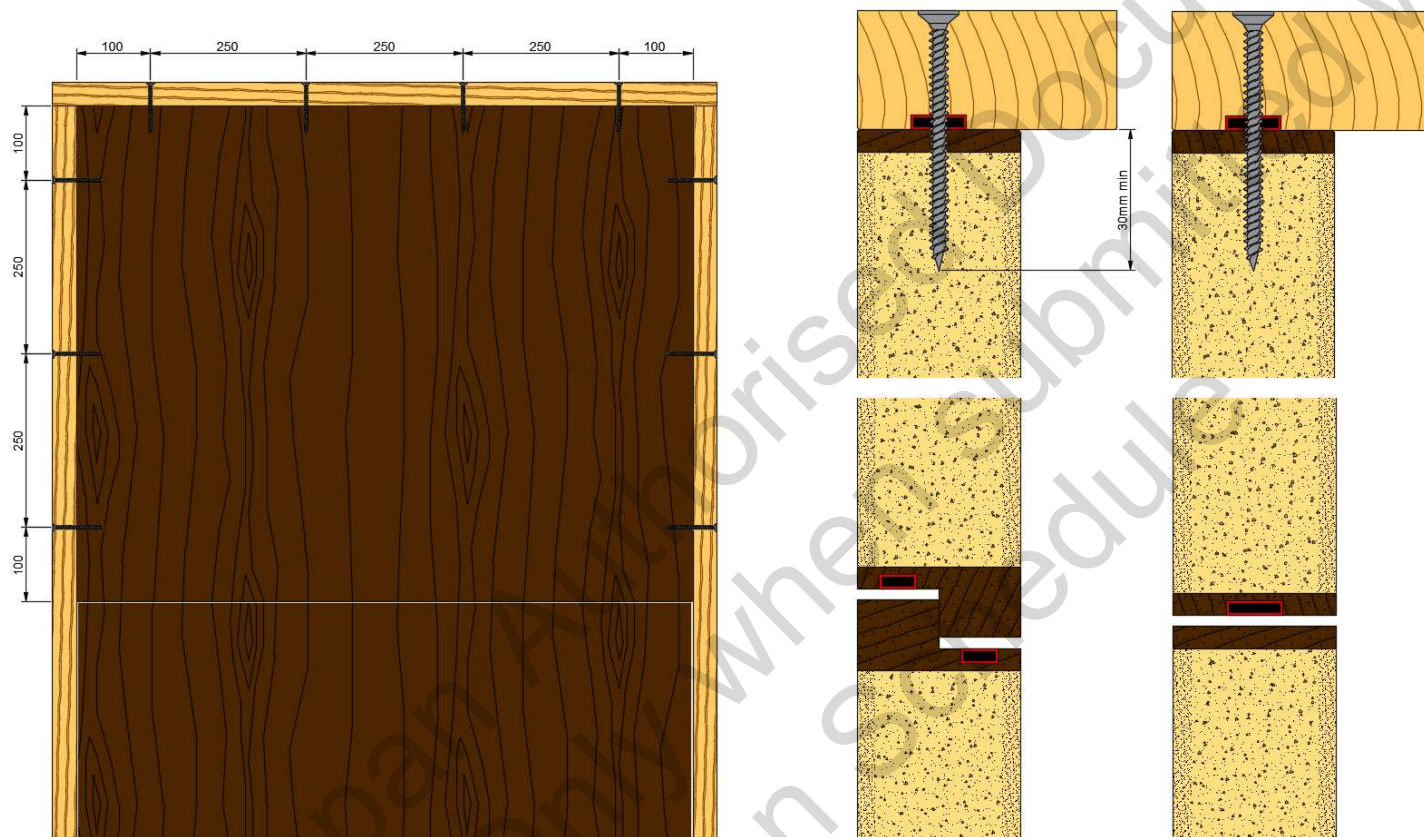
Example detail of transomed overpanel

8.1.2 Flush overpanel

These can be supplied for:

- Tested leaf only
- Tested frame only
- Intumescent specification at overpanel leaf junction as tested.
- Intumescent type as tested.

Halspan Authorised Document
Valid Only when submitted with
Permission Schedule



Example detail of flush and equal rebated overpanel

8.1.3 Overpanel Fixing

Overpanels must be fixed to the frame by the following method:

- 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.

8.1.4 Overpanel Fire Sealing

The jamb intumescent seal detail is to be fitted in the overpanel edges or frame reveal. When the intumescent seals are fitted to all edges of the overpanel, the frame to overpanel junction is permitted to have a maximum 0.5mm gap tolerance.

It is permitted to include a glazed aperture within the overpanel providing the glazing is within the parameters given in section 6.

8.2 Fanlights & Sidelights

8.2.1 General Requirement for Fanlights & Sidelights

There are 2 systems which could be used to create a fanlight or sidelight using 2 different construction methods.

Combination Frames:

This is where a single framing element has been used which separates 2 panes of glass or the glass and doorleaf. This type of construction has been tested in CFR1005241, Chilt/RF03076 and Chilt/RF13063. In addition section 3.2.1 lists a number of test reports developed by others which have tested doors and screen using this construction method. See section 8.2.2.

Jointed Door Frames & Fanlights/Sidelights:

This is where the door leaf has its own door frame and each pane of glass is surrounded by a frame. The individual items are then fixed together to create a door and screen (modular type system). The doorset has to comply with the requirements of this assessment and the individual framed glass panes must comply with their relevant Certifire approval for glass type, glazing system, pane size and timber type and dimensions. See section 8.3.2.

8.2.2 Combination Frames

When constructing a doorset assembly using combination frames the following limitations apply:

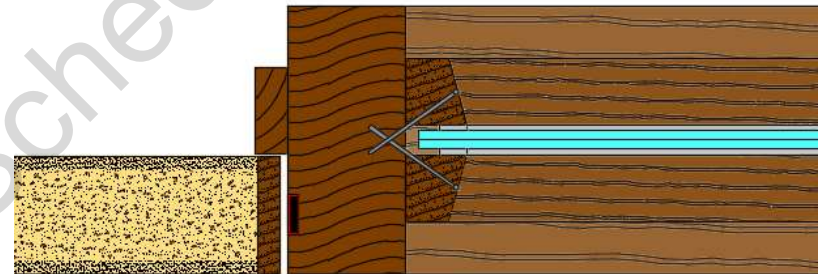
- Frame sections, glass type and size, beads and glazing seals must be as described in the tables in section 8.3
- The centreline of the glass must be aligned with the centreline of the timber frame.
- The maximum width and height of the overall assembly is 2950mm x 2950mm.
- The assembly may only contain either 1no single door or 1no pair of doors.
- The common hanging jamb/screen mullion must run continuously full height of the door and fanlight.
- The sidelights and or fanlights can be glazed or consist of a solid panels constructed and fitted as detailed for overpanels.

This method combines the door frame members with the side screen and fanlight frame members as illustrated in the example below:

8.2.2.1 Drawings for Permitted Combination Frame



(A): Example of combination frame



(B): Example detail of combination frame

8.3 Fanlights & Sidelights: Glass & Glazing Details

There are 2 types of Fanlights and sidelights.

Combination system where the door and glass/solid panel share a mullion or transom or

Jointed system where the door has its own frame and the glass/solid panel has its own frame and is jointed together.

The following sections give details of

- Timber framing details
- Permitted glasses
- Maximum panel size in either Portrait or Landscape orientation
- Glazing details:
 - Glazing material*
 - Bead type and size*
 - Fixings*

8.3.1 Maximum Glass Sizes & Glazing for combination System

8.3.1.1 Fireswiss, Pyrostop 30-10, Pyrobel 16

Transom/mullion details:

- The timber framing must be hardwood with a minimum density of 640kg/m³, and a minimum section of 80mm x 44mm.

Glazing details:

- System Thermaglaze 45
- Beading 25mm high and 30mm wide with 16 deg chamfer (minimum density 640kg/m³) fixed with 50mm screws at 150 centres and 50mm from corner inserted at 30° to the plane of the glass.

Maximum single pane dimensions:

Screen Element	Height (mm)	Width (mm)
Fanlight	866	1872
Side screen	2006	996

8.3.1.2 Pyroguard EW30 (7mm thick) – Pyroguard UK Ltd

Transom/mullion details:

- Minimum 75mm deep x 40mm thick softwood or hardwood (minimum density 510kg/m³). This timber section can be used for both door jambs and transoms above doors included within screens and for the perimeter framing of the screen and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 15mm high x 32mm deep hardwood beads (minimum density 640kg/m³). The bead shape may be square or incorporate a 10 - 15° chamfer
- 50mm long size 6 - 8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30° to the plane of the glass
- 10mm x 2mm Interdens located between the glass and the beads
- 5mm high x 7mm wide x 40mm long hardwood or non-combustible setting blocks with 5mm expansion allowance to all edges.

Maximum single pane dimensions:

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

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

8.3.1.3 Pyroguard EW30 MAXI (11mm thick) – Pyroguard UK Ltd.

Transom/mullion details:

- Minimum 75mm deep x 40mm thick hardwood (minimum density 640kg/m³). This timber section can be used for both door jambs and transoms above doors included within screens and for the perimeter framing of the screen and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 30mm deep hardwood beads (minimum density 640kg/m³). The bead shape may be square or incorporate a 10 - 15° chamfer
- 50mm long size 6 - 8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30° to the plane of the glass
- 10mm x 2mm Interdens located between the glass and the beads
- 5mm high x 11mm wide x 40mm long hardwood or non-combustible setting blocks with 5mm expansion allowance to all edges.

Maximum single pane dimensions:

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

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

8.3.1.4 Pyroguard EI30 (15mm thick) – Pyroguard UK Ltd.

Transom/mullion details:

- Minimum 80mm deep x 40mm thick hardwood (minimum density 640kg/m³). This timber section can be used for both door jambs and transoms above doors included within screens and for the perimeter framing of the screen and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 23mm deep hardwood beads (minimum density 640kg/m³). The bead shape may be square or incorporate a 10 - 15° chamfer;
- 50mm long size 6 - 8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30° to the plane of the glass;
- 7mm x 2mm Egopren glazing tape located between the glass and the beads;
- 15mm x 2mm Kerafix Pan 200 edge seal fitted around edge of glass;
- 3mm high x 15mm wide x 80mm long hardwood or non-combustible setting blocks with 5mm expansion allowance to all edges.

Maximum single pane dimensions:

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

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

8.3.1.5 Pyranova (15mm thick) – Schott Ltd.

Transom/mullion details:

- Minimum 68mm deep x 80mm thick softwood or hardwood (minimum density 400kg/m³). This section must be used for door jambs and transom above head of door leaves;
- Minimum 68mm deep x 40mm thick softwood or hardwood (minimum density 400kg/m³) can be used for the perimeter framing of the screen and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 23.5mm deep hardwood beads (minimum density 640kg/m³). The bead shape may be square or incorporate a 10 - 15° chamfer
- 40mm long size 6 - 8 steel wood screws at maximum of 70mm from corners and 200mm centres inserted at 30° to the plane of the glass
- 8mm x 3mm closed cell foam glazing tape located between the glass and the beads
- 3mm high x 15mm wide x 80mm long hardwood or non-combustible setting blocks.

Maximum single pane dimensions:

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

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

8.3.1.6 Pyroshield 2 (6mm thick) – Pilkington Ltd.

Transom/mullion details:

- Minimum 80mm deep x 44mm thick softwood or hardwood (minimum density 510kg/m³). This timber section can be used for both door jambs and transoms above doors included within screens and for the perimeter framing of the screen and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 15mm high x 20mm deep hardwood beads (minimum density 640kg/m³) with an 18° chamfer
- 40mm long size 6 - 8 steel wood screws at maximum of 50mm from corners and 150mm centres inserted at 45° to the glass
- 10mm x 2mm Interdens located between the glass and the beads
- 3mm high x 6mm wide x 40mm long hardwood or non-combustible setting blocks fitted at 300mm centres along bottom edge of glass with 3mm expansion allowance to all edges.

Maximum single pane dimensions:

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

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

8.3.1.7 Pyrodur 30-104 (7mm thick) – Pilkington Ltd.

Transom/mullion details:

- Minimum 80mm deep x 44mm thick hardwood (minimum density 640kg/m³). This timber section can be used for both door jambs and transoms above doors included within screens and for the perimeter framing of the screen and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 20mm deep hardwood beads (minimum density 640kg/m³) with a 15° chamfer;
- 40mm long size 6 - 8 steel wood screws at maximum of 50mm from corners and 150mm centres inserted at 30° to the glass;
- 20mm x 2mm Interdens located between the glass and the beads;
- 3mm high x 6mm wide x 40mm long hardwood or non-combustible setting blocks fitted at 300mm centres along bottom edge of glass with 3mm expansion allowance to all edges.

Maximum single pane dimensions:

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

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

8.3.1.8 Pyrodur 60-10 (10mm thick) – Pilkington Ltd.

Transom/mullion details:

- Minimum 80mm deep x 44mm thick hardwood (minimum density 640kg/m³). This timber section can be used for both door jambs and transoms above doors included within screens and for the perimeter framing of the screen and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 20mm deep hardwood beads (minimum density 640kg/m³) with a 15° chamfer
- 40mm long size 6 - 8 steel wood screws at maximum of 50mm from corners and 150mm centres inserted at 30° to the glass
- 20mm x 2mm Interdens located between the glass and the beads
- 3mm high x 6mm wide x 40mm long hardwood or non-combustible setting blocks fitted at 300mm centres along bottom edge of glass with 3mm expansion allowance to all edges.

Maximum single pane dimensions:

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

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

8.3.1.9 Pyrostop 30-10 (15mm thick) – Pilkington Ltd.

Transom/mullion details:

- Minimum 95mm deep x 44mm thick hardwood (minimum density 640kg/m³). This timber section can be used for both door jambs and transoms above doors included within screens and for the perimeter framing of the screen and the transoms and mullions separating individual panes of glass within the fanlights and side screens.

Glazing details:

- 20mm high x 37mm deep hardwood beads (minimum density 640kg/m³). Can be square or chamfered
- 60mm long size 6 - 8 steel wood screws at maximum of 50mm from corners and 150mm centres inserted at 45° to the glass
- 12mm x 3mm Hodgsons Sealants Firestrip 30 located between the glass and the beads
- 5mm high x 15mm wide x 40mm long hardwood or non-combustible setting blocks fitted at 300mm centres along bottom edge of glass with 5mm expansion allowance to all edges.

Maximum single pane dimensions:

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

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

8.3.2 Jointed Door Frames & Fanlights/Sidelights

The approval of fanlights/sidelights which are joined on to compliant doorsets is based on the parameters within the Certifire Certificate of Approval documents for the glass type being used.

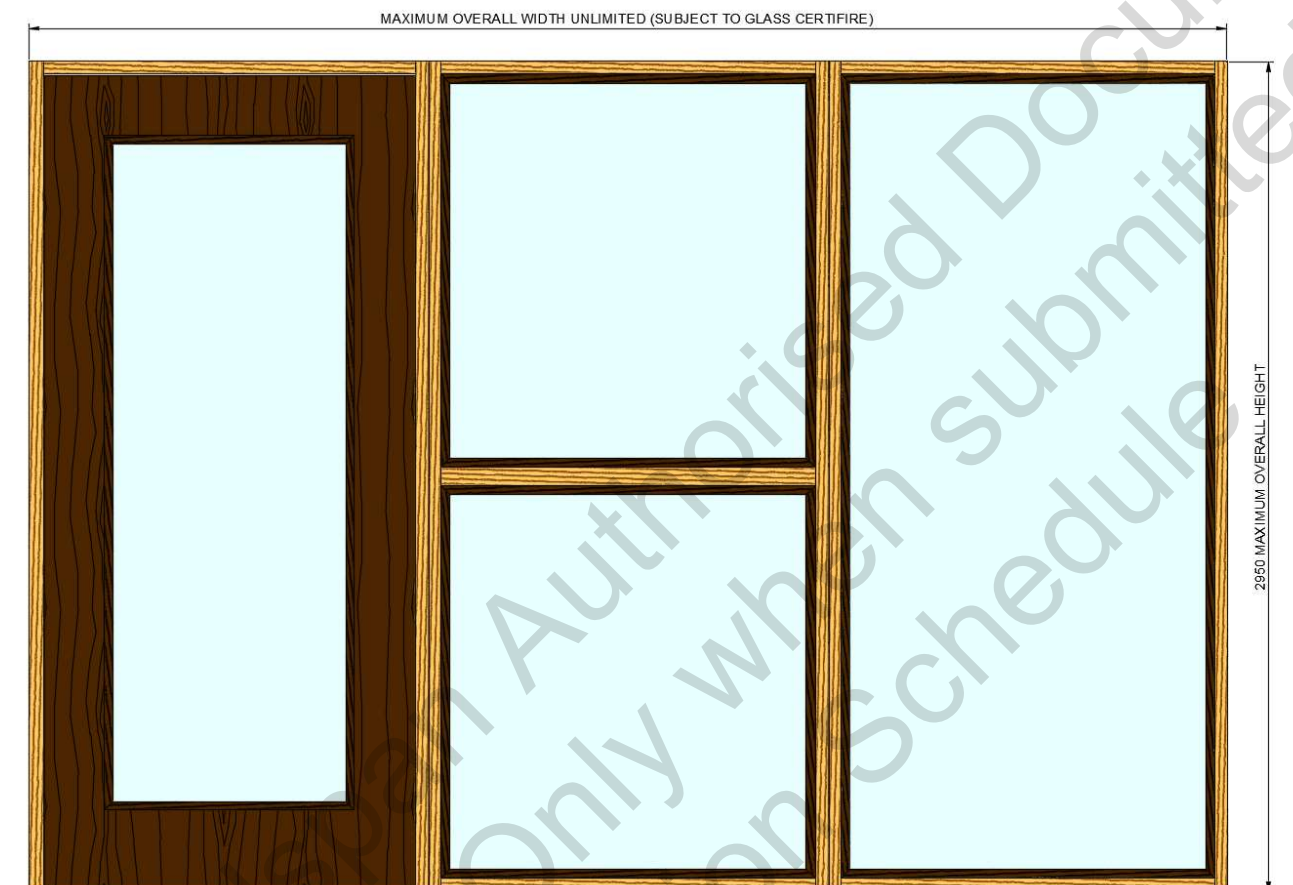
All specifications for the door, door frame, any glazing within the door leaf/leaves, intumescent seals, hardware and intumescent protection must be as laid out within this assessment. The Certifire Certificate of Approval relates only to the fanlight/sidelight (side screen) glass, framing members, glazing beads, fixings and glazing seals.

The following general principles apply:

1. The maximum height of the overall assembly is 2950mm.
2. The maximum width is unlimited provided the doorset and any solid panels comply with this field of application and each glass panel complies with the Certifire approval.
3. The sidelights and or fanlights can be glazed or consist of solid panels constructed and fitted as detailed for overpanels.

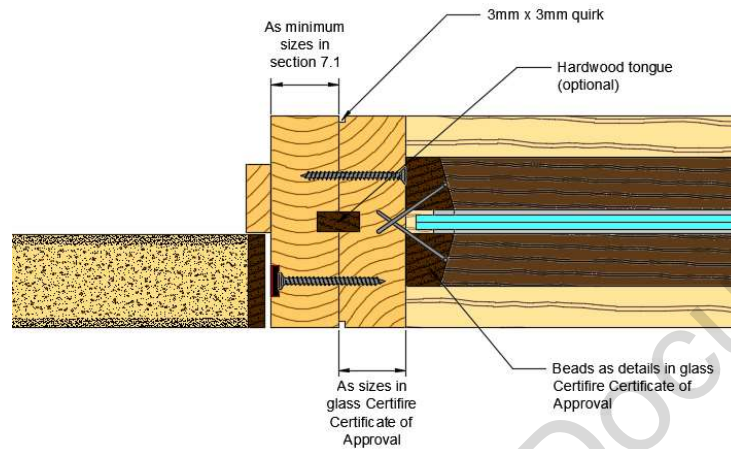
An example of a jointed door frame and sidelight can be seen below:

8.3.2.1 Example Drawing of Jointed Frames

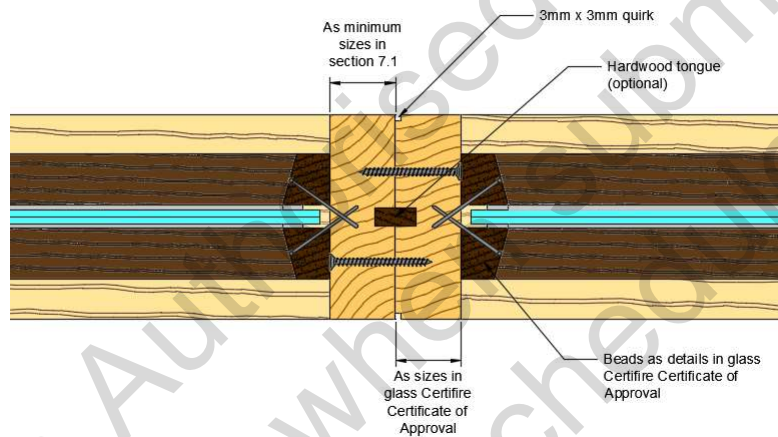


(A): Example of jointed frame

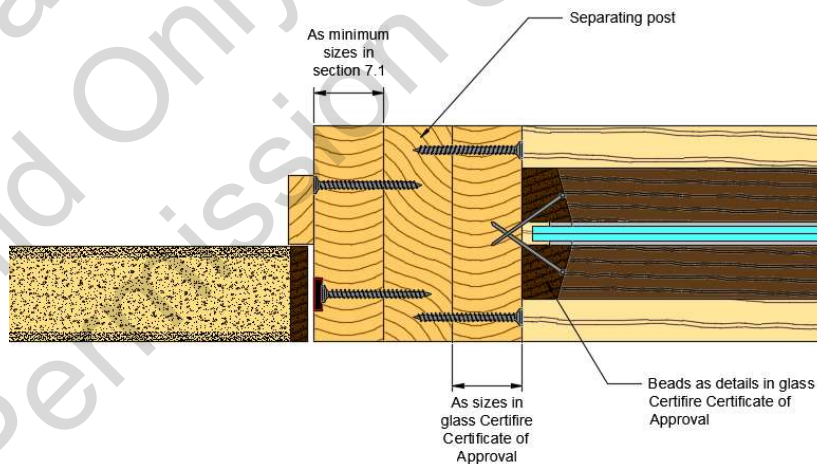
The framing can be made up of various sections as per the options shown below:



(B): Example detail of finger jointed door frame to screen frame



(C): Example detail of finger jointed screen frame to screen frame



(D): Example detail of jointed door frame to screen frame with a separating post

Note:

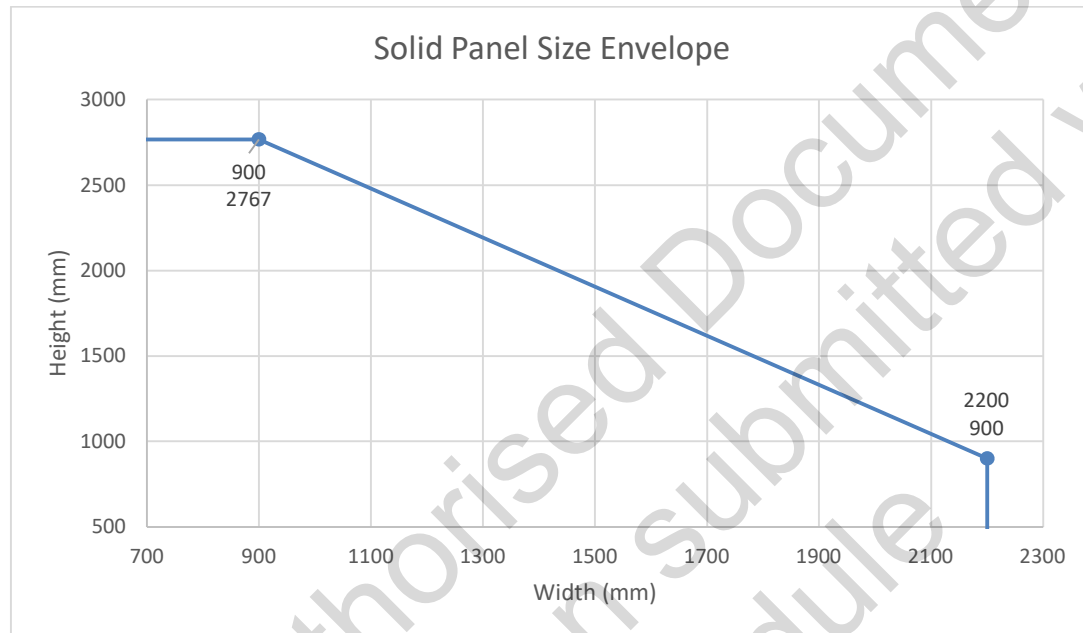
1. When using separate sections of timber, as shown above, each section must be suitably fixed to one another using appropriate steel screw fixings and glued using one of the adhesives approved for the lipping in the adhesive section of this report.
2. Screws must be fixed at 600mm centres and located to approximately 2/3 depth of the adjacent timber section.
3. The overall dimensions of the door frame and frame around glass/solid panel must not be less than 80mm by 44mm.
4. Joints must be tight with no gaps.
5. It is permitted to include maximum 3mm (w) x 3mm (d) quirks at the junction of each timber section.
6. Drawing is representative of each type of common frame member; actual construction in terms of intumescent seal location and material, etc. must be as given within this document for the doorset and the Certifire certificate for the sidepanels.
7. The following example shows a permitted arrangement for glazing within a solid panel which is permitted provided the requirement given in section 6 are complied with.

8.3.3 Solid Panel

Leaf 1 and 2 are permitted.

Solid panels can be fitted in lieu of glazing based on test Chilt/RF13063. Side panels can be fitted providing the following is complied with:

- Maximum size in portrait orientation: 2767mm high x 900mm wide
- Maximum size in landscape orientation: 2200 mm wide x 900mm high



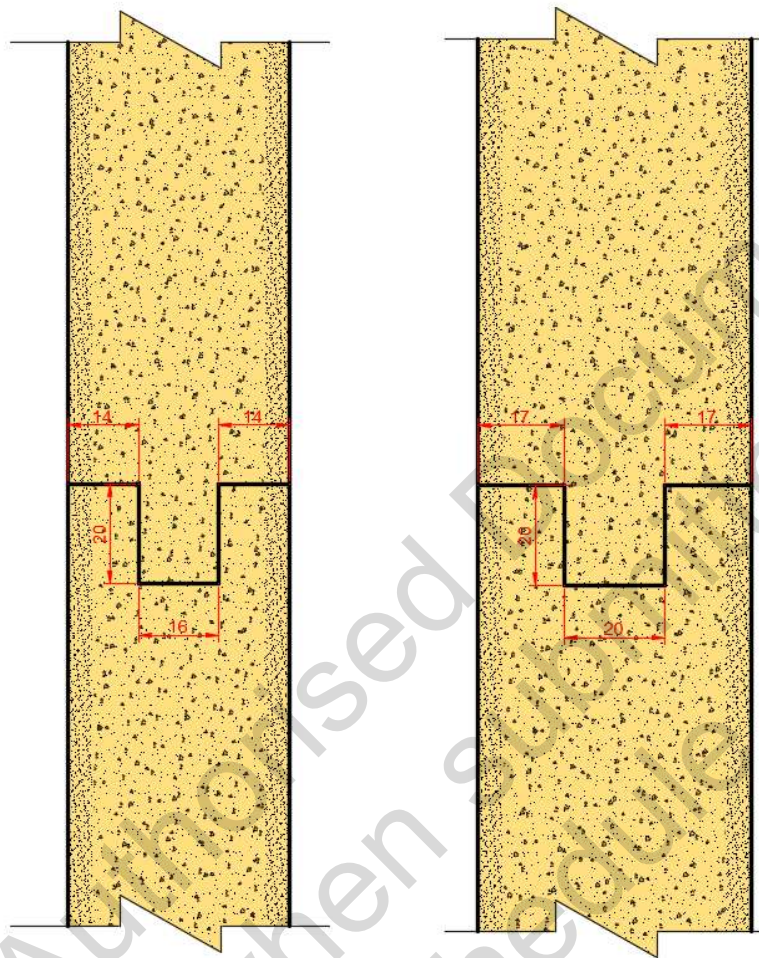
The panel to be lipped on all 4 edges with a 15 x 4mm intumescent seal on all four edges.

The solid side panels must be fixed in line with the fixing details for overpanels given in section 8.1.3.

The side panel can be made from 2 pieces provided the construction joint:

- Is within 1000mm of the threshold
- Includes a 40 x 15mm thick softwood biscuit (minimum density 510kg/m³) located central in panel thickness
- Panels can be formed by tongued and groove panel joint detail, see drawing below. This is based on scaled down detail successfully tested for 60 minutes.

Biscuit and panel joints to be bonded together using PU glue.



(A): 44mm core

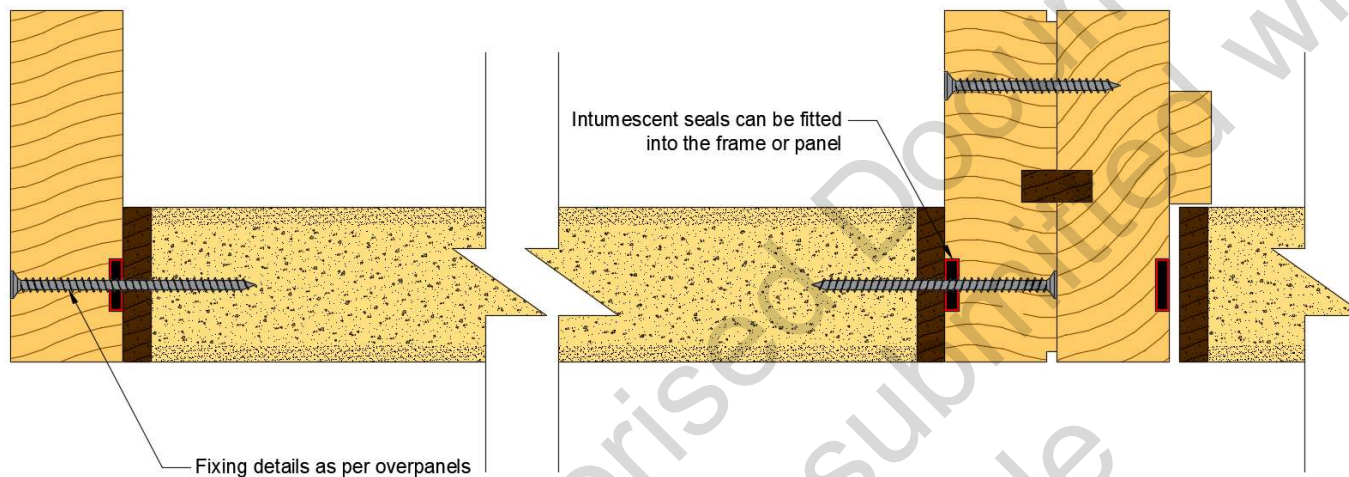
(B): 54mm core

Example of tongue and groove panel joint detail

8.3.3.1 Example Drawings for Solid Side Panel with Glazing



(A): Example of solid side panel with glazing



(B): Example detail of side panel fixing

9 Intumescent

9.1 Essential Hardware Protection

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

Hardware Intumescent Specification		
Application	Location	Product & Manufacturer
Butt Hinges	Not required for Frame 1, 2, 3, 5 & 6	
	For frame 4 & 7 under both hinge blades	1mm Therm-A-Strip – Intumescent Seals Ltd 1mm Interdens – Dufaylite Developments Ltd
	With concealed intumescent (see section 9.2) under both hinge blades	1mm Lorient Interdens
Lock/latches	Under forend & keep if the forend or keep exceeds 150mm up to the maximum assessed dimension	1mm Interdens – Dufaylite Developments Ltd. 1mm MAP paper – Lorient Polyproducts Ltd. 1mm Pyrostrip 300 – Mann McGowan 1mm Therm-A-Strip – Intumescent Seals Ltd. 1mm SLS-PAD-109 – Halspan Ltd. 1mm SLS-PAD-110 – Halspan Ltd 1mm Graphite – Seal Tight Solutions Ltd
	With concealed intumescent (see section 9.2) under forend and keep of all locks/latches	1mm Lorient Interdens
	With unequal rebated edges (see section 5.4.3) and equal rebated edges (see section 5.4.1) under forend and keep of all locks/latches	1mm SLS-PAD-109 – Halspan Ltd.
Top pivots & flush bolts & Bottom straps	Lining all sides of the mortices	2mm Interdens – Dufaylite Developments Ltd. 2mm MAP paper – Lorient Polyproducts Ltd. 2mm Therm-A-Strip – Intumescent Seals Ltd. 2mm Therm-A-Flex – Intumescent Seals Ltd. 1mm SLS-PAD-111 – Halspan Ltd. 1mm SLS-PAD-121 – Halspan Ltd 1mm Graphite – Seal Tight Solutions Ltd 2mm Graphite – Kilargo Seals

Note:

The seal specification for each configuration is contained in sections 4.5.6 to 4.5.20.

While not essential, it is permitted to use 1mm thick MAP, Interdens or non-pressure forming graphite behind hinge blades and around lock bodies. Providing this additional protection will only enhance performance.

9.2 Concealed Intumescent Materials behind Lippings

Leaf 1 design has been successfully tested in test reference Chilt/RF00068A with intumescent material concealed in the rear of the vertical edge lippings. The permitted leaf sizes, configurations and intumescent specification are given in section 4.5.9 LSASD reference AH6 and section 4.5.10 ULSASD reference BH6.

The following construction details must also be followed:

1. The door must only be lipped on the vertical edges and glued using PVA type adhesive.
2. The lippings must be hardwood of minimum density 640kg/m³.
3. The lippings must be flat and fall within the range of 8 – 12mm thick.
4. The door frame must be a minimum of 70mm (w) x 32mm (t) and constructed from hardwood of minimum density 640kg/m³ – frame 2
5. 1mm thick intumescent gaskets must be fitted under all hinge blades, lock forends and keeps.

All other construction details may be as specified in this document, as appropriate.

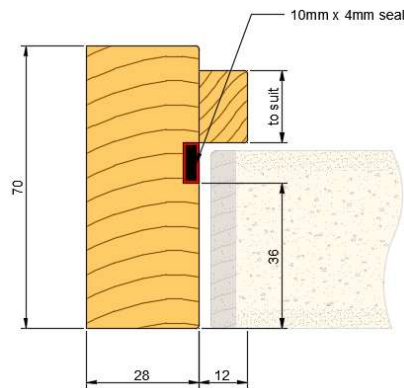
9.3 Offset Intumescent

Leaf 1 design has been successfully tested in test reference Chilt/RF02098A with offset intumescent.

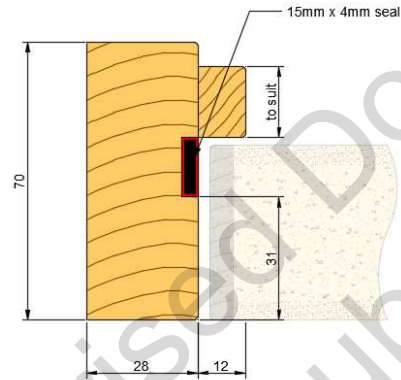
The test for this design was conducted with the doorset hung such that the door leaf opened towards the fire. If the tested design were to be tested opening away from the fire it would be expected that the presence of the stop to the fire side would protect the leaf edge from exposure to the fire and delay distortion until the stop had been burnt away and also that activation of the intumescent seal would occur at this delayed time. It is therefore assessed that for this offset intumescent design the more onerous test was conducted in terms of fire resistance performance. Based on this test, assessment is made that doorsets incorporating offset intumescent may be hung either away from or towards the fire risk side of the doorset.

The permitted leaf sizes, configurations and intumescent specification are given in section 4.5.9 LSASD reference AH3 and section 4.5.10 ULSASD reference BH3.

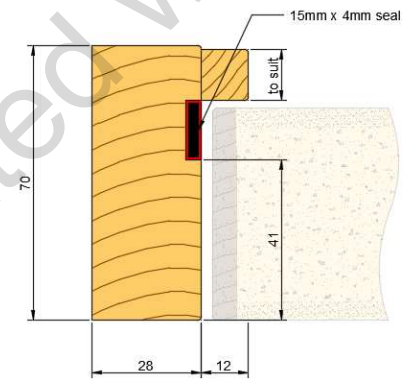
The following drawing shows the arrangement of the intumescent in Leaf 1 and Leaf 2.



(A): 10x4mm seal arrangement for 44mm door (Leaf 1)



(B): 15x4mm seal arrangement for 44mm door (Leaf 1)



(C): 15x4mm seal arrangement for 54mm door (Leaf 2)

10 Adhesives

The following adhesives must be used in construction:

Element	Product/Material Type
Decorative Facings	UF, PF, PU, PVA, PVAc or contact adhesive (see note below)
Timber lipping	UF, PF, PU, PVA, PVAc and PU hotmelt
T lippings	UF, PF, PU, PVA and PVAc
PVC lipping	PU, EVA hotmelt and contact adhesive
ABS Lipping	PU
Lipping incorporating concealed intumescent	PVA
Additional MDF Facings	UF, PF, PU, PVA or PVAc
Aperture liner	UF, PVA and PU

Note:

Contact adhesive has been permitted as an acceptable adhesive for decorative facings as the outer decorative facing will have negligible effect on the stability of the door leaf and will be rapidly consumed in fire test conditions. Decorative facings are given in section 5.6.2

11 Hardware

11.1 General

The following section details the permitted scope and constraints for fitting hardware to this door design. The following items of hardware must also bear the UKCA or CE Mark in addition to the requirements outlined in the following sections. The UKCA or CE mark must indicate that the hardware is suitable for fire doors in the classification code and declaration of performance issued by the hardware manufacturer:

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

The following sections consider the essential items of hardware used on these doorsets.

Each item of hardware is considered in each section giving the items of hardware which

- Have been tested – this information is collated in Appendix B
- Can be used as a result of an assessment of the appropriateness of the item of hardware, based on test evidence not commissioned by Halspan
- Can be used as a result of the CERTIFIRE approval of the item of hardware

Each section will consider the named item of hardware and detail if there are any limitations associated with

- Leaf size
- Configuration
- Intumescent seals
- Intumescent protection
- Frame

No item of hardware should be within

- 200mm of another item of hardware at the hanging jamb or head
- 300mm of another item of hardware at a meeting edge or closing edge as tested in WF45117.

The mortice for the hardware should be no closer than 20mm to any glazed aperture within the leaf.

Hardware items should generally be fitted in accordance with the manufacturer's instructions.

11.2 Hardware with Rebated Meeting Edge

The hardware for a rebated meeting edge needs to be considered to ensure that it can be fitted into the edges of the doorset without compromising the meeting edge.

11.2.1 Hardware with Equal Rebated Meeting Edge

A lock has been successfully tested in test reference WF414679 with an equal rebated meeting edge. Single-point locks (section 11.4.1) are suitable for use with equal rebated meeting edges, subject to the following additional requirements being followed:

It is required that the forend is no wider than 22mm as tested in WF414679, and the strike plate is no wider than 24mm, so as to not interrupt the intumescent seals more than the tested arrangement. The hardware protection detailed in section 9.1 must be followed.

A steel forend conversion set for the lock/latch or a lock/latch incorporating a rebated forend can only be fitted when covered by CERTIFIRE approval for an ITT designated doorset, (i.e. a doorset incorporating Intumescent, Timber leaf and Timber frame). This is acceptable providing all the requirements for the inclusion of the lock/latch required within this Field of Application and the Certifire certificate are complied with.

Flush bolts are not permitted with equal rebated meeting edges with this design. The guidance for other bolt types must be followed as in section 11.7.

11.2.2 Hardware with Unequal Rebated Meeting Edge

A lock/latch is permitted to be fitted when contained entirely within an unequal rebate (see section 5.4.3) and in this case the protection detailed in section 9.1 applies.

Flush bolts are permitted to be fitted when an unequal rebate is present and the flush bolt does not interrupt the intumescent seal. The guidance in section 9 for flush bolts shall be followed.

The guidance for a door selector must be followed as in section 11.8.

11.3 Essential Hardware

The following table details the essential hardware for door leaf configuration.

The following table includes a self closing device, but for some permanently locked fire doors a closer is not used, providing it is fitted with the appropriate signage.

Configuration	Essential hardware						
	Hinges	Latch	Closer (overhead face-fixed)	Floor spring	Top pivot / Bottom strap	Bolts (Flush or Surface- mounted)	Selector (if meeting edges are rebated)
LSASD	✓	✓	✓				
ULSASD	✓		✓				
DASD				✓	✓		
LSASD+OP	✓	✓	✓				
ULSASD+OP	✓		✓				
DASD+OP				✓	✓		
LSADD	✓	✓	✓			✓	✓
ULSADD	✓		✓				✓
DADD				✓	✓		
LSADD+OP	✓	✓	✓			✓	✓
ULSADD+OP	✓		✓				✓
DADD+OP				✓	✓		

Note: It is permitted to omit the door closer and fit bolts to the inactive leaf of unlatched double doorsets. The active leaf must be fitted with a door closer and both leaves must carry the appropriate signage.

Note on Automatic Closing:

For single action doorsets, in addition to overhead face fixed closers, other methods of self closing are possible such as:

- Concealed closer at head of door
- Jamb mounted closer
- Single action floor springs

For double action doorsets, in addition to top pivots and floor springs, other methods of self closing are possible such as Transom mounted closers but these are not covered by this assessment.

Irrespective of how automatic closing is achieved the item of hardware must have suitable and appropriate test evidence. Further details on self closing devices for this door design are given in section 11.6.

11.4 Latches & locks

11.4.1 Single Point latches & locks

A single point primary latch is suitable however a secondary latch/lock may be used for increased security. The following details apply:

- Leaf: Leaf 1 & 2
- Frame: Frames 1, 2, 3, 4, 5, 6, 7
- Configurations that must include latches LSASD, LSASDOP, LSADD, LSADDOP
(*check configuration limitations on Frame 4, 5, 6 and 7*)

A single point primary lock (i.e. a locking mechanism only) is suitable however a secondary lock may be used for increased security. The following details apply:

- Leaf option: Leaf 1, 2 and 3
- Frame option: Frame 1, 2, 3, 4, 5, 6, 7
- Configurations when only lock fitted ULSASD, ULSASDOP, ULSADD, ULSADDOP
(*check configuration limitations on Frame 4, 5, 6 and 7*)

Configurations that include roller catches and locks without latches (with self closing devices) are considered to perform in a fire test as unlatched as there is no positive latching mechanism.

Intumescent requirements:

- Single point latch located in meeting edges must use a double strip intumescent detail in addition to the lock protection, as required.

Latches and locks tested and listed in Appendix B are suitable.

Based on the maximum size of lock tested in single and double leaf configurations, alternative latches/locks which meet the following specification are acceptable:

- A latch/lock which has been tested to BS 476 Part 22 1987 or BSEN 1634 Part 1 in a solid timber doorset 44mm thick and achieved a minimum of 30 minutes integrity performance. The higher specification of hardware intumescent protection as tested or as required for the inclusion of the lock/latch within this Field of Application must be used. For example if the lock/latch test specifies intumescent protection to all concealed faces of the lock/latch and this Field of Application does not require intumescent protection to all concealed faces of the lock/latch, the fitting of the intumescent specified in the test report is required.
- A Certifire approved lock/latch which is approved for 30 minutes in an ITT doorset, (i.e. a doorset incorporating Intumescent, Timber leaf and Timber frame), is acceptable providing the higher specification of hardware intumescent protection as required for the inclusion of the lock/latch within this Field of Application or the Certifire certificate are complied with. For example if the Certifire Certificate specifies intumescent protection to all concealed faces of the lock/latch and this Field of Application does not require intumescent protection to all concealed faced of the lock/latch, the fitting of the intumescent specified in the Certifire Certificate is required.

Tested and alternative latches/locks must also comply with the following specification:

Tested and Alternative Latch & Lock Specification	
Element	Specification
Maximum forend and strike plate dimensions	235mm high by 25mm wide by 4mm thick
Maximum body dimensions	169mm high by 130mm wide by 18mm thick
Intumescent protection	see section 9
Materials	All parts essential to the locking/latching action (including the latch bolt, forend and strike) to be steel, stainless steel or brass with a melting point ≥ 800 C
Location (of handle)	<u>Primary latch/lock location:</u> 800 – 1300mm from the threshold
	<u>Secondary latch/lock location:</u> must be no closer than 300mm from primary latch/lock and the top of the latch/lock forend no closer than 150mm to leaf head

Single point lock/latches are permitted with equal and unequal rebated meeting edges, subject to following the requirements in section 11.2.1 and 11.2.2 respectively.

11.4.2 Multi point latches & locks

The multi point latches and locks detailed in the following sections have been successfully tested with the Prima 30 door blanks, and are therefore suitable for use within the scope stated herein.

A minimum door leaf size will apply when a 3 Point locking system is introduced into the design to ensure that there is a minimum of 150mm from the top of the forend and top of the top strike plate to the head of the leaf and 150mm from the bottom of the forend and bottom of the bottom strike plate.

Multi point lock/latches are not permitted with equal or unequal rebated meeting edges.

11.4.2.1 ERA 6945-80-85 MA

This has been successfully tested in CFR1903071, and are suitable for use within the following scope:

- Leaf: 1 and 2 – with minimum lipping density of 640kg/m³
- Maximum leaf height: 2440mm
- Frame: 1, 2, 6 and 7only
- Door configuration: LSASD only
- Intumescent protection: see test report summary, section 3.1.47
- Intumescent seals:
 - (c) see section 4.5.9.1 and intumescent specification reference AS18 for door perimeter intumescent seals.

11.4.2.2 GU Ferco 3 Point dead bolt

This has been successfully tested in Chilt/RF03076, and are suitable for use within the following scope:

- Leaf: Leaf 1 and 2 – with minimum lipping density of 640kg/m³
- Maximum leaf size, for Leaf 1: 2060mm high x 930mm wide
- Maximum leaf size, for Leaf 2: 2231mm high x 930mm wide
- Frame: 1, 2, 6 and 7 only
- Door configuration: LSASD only
- Intumescent protection: see test report summary, section 3.1.44
- Intumescent seals:
 - (a) Head – 1no 10x4mm Lorient LP1004, fitted centrally.
 - (b) Hanging Jamb – 1no 10x4mm Lorient LP1004, fitted centrally.
 - (c) Closing Jamb – 1no 25x4 Lorient LP2504, fitted centrally.

11.4.2.3 Winkhaus AV2 and AV2e

The AV2e has been successfully tested in WF429950 using Halspan XT30 core. This, given that other 3 point locks have been tested in Prima 30 and following comparison of performance between the two core types, the use of AV2 and AV2e are assessed as suitable for use within the following scope:

- Leaf: Leaf 1 and 2 – with minimum lipping density of 640kg/m³
- Maximum leaf size, for Leaf 1 and 2: 2200mm high x 950mm wide
- Frame: 1, 2, 6 and 7 only
- Door configuration: LSASD only
- Intumescent protection: see test report summary, section 3.2.25
- Intumescent seals:
 - (d) Head and Jambs – 2no 10x4mm Pyroplex 10FOW 1050, fitted centrally and 19mm apart.

11.4.3 Electro-magnetic locks

11.4.3.1 RGL Electronics magnetic lock ML600

The following RGL Electronics surface mounted magnetic lock has been successfully tested in test reference WARRES 404075A, as follows:

- **ML600 magnetic lock:** fitted to the leaf head and frame head.

Based on the test evidence, it is suitable for use within the following parameters:

- Leaf: Leaf 1 and 2 – when fitted with a lipping to the top of the leaf, this lipping must have a minimum lipping density of 640kg/m³
- Frame: Frame 1, 2, 3, 4, 5, 6 & 7
- Configurations All configurations
- (check configuration limitations on Frame 4, 5, 6 and 7)

11.4.3.2 Assa Abloy electronic lock, electric strike & magnetic contact

The following Assa Abloy electronic lock, electronic strike and magnetic door contact have been successfully tested in test reference CFR2010021-2, as follows:

- **EL560 electric mortice lock:** fitted with Assa Abloy handleset (INOXI 3-19/242) and cylinder (CY326). Fitted 900mm from bottom of the leaf.
- **EffEff 332.238 electric mortice strike with Assa Abloy mortice latch (807-12).** Fitted 1222mm from bottom of the leaf.
- **351U80 electric mortice escape lock:** fitted to the frame head. Fitted 100mm from the closing edge.
- **1076D magnetic door contact:** with the magnetic component fitted to the leaf head and electric component fitted to frame head. Fitted 117mm from the hanging edge.

On the basis that the 351U80 has been tested and that 351M80 and 352M80 are of identical dimensions to the tested 351U80, with only a variation to functionality it is assessed that the use of these alternative products is acceptable. The maximum keep dimension permitted is 150mm high x 44mm wide x 4mm thick.

Based on the test evidence, or assessed, these items are suitable for use when fitted as tested, within the following scope:

- Leaf: 1 and 2 – with minimum lipping density of 640kg/m³
- Frame: 1, 2, 6 and 7 only
- Minimum frame section size:
 - (a) for 351U80 electric mortice escape lock – with minimum section size of 45mm thick x 75mm deep for frame head (excluding door stop).
 - (b) Otherwise minimum 32mm thick x 75mm deep for frame head and jambs (excluding stop).
- Door configuration:
 - EL560 electronic mortice lock: LSASD and LSADD
 - EffEff 332.238 electronic mortice strike: LSASD and LSADD. This strike can be used with any approved latch/lock.
 - 351U80/ 351M80/ 352M80 electronic mortice escape lock: LSASD, ULSASD, LSADD and ULSADD
 - 1076D magnetic door contact: LSASD, ULSASD, LSADD and ULSADD
- Intumescent seals: Frame reveal and meeting edges: 2no. 10x4mm minimum, graphite, positioned 10mm apart.
Note: When using this hardware the 1no 10x4 or 1no 15x4 graphite based intumescent seal design as specified in the relevant part of section 4.5.9 to 4.5.20 must be replaced with a minimum of 2no. 10x4mm of the same specification.
- Intumescent protection:
 - (a) EL560 – 1mm MAP or Interdens encasing lock body, underneath forend and strike.
 - (b) EffEff 332.238 – 1mm MAP or Interdens covering all concealed faces, and underneath forend.
 - (c) 351U80/ 351M80/ 352M80 – 1mm MAP or Interdens encasing lock body (except at connector block end), underneath forend and strike.
 - (d) 1076D – 1mm graphite sleeve encasing inner body of both components.

11.4.4 Access control systems

The electronic access control systems detailed in the following sections have been successfully tested with the Prima 30 door blanks, and are therefore suitable for use within the scope stated herein.

11.4.4.1 Assa Abloy RFID systems

The following Assa Abloy RFID card reader systems have been successfully tested in WF367904, as follows:

- **VingCard Essence RFID:** fitted with ANSI DB mortice lock. Fitted directly above the lock located 1000mm from the bottom of the leaf to the spindle.
- **VingCard Classic RFID:** tested without a lockcase.
- **VingCard Signature RFID:** tested without a lockcase.

Based on the test evidence, they are suitable for use within the following scope:

- Leaf: 1 and 2 – with minimum lipping density of 640kg/m³
- Frame: 1, 2, 3, 6 and 7 only
- Door configuration: LSASD only
- Intumescent protection: 1mm MAP or Interdens sheet Intumescent protection around all mortices and behind forend and keep
- VingCard Classic RFID and VingCard Signature RFID systems may be used with the tested ANSI DB lockcase as tested.

11.4.4.2 Dormakaba RFID systems

The following Dormakaba RFID card reader systems have been successfully tested in test references DMT-DO-50-582-R1 and DMT-DO-50-583-R1, as follows:

- **79/RT series RFID:** – fitted with ASM mortice lock (M7X-AXXX1-XXX), strike plate (50413X-XXX/STRIKE ASA), handleset (069-510983, F79X-10X03XX-XXX, B76-XXXXXX-XXX).
- **Quantum Pixel LH RFID:** consisting of mortice assembly (A70270-HAND), controller assembly (IS-KP21XXXXXXXX), reader assembly (OS-KP1XXXXXX), strike plate (30320-H-COLOR/ ASSY, STRIKE, BUTTONS), handleset (OS-CL1XXXXXXXX, IS-CL1XXXXXXXX, MXAS99823).
- **Saffire LX series RFID:** consisting of ASM mortice assembly (MSX-AXXX1-XXX), face plate, strike plate (50413X-XXX/STRIKE ASA), handleset (FSXXXAKXXXAX-XX, 069-515541-XXX, BS-XXXXXXXX-XX, 069-515488-1XXX).
- **Quantum RFID:** consisting of mortice assembly (A70000-HAND), reader assembly (A30940-E-COLOR), strike plate (30320-H-COLOR/ ASSY, STRIKE, BUTTONS), handleset (OS-LS1XXXXXXXX, QM11XXXXXXXXXX).

Based on the test evidence, they are suitable for use within the following parameters:

- Leaf: 1 and 2 – with minimum lipping density of 640kg/m³
- Frame: 1, 2, 6 and 7 only (see section 7.5 for limitations on use of Frame 7)
- Door configuration: LSASD only
- Intumescent protection: 1mm MAP or Interdens sheet Intumescent protection around all mortices and behind forend and keep.

11.4.4.3 NSP Europe RFID systems

The following NSP Europe RFID card reader systems have been successfully tested in test reference WF401228, as follows:

- **SMF 614 RFID:** tested with SMF 02 Duo sash lock.
- **SMF Duo RFID:** tested with SMF 02 Duo sash lock.

Based on the test evidence, they are suitable for use within the following parameters:

- Leaf: 1 and 2 – with minimum lipping density of 640kg/m³
- Frame: 1, 2, 3, 6 and 7 – with a minimum section size of 32mm thick x 75mm deep (excluding door stop).
- Door configuration: LSASD only
- Intumescent protection: 1mm MAP or Interdens sheet Intumescent protection around all mortices and behind forend and keep.

11.4.4.4 Salto system

The following Salto card reader system has been successfully tested in test reference CFR2010021-1, as follows:

- **AELEMENT Fusion:** tested with Salto Mortice Lock LE7Sxx.

Based on the test evidence, they are suitable for use within the following parameters:

- Leaf: 1 and 2 – with minimum lipping density of 640kg/m³
- Frame: 1, 2, 3, 6 and 7 only – with a minimum section size of 34mm thick x 75mm deep (excluding door stop).
- Door configuration: LSASD only
- Intumescent protection: 1mm MAP or Interdens sheet Intumescent protection around all mortices and behind forend and keep.

11.5 Hinges

11.5.1 Butt Hinges

Butt hinges listed in Appendix B have been successfully tested with the Prima 30 door blank, and they are suitable for use within the following scope.

These items are suitable in the following:

- Leaf: Leaf 1 & 2
- Frame: Frames 1, 2, 3, 4, 5, 6, 7 (*check configuration limitations on Frame 4, 5, 6 and 7*)
- Configuration: LSASD, ULSASD, LSASDOP, ULSASDOP, LSADD, ULSADD, LSADDOP, ULSADDOP

Based on the test evidence cited in section 3 the following alternative hinge specification is acceptable providing the hinge has been tested to BS 476 Part 22 1987 or BSEN 1634 Part 1 in a solid timber doorset 44mm thick and achieved 30 minutes.

Leaves less than 2400mm (h) must be hung on a minimum of 3 hinges. Leaves greater or equal 2400mm (h) must be hung on 4 hinges.

Leaves less than 1200mm (h) can be hung on a minimum of 2 hinges located 150mm from the top and bottom of the door leaf (top hinge location is measured from the top of the hinge blade to the top of the door leaf and bottom hinge location is measured from the bottom of the hinge to the bottom of the door leaf)

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 Note: Where the frame section is less than 30mm thick, screw length which matches the frame thickness may be used. All other criteria must remain as detailed in this table	
Materials:		Steel or stainless steel	
Hinge position:	If 3No. hinges are required:	Top	100 –180mm from the leaf head to top of hinge
		2 nd	Minimum 200mm from top hinge or centrally fitted between top and bottom hinges
		Bottom	150 - 250mm from the foot of leaf to bottom of hinge
	If 4No. hinges are required:	Top	100-180mm from the leaf head to top of hinge
		2 nd & 3 rd	Equispaced between top and bottom or 2 nd hinge 200mm from top hinge and 3 rd hinge equally spaced between 2 nd and bottom hinges
		Bottom	150 - 250mm from the foot of leaf to bottom of hinge
Intumescent protection:		See section 9	

- Alternatively a Certifire approved hinge, meeting the requirements of the above table and, which is approved for 30 minutes in an ITT doorset (i.e. a doorset incorporating Intumescent, Timber leaf and Timber frame), is acceptable providing the higher specification of hardware intumescent protection as required for the inclusion of the hinge within this Field of Application or the Certifire certificate are complied with. For example if the Certifire Certificate specifies intumescent protection behind the hinge blades and this Field of Application does not require intumescent protection behind the hinge blades, the fitting of the intumescent specified in the Certifire Certificate is required.

11.5.2 Concealed Hinges

The concealed hinges detailed in the following sections have been successfully tested with the Prima 30 door blanks, and are therefore suitable for use within the scope stated herein.

11.5.2.1 Eurospec CEAM Art Stars 1131

These hinges have been successfully tested in test reference CFR1909241 and are suitable for use within the following scope:

- Leaf: Leaf 2 only – with minimum lipping density of 640kg/m³
- Frame: Frame 1, 2, 6 & 7 only (*check configuration limitations on Frame 6*) – with minimum section size of 45mm wide x 95mm deep (excluding stop). Minimum stop size of 15mm wide.
- Configuration: LSASD, ULSASD, LSASDOP, ULSASDOP, LSADD, ULSADD, LSADDOP, ULSADDOP
- Minimum number of hinges: 4No fitted as follows:

Hinge position:	Top	120mm from the leaf head to top of hinge
	2 nd & 3 rd	Equispaced between top and bottom or top of 2 nd hinge 90mm from bottom of top hinge and 3 rd hinge equally spaced between 2 nd and bottom hinges
	Bottom	120mm from the foot of leaf to bottom of hinge

- Intumescent protection:
 - (a) 1mm thick graphite based intumescent sheet (reference Eurospec ES1131) to all main rear faces of hinge.
 - (b) 2No sodium silicate based seals of minimum size 15x4mm, fitted centrally and 10mm apart in the hanging jamb(s), such that the 2nd seal (inner seal) is only partially interrupted at the hinges with at least 50% remaining.

11.5.2.2 Simonswerk TECTUS TE 340 3D FR & TE 640 3D A8 FR

These hinges have been successfully tested in test reference WF316349 and are suitable for use within the following scope:

- Leaf: Leaf 1 & 2 – with minimum lipping density of 640kg/m³
- Frame: Frame 1, 2, 6 & 7 only (*check configuration limitations on Frame 6*). Minimum dimension: 44mm by 72mm, Minimum stop size of 13mm wide.
- Configuration: LSASD, ULSASD, LSASDOP, ULSASDOP, LSADD, ULSADD, LSADDOP, ULSADDOP
- Minimum number of hinges: 3No fitted as follows:

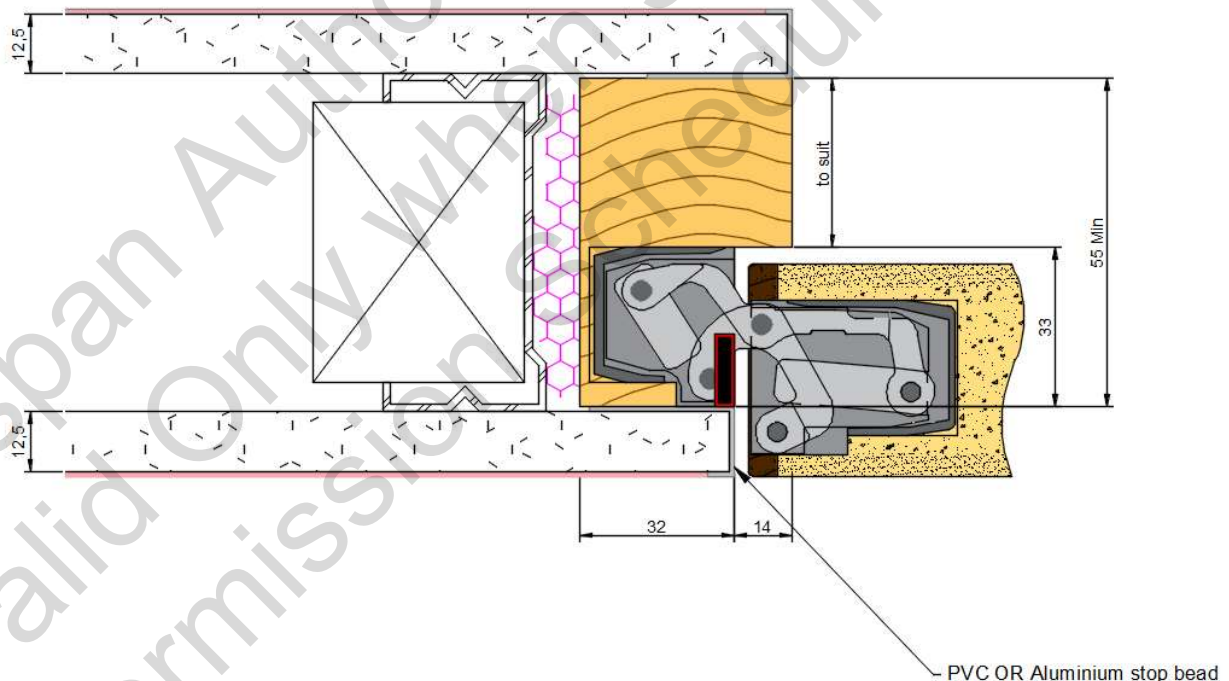
Hinge position:	Top	Centreline of hinge at 280mm from the leaf head
	2 nd	Positioned nominally equally spaced between top and bottom hinges
	Bottom	Centreline of hinge at 395mm from the foot of leaf

- Hinges must be positioned with their centrelines a minimum of 630mm apart.
- Intumescent protection:
 - (a) 1mm and 2mm thick graphite based intumescent sheet (ref: ROKU strip M130) to internal faces of hinge blades.
 - (b) Minimum of 1No graphite based seal of minimum size 15x4mm, fitted centrally in the jambs.

These hinges have been successfully tested in test reference WF348445 and are suitable for use within the following scope:

- Leaf: Leaf 1 & 2 – with minimum lipping density of 640kg/m³
- Frame: Frame 1, 2 & 7 only – with minimum section size of 31mm thick x 55mm deep (excluding stop), Minimum stop size of 14mm wide
- Configuration: LSASD, ULSASD, LSASDOP, ULSASDOP, LSADD, ULSADD, LSADDOP, ULSADDOP
- Minimum number of hinges: 2 No fitted with the hinge centre line at 250mm from the top and bottom edges of the leaf.
- Hinges must be a minimum of 600mm apart.
- Intumescent protection:
 - (a) 1mm thick MAP based intumescent sheet (ref: ITO-TECTUS-TE541 FVZ kit) to external faces of hinge body to door leaf. And 2mm thick MAP based intumescent sheet (ref: ITO-TECTUS-TE541 FVZ kit) to rear face only of hinge body to door frame.
 - (b) Minimum of 1 No graphite based seal of minimum size 15x4mm, fitted in the jambs, aligned centrally with the leaf thickness.

Must be used with a flush wall detail as tested, which includes plasterboard of 12.5mm thick fitted extending over both faces of the frame and firestopping zone and affixed to the frame using 40mm steel screws at 300mm centres, as shown below.



11.5.2.4 Simonswerk TECTUS TE 527 3D

This has been successfully tested in test reference WF348445, and is suitable for use within the following scope:

- Leaf: 2 only– with minimum lipping density of 640kg/m³
- Frame: 2, 6 & 7 only (*check configuration limitations on Frame 6*) – with minimum section size of 37mm thick x 93mm deep (excluding stop). Minimum stop size of 20mm wide. (see section 7.5 for limitations on use of Frame 7)
- Door configuration: LSASD, ULSASD, LSASDOP, ULSASDOP, LSADD, ULSADD, LSADDOP, ULSADDOP
- Minimum number of hinges: 2No fitted with the hinge centre line at 250mm from the top and bottom edges of the leaf.
- Hinges must be a minimum of 600mm apart.
- Intumescent protection:
 - (a) 1mm thick MAP based intumescent sheet (ref: ITH-TECTUS-TE525-10 kit) to external faces of all hinge blades.
 - (b) 2No graphite based seal of minimum size 15x4mm, fitted centrally and 10mm apart in the jamb(s), such that the 2nd seal (inner seal) is not interrupted by the hinges.

11.5.2.5 Bartels Pivota DX 61 3D

This has been successfully tested in test reference WF337470, and is suitable for use within the following scope:

- Leaf: 1 and 2– with minimum lipping density of 640kg/m³
- Frame: 1, 2, 6 & 7 only (*check configuration limitations on Frame 6*) – with minimum section size of 31mm thick x 70mm deep (excluding stop). Minimum stop size of 12mm wide.
- Door configuration: LSASD, ULSASD, LSASDOP, ULSASDOP, LSADD, ULSADD, LSADDOP, ULSADDOP
- Minimum number of hinges: 2No fitted with the top hinge centreline at 242mm from the top of the leaf and the bottom hinge centreline at 363mm from the foot of the leaf.
- Hinges must be a minimum of 600mm apart.
- Intumescent protection:
 - (a) 1mm thick Lorient MAP based Interdens intumescent sheet to all concealed faces of the mortice/slot in the door frame and door leaf.
 - (b) Minimum of 1No graphite based seal of minimum size 15x4mm, fitted centrally in the jambs.

11.5.2.6 Royde & Tucker HC605

Royde & Tucker HC605 has been successfully tested in test reference CFR1710131 in conjunction with Leaf 2, and similarly sized Royde & Tucker concealed hinge item 604 has been successfully tested in test reference CFR1710131 in conjunction with Leaf 1. On the basis of this test the use of Royde & Tucker concealed hinge H605 is permitted, and is suitable for use within the following parameters:

- Leaf: 1 and 2 – with minimum lipping density of 640kg/m³
- Frame: 2, 6 & 7 only (*check configuration limitations on Frame 6 & 7*) – with minimum section size of 44mm wide x 94mm deep (excluding stop) and minimum stop size of 15mm wide. (see section 7.5 for limitations on use of Frame 7)
- Door configuration: LSASD, ULSASD, LSASDOP, ULSASDOP, LSADD, ULSADD, LSADDOP, ULSADDOP
- Minimum number of hinges: 2 No fitted with the hinge centre line at 250mm from the top and bottom edges of the leaf.
- Hinges must be a minimum of 600mm apart.
- Intumescent protection:
 - (a) 1mm thick Type 15 Wolman BASF interdens around body of leaf portion on the closing face and the radii. And 2mm thick Type 36 Wolman BASF interdens under the leaf portion body, under face plate (leaf and frame portions).
 - (b) For Leaf 1, a minimum of 1 no graphite based seal of minimum size 15x4mm, fitted centrally in the jambs, such that the seal is only partially interrupted at the hinges with at least 30% remaining.
 - (c) For Leaf 2, a minimum of 2 no graphite based seal of minimum size 15x4mm, located 5mm either side of the centre line of the frame reveal, such that the 1st seal (outer seal) is partially interrupted at the hinges with at least 80% remaining, and 2nd seal (inner seal) is partially interrupted at the hinges with at least 40% remaining.

11.5.2.7 Atomica K8000CS

This has been successfully tested in test reference CFR1711241, and is suitable for use within the following scope:

- Leaf: 2 – with minimum lipping density of 640kg/m³
- Frame: 2, 6 & 7 only (*check configuration limitations on Frame 6*) – with minimum section size of 44mm thick x 94mm deep (excluding stop). Minimum stop size of 16.5mm wide. (see section 7.5 for limitations on use of Frame 7)
- Door configuration: LSASD, ULSASD, LSASDOP, ULSASDOP, LSADD, ULSADD, LSADDOP, ULSADDOP
- Minimum number of hinges: 3 No fitted with the top hinge centreline at 250mm from the top of the leaf and the bottom hinge centreline at 250mm from the foot of the leaf.
- Hinges must be a minimum of 600mm apart.
- Intumescent protection:
 - (a) 1mm thick Type 15 Wolman BASF interdens to all surfaces parallel with the face of the hinge (both leaf and frame portions).
 - (b) Minimum of 1 No graphite based seal of minimum size 15x4mm, fitted centrally in the jambs.

11.6 Automatic Closing

Automatic closing can be provided by:

- Overhead face fixed closer
- Concealed closers
- Jamb mounted closers
- Floor springs with top pivots and bottom straps

Other forms of self closing such as transom mounted closer and offset pivots used with floor springs are not permitted by this assessment.

11.6.1 Overhead Face Fixed Closer

Overhead face-fixed closers listed in Appendix B1 have been successfully tested with the Prima 30 door blank, and they are suitable for use within the scope:

- Leaf: Leaf 1 & 2
- Frame: Frames 1, 2, 3, 4, 5, 6, 7
- Configuration: LSASD, ULSASD, LSASDOP, ULSASDOP, LSADD, ULSADD, LSADDOP, ULSADDOP (*check configuration limitations on Frame 4 and 5*)
- Intumescent protection: none required

Alternatively a Certifire approved overhead face fixed closer which is approved for 30 minutes in an ITT doorset (i.e. a doorset incorporating Intumescent, Timber leaf and Timber frame), is acceptable providing all the requirements for the inclusion of the overhead face fixed closer required within this Field of Application and the Certifire certificate are complied with. For example if the Certifire certificate approves use, but places limitations on positioning, then these limitations must be followed.

11.6.2 Concealed Closers

The concealed closers detailed in the following sections have been successfully tested with the Prima 30 door blanks, and are therefore suitable for use within the scope stated herein.

11.6.2.1 Rutland ITS.11204 Concealed Overhead

This item been successfully tested in test reference Chilt/RF01056, and is suitable for use within the following scope:

- Leaf: Leaf 1 & 2 – when fitted with a lipping to the top of the leaf, this lipping must have a minimum lipping density of 640kg/m³
- Frame: Frame 1, 2, 6 & 7 only – with minimum section size of 30mm thick x 70mm deep (excluding stop). Minimum stop size of 14mm wide.
- Door configuration: LSASD, ULSASD, LSADD, ULSADD
- Intumescent protection:
 - (a) Rutland IP.114 (30 minutes intumescent kit), fitted around the closer body and closer sliding channel.
 - (b) Minimum of 1No graphite based seal of minimum size 15x4mm, fitted centrally in the frame head.

11.6.2.2 Dorma ITS 96 + G96N Concealed Overhead Closer

These have been successfully tested in test reference WF389552, and is suitable for use within the following scope:

- Leaf: 1 and 2 – when fitted with a lipping to the top of the leaf, this lipping must have a minimum lipping density of 640kg/m³
- Frame: 1, 2, 6 & 7 only – with minimum section size of 32mm thick x 70mm deep (excluding stop). Minimum stop size of 14mm wide.
- Door Configurations: LSASD, ULSASD, LSADD, ULSADD
- Intumescent protection:
 - (a) 1mm thick interdens, fitted around the closer body and slide channel, as tested.
 - (b) Minimum of 1No graphite based seal of minimum size 15x4mm, fitted centrally in the frame head, as tested.

11.6.2.3 Halspan 6200 concealed overhead closer

This item has been successfully tested in test reference CFR1909241, and is suitable for use within the following scope:

- Leaf: 2 only – when fitted with a lipping to the top of the leaf, this lipping must have a minimum lipping density of 640kg/m³
- Frame: 2 & 7 only – with minimum section size of 45mm thick x 96mm deep (excluding stop). Minimum stop size of 15mm wide.
(see section 7.5 for limitations on use of Frame 7)
- Door configuration: LSASD, ULSASD, LSADD, ULSADD
- Intumescent protection:
 - (a) 2mm thick MAP intumescent pack (Halspan ref: SLS-PAD-130), fitted around closer body, under the closer forend, over the top of the closer body, over the cut out for the closer arm at the top of the leaf and lining the closer rail mortice in the frame head.
This is assessed as permitted on the basis of the performance seen in test CFR2105131, where the intumescent pack (Halspan ref: SLS-PAD-131) was tested with the larger sized Halspan 9200 concealed closer, with a 54mm thick leaf. Halspan Ltd have stated that the intumescent material used in SLS-PAD-130 and SLS-PAD-131 are the same, with the difference being for different sized closers.
 - (b) 2No sodium silicate based seals of minimum size 15x4mm, fitted centrally and 10mm apart in the frame jamb(s), such that the 2nd seal (inner seal) is only partially interrupted at the sliding channel at the frame head, with at least 73% remaining, as tested.
 - (c) 1No sodium silicate based seal of minimum size 10x4mm, fitted centrally in the leaf head, as tested.

11.6.3 Jamb Mounted Closer

The Perkomatic R85 jamb mounted closers was tested in WARRES 63269.

This closer is suitable for use within the following scope:

- Leaf: Leaf 1 & 2 – with minimum lipping density of 640kg/m³
- Frame: Frame 1, 2, 6 & 7 only
- Configuration: LSASD, LSADD

On the basis of Certifire Certificate CF370, the Perko-Powermatic R100 is also permitted for use within the following scope and subject to meeting the following requirements:

- Leaf: Leaf 1 & 2 – with minimum lipping density of 640kg/m³
- Frame: Frame 1, 2, 3, 6 & 7 only
- Configuration: LSASD, ULSASD, LSADD, ULSADD
- The use of this closer requires that door edge gaps (section 12.11), must be no more than 3mm.
- Recessing for closers shall result in a tight fit, allowing for any intumescent protection
- The fixings supplied by the closer manufacturer must be used.
- The closer units shall not be fitted higher than 1000mm above the bottom edge of the leaf
- Intumescent Protection: The R100 unit shall be bedded upon intumescent mastic provided by the manufacturer and as detailed within the manufacturer's product data sheet, or fitted with the manufacturer's R97-XX intumescent protection kit which comprised pre-cut, self-adhesive intumescent sheet material.

11.6.4 Floor Springs

The floor springs detailed in the following sections have been successfully tested with the Prima 30 door blank, and are therefore suitable for use within the scope stated herein.

11.6.4.1 Dorma BTS 75 V floor spring

This item has been successfully tested in test reference WARRES 135011, along with the 7421 bottom strap and 8066 top strap/pivot, and is suitable for use within the following scope:

- Leaf: Leaf 1 & 2 – when fitted with a lipping to the top and/or bottom edge of the leaf, this lipping must have a minimum lipping density of 640kg/m³
- Frame: Frame 1, 2 & 7 only – with minimum section size of 38mm thick x 95mm deep (excluding stop).
- Configuration: DASD, DASDOP, DADD, DADDOP
- Intumescent protection:
 - (a) 2mm thick graphite based seal fitted lining the mortice for the top strap, pivot and bottom strap.
 - (b) Minimum of 1No palusol based seal of minimum size 15x4mm, fitted centrally in the door frame head or bottom edge of overpanel.

11.6.4.2 Dorma BTS 80 F floor spring

This item has been successfully tested in test reference Chilt/RF06048A and Chilt/RF06074, along with the 7421 bottom strap and 8066 top strap/pivot, and is suitable for use within the following scope:

- Leaf: 1 and 2 – when fitted with a lipping to the top and/or bottom edge of the leaf, this lipping must have a minimum lipping density of 640kg/m³
- Frame: 1, 2 & 7 only – with minimum section size of 44mm thick x 90mm deep (excluding stop).
- Door configuration: DASD, DASDOP, DADD, DADDOP
- Intumescent protection:
 - (a) 2mm thick graphite based intumescent kit, lining the sides of top strap in the door leaf. And also covering face of the bottom strap in the door leaf.
 - (b) Minimum of 1No graphite based seal of minimum size 15x4mm, fitted centrally in the door frame head.

11.6.4.3 Hoppe AR700-4 floor spring

This item has been successfully tested in test reference WF193473A, along with the AR700-ACC bottom strap and top strap/pivot, and is suitable for use within the following scope:

- Leaf: 2 only – when fitted with a lipping to the top and/or bottom edge of the leaf, this lipping must have a minimum lipping density of 640kg/m³
- Frame: 2 & 7 only – with minimum section size of 44mm thick x 95mm deep (excluding stop). (see section 7.5 for limitations on use of Frame 7)
- Door configuration: DASD, DADD
- Intumescent protection:
 - (a) 2mm thick interdens fitted around body of the top centre strap and the bottom strap in the door leaf and around the body of top pivot in the door frame.
 - (b) 2No graphite based seals of minimum size 15x4mm, fitted centrally and 8mm apart in the door frame head.

11.6.4.4 Royde & Tucker H131-400 pivot set

This item has been successfully tested in test reference CFR1009301-1, along with the H131-P44 pivot protector, and is suitable for use within the following scope:

- Leaf: 1 and 2 – when fitted with a lipping to the top and/or bottom edge of the leaf, this lipping must have a minimum lipping density of 640kg/m³
- Frame: 1, 2 & 7 only – with a minimum section size of 44mm thick x 95mm deep (excluding stop).
- Door configuration: DASD, DADD
- Intumescent protection:
 - (a) 1mm thick interdens Type 15, fitted between bottom pivot and hanging jamb, under each pivot receptacle and wrapped vertically around the upper part of the top pivot.
 - (b) Minimum of 1No graphite based seals of minimum size 15x4mm, fitted centrally in the door frame head.

The H131-P44 pivot protector was included along with the H131-400 pivot set. If the pivot protector had not been included it would be expected that the heat transfer at the top and bottom hanging corners would be reduced, without detriment to the fire resistance performance. It is therefore permitted to optionally not fit the H131-P44 pivot protector. When the H131-P44 pivot protector is included it must have the following intumescent protection:

- (a) 1mm thick interdens Type 15, fitted to the concealed horizontal face and vertical face at the heel of the pivot protector.

11.7 Bolts

11.7.1 Surface mounted face fixed barrel bolts

Steel, stainless steel, aluminium or bronze surface mounted barrel bolts (of up 300mm long) may be surface-fixed at the top and bottom of one leaf, at a minimum of 50mm from the meeting edge.

These items are suitable within the following scope:

- Leaf: 1 & 2
- Frame: Frames 1, 2, 3, 4, 5, 6, 7 (*check configuration limitations on Frame 6*)
- Configuration: All configurations
- Intumescent protection: none required

11.7.2 Flush Bolts

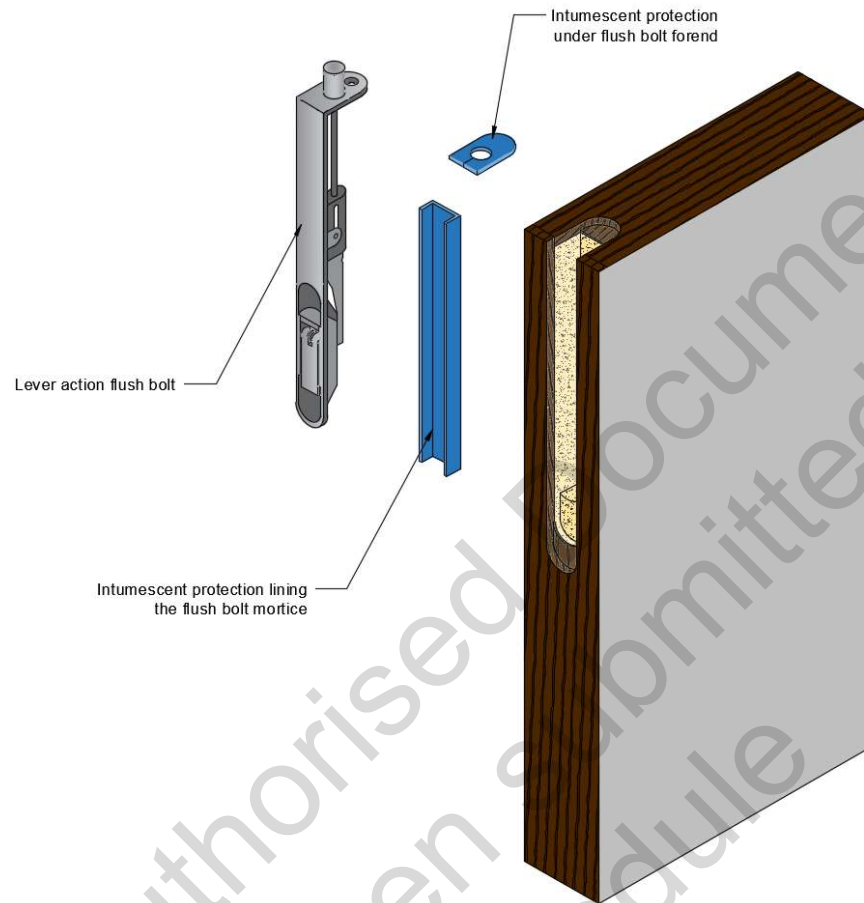
Flush bolts listed in Appendix B6 have been successfully tested with the Prima 30 door blank, and they are suitable for use within the following scope:

- Leaf: Leaf 1 & 2 – with minimum meeting edge lipping density of 640kg/m³ and when fitted with a lipping to the top and/or bottom edge of the leaf, this lipping must have a minimum lipping density of 640kg/m³
- Frame: Frame 1, 2, 3, 6 & 7 only
- Configurations LSADD, ULSADD, LSADDOP and ULSADDOP (*check configuration limitations on Frame 6*)
- Intumescent Protection: See section 9.1 and drawing below. Note that the mortice behind the keep must also be protected.
- Intumescent strips must be located in the leaf NOT containing the flush bolt.
- Flush bolts fitted at the bottom of the leaf cannot be used when a morticed in drop seal is present.
- Flush bolts are not permitted in conjunction with equal rebated meeting edge or rebated overpanels.
- Flush bolts are permitted with unequal rebated meeting edges subject to following the requirements in section 11.2.2.

Flush bolts may be incorporated centrally into the top and bottom of one meeting edge, providing the following maximum dimensions are not exceeded based on test Chilt/RF15097.

- 610mm long x 20mm deep x 20mm wide.
(Note size limitation for Frame 6 and 7 in sections 7.4 and 7.5 respectively)

Flush bolts must be steel and the mortice must be as tight to the mechanism as is compatible with its operation. All edges of the mortice of the keep and body must be protected with intumescent gaskets as specified in section 9.

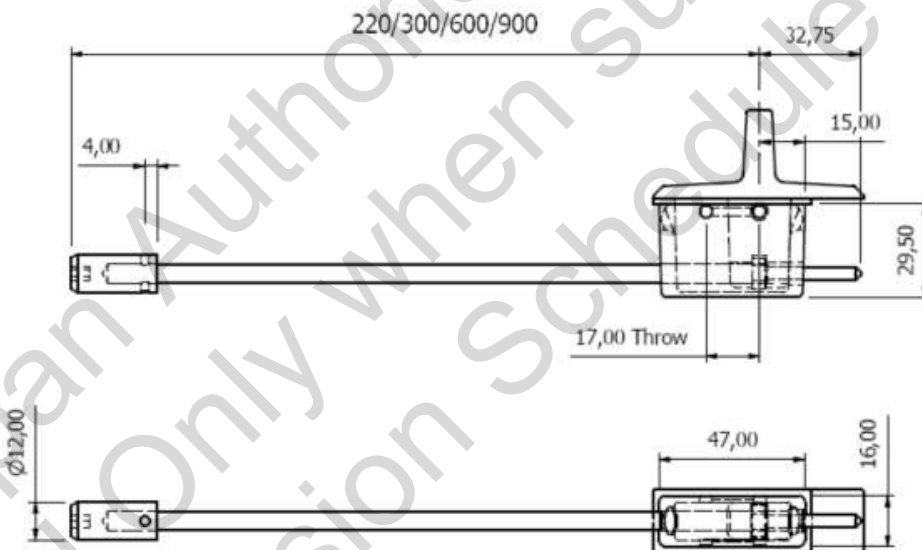


Example of intumescent protection for flush bolt

11.7.3 Royde & Tucker Anza surface mounted bolt

ANZ-220-BSS-FD (now with the product code ANZ-220-FD) has been successfully tested in CFR1009301-2 with the bolt activator in the face of the leaf, and is suitable for use within the following scope:

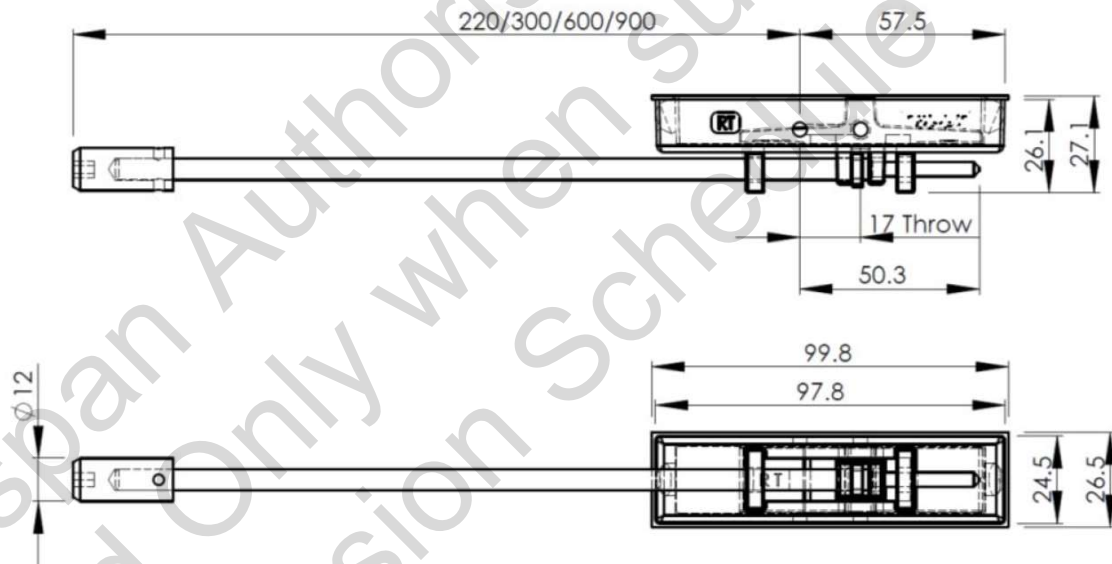
- Leaf: 1 and 2
- Frame: 1, 2 and 6 only – with minimum section size of 44mm thick x 94mm deep.
- Door configuration: LSADD, ULSADD
- Intumescent protection:
 - (a) 1mm thick interdens – Fitted to all sides of the mortice in the leaf face, under the guide plate in the leaf head and under the bolt keep in the frame head. This is supplied with the bolts from Royde & Tucker.
 - (b) Minimum of 1No graphite based seal of minimum size 15x4mm, fitted centrally in the frame head.
- The rebate in the leaf face for the operating handle must not be closer than 190mm to the top or bottom of the leaf or closer than 40mm to the meeting edge of the leaf.
- The bolt fitted at the bottom of the leaf cannot be used when a morticed in drop seal is present.
- The longer length product variants ANZ-300-FD, ANZ-600-FD and ANZ-900-FD are also permitted as the bolt activator will be located further away from the top and bottom of the door leaf.



11.7.4 Royde & Tucker Anza flush mounted bolt

ANZ-220-BSS-FFD (now with the product code ANZ/R-220-FFD) has been successfully tested in CFR1009301-2 with the bolt activator in the meeting edge, and is suitable for use within the following scope:

- Leaf: 1 and 2
- Frame: 1, 2 and 6 only – with minimum section size of 44mm thick x 94mm deep.
- Door configuration: LSADD, ULSADD
- Intumescent protection:
 - (a) 1mm thick interdens – Fitted to all sides of the mortice in the leaf edge, under the guide plate in the leaf head and under the bolt keep in the frame head. This is supplied with the bolts from Royde & Tucker
 - (b) Minimum of 1No graphite based seal of minimum size 15x4mm, fitted centrally in the frame head, fully interrupted by the bolt keep
- The rebate for the operating handle recessed into the leaf edge must not be closer than 170mm to the top or bottom of the leaf and must be positioned centrally in the leaf edge
- The bolt fitted at the bottom of the leaf cannot be used when a morticed in drop seal is present.
- The longer length product variants ANZ/R-300-FFD, ANZ/R-600-FFD and ANZ/R-900-FFD are also permitted as the bolt activator will be located further away from the top and bottom of the door leaf.



11.8 Door Selectors

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

These items are suitable for use within the following scope:

- Leaf: Leaf 1 & 2
- Frame: Frame 1, 2, 3, 6 and 7
- Configuration: LSADD, ULSADD, LSADDOP, ULSADDOP
- Intumescent protection: none required

11.9 Roller Catches

Roller catches may be used but only in conjunction with a self-closing device and are suitable for use within the following scope:

- Leaf: 1 and 2
- Frame: 1, 2, 3, 4, 5 and 7 only
- Door configuration: ULSASD, DASD

The roller catch must be steel or brass with a melting point $\geq 800^{\circ}\text{C}$ and must meet following dimension specification:

- Maximum forend and strike plate dimensions: 80mm high x 35mm wide x 4mm thick.
- Maximum body dimensions: 70mm high x 50mm wide x 20mm thick.
- Intumescent protection: None required
- Positioning must be no closer than 300mm from other meeting edge hardware and the top of the roller forend no closer than 150mm to leaf head.

Note: DIN Standard roller catches with integral locking function can be used up to forends of 235mm high x 25mm wide with intumescent protection as detailed in section 9.1 for lock/latches of this size.

11.10 Cable Loops & cableways

The cable loops detailed in the following sections have been successfully tested with the Prima 30 door blank, and are therefore suitable for use within the scope stated herein.

11.10.1 Abloy EA280

This item has been successfully tested in test reference CFR2010021, with cable channels, and is suitable for use within the following scope:

- Leaf: 1 and 2 – with minimum lipping density of 640kg/m^3
- Frame: 1, 2, 6 and 7 only – with minimum section size of 32mm thick x 75mm deep (excluding stop).
- Door configuration: LSASD, LSADD
- Intumescent protection:
 - (a) 1mm thick MAP based intumescent sheet – covering all concealed faces of cable loop recess box in the frame jamb(s).
 - (b) May be used with cableways which must be fitted and protected as detailed in section 11.10.5.
 - (c) Graphite based intumescent strip – minimum of 2No 10x4mm fitted centrally and 10mm apart in the frame hanging jamb(s), such that the both strips are only partially interrupted at the cable loop with at least 10% remaining.
- Cable loop must be fitted no higher than 1251mm from the bottom of the door jamb(s).
- Cable loop must not be within 100mm of hinge or other items of hardware along the frame jamb.

11.10.2 Dorma KU 260

This item has been successfully tested in test reference CFR2004171 (Right-hand doorset), with cable routes, and is suitable for use within the following scope:

- Leaf: 2 only – with minimum lipping density of 640kg/m³
- Frame: 2 and 7 only – with minimum section size of 32mm thick x 100mm deep (excluding stop). (see section 7.5 for limitations on use of Frame 7)
- Door configuration: LSASD, LSADD
- Intumescent protection:
 - (a) 1mm thick MAP based intumescent sheet Dorma Intumescent Kit 40SVP6024 – covering all concealed faces and the inside base of the cable loop recess box in the frame jamb(s).
 - (b) May be used with cableways which must be fitted and protected as detailed in section 11.10.5.
 - (c) Graphite based intumescent strip – minimum of 2No 15x4mm fitted centrally and 10mm apart in the frame hanging jamb(s), such that the both strips are only partially interrupted at the cable loop with at least 46% remaining.
- Cable loop must be fitted with the top of the face plate no more than 950mm above the bottom of the the door jamb(s).
- Cable loop must not be within 100mm of hinge or other items of hardware along the frame jamb.

11.10.3 Gianni DL-500 & DL-417ST

These items have been successfully tested in test reference WF415117A, without a cable channel, and is suitable for use within the following scope:

- Leaf: 1 and 2 – with minimum lipping density of 640kg/m³
- Frame: 1, 2, 6 and 7 only – with minimum section size of 32mm thick x 70mm deep (excluding stop).
- Door configuration: LSASD
- Intumescent protection:
 - (a) 1mm thick interdens – covering all concealed faces of the cable loop recess box in the frame jamb.
 - (b) May be used with cableways which must be fitted and protected as detailed in section 11.10.5.
 - (c) Graphite based intumescent strip – minimum of 1No 15x4mm fitted centrally in the frame hanging jamb.
- Cable loop must be fitted no higher than 1030mm from the bottom of the door jamb.
- Cable loop must not be within 200mm of hinge or other items of hardware along the frame jamb.

11.10.4 Bartels Systembeschläge Pivota DX “Connect”

This item has been successfully tested in test reference WF337470A, without a cable channel, and is suitable for use within the following scope:

- Leaf: 1 and 2 – with minimum lipping density of 640kg/m³
- Frame: 1, 2, 6 and 7 only – with minimum section size of 43mm thick x 70mm deep (excluding stop).
- Door configuration: ULSASD, LSASD, ULSADD, LSADD
- Intumescent protection:
 - (a) 1mm thick MAP based Lorient Interdens intumescent sheet – covering all concealed faces within the frame hanging jamb(s).
 - (b) May be used with cableways which must be fitted and protected as detailed in section 11.10.5.
 - (c) Graphite based intumescent strip – minimum of 1No 15x4mm fitted centrally in the frame hanging jamb(s).
- Centre line of Cable loop forend must be fitted no more than 1375mm above the bottom of the door jamb.
- Cable loop must not be within 200mm of hinge or other items of hardware along the frame jamb.

11.10.5 Cableways

Cableways are suitable in the following 3 methods:

11.10.5.1 Cableway Method 1

- Leaf: Leaf 1 & 2 – with minimum lipping density of 640kg/m³
- Frame: Frame 1, 2, 6 and 7 only
The frames must have a minimum density of 510kg/m³ and minimum size of 32mm (w) x 70mm (d) (excluding stop).
- Configurations: LSASD
- Maximum leaf size: 2100mm (h) x 926mm (w)
- Intumescent specification: The hanging jamb must contain as a minimum 2no intumescent strips of 10mm x 4mm for 44mm leaves or 15mm x 4mm for 54mm leaves, located 5mm either side of the centre line of the frame reveal.
- Grooves cannot be located within 100mm of the cableway.
- May be used with the cable loops detailed in sections 11.10.1 to 11.10.4, which must be located, fitted and protected as described.

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 cableway to facilitate electro-magnetic closing/latching mechanisms. The cableway must be concealed in the following way:

- A hole drilled centrally through the leaf of maximum 10mm diameter
- The cable for the electronic closing/latching mechanisms must be no more than 2mm smaller in diameter than the hole through the leaf unless wrapped in 1mm intumescent.
- The cable for the electronic closing/latching mechanism must be PVC encased
- The hole must be located no higher than 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.

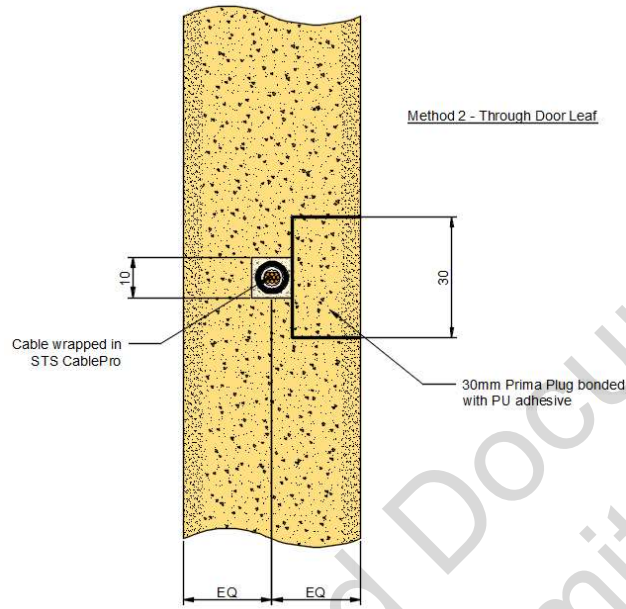
11.10.5.2 Cableway Method 2

This item has been successfully tested in test reference CFR2004171 (Right-hand doorset), using Leaf 2, and CFR2010021 (Right-hand doorset), using Leaf 1, with associated hardware and is suitable for use within the following scope:

- Leaf: Leaf 1 & 2 – with minimum lipping density of 640kg/m³
- Frame: Frame 1, 2, 6 & 7 only
The frames must have a minimum density of 510kg/m³ and minimum size of 32mm (w) x 70mm (d) (excluding stop).
- Configurations: LSASD ULSASD, LSADD, ULSADD
- Maximum leaf size: As limited by other hardware or the relevant configuration
- Intumescent specification:
 - For Leaf 1, a minimum of 2no intumescent strips of 10mm x 4mm located 5mm either side of the centre line of the frame reveal.
 - For Leaf 2, a minimum of 2no 15mm x 4mm located 5mm either side of the centre line of the frame reveal.
- The leaf can be grooved.
For Leaf 1, grooves cannot be located within 100mm of the cableway.
- May be used with the cable loops detailed in sections 11.10.1 to 11.10.4, which must be located, fitted and protected as described.
- Cableway must be no higher than 1500mm from the bottom of the leaf to centre of channel.
- Cableway must be spaced a minimum of 90mm from any apertures within the leaf e.g. glazing, air transfer grilles or letter plates etc.

This method comprises a 10mm high x 10mm wide horizontal channel through the full width of the leaf, central to the leaf edge and is concealed in the following way:

- Groove the face of the door core with a 10mm wide channel to a depth of 5mm below the centre of the door core (i.e. 27mm deep for 44mm cores and 32mm deep for 54mm cores)
- Groove the same face with a second groove 30mm wide x 17mm deep for 44mm cores or 23mm deep for 54mm cores, located centrally over the first groove
- Fit a plug in to the second groove 30mm wide by 17mm/23mm deep using Prima core. The plug should run the full length of the cableway and be bonded into place using PVA or PU adhesive
- The door core can then be lipped and calibrated in the usual manner
- Mortice out the for the lock and drill a 10mm hole through the lipping on the opposite edge
- When installing the cable, it must be protected with 1mm STS CablePro intumescent wrap



Cableway Method 2 detail – channel through centre of leaf thickness

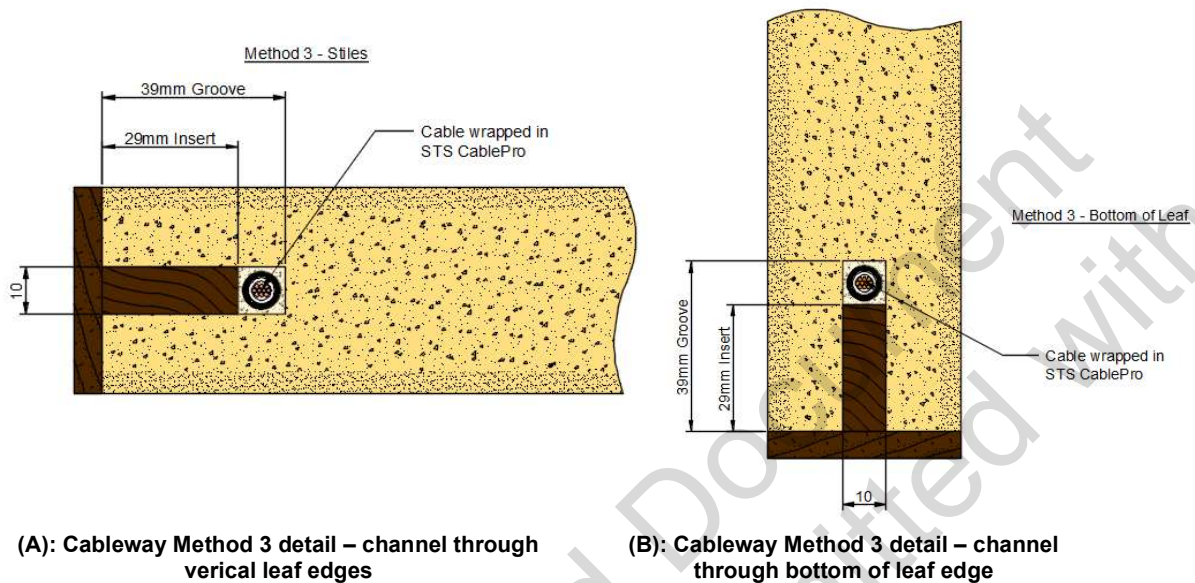
11.10.5.3 Cableway Method 3

This item has been successfully tested in test reference CFR2004171 (Right-hand doorset), using Leaf 2, and CFR2010021 (Right-hand doorset), using Leaf 1, with associated hardware and is suitable for use within the following scope:

- Leaf: Leaf 1 & 2 – with minimum lipping density of 640kg/m³
- Frame: Frame 1, 2 & 7 only
The frames must have a minimum density of 510kg/m³ and minimum size of 32mm (w) x 70mm (d) (excluding stop).
- Configurations: LSASD ULSASD, LSADD, ULSADD
- Maximum leaf size: As limited by other hardware or the relevant configuration
- Intumescent specification:
 - For Leaf 1, a minimum of 2no intumescent strips of 10mm x 4mm located 5mm either side of the centre line of the frame reveal.
 - For Leaf 2, a minimum of 2no 15mm x 4mm located 5mm either side of the centre line of the frame reveal.
- The leaf can be grooved.
For Leaf 1, grooves cannot be located within 100mm of the cableway.
- May be used with the cable loops detailed in sections 11.10.1 to 11.10.4, which must be located, fitted and protected as described.
- Cableway must be no higher than 1500mm from the bottom of the leaf to the highest point of the cableway.
- Cableway must be spaced a minimum of 90mm from any apertures within the leaf e.g. glazing, air transfer grilles or letter plates etc.

This method comprises a 10mm high x 10mm wide channel central to the leaf edge, running down from the hanging edge to the bottom edge of leaf, along the bottom edge to the closing edge/meeting edge, and up along the closing edge/ meeting edge to the latch/lock location, and concealed in the following way:

- Groove the edge of the door core with a 10mm wide channel located centrally, to a depth of 39mm. This groove should run from the lock/keep location in the closing/meeting edge, down the edge, along the bottom of the door then back up the hanging edge to the cable loop location.
- Install the cable, protected with 1mm STS CablePro intumescent wrap, into the groove.
- Infill the groove with 29mm x 10mm Sapele (minimum density 640 kg/m³), bonded in place with PU adhesive.
- The door core can then be lipped and calibrated in the usual manner.



11.11 Handles

11.11.1 Lever Handles

Lever type handles listed in Appendix B6 have been successfully tested with the Prima 30 door blank, and they are suitable for use within the following scope:

- Leaf: 1 & 2
- Frame: Frames 1, 2, 3, 4, 5, 6, 7 (*check configuration limitations on Frame 6*)
- Configuration: All configurations
- Intumescent protection: none required

Alternative handles are permitted providing they meet the specification given below:

- Steel, stainless steel, brass, aluminium or bronze are permitted
- Surface fixings or through fixings are permitted. If through fixed there must be no more than 0.5mm clearance between the hole and the fixing.
- The hole through the leaf to facilitate the spindle must be no greater than 20mm diameter.
- The design may be either lever on rose or lever on back plate up to the following maximum sizes:
 - Lever on rose with a rose diameter up to 54mm
 - Lever on back plate with a back plate size up to 243mm high x 56mm wide
 - Lever handle length 250mm

The handle must be compatible with the lock/latch, such that the closing action of the doorset is not impeded.

11.11.2 Pull Handles

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

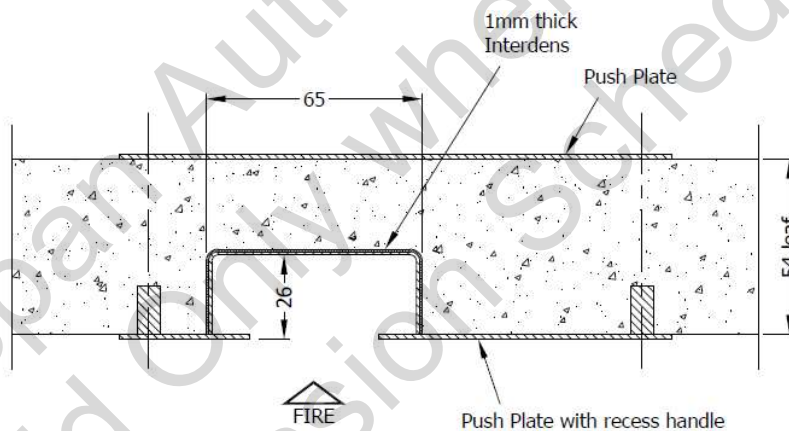
These items are suitable within the following scope:

- Leaf: 1 & 2
- Frame: Frames 1, 2, 3, 4, 5, 6, 7 (*check configuration limitations on Frame 6*)
- Configuration: All configurations
- Intumescent protection: none required

11.11.3 Hoppe AR3903-BB-PULL-SSS recessed pull handle/push plate

This item has been successfully tested in test reference WF193473A, and is suitable for use within the following scope:

- Leaf: 2 only
- Frame: Frames 1, 2, 3, and 7 only
- Door configuration: All configurations
- Intumescent protection:
 - (a) 1mm thick interdens – fitted beneath the recessed part of the pull handle
- The recessed pull handle/push plate must be located between 500mm and 1200mm above the threshold and no closer than 50mm to a door edge and no closer than 100mm to glazing, cableways or any hardware.
- This item may be fixed in a back-to-back arrangement with the recessed pull handle to one face and the push plate to the other face of the leaf, through fixed and with a recess for the pull handle as tested and shown in the following drawing:



11.12 Push Plates & Kick Plates

Steel, stainless steel, brass, aluminium or PVC face-fixed hardware such as push plates and kick plates may be fitted to the doorsets and may be recessed to a maximum depth of 2mm on both sides of the door leaf. These items of hardware are permitted up to a maximum of 20% of the door leaf area if mechanically fixed and a maximum of 30% if bonded with a contact or other thermally softening adhesive. Plates must not return around the door edges.

When fitted recessed the plate may not be closer than 14mm to any leaf edge and may not be fitted below stops.

These items have been successfully tested in test reference Chilt/RF10111 and are suitable for use within the following scope:

- Leaf: Leaf 1 & 2
- Frame: Frames 1, 2, 3, 4, 5, 6, 7
- Configuration: All configurations
- Intumescent protection: none required

11.13 Panic Hardware

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

These items are suitable for use within the following scope:

- Leaf: Leaf 1 & 2
- Frame: Frame 1, 2, 3 and 7 only
- Configuration: LSASD, LSADD
- Intumescent protection: none required

11.14 Security Viewers

Door security viewers with brass or steel bodies of a diameter less than or equal to 15mm may be used provided that the through-hole is bored tight to the case of the viewer (maximum tolerance +1 mm). Lenses must be glass and the item must be protected with a tested acrylic intumescent mastic or 1mm graphite sheet.

Fitted no closer than 75mm to door edge, glazing or any hardware.

Two door security viewers may be fitted to one door leaf if necessary, and must be positioned a minimum of 75mm apart.

These items have been successfully tested in test reference Chilt/RF03076, and are suitable for use within the following scope:

- Leaf: 1 & 2
- Frame: Frames 1, 2, 3, 4, 5, 6, 7
- Configuration: All configurations
- Intumescent protection: 1mm graphite sheet or as tested.

See Appendix B7 for tested security (eye) viewers

11.15 Environmental Seals

Silicon based flame retardant acoustic, weather and dust seals (e.g. Halspan SLS-TRI series, Lorient IS1212, IS1511, IS7025, IS7060 or Sealed Tight Solutions Ltd. ST1009) may be fitted to this doorset design (Leaf 1 and 2 and Frame 1,2,3,4,5,6 and 7), 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.

11.16 Threshold drop Seals

Automatic drop seals have been successfully tested in Leaf 1 and are therefore permitted for both Leaf 1 and 2. The following types of automatic threshold drop seals may therefore be recessed into the bottom of leaves to this design without compromising the performance.

Automatic Threshold Drop Seal Types	
Product	Manufacturer
LAS8001si	Lorient Polyproducts Ltd.
RP8Si	Raven Products Ltd.
Schall-Ex Duo L-15	Athmer HG
NOR810, NOR810S	Norsound Ltd.
SLS-DRP series	Halspan Ltd.
STS 422 and STS422GT	Sealed Tight Solutions Ltd

Note:

- Morticed in drop seal is not to be used in conjunction with a mortice in flush bolt at the bottom of meeting edge.
- Morticed in drop seals are not permitted in conjunction with an equal or unequal rebated meeting edge.

11.17 Air Transfer Grilles

11.17.1 Pyroplex Air Transfer Grilles

The following fire tested Pyroplex air transfer grilles have been assessed as acceptable for use with the Prima 30 doorset.

The grilles must be fitted no closer than 100mm from the edge of the door leaf and a minimum of 80mm apart if more than one grille is to be fitted.

The area occupied by the air transfer grille(s) must be deducted from the percentage of glazing, if both elements are fitted. The grilles may be fitted up to a maximum height of 2200mm from the threshold.

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

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

11.17.2 Mann McGowan Air Transfer Grilles

These Pyrogrilles 100 – transfer grilles have been tested in WF391351 in Leaf 1.

The grilles must be fitted no closer than 100mm from the edge of the door leaf and a minimum of 80mm apart if more than one grille is to be fitted.

The area occupied by the air transfer grille(s) must be deducted from the percentage of glazing, if both elements are fitted.

The grilles may be fitted up to a maximum height of 850mm from the threshold.

Grilles up to 600mm by 600mm may be fitted.

The air transfer grilles must be installed in accordance with the manufacturer's installation details.

11.18 Letter Plates

11.18.1 Tested Letter plates

The following letter plates have been tested and are approved for use:

- Halspan Letterplate (TS008 certified letterplate) – reference test WF428611
- Royde & Tucker (LP08-44 (CF255)) – with 38 x 3 graphite collar reference test CFR 1903071 Rev 1

The letter plates, fitted in the horizontal orientation, must be located between 200mm and 1200mm above the threshold and no closer than 100mm to a door edge, glazing or any hardware.

See Appendix B8 for tested letter plates / boxes.

The area of the tested letter plate (and air transfer grille if present) plus any glazing must not exceed the total permitted area for glazing in the leaf.

11.18.2 Alternative Letter plates

On the basis of Certifire Certificates the following alternative Letterplates are permitted for use within the specified scopes. In all cases the alternative Letterplates, the product and/or its immediate packaging will be identified with the letter plate manufacturer's name, the product name or number, the Certifire name or name and mark, together with the relevant Certifire Certificate number.

The area of the alternative letter plate (and air transfer grille if present) plus any glazing must not exceed the total permitted area for glazing in the leaf.

11.18.2.1 Royde & Tucker Letterplates (CF255)

Certifire Certificate CF255 covers Royde & Tucker Letterplate assemblies (using brass, stainless steel or aluminium plates and a PVC encased intumescent lining for fitting horizontally, and steel letterplates for fitting vertically).

The permitted product codes for horizontal orientation fitting are:

LP02-44, LP02-49, LP02-54, LP02-64, LP03-44, LP03-49, LP03-54, LP03-64, LP08-44, LP08-49, LP08-54, LP08-64, LP05-44, LP05-49, LP05-54, LP06-44, LP06-49, LP06-54, LP05-64, LP06-64.

The permitted product codes for vertical orientation fitting are:

LP02V-44, LP02V-49, LP02V-54, LP02V-64, LP03V-44, LP03V-54, LP03V-64, LP08V-44, LP08V-49, LP08V-54 and LP08V-64.

All of the above Royde & Tucker letterplate assemblies are permitted for use within the following scope and subject to meeting the following requirements:

- Leaf: Leaf 1 & 2
- Frame: Frame 1, 2, 3, 4, 5, 6 & 7
- Configuration: All configurations
- Where the letterplate is fitted in a horizontal orientation the letterplate system shall be located between 250mm and 1200mm above the threshold to the middle of the aperture, and no closer than 100mm to a door edge, glazing or any hardware.
- Where the letterplate is fitted in a vertical orientation the letterplate system shall be located between 1300mm and 1600mm above the threshold to the middle of the aperture, and no closer than 100mm to a door edge, glazing or any hardware.
- The fixings supplied by the letterplate manufacturer must be used.
- The standard product is designed to fit door leaves in three thickness ranges, 42-47mm, 47-52mm and 52-57mm and the appropriate model must be selected.
- For door leaves with a maximum thickness of 64mm, the use of LP02-64, LP03-64, LP05-64, LP06-64, and LP08-64 requires that the specific aperture preparation as detailed in Certifire Certificate CF255 must be followed.

11.18.2.2 Assa Abloy Firemaster Letterplate (CF219)

Certifire Certificate CF219 covers the Assa Abloy Firemaster Letterplate (a complete system using brass, stainless steel or aluminium plates and a PVC encased intumescent lining) is permitted for use within the following scope and subject to meeting the following requirements:

- Leaf: Leaf 1 & 2
- Frame: Frame 1, 2, 3, 4, 5, 6 & 7
- Configuration: All configurations
- The fixings supplied by the letterplate manufacturer must be used.
- The letter plate, fitted in the horizontal orientation, must be located between 250mm and 1200mm above the threshold to the middle of the aperture, and no closer than 100mm to a door edge, glazing or any hardware.

11.18.2.3 UAP Soterian TS008 FD30 Letterplate (CF5723)

Certifire Certificate CF5723 covers the UAP Soterian TS008 FD30 Letterplates (a complete system using aluminium or steel flaps and outer casing with an inner body consisting of an aluminium profile with intumescent to the outer body of the letter plate as well as the internal sleeve) is permitted for use within the following scope and subject to meeting the following requirements:

- Leaf: Leaf 1 & 2
- Frame: Frame 1, 2, 3, 4, 5, 6 & 7
- Configuration: All configurations
- The fixings supplied by the letterplate manufacturer must be used.
- The letter plate, fitted in the horizontal orientation, must be located between 290mm and 1200mm above the threshold to the middle of the aperture, and no closer than 100mm to a door edge, glazing or any hardware.

11.18.2.4 Lorient RJ008 Letterplate (CF5688)

Certifire Certificate CF5688 covers the Lorient RJ008 FD30 Letterplates (a complete system using aluminium or steel flaps and outer casing with an inner body consisting of an aluminium profile with intumescent to the outer body of the letter plate as well as the internal sleeve) is permitted for use within the following scope and subject to meeting the following requirements:

- Leaf: Leaf 1 & 2
- Frame: Frame 1, 2, 3, 4, 5, 6 & 7
- Configuration: All configurations
- The fixings supplied by the letterplate manufacturer must be used.
- The letter plate, fitted in the horizontal orientation, must be located between 290mm and 1200mm above the threshold to the middle of the aperture, and no closer than 100mm to a door edge, glazing or any hardware.

11.19 Lock cylinders

Cylinders have been suitably tested and are permitted for use within the following scope:

- The cylinder must be compatible with the lock/latch.
- The cylinder must be constructed of either brass or steel with a melting point in excess of 800°C.
- Cylinder dimensions may be up to 33mm high x 17mm wide at the maximum dimension and may be of euro profile or oval.
- Single and double cylinders, along with cylinder & turn are permitted.
- Door preparation for single cylinders shall penetrate only half the door thickness.
- Intumescent protection and tightness of fitting:
 - If the lock body is not protected with an intumescent material, the maximum clearance between leaf and cylinder is 1mm to each edge.
 - If the lock body is protected with an intumescent material, maximum clearance between leaf and cylinder is 3mm to each edge.
 - 1mm thick MAP or non-pressure forming graphite intumescent around the cylinder is optionally permitted.

12 Installation

12.1 General

This section considers the installation of direct types of frames and doorset.

- the door frame and architrave installation position relative to the wall
- the fire stopping between the frame and the wall and the use of shadow gaps
- the fixing requirement including packers
- the requirements for door edge gaps
- the trimming of door edges

Section 12.7 gives the fire stopping requirements for the different frame types, depending on the gap between the rear of the frame and the structural opening.

Specific fire stopping requirements are needed for the projecting frames and shadow gap details given in section 12.4, which must be followed as stated in that section.

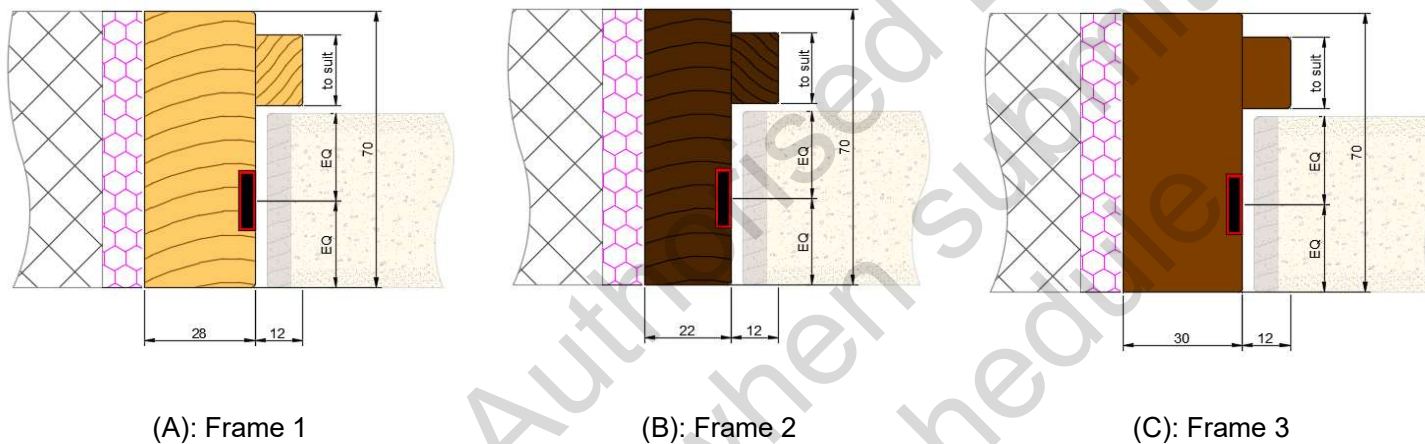
12.2 Door Frame Installation: Frame 1, 2 & 3

The following diagrams indicate acceptable door frame/wall installation arrangements and are used with leaf 1 and 2:

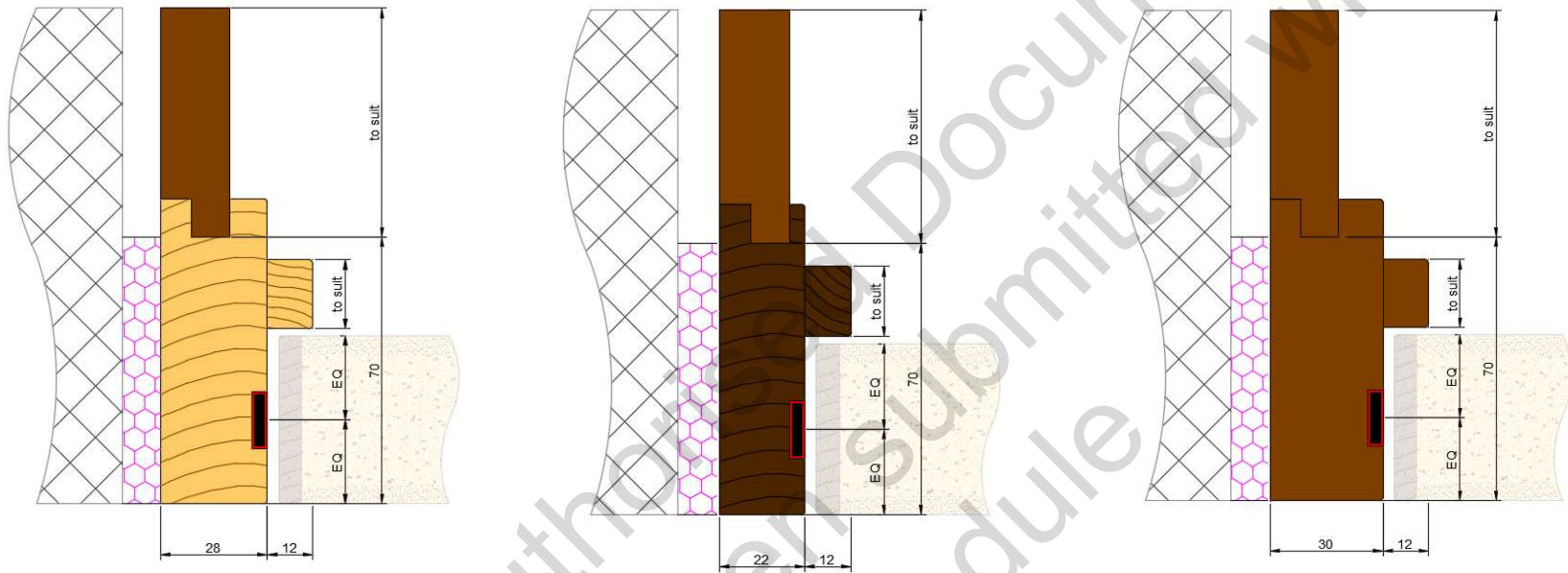
The drawings below show the relationship of frame to wall and location of fire stopping between wall and frame.

See section 12.9 for preparation requirement for the aperture.

Frame flush to wall with architrave being optional



Example of installation detail for frames 1, 2 & 3



(D): Frame 1

(E): Frame 2

(F): Frame 3

Example of installation details for frames 1, 2 & 3 with MDF/softwood extension liners

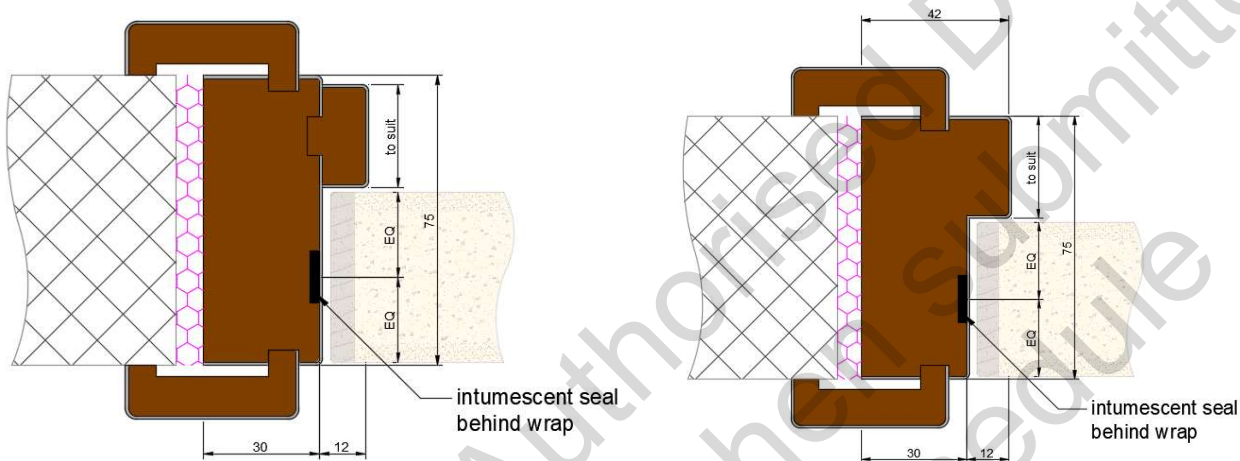
Note: The above drawings assume that the wall aperture is suitably protected so that the effects of the fire cannot affect the wall. If this is not the case the fire stopping must be full depth and the extension liner must be the same width and material as the frame.

12.3 Door Frame Installation: Frame 4

The following diagrams indicate acceptable door frame installations and are used with leaf 1 and 2:

The drawings below show the relationship of frame and architrave to wall and location of fire stopping between wall and frame.

See section 12.9 for preparation requirement for the aperture.

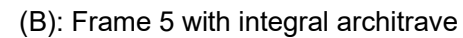


(A): Frame with planted stop

(B): Frame 4 with integral (rebated) stop

Example of installation details for frame 4

The following diagrams indicate acceptable door frame installations and are used with Leaf 1 and 2 based on test CFR 1809181:
The drawings below show the relationship of frame to wall and location of fire stopping between wall and frame.
See section 12.9 for preparation requirement for the aperture.



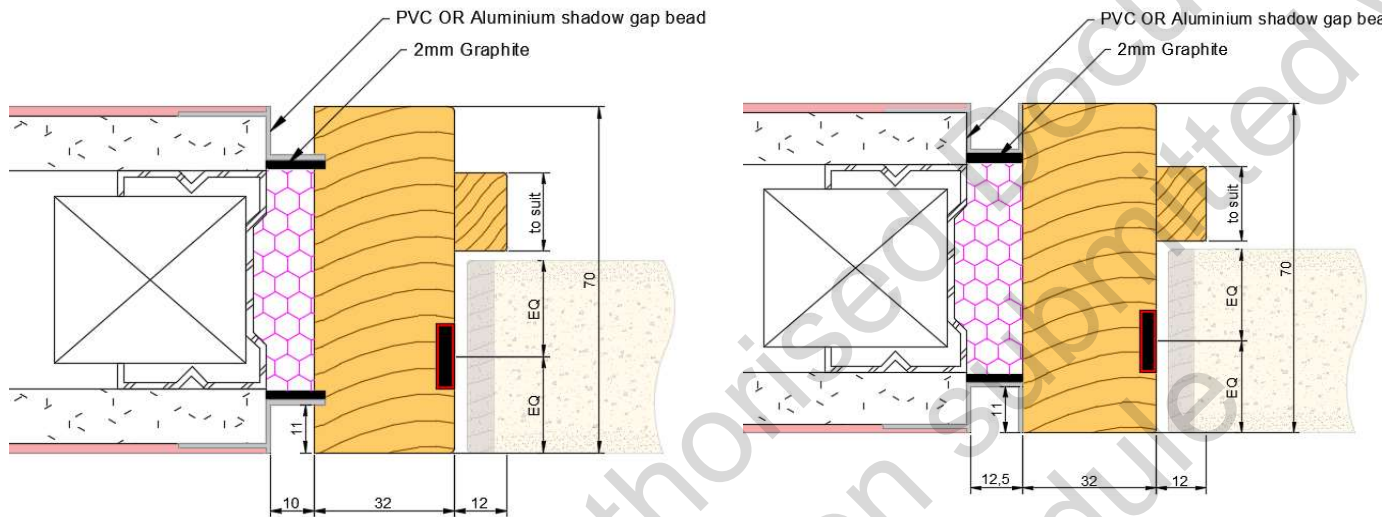
Example of installation details for frame 5

12.4.1 Shadow gaps

The testing of projecting door frames (Frame 5) demonstrates that the door frame is capable of a degree of resistance to fire when the rear of the frame is exposed. This gives confidence that shadow gap details can be permitted within the following parameters:

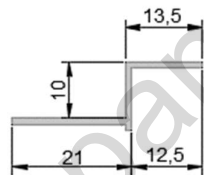
- Additional protection to the rear of the frame must be provided by either a 10mm x 2mm graphite strip or a 10mm x 4mm PVC encapsulated graphite seal fitted to the shadow gap around the whole perimeter of the door frame
- For single acting doorsets the minimum frame section width after any rebates have been taken out of the back of the frame must remain as 32mm
- For double acting doorsets the minimum frame section width after any rebates have been taken out of the back of the frame must remain as 40mm
- Where shadow gaps are created by using fire stopping see sketches C) and D) below, the fire stopping must be tightly compacted mineral wool or a fire rated foam and both materials must have test evidence to BS 476 Part 22 or BS EN 1634-1, for this application and achieved 30 minutes minimum fire resistance.
- Where shadow gaps are created by using a sub-frame see sketches E) and F) below, the sub-frame material must be manufactured from one of the following materials, fitted to ensure that when the frame is fitted there are no gaps between frame and subframe once the frame screwed into position:
 - Timber with a density >450kg/m³
 - Plywood with a density >600kg/m³
 - MDF with a density >700kg/m³
 - Particleboard with a density >600kg/m³
 - Non-combustible board
- The maximum width and depth of any shadow gap is 13mm x 13mm. These dimensions refer to the total gap after the application of any trims and/or intumescent protection

Examples of permitted shadow gap installations are shown below. These examples are not exhaustive, the written details above must be adhered to.

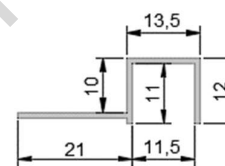


(C): Frame 5 with PVC/Aluminium shadow gap trim (1)

(D): Frame 5 with PVC/Aluminium shadow gap trim (2)

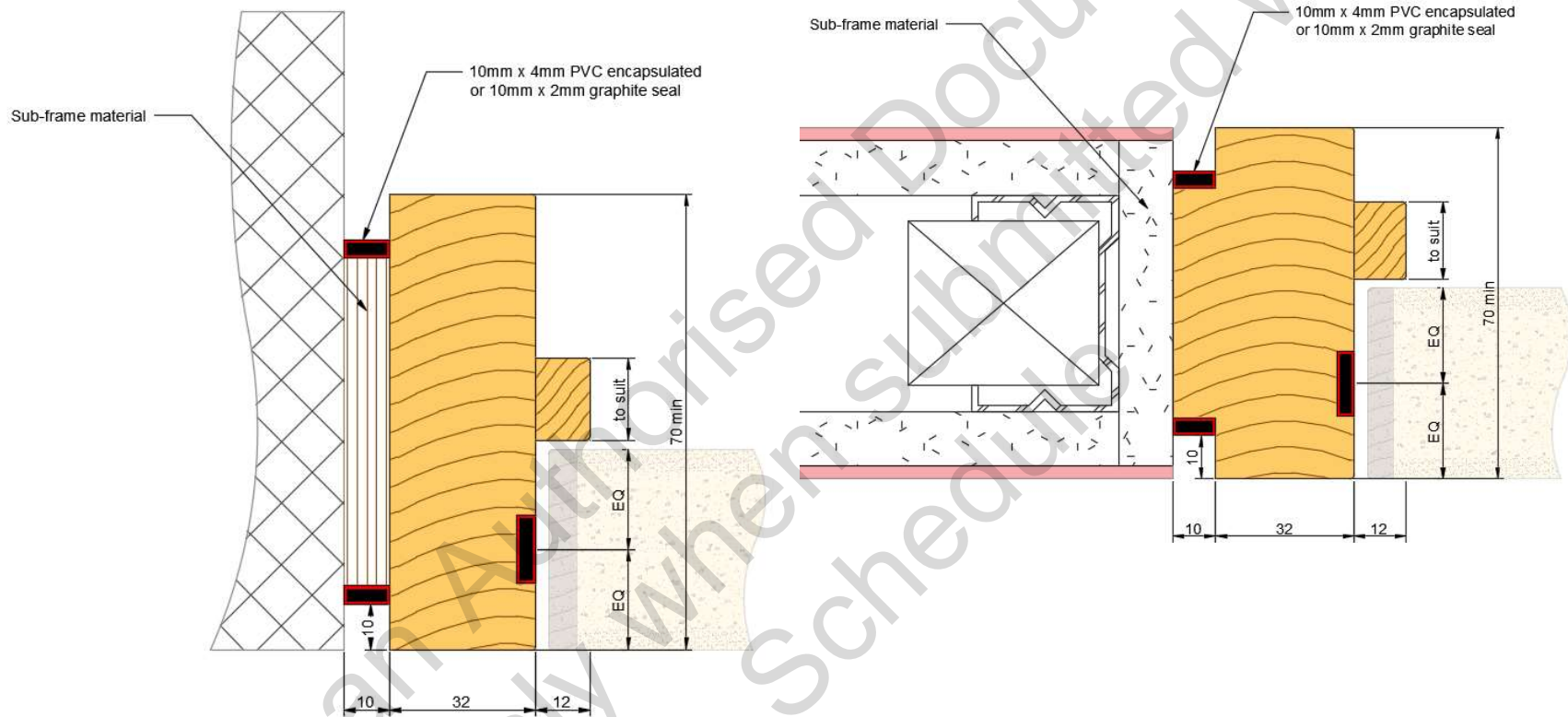


PVC/Aluminium shadow gap trim detail 1



PVC/Aluminium shadow gap trim detail 2

Example of installation detail for frame 5 with shadow gap and trim where fire stopping required



(E): Frame 5 with separate sub-frame and tight fit into aperture forming shadow gap (3)

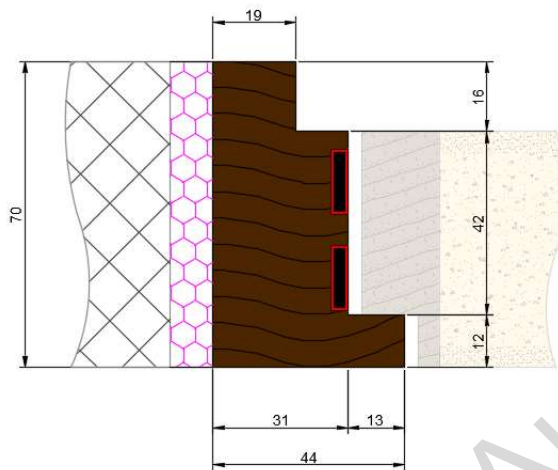
(F): Frame 5 with integral sub-frame and tight fit into aperture forming shadow gap (4)

12.5 Door Frame Installation: Frame 6

The following diagrams indicate acceptable door frame installations and are used with Leaf 2 based on test CFR180810.

The drawings below show the relationship of frame to wall and location of fire stopping between wall and frame.

See section 12.9 for preparation requirement for the aperture.



Example of installation detail for frame 6

12.7 Firestopping

The firestopping requirements between back of frame and wall are dependent on the gap size.

Gaps (mm)	Requirement
Up to 10	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. Based on the test evidence the use of architraves is optional.
Up to 20	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 or full depth expanding PU foam, fire tested for this application to BS 476: Part 22: 1987 or BS EN 1634-1. Architraves are optional.
Over 20	<p>A timber based or non-combustible subframe up to 50mm thick can be inserted and fixed to the wall and the gap between subframe and wall filled as follows:</p> <ul style="list-style-type: none">• Gaps 5 to 10mm 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. .• The subframe to door frame gap filled as above.

Note:

When fitting door frame shadow gaps, the details in section 12.4.1 must be followed.

12.8 Packers

Packers can be timber of equal density to the frame, plywood, MDF, or proprietary plastic packers tested by Halspan.

12.9 Wall Types

Prima 30 has been tested in the following wall types. However, consideration of the wall type must be given. The frame needs to be fixed back to a supporting construction which will remain in place for the duration of the fire resistance period. The following aspect off the different supporting constructions need to be considered.

- Masonry, concrete and solid blockwork – are considered as rigid constructions and are solid throughout the depth of the wall and have inherent fire resistance. These walls are denoted as rigid constructions in BSEN 1364 Part 1 as they deflect very little during a fire test. Due to the solid nature of the wall firestopping as detailed above will be adequate. Highly perforated blockwork is not covered by this category and specific test evidence must be referenced to ensure adequate support during the fire exposure period.
- Steel stud partitions – are considered as flexible constructions and incorporate large voids in their construction (which may or may not filled with insulation material). These walls deflect during a fire test. Specific evidence is required to ensure the stud supporting the door frame is stabilised to reduce deflection during the fire test and the aperture is adequately lined to prevent gases getting into the void.
- Timber stud partitions – are not categorised but tend not to distort significantly during a fire test. A timber stud does not need to be stabilised during the fire test and the aperture will only need to be lined if the timber stud is not fully protecting the void in the partition.
- Bespoke walls and partitions will require specific test evidence.

12.10 Onsite Leaf Size Adjustment

Leaf 1 and 2 may be altered as follows:

Leaf Size Adjustment Specification	
Element	Reduction
Leaf	The manufactured size of the leaf may be reduced in height or width without restriction but will still require to be relipped in line with this assessment.
Lipping	The dimensions stated in section 5.4 may be reduced by 1mm for fitting purposes but cannot go below the minimum. PVC/ABS lippings may not be reduced in thickness

12.11 Door Gaps

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

Door Gap & Alignment Tolerance Specification	
Location	Dimension
Door edge gaps	A minimum of 2mm and a maximum of 4mm
Alignment tolerances	Leaves must not be proud of each other or from the door frame by more than 1mm.
Threshold	10mm between bottom of leaf and top of floor covering. This is the maximum tolerance for fire resistance only . Where smoke control is required refer to section 14

12.12 Structural Opening

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

12.13 Fixings

12.13.1 Doorsets

The supporting construction must be capable of staying in place and intact for the full period of fire resistance required from the doorset. The frame jambs are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corners of the door frame. 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.

12.13.2 Doorsets with Side Screens

The supporting construction must be capable of staying in place and intact for the full period of fire resistance required from the doorset and sidescreen. The perimeter frame sections are to be fixed to the supporting construction using steel fixings at 600mm maximum centres and maximum of 150mm from corners of the perimeter frame. The fixings must be of the appropriate type for the supporting construction and must penetrate to a minimum depth of 50mm.

13 Insulation

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

Insulation Performance Criteria	
Type	Details
Partially insulating	Doorsets incorporating up to 20% of non-insulating glazing
Fully insulating	Unglazed doorsets or doorsets including 30 minute insulating glazing – glasses 11, 13 to 15 in the table in section 6.2.

14 Smoke Control Guidance

14.1 General

Fire doorsets required to provide an ambient temperature smoke control function will need to fit smoke seals, or combined intumescent/smoke seals, which have been tested in accordance with one of the following test methods:

- BS 476-31.1: 1983; *Fire tests on building materials and structures, Section 31.1 Method of measurement under ambient temperature conditions*
- BS EN 1634-3: 2004; *Fire resistance tests for door and shutter assemblies —Part 3: Smoke control doors and shutters*

In order for the doorset to provide the smoke leakage performance demonstrated by the smoke leakage test evidence, the orientation and position of the smoke seals, any interruptions, door edge gaps, and the type/configuration of the doorset must be consistent with the details tested. Additionally, any other components installed where smoke leakage may occur, such as glazing, hardware, or sealing between the frame and structural surround, must also be taken into account.

The tested leakage rate will be expressed in the test reports as the volume of air leakage through the complete specimen, per linear metre of door gap, per hour ($\text{m}^3/\text{m/h}$), which is measured at the pressure differences stated in the relevant standard e.g. 10Pa, 25Pa and 50Pa. The test reports will also state the tested threshold arrangement (i.e. taped or fitted with a threshold seal).

The fitting of smoke seals must not compromise the fire resistance performance of the doorset designs assessed within this field of application. Smoke seals that are fitted to fire resisting doorsets must therefore have suitable fire resistance test evidence that demonstrates the performance of the seal in fire test conditions, when tested as part of a complete doorset, to the relevant test standard (e.g. BS 476: Part 22: 1987 or BS EN 1634-1). The configuration and location of the seal in the fire test evidence must align with that tested for smoke leakage.

Combined fire and smoke seals can be used in lieu of separate fire seals and perimeter smoke seals, where there is appropriate fire resistance and smoke leakage test evidence to support the respective performances.

Halspan have successfully conducted smoke control tests to BS EN 1634-3: 2004 on a number of sealing systems and the products are summarised below. For full details the test reports should be referred to.

- Halspan Triple Fin (Reference: SLS-TRI-100/2) – fitted in the frame reveal in the upstand of the stop.
- Halspan Trident Seal (Reference: SLS-TRI-103/5) – fitted in the leaf edge or frame reveal.
- Halspan threshold drop down seal (Reference: SLS-DRP range) – fitted in the bottom edge of the leaf.
- Norseal 810 drop seal – fitted in the bottom edge of the leaf.
- Norseal 710 perimeter seal – fitted in the frame reveal against the upstand of the door stop.
- Norseal 720 perimeter seal – fitted in the leaf edge or frame reveal.

15 Conclusion

This assessment provides a field of application for the Halspan Prima 30 product family which consists of Leaf types 1 and 2. Providing the doorset design is constructed in accordance with this assessment, it is Warringtonfire's opinion that, if the doorset were to be tested in accordance with BS 476: Part 22: 1987, the doorset would provide a minimum of 30 minutes integrity and insulation (subject to section 13).

Halspan Authorised Document
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16 Declaration by the Applicant

- 1) We the undersigned confirm that we have read and comply with obligations placed on us by the Passive Fire Protection Forum (PFPF) Guide to undertaking technical assessments and engineering evaluations based on fire test evidence 2021 Industry Standard Procedure
- 2) We confirm that any changes to a component or element of structure which are the subject of this assessment have not to our knowledge been tested to the standard against which this assessment has been made.
- 3) We agree to withdraw this assessment from circulation should the component or element of structure, or any of its component parts be the subject of a failed fire resistance test to the standard against which this assessment is being made.
- 4) We understand that this assessment is based on test evidence and will be withdrawn should evidence become available that causes the conclusion to be questioned. In that case, we accept that new test evidence may be required.
- 5) We are not aware of any information that could affect the conclusions of this assessment. If we subsequently become aware of any such information, we agree to ask the assessing authority to withdraw the assessment.

(In accordance with the principles of FTSG Resolution No. 82: 2001)

Signed: *A. Davies*

Name: Andy Davies

Position: Technical Manager

Date: 11/04/2022

For and on behalf of: **Halspan Ltd**

17 Limitations

The following limitations apply to this assessment:

- 1) This field of application addresses itself solely to the elements and subjects discussed and do not cover any other criteria or modifications. All other details not specifically referred to should remain as tested or assessed.
- 2) This field of application report is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available to Warringtonfire, the assessment will be unconditionally withdrawn, and the applicant will be notified in writing. Similarly, the assessment evaluation is invalidated if the assessed construction is subsequently tested since actual test data is deemed to take precedence.
- 3) This field of application has been carried out in accordance with Fire Test Study Group Resolution No. 82: 2001.
- 4) Opinions and interpretation expressed herein are outside the scope of UKAS accreditation.
- 5) This field of application relates only to those aspects of design, materials and construction that influence the performance of the element(s) under fire resistance test conditions against the ISO 834 time/temperature curve that is stipulated in the standard this assessment concludes to. 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 field of application, the element is suitable for its intended purpose.
- 6) This field of application report 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 field of application would be regarded by any Building Control authorities or any other third parties as sufficient for that or any other 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.
- 8) The version/revision stated on the front of this field of application supersedes all previous versions/revisions and must be used to manufacture doorsets from the stated validity date on this front cover. Previous revisions of the Field of Application cannot be used once an updated Field of Application has been issued under a new revision.

18 Validity

- 1) The assessment is initially valid for five years after which time it is recommended to be submitted to Warringtonfire for re-appraisal.
- 2) This assessment report is not valid unless it incorporates the declaration given in Section 16 duly signed by the applicant.

Position:	Assessor	Co-author	Reviewer
Signature:			
Name:	* E L Wilson	* Dr K D S Towler	* P N Barker
Title:	Product Assessor	Senior Product Assessor	Technical Manager

* For and on behalf of Warringtonfire

Appendix A Revision & Revalidation Table

Rev.	Job Reference	Date	Description
A	A00065	23.05.00	Revalidation and update to include Halspan 30 steel/aluminium frame doorsets and all additional test evidence.
B	A01206	14.12.01	5 year revalidation and update including additional test evidence.
C	A03032	13.08.03	Update into the new report format with additional cover relating to Sureguard edge protectors and laminates, ironmongery, MDF and softwood glazing beads.
D	A05012	24.01.05	Update to include new test data covering lippings, ironmongery, glazing, intumescent seals and framing.
E	A10027	29.05.10	Update to include new test data covering lippings, hardware, feature grooves, glazing, 617 Intumescent seals, PVC lippings and fire stopping details. The report has been technically reviewed and revalidated for a further 5 year period.
F	A10216	20.10.10	Update to include grooves with hardwood inserts, re-instate security viewers, new sealing to structural opening section, recessed push/kick plates, inclusion of glazing system 30049, inclusion of Norfast perimeter seal.
G	A11167	11.08.11	Update to include test evidence for Prima Plus design. Scope of application for Prima Plus design is contained in Appendix H.
H	F15271	11.12.15	Review, update and revalidation for a further 5 year period. The update to include STS perimeter seals, overpanels with the Prima Plus design, Pyroguard EI 30 glass, side panels & Tectus concealed hinges.
I	F15315	17.12.15	Update to include STS glazing system; Ref: ST105GT, STS smoke control seals; Ref: ST1009, STS drop seals; Ref: ST422 & STS hardware gaskets; Ref: ST30, based on FEP/F14207 Rev. B, FEP/F15034 & FEP/F15097.
J	436927	11.04.22	<p>Revision of assessment scope in new report layout based on BSEN 15725: 2010 and reformatting of report in the new Warringtonfire brand and layout. Review and revalidation for 5 years.</p> <p>Revised assessment to cover only timber based frames with Prima 30 (44 and 54mm cores). The following to be covered in the following separate assessments:</p> <ul style="list-style-type: none"> • Steel and Aluminium frames, reference Part 2. • Leaves based on Prima 30 38mm core with facings, reference Part 3 • Edge Protectors, reference Part 4. • Halspan 30 Prima Plus doorsets, reference Part 5. <p>Includes, but not limited to, changes within the following sections: (1) Removals and additions to permitted configurations, intumescent seals and leaf sizes (2) Clarification and addition of new frames: Morland Firecheck (Frame 4), Projecting softwood, MDF and Hardwood (Frame 5), Over Rebated Hardwood (Frame 6), Woodex frame (Frame 7). (3) Developed Lipping specifications, and limits on use, as well as equal and unequal rebated meeting edges (4) Addition of 12mm MDF decorative facing. (5) Updates to permitted grooves (6) Addition of steel bar decorative inserts (7) Full review and addition or amendment of</p>

			<p>all hardware sections, including locks, concealed hinges, concealed closers, bolts, cable loops, handles, push plates and kick plates, security viewers, environmental seals, threshold drop seals, air transfer grilles, letter plates and lock cylinders . (6) Update to cableway section (7) Permitted glazing, glazing beads, glazing sizes and glazing intumescent options, includes removals and additions (8) Removal of Zeroplus Slimport glazing, inclusion of Hygeno Intavista and Flushview, Vistamatic VS2, BetweenGlassBlinds Optiwhite glazing units (9) Timber threshold/cills (10) interconnecting doorsets (11) Permitted adhesives (12) Installation requirements</p>
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Appendix B Test Evidence for Specific Items of Hardware

Appendix B1 Closer Test Evidence

Closer Test Evidence								
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Closer Type	Closer Manufacturer	Closer Reference	Closer Protection
DMT-DO-50-582-R1-1	LSASD	46	Frame 2	Hardwood	Overhead	Dormakaba	TS83 2-5	
BMT/FEP/F15 097	ULSADD	33	Frame 1	European Redwood	Overhead	Arrone	AR1500	
CFR1808311	LSADD	41	Frame 1	Douglas Fir	Overhead	Halspan	CLR-AGN-101 Eco Closer	
CFR1909021	LSADD	45	Frame 1	European Redwood	Overhead	Halspan	CLR-AGN-100 Eco closer	
WF389552	LSASD	36	Frame 1 32x70	Pine Softwood	Concealed	Dormakaba	ITS96 FL EN3-6	Body & Faceplate - 1mm Interdens, Guide rail - 1mm Interdens
WF391351	LSASD	40	Frame 1	Redwood (softwood)	Overhead	Rutland	TS3204	
Chilt/RF00068	LSASD	42	Frame 2	Sapele	Overhead	Dormakaba	TS73V	
Chilt/RF01056	LSASD	39	Frame 1 30x70	European redwood	Concealed	Cairney Hardware	C2300	Cairney Hardware 30 minute intumescent pack
Chilt/RF03076	LSASD	26	Frame 2 32x95	Sapele	Concealed	Mitron	Mitron concealed door closer	Intumescent protection pad included
Chilt/RF05080	LSADD	35	Frame 2	Sapele	Overhead	Dormakaba	TS73V	
Chilt/RF08127	LSADD	38	Frame 1	European redwood	Overhead	Halspan	CLR-BSS-100 Power closer	

Closer Test Evidence								
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Closer Type	Closer Manufacturer	Closer Reference	Closer Protection
Chilt/RF10111	LSADD	46	Frame 1	European redwood	Overhead	Dormakaba	TS71	
RF95042	ULSADD	35	Frame 2	Sapele	Overhead	Dormakaba	TS72V	
WF145632	LSASD	38	Frame 1	White wood	Overhead	New Star Door	5003	
WF152318	LSASD	23	Frame 3	MDF	Overhead	Dormakaba	TS71	
WF403596A AR1	ULSASD	42	Frame 1	European redwood	Overhead	Synergy	S800 EN 2-5*	
WF368204	ULSASD	48	Frame 1	European redwood	Overhead	Arrone	AR1500	
WF370389	ULSADD+OP	37	Frame 2	Beech wood	Overhead	Rutland	TS6204	
WF372220 AR1	LSADD	42	Frame 2	Mahogany	Overhead	Devon	86.214.86 FC	
CFR2004171 LH	LSASD	46	Frame 2	Sapele	Overhead	Halspan	R9000 series	
CFR2004171 RH	LSADD	53	Frame 2	Sapele	Overhead	Halspan	R9000 series	
WF311289 A	ULSASD	38	Frame 1 33x70	Pine	Concealed	Taiwan Daedalus Control	DR660/760	1mm Interdens to body. 2mm Interdens to channel.
WF311289B	ULSASD	58	Frame 2 36x94	Sapele	Concealed	Taiwan Daedalus Control	DR660/760	1mm Interdens to body. 2mm Interdens to channel.
WF345070	ULSASD	34	Frame 1	Softwood	Overhead	HOPPE	AR1500-SSS	
WF380315/C Issue 2	ULSASD	36	Frame 1	Pine	Overhead	Arrone	AR450	
TI091-2B	LSASD	35	Frame 2 30x95	Oak	Concealed	Euroart	DC8524	2mm Interdens to body. 1mm interdens to closer arm in frame.

Closer Test Evidence								
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Closer Type	Closer Manufacturer	Closer Reference	Closer Protection
CFR1909241	ULSADD	31	Frame 2 45x96	Sapele	Concealed	Halspan (see note to test report summary)	Halspan 6200 (see note to test report summary)	graphite sheet (see test report for details)

Appendix B2 Hinge Test Evidence

Hinge Test Evidence									
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Hinge Type	Hinge Manufacturer /Supplier	Hinge Reference	Hinge Size (blade)	Hinge Protection
DMT-DO-50-582-R1-1	LSASD	46	Frame 2	Hardwood	Lift off butt hinge	Assa Abloy	3228	110 x 41	
BMT/FEP/F1 5097	ULSADD	33	Frame 1	European Redwood	Butt hinge	Intelligent UK		100 x 30	STS 1mm graphite
BMT/FEP/F1 5214 AR1	LSADD	40	Frame 2	Mahogany	Butt hinge	Halspan	HIN-BSS-104	101 x 30	
BMT/FEP/F1 5270 AR1	LSASD	39	Frame 2	Sapele	Butt hinge	Halspan	HIN-BSS-103	101 x 30	
Chilt/RF0209 8	LSASD	36	Frame 2	Sapele	Lift off butt hinge	Royde & Tucker	Hi Load 101	100 x 35	
Chilt/RF0402 1	LSADD	52	Frame 2	Sapele	Lift off butt hinge	Royde & Tucker	Hi Load R107	100 x 35	2mm thk. Therm-A-Strip
Chilt/RF0606 8	LSASD	32	Frame 1	European redwood	Butt hinge	Interior Hardware		101 x 30	
Chilt/RF0803 9	LSADD	50	Frame 1	European redwood	Butt hinge	ASSA	ASSA 3244	115 x 31	
Warres No. 131998	LSADD	27	Frame 3	MDF	Butt hinge	Hinge Master	Speedset Hinge	102 x 31	2mm Interdens
Warres No. 131998	LSADD+OP	32	Frame 1	White wood	Butt hinge	Cooke Bros	Phoenix 7590	100 x 31	2mm Interdens
WF403596A AR1	ULSASD	42	Frame 1	European redwood	Butt hinge	Jedo	102	102 x 31	

Hinge Test Evidence									
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Hinge Type	Hinge Manufacturer /Supplier	Hinge Reference	Hinge Size (blade)	Hinge Protection
WF372220 AR1	LSADD	42	Frame 2	Mahogany	Butt hinge	Devon	89.338.86	101 x 30	
WF415117A	LSASD	36	Frame 1	Redwood	Butt hinge	Royde & Tucker	Hi Load 102	100 x 35	1mm interdens
CFR2004171 LH	LSASD	46	Frame 2	Sapele	Butt hinge	Halspan	HIN-BSS-102	102 x 30	1mm SLS-PAD-103
CFR1009301 RH	LSADD	41	Frame 1	Pine	Projection hinges	Royde & Tucker	H102-B	100 x 53	1mm interdens
WF345070A	ULSASD	34	Frame 1	Softwood	Butt hinge	HOPPE	AR8580-SSS 102 x 76 overall	Not stated	1mm Interdens Lorient AR/INT-8180/8580

Appendix B3 Concealed Hinge Test Evidence

Concealed Hinge Test Evidence									
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Hinge Type	Hinge Manufacturer	Hinge Reference	Hinge Size (blade)	Hinge Protection
WF348445	LSASD	33	Frame 1 32 x 55 Covered with plasterboard	Softwood	Concealed Hinge	Simonswerk	TECTUS TE 541 3D FVZ	185 x 86	2mm MAP ITO-TECTUS-TE541 FVZ (kit)
WF316349	LSASD	A: 34 B: 34	Frame 1 44x90	Softwood 510kg/m3	Concealed hinge	Simonswerk	A: TECTUS TE 340 3D FR B: TECTUS TE 640 3D A8 FR	A: 160 x 73 B: 240 x 98	Graphite based ref ROKU Strip M130
WF337470A	ULSASD	39	Frame 1 31x70	Softwood 450kg/m3	Concealed hinge	Bartels Systembeschläge	Pivota DX 61 3D	180 x 30	1mm interdens

CFR1710131 LH	ULSASD	48	Frame 2 44x94	Hardwood	Concealed hinge	Royde & Tucker	605	174 x 32 (leaf side) 119 x 22 (frame side)	1mm & 2mm interdens
CFR1710131 RH	ULSASD	38	Frame 2 44x94	Hardwood	Concealed hinge	Royde & Tucker	604 (for HC605, see Section 11.5.2.6)	176 x 29 (leaf side) 119 x 22 (frame side)	1mm & 2mm interdens
CFR1711241 RH	ULSASD	40	Frame 2 44x94	Hardwood	Concealed hinge	Atomica	K8000CS	120 x 29 (leaf side) 120 x 20 (frame side)	1mm interdens

Appendix B4 Floor Spring, Top & Bottom Pivot / Strap Test Evidence

Floor Spring Test Evidence								
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Species	Closer Type	Closer Manufacturer	Closer Model Reference	Closer Protection
Chilt/RF06048 A	LDASD	34	Frame 1	European redwood	Floor spring	Dorma	BTS80	
Chilt/RF06074	LDASD	34	Frame 1	European redwood	Floor spring	Dorma	BTS80	
WF193473/A	DADD	50	Frame 2	Sapele	Floor spring	HOPPE	AR700-4	
WF193473/A	DADD	50	Frame 2	Sapele	Top centre & bottom strap	HOPPE	AR700-ACC	2mm MAP
CFR1009301 LH	LSASD	50	Frame 1	Pine	Pivot set	Royde & Tucker	H131-400 & H131-P44 (pivot protector)	1mm interdens

Appendix B5 Lock & Latch Test Evidence

Lock & Latch Test Evidence									
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Lock/Latch Type	Lock/Latch Manufacturer	Lock/Latch Reference	Lock/Latch Size (forend)	Lock/Latch Protection
DMT-DO-50-582-R1-1	LSASD	46	Frame 2	Hardwood	Access control lock	Dormakaba	79/RT Series	203 x 25	1mm Interdens
DMT-DO-50-582-R1-4	LSASD	46	Frame 2	Hardwood	Access control lock	Dormakaba	Quantum Pixel	203 x 27	1mm Interdens
BMT/FEI/F1 4118	LSASD	66		Winkhauser Eco60	3 point lock	Winkhaus	AV2	1230 x 24	Various
BMT/FEP/F1 5097	ULSADD	33	Frame 1	European Redwood	Mortice lock/latch	Union	Union mortice latch	235 x 24	STS 1mm graphite
CFR100524 1	LSASD + SP + OP	31	Frame 2	Sapele	Tubular latch	Halspan	LCK-MS-201	78 x 21 x 15	
CFR111122 1	LSASD	37	Frame 1	European Redoak	Tubular latch	The Dale Collection	CSP706	57 x 26 x 1.6	1mm MAP
CFR190307 1 Rev 1	LSASD	39	Frame 1	Unsorted redwood	3 point lock	ERA	6945-80-85MA , 3 point manual latch / lock	1895 x 20	SLS-PAD-110 (1mm)
CFR190318 1	LSADD	35	Frame 1	European Redwood	Mortice lock/latch	Halspan	LCK-BSS-100	235 x 24	SLS-PAD-109 (1mm)
DMT-DO-50-583-R1	LSASD	43	Frame 2	Hardwood	Access control lock	Dormakaba	Saffire LX Series	203 x 25	1mm Interdens
LP-636.3/09	LSADD	34	Frame 1	Softwood	Mortice lock/latch	Assa Abloy	Abloy 4292	235 x 20	
WF391351	LSASD	40	Frame 1	Redwood (softwood)	Tubular latch	Smith & Locke Ltd.	3006K	63 x 25	1mm Interdens

Lock & Latch Test Evidence									
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Lock/Latch Type	Lock/Latch Manufacturer	Lock/Latch Reference	Lock/Latch Size (forend)	Lock/Latch Protection
WF367904	LSASD	36	Frame 1	Softwood	Access control lock	Assa Abloy	Vingcard Essence RFID (Active), Vingcard Classic RFID (In-active), Vingcard Signature RFID (In-active)	203 x 28	
WF401228	LSASD	29	Frame 1	Pine softwood	Access control lock	NSP Ltd	SMF 614 (digital lock), SMF Duo (Digital lock), SMF 02 Duo (Digital sash lock)	204 x 28	
Chilt/RF0105 9A (AR2)	LSASD	39	Frame 3	SAM MDF	Tubular latch	Henderson Hardware	Tubular mortice latch	57 x 26	
Chilt/RF0307 6	LSASD	26	Frame 2	Sapele	3 point lock	GU Ferco	3 point locking system	15 x 2060	2mm Therm-A-Flex
Chilt/RF0906 9	LSADD	37	Frame 1	European redwood	Tubular latch	E*S	E*S tubular steel mortise latch	57 x 26	
RF95042	ULSADD	35	Frame 2	Sapele	Mortice lock/latch	Henderson Hardware	3 lever lock/latch	152 x 22	1mm Interdens
RF97063	ULSADD	45	Frame 2	Sapele	Tubular latch	Legge	Tubular mortice latch	20 x 15 x 60	1mm Interdens
DMT-DO-50-583-R2	LSASD	43	Frame 2	Hardwood	Access control lock	Dormakaba	Quantum RFID	203 x 32	1mm Interdens
Warres No. 112248	ULSADD	30	Frame 1	European redwood	Mortice lock/latch	Colson	Sash lock	100 x 75	Acrylic mastic

Lock & Latch Test Evidence									
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Lock/Latch Type	Lock/Latch Manufacturer	Lock/Latch Reference	Lock/Latch Size (forend)	Lock/Latch Protection
Warres No. 131998	LSADD	27	Frame 3	MDF	Tubular latch	Era Security Products	Tubular mortise latch	64 x 22	2mm Interdens
Warres No. 131998	LSADD+OP	32	Frame 1	White wood	Tubular latch	Legge	3" rebate latch	76 x 38	2mm Interdens
WF145632	ULSASD	27	Frame 1	White wood	Mortice lock/latch	Interior Hardware	76mm Euro Profile Sashlock	85 x 24	
WF403596A AR1	ULSASD	42	Frame 1	European redwood	Mortice lock/latch	Harbrine	Harbrine steel mortice lock/latch	235 x 20	
WF368204	ULSASD	48	Frame 1	European redwood	Mortice lock	Zoo	Dead lock	235 x 22	1mm Interdens
WF372220 AR1	LSADD	42	Frame 2	Mahogany	Mortice lock/latch	Devon	88.601.86	235 x 25	1mm Interdens
WF415117A	LSASD	36	Frame 1	Redwood	Mortice lock/latch	Securefast PLC	SEU777/2R	235 x 24	1mm Interdens
CFR200417 1 LH	LSASD	46	Frame 2	Sapele	Mortice lock/latch	Halspan	R60	234 x 22	1mm SLS-PAD-109
CFR200417 1 RH	LSADD	53	Frame 2	Sapele	Mortice lock/latch	Dormakaba	SVP 6268	235 x 24	1mm Intumescent kit 40SVP6024
CFR201002 1 LH	LSASD	38	Frame 1	Tulipwood	Access control lock	Salto	LE7Sxx with AEelement Fusion	235 x 24	1mm BASF Interdens
CFR201002 1 RH	LSADD	30	Frame 1 32x75 (jambs) 45x75 (head)	Redwood	Access control lock	Assa Abloy	Abloy EL560	235 x 24	1mm SLS-PAD-120 MAP
CFR201002 1 RH	LSADD	30	Frame 1 32x75 (jambs) 45x75 (head)	Redwood	Access control lock	Assa Abloy	Abloy 351U80 to frame head	200 x 25	1mm SLS-PAD-120 MAP

Lock & Latch Test Evidence									
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Lock/Latch Type	Lock/Latch Manufacturer	Lock/Latch Reference	Lock/Latch Size (forend)	Lock/Latch Protection
WF345070A	ULSASD	34	Frame 1	Softwood	Mortice lock/latch	HOPPE	AR8004-76-SC	154 x 25	1mm Interdens intumescent pack supplied with lock
WF345070B	ULSASD	56	Frame 2	Hardwood	Mortice lock/latch	HOPPE	AR910-S-60-SSS	235 x 24	1mm Interdens intumescent pack supplied with lock
WF193473/A	ULSADD	50	Frame 2	Sapele	Mortice lock/latch	HOPPE	AR913-S-80 SSS	235 x 24	2mm interdens
WF380315/C Issue2	ULSASD	36	Frame 1	Pine	Mortice lock/latch	Arrone	AR910	235 x 24	1mm interdens
CFR100930 1 LH	LSASD	50	Frame 1	Pine	Mortice lock/latch	Royde & Tucker	H131-516 (strike) H131-711 (roller latch)	229 x 25	1mm interdens
WF429950	LSASD	53	Frame 1	Tulipwood	3 point lock	Winkhaus	AV2/AV2e	1770 x 20	0.8mm Winkhaus AV2/AV3 Intumescent Kit

Appendix B6 Bolt Test Evidence

Bolt Test Evidence									
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Bolt Type	Bolt Manufacturer	Bolt Reference	Bolt Size	Bolt Protection
BMT/FEP/F1 5097	ULSADD	33	Frame 1	European Redwood	Flush bolt	Zoo	ZAS03	609 x 20 & 203 x 20	STS 1mm graphite
BMT/FEP/F1 5214 AR1	LSADD	40	Frame 2	Mahogany	Flush bolt	Eclipse	J34620	155 x 20 & 38 x 18	SLS-PAD-110 (1mm)
CFR180831 1	LSADD	41	Frame 1	Douglas Fir	Surface bolt	Royde & Tucker	Barza bolt / Barza keep	222 x 17.5 x 25 / 6 x 47 x 25	
CFR190902 1	LSADD	45	Frame 2	European Redoak	Flush bolt	Halspan	LCK-MSC-210	202 x 17 x 20 x 0.9	Therm-A-Strip (10 x 2)
WF372220 AR1	LSADD	42	Frame 1	Mahogany	Flush bolt	Devon	94.156.61	205 x 20 / 20 x 38	2mm Therm-A-Strip
WF372227 AR1	LSADD	56	Frame 2	Beech	Flush bolt	Simplex	SPX101 / SDS101	170 x 26 / 60 x 24	2mm Kilargo
CFR100930 1 RH	LSADD	41	Frame 1	Pine	Recessed surface bolt	Royde & Tucker	ANZ-220-BSS-FD	51 x 20 (case) / 36 x 18 (keep)	1mm interdens
CFR100930 1 RH	LSADD	41	Frame 1	Pine	Flush bolt	Royde & Tucker	ANZ-220-BSS-FFD	100 x 26 (case) / 36 x 18 (keep)	1mm interdens

Appendix B7 Door Viewer Test Evidence

Door Viewer Test Evidence						
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Door Viewer	Viewer Protection
BMT/FEP/F15270 AR1	LSASD	39	Frame 2	Sapele	Eurospec - SWE1000SSS (15Ø)	None
CFR1903071 Rev 1	LSASD	39	Frame 1	Unsorted redwood	Lorient - LRJ3745 (38Ø)	2mm graphite
CFR1903071 Rev 1	LSASD	39	Frame 1	Unsorted redwood	Lorient - LRJ3745 (38Ø)	2mm graphite
CFR2010021	LSASD	38	Frame 1	Tulipwood	JNF - IN.23.010B (14Ø)	None
WF380315B	ULSASD	36	Frame 1	Pine	Arrone Door Viewer AR539	0.6mm graphite

Appendix B8 Letter Plate Test Evidence

Letter Plate Test Evidence					
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Letter Plate
CFR1903071 Rev 1	LSASD	39	Frame 1	Unsorted redwood	Royde & Tucker (LP08-44 (CF255)) - with 38 x 3 graphite collar
WF428611	LSASD	34	Frame 1	Softwood	Halspan TS008 Certified Letterplate (see note to test report summary)
CFR1811211	ULSASD	38	Frame 1	Douglas Fir	Royde & Tucker LP08V-44-PSS-C (vertical letterplate) – 38 x 3 graphite collar

Appendix B9 Electronic Strike Test Evidence

Electronic Strike Test Evidence								
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Electronic Strike Manufacturer	Electronic Strike Reference	Electronic Strike Protection	Electronic Strike Notes
WF415117A	LSASD	36	Frame 1	Redwood	Gianni Industries Inc	1) GK361M-ST-1224. 2) GK450M-ST-1224	1mm Interdens	2 strikes fitted
WF404075A	ULSASD	36	Frame 1	Redwood	Specialized Security	DS-01-02	1mm Interdens	
CFR2010021	LSADD	30	Frame 1	Redwood	Assa Abloy	EffEff 332.238	1mm MAP	

Appendix B10 Cable Loop Test Evidence

Cable Loop Test Evidence								
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Cable Loop Manufacturer	Cable Loop Reference	Cable Loop Protection	Cable Loop Notes
WF415117A	LSASD	36	Frame 1	Redwood	Gianni Industries Inc	DL-500 & DL-417ST	1mm Interdens	2 cable loops fitted
CFR2010021	LSADD	30	Frame 1	Redwood	Assa Abloy	EA280	1mm MAP	2no cable loop. 1no fitted in each jamb
CFR2004171 RH	LSADD	53	Frame 2	Sapele	Dormakaba	KU 260	1mm MAP SLS-PAD-107	2no cable loop. 1no fitted in each jamb
WF337470A	ULSASD	39	Frame 1 31x70	Softwood 450kg/m3	Bartels Systembesch lage	Pivota DX "Connect"	1mm Lorient Interdens	1no conductor loop fitted concealed to leaf and hanging jamb

Appendix B11 Magnetic Lock & Contact Test Evidence

Magnetic Lock Test Evidence										
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Material	Magnetic Lock Manufacturer	Magnetic Lock Reference	Magnetic Lock Bracket	Magnetic Lock Contact	Magnetic Lock Contact Armature	Magnetic Door Stop/Holder
WF404075 A	ULSASD	36	Frame 1	Redwood	Specialized Security	ML 600	180 x 50 x 50 Alu ZL bracket	180 x 38 x 13 mild steel plate	BLK 600	Specialized Security DR-01
CFR20100 21 (Magnetic contact)	LSADD	30	Frame 1	Redwood	Assa Abloy	1076D				

Appendix B12 Handle Test Evidence

Handle Test Evidence									
Test Report Reference	Config.	Test Result (integrity)	Frame	Frame Species	Handle Type	Handle Manufacturer	Handle Model Reference	Handle Protection	
WF193473/A	ULSADD	50	Frame 2	Sapele	Push plate & recessed pull	HOPPE	AR3903-BB-PULL-SSS	1mm interdens	
WF193473/A	ULSADD	50	Frame 2	Sapele	Knobset	HOPPE	AR3901/10-UN-SSS		
WF193473/A	ULSADD	50	Frame 2	Sapele	Turn & release	HOPPE	AR3901/29-SSS		
CFR2004171 LH	LSASD	46	Frame 2	Sapele	Lever type	Zoo Architectural Hardware	ZCA030SA	1mm SLS-PAD-107	
WF380315/C Issue2	ULSASD	36	Frame 1	Pine	Lever type	Arrone	E1140/42H/42 HS		
CFR1009301 LH	LSASD	50	Frame 1	Pine	Lever type	Dline			
CFR2010021 RH	LSADD	30	Frame 1	Redwood	Lever type	Assa Abloy	INOXI 3-19/242 levers		

Appendix C Permitted Leaf & Frame Combination

The table below shows which leaf and frame combination is permitted.

Frame		Leaf	
No.	Material	1	2
		44mm thick core	54mm thick core
1	Softwood and Hardwood	✓	✓
2	Hardwood	✓	✓
3	MDF	✓	✓
4	Wrapped MDF – Morland Frame	✓	✓
5	Projecting – Softwood, MDF and Hardwood	✓	✓
6	Over Rebated – Hardwood	✗	✓
7	WoodEx	✓	✓

Appendix D Permitted Configuration for each Leaf & Frame Combination

The following tables below show what configurations are permitted based on the permitted leaf and frame combinations.

Appendix D1 Permitted Configuration for Leaf 1 + Frame 1-7

Permitted Configuration for Leaf 1 + Frame 1-7													
Frame		Configuration											
		LSASD	ULSASD	DASD	LSASDOP	ULSASDOP	DASDOP	LSADD	ULSADD	DADD	LSADDOP	ULSADDOP	DADDOP
1	Softwood and Hardwood	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	Hardwood	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	MDF	✓	✓	✗	✓	✓	✗	✓	✓	✗	✓	✓	✗
4	MDF – Wrapped (Morland Frame)	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
5	Projecting – Softwood, MDF or Hardwood	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
6	Over rebated – Hardwood	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
7	WoodEx	✓	✓	✗	✗	✗	✗	✓	✓	✗	✗	✗	✗

Appendix D2 Permitted Configuration for Leaf 2 + Frame 1-7

Permitted Configuration for Leaf 2 + Frame 1-7													
Frame		Configuration											
		LSASD	ULSASD	DASD	LSASDOP	ULSASDOP	DASDOP	LSADD	ULSADD	DADD	LSADDOP	ULSADDOP	DADDOP
1	Softwood and Hardwood	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	Hardwood	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	MDF	✓	✓	✗	✓	✓	✗	✓	✓	✗	✓	✓	✗
4	MDF – Wrapped (Morland Frame)	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
5	Projecting – Softwood, MDF or Hardwood	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
6	Over rebated – Hardwood	✓	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗
7	WoodEx	✓	✓	✗	✗	✗	✗	✓	✓	✗	✗	✗	✗

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