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## Title

Supplementary Field of Application for:

Vistamatic VS2 Vision Panel for:

30 Minute Fire Resisting Timber Doorset Assemblies

For 30 minutes Fire Resistance

## Report No.:

Chilt/A12242 Revision D

## Issue Date:

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## Prepared for:

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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 supplementary Field of Application (FoA) report has been commissioned by Vistamatic Limited and relates to the fire resistance of the Vistamatic VS2 vision panel system and is intended to supplement the primary FoA reports of a number of proprietary fire resisting doorset designs listed in section 4.2.

Unless stated otherwise in this report, the details contained within the primary FoA must take precedence. This supplementary FoA is only valid when used in conjunction with the primary FoA reports detailed herein.

This supplementary FoA report is for National Application and has been written in accordance with the general principles outlined in BS EN 15725.

This supplementary FoA 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 supplementary FoA has been written using appropriate test evidence generated at UKAS accredited laboratories, to the relevant test standard. The supporting test evidence has been deemed appropriate to support the manufacturers stated glazing systems with the proprietary doorset designs listed in section 4.2. The primary evidence for the glazing systems is summarised in section 3.1.

The scope presented in this supplementary FoA relates to the behaviour of the proposed glass and glazing systems when installed within identified doorset designs 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 supplementary FoA 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 primary FoA reports referenced in section 3.2 are to be used in conjunction with the scope presented in this supplementary FoA. At the time of issue of this document, the relevant primary FoA reports have remaining validity. The referenced primary FoA reports must retain validity, in order that this supplementary FoA report can be considered valid when used in conjunction with the relevant primary FoA. If the revision of the relevant primary FoA changes, then this supplementary FoA must no longer be used with that primary FoA.

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 doorset designs listed in section 4.2, when fitted with the proprietary fire resistant glass and glazing systems detailed in section 4.6 & 5, for 30 minutes fire resistance integrity, 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 scope defined in this report is based on fire resistance test evidence for doorset designs incorporating the Vistamatic VS2 Vision Panel, which is summarised in section 3.1. Analysis of specific construction details that require assessment are given within this supplementary FoA against the relevant element of construction, as appropriate.

In order to construct a doorset design using the Vistamatic VS2 Vision Panel design listed herein, this supplementary FoA must be used in conjunction with one of the primary FoAs listed in section 3.2, as appropriate. This supplementary FoA cannot be used to support the fire resistance of a doorset design by itself.

This supplementary FoA only provides information relevant to the Vistamatic VS2 Vision Panel and how it may be used as an option to similar products currently listed within the primary FoA reports listed in section 3.2. All other construction details and design limitations must be in compliance with the primary FoA for the doorset design, as appropriate.

It is beyond the remit of this supplementary FoA report to provide scope for performance characteristics other than fire resistance integrity performance. Any other performance requirement is to be subject to a separate analysis.

## 2.1 Assumptions

- All densities referred to in this document are based upon an assumed moisture content of 12%.
- It is assumed that doorsets will be constructed in accordance with the primary FoA reports referred to herein, other than those specific aspects related to glazing as detailed in this supplementary FoA.
- For components created using solid timber sections referred to in this assessment, it is assumed that, for all timbers, they will be of a quality deemed to meet or exceed class J30 as specified in BS EN 942: 2007, subject to adequate repairs, other than glazing beads which must meet a minimum class J10. Note that areas under intumescent seals/gaskets are not considered to be concealed faces and defects must be repaired.
- Where timber is referred to within this document it is assumed that the timber element is made from a continuous solid piece, unless specifically detailed otherwise.
- All dimensions detailed herein may be varied by ±2% except where minimum, maximum or a range of dimensions are given.

# 3. Test Data

The test evidence summarised below has been generated to support the fire resistance performance of the Vistamatic VS2 Vision Panel system that is the subject of this supplementary FoA . Only key aspects of the tested details have been summarised.

**Note:**

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

The test evidence has been generated within timber-based door leaf constructions that are deemed fundamentally similar to the designs in the primary FoAs (i.e. timber particleboard and timber lamel cores) and has therefore been deemed suitable for the purpose of this supplementary FoA.

Some of the test evidence used in the evaluation is over 5 years old. In accordance with industry guidance, the evidence has been reviewed to consider its suitability. Warringtonfire are satisfied that there have been no significant revisions to the relevant test standards which would render the evidence irrelevant.

The evidence has been generated to BS476 Part 22: 1987 and EN 1634-1. The latter is known to be more onerous than the BS476: Part 22: 1987 standard, primarily due to the use of plate thermocouples within the furnace to record the furnace temperature.

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. Furthermore, the neutral pressure regime is positioned lower relative to the specimen height in a European fire door test, therefore resulting in greater relative positive pressure conditions than those expected in a BS476 Part22: 1987 test, which has the potential to increase hot gases and flaming on the unexposed side. These factors result in more onerous test conditions for doorsets tested to the BS EN 1634-1 test standard compared with the BS476: 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 evidence citied in the following section, tested to both named standards referenced above can be utilised in this assessment which will conclude in terms of the fire resistance performance of the VS2 vision panel assembly if tested in accordance with BS476 Part 22:1987.

## 3.1 Primary Test Evidence

The following summaries are provided to give the key details relevant to the test report and scope of this supplementary FoA. To support the design options and scope in this supplementary FoA, specific test reports are referred to, as appropriate.

### 3.1.1 Test report Chilt/RF12065 Revision B

The referenced test report, the essential details of which are summarised below, is primary data for the Vistamatic VS2 vision panel, fitted within 2No fire resisting timber based doorsets.

| | | |
|---|---|---|
| Date of test | 10th July 2012 | |
| Testing body | Chiltern International Fire, now trading as Warringtonfire Testing and Certification Ltd. UKAS No 1762 | |
| Sponsor | Vistamatic Ltd | |
| Tested Product | 2No Latched, single leaf, single acting, timber doorsets with 2No vision panels in each. | |
| Tested Orientation | Opening into the furnace<br>Vistamatic Unit: Operating lever handle oriented to the unexposed face of both doorsets, with cutout through the 6mm thick Pyro-Ex glass pane | |
| Summary of test specimen (mm) | Both specimens<br>Leaf:<br>Leaf dimensions: 2100 (h) x 1140 (w) x 44 (t)<br>Core: Halspan Prima - graduated density particleboard core 44 (t), incorporating 8 (t) Lipping: Sapele Lippings on vertical edges only.<br>Frame:<br>Frame: 70 (d) x 32 (w) European Redwood with a 25 (w) x 12 (t) stop.<br>Both Specimens: Intumescent:<br>1No. 20 x 4 Lorient Polyproducts Ltd Type 617 centrally in the frame reveals to the head and jambs.<br>Specimen A: Glazing<br>Both vision panels utilised a Norseal acrylic mastic (Fire Wizard) as glazing liner nominally 3 (t) and Mann McGowan Pyroglaze 30 10x 3 (t) fitted between glass and timber beads. Both apertures included Pyro-EX toughened glass 10 (t) fitted to exposed face, 4 (t) annealed glass as a central pane with 6 (t) Pyro-Ex toughened glass fitted on unexposed face & a stainless steel spacer bar 5.5 (t) fitted between the outer glass layers.<br>Left vision panel: sight size 485 (w) x 985 (h).<br>Right panel size: 384 (w) x 1485 (h).<br>Expansion allowance: 3 all round.<br>Bead: Both panels utilised profiled 20 (h) x 17 (d) Sapele beads with 9 x 9 bolection returns and a 15O chamfer fitted to both faces.<br>Bead fixing: fixed with 40 (l) steel pins fitted 50 from corners at 150 centres.<br>Specimen B: Glazing<br>Aperture liner: Both vision panels utilised a Norseal glazing liner 44 x 1.8 ref: 1.8-408 53/SA.<br>Glazing system (between glass & bead): Norseal graphite ref: 2.5-390 x 10/SA fitted between glass and steel beads. Both apertures included Pyro-EX toughened glass 10 (t) fitted to exposed face, 4 (t) annealed glass as a central pane with 6 (t) Pyro-Ex toughened glass fitted on unexposed face & a stainless steel spacer bar 5.5 (t) fitted between the outer glass layers. Left vision panel: sight size 375 (w) x 1473 (h), right panel size: 476 (w) x 976 (h), expansion allowance 3 all round.<br>Both panels utilised profiled 50 x 20 x 2 stainless steel beads fitted on the unexposed face & 50 x 2 stainless steel beading fitted around the glazing aperture on the exposed face. All were fixed with threaded studs welded to unexposed face bead and 40 (l) machine security screws fitted 20 from corners at 170 centres. | |
| Test Standard | BS EN 1634-1: 2008 | |
| Performance | Doorset A | Doorset B |
| | Integrity: 30 minutes<br>Insulation: 10 minutes- standard set & glass | Integrity: 34 minutes<br>Insulation: 10 minutes - glass |

### 3.1.2 Test report WF502390 Revision 1

The referenced test report is primary data to support the performance of the Vistamatic VS2 glazing unit in timber based doorsets.

| | | |
|---|---|---|
| **Date of test** | 16th December 2021 | |
| **Testing body** | Warringtonfire Testing and Certification Ltd. UKAS No 1762 | |
| **Sponsor** | Vistamatic Limited | |
| **Tested Product** | 2No Single-acting Single-leaf doorset incorporating the VS2 DGU. Referenced Doorset A and Doorset B for the purpose of the test. | |
| **Sampling detail** | BM TRADA Contract Reference SC21134 | |
| **Description of Specimen** | Leaf core: Halspan Optima particleboard<br>Leaf size: 2100mm high x 926mm wide x 44mm thick<br>Glazing (Doorset A): Vistamatic VS2 with stainless steel glazing bead. 400mm high x 800mm wide x 22mm thick overall unit size.<br>Glazing (Doorset B): Vistamatic VS2 with hardwood glazing bead. 1500mm high x 500mm wide x 26mm thick overall unit size.<br><br>For full description of the tested doorsets reference must be made to the full test report. | |
| **Tested Orientation** | <u>Doorset A & B:</u><br>Opening away from the furnace<br><br>Vistamatic Unit:<br>Operating lever handle oriented to the exposed face of both doorsets. | |
| **Test Standard** | BS EN 1634-1: 2014+A1:2018 | |
| **Performance** | Integrity | Insulation |
| | Doorset A: 38 minutes<br>Doorset B: 37 minutes | Doorset A: 18 minutes<br>Doorset B: 21 minutes |

### 3.1.1 Test report IF12021

The referenced test report, the essential details of which are summarised below, is the supplementary data for the use of the Vistamatic VS2 vision panel, fitted within a small scale fire resisting timber based doorset.

| | |
|---|---|
| **Date of test** | 3rd April 2012 |
| **Testing body** | Chiltern International Fire, now trading as Warringtonfire Testing and Certification Ltd. (UKAS No 1762) |
| **Sponsor** | Vistamatic Ltd |
| **Tested Product** | Latched, single leaf, single acting, timber doorsets with vision panel. |
| **Tested Orientation** | Opening into the furnace<br><br>Vistamatic Unit:<br>Operating lever handle oriented to the unexposed face of the doorset. |
| **Summary of test specimen (mm)** | Leaf:<br>Leaf dimensions: 1005 (h) x 928 (w) x 44 (t)<br>Core: Halspan graduated density particleboard core 44 (t).<br>Lipping: 6 (t) Sapele Lippings on vertical edges only.<br>Frame:<br>Frame: 70 (d) x 32 (w) European Redwood<br>Doorstop: 20 (w) x 12 (t) planted stop.<br>Intumescent:<br>Head & Jambs: 15 x 4 Lorient Polyproducts Ltd Type 617 centrally in the frame reveals.<br>Hardware:<br>Hinges: 2No Royde & Tucker H101 lift type hinges<br>Closer: none fitted<br>Latch: none fitted<br>Glazing<br>Glass 1 (outer – unexposed side): 6 (t) toughened glass<br>Glass 2 (inner): 4 (t) annealed glass<br>Glass 3 (outer – exposed side): 10 (t) toughened glass<br>Aperture size: 406 (w) x 806 (h)<br>Vision panel size: 400 (w) x 800 (h)<br>Expansion allowance 3mm all round<br>Beading: Sapele, 19 (h) x 17 (w) including 9x9 bolection return and 15 degrees chamfer.<br>Bead fixing: 40 (l) steel pins, at 50mm from corners, 150mm centres and 45 degrees to the face of the glass.<br>Glazing system (between glass & bead): 10x4 (t) Mann McGowan Pyroglaze 30 fitted between glass and bead.<br>Glazing system (around perimeter of glass): 3 (t) Norseal intumescent mastic fitted around the perimeter of the glass |
| **Test Standard** | BS EN 1634-1: 2008 |
| **Performance** | Integrity: 44 minutes<br>Insulation: N/A |

## 3.2 Supplementary Test Evidence

The following primary FoA reports provide the key details necessary to construct a doorset design in conjunction with the glazing systems given in this supplementary FoA.

Each of the below door designs have been successfully tested and assessed to provide a minimum of 30 minutes fire resistance to BS476 Part 22:1987.

Other than for the specific glazing system requirements detailed herein, the relevant primary FoA for the specified doorset design must be referred to for all details of construction and installation.

### 3.2.1 Test report Chilt/RF05102

The referenced test report, the essential details of which are summarised below, is primary data for the Pilkington Med-X (X-ray shielding) glass, fitted within a fire resisting timber based X-ray shielding doorset.

| | |
|---|---|
| **Date of Test** | 27th September 2005 |
| **Identification of Test Body** | Chiltern International Fire, now trading as Warringtonfire Testing and Certification Ltd. UKAS No. 1762 |
| **Sponsor** | Wardray Premise Ltd |
| **Tested Product** | Unlatched, Single Acting, Double Leaf, Timber Doorset with lead elements and glazing |
| **Tested Orientation** | Opening in towards heating condition |
| **Summary of Test Specimen (mm)** | Leaves:<br>Overall Size: 2100(h) x 1000/500(w) x 60(t).<br>Core: Pacific Rim Wood Flamebreak 'FD30'– 44(t) overall.<br>Outer facings: 6(t) Verola plywood (620kg/m$^3$).<br>Lead sheet: (C8), 3.55(t) fitted between Flamebreak leaf and outer facings on exposed face, with a lead strip 38(w) x 3.55(t) fitted at the hanging leaf edges between the inner and outer facings.<br>Lipping: Shorea (580-620 kg/m$^3$), 12(t) to vertical edges only.<br>Astragal: Shorea (580-620 kg/m$^3$) 19(t) x 60(w) fitted to exposed face of the main leaf on a 3.55(t) lead strip.<br>Frame:<br>Head & Jambs: Shorea (580-620 kg/m$^3$), 100 (d) x 45(w), with 19 (t) x 35 (w) planted stop. Lead elements were incorporated.<br>Frame Fixing: 3No 80(l) steel wood screws per jamb.<br>Threshold: Non Combustible.<br>Architrave: Shorea (580-620 kg/m$^3$) 60(w) x 12(t) with lead lining.<br>Intumescent:<br>Frame Reveals, heads & jambs: 2No Lorient Polyproducts LP1504 - 15 x 4.<br>Leaf Edges (meeting edges only): 1No Lorient Polyproducts LP1504SS - 15 x 4 in active leaf only.<br>Hardware: both specimens<br>Hinges: 4No Royde & Tucker butt type hinges Ref.H1356 per jamb 130(h) x 44(w) (blade size).<br>Closer: Arrow 517P overhead type closer (footprint size: 284(l) x 76(h)).<br>Lock/Latch: Eurospec mortice (Forend size: 153(h) x 25(w)).<br>Lock/Latch Status: Disengaged for test.<br>Handle: Legge B397/77SCP lever type handle (Rose size: Ø54).<br>Flushbolts: Eurospec aluminium (Forend size: 202(h) x 21(w)).<br>Hardware protection:<br>Under all hinge blades: 2(t) graphite sheet ref: Norseal HINP2 |

| | |
|---|---|
| | Under Forend & Keep and encasing latch body: Norseal graphite ref: Sheet 5 impregnated paper.<br>Protecting flushbolt rebates and under keep: Norseal graphite ref: Sheet 5 impregnated paper.<br><u>Glazing</u><br>Double glazed unit comprising:<br>Glass 1: Pilkington Med-X (x-ray shielding glass) 11(t) on fire side.<br>Glass 2: Pilkington Pyroshield 6(t) on the non-fire side.<br>Beads: Shorea (580-620 kg/m$^3$) 23(w) x 25(d) with 36˚ chamfer and 5 x 5 bolection return. Steel screws 50(l) at 50 from corners and 150 (c/c). A steel angle fitted between the Pyroshield and glazing aperture and separating the two panes.<br>Lead strip (C8) fitted behind bead on exposed face.<br><u>Glazing system</u><br>Lining the glazed aperture – Sealmaster GL60 2(t) liner with Fireglaze sealant 10(H) x 2(t) between the beads and glass. |
| **Test Standard** | BS 476 Part 22:1987 |
| **Performance** | Integrity: 29 minutes (the test was terminated at 32 minutes)<br>Insulation: 29 minutes |
| **Failure Mode** | Failure by way of continuous flaming at the top of the meeting edges at 29 minutes 50 seconds. |
| **Reason For Use** | The failure recorded at 29 minutes was not related to the glazing which is the item of interest from this test evidence. No failure was reported at the glazing throughout the duration of the test which was terminated at 32 minutes. This test evidence is therefore considered acceptable for use in the support of fire resistance performance of the Med-X glazing |

### 3.2.2 Field of Application report Chilt/A02066 Revision O – Strebord 44

The referenced field of application report contains the test evidence used to support the fire resistance of the Strebord 44 doorset design. Construction of these proprietary fire resisting doorsets must be in accordance with the requirements of the field of application report, other than as specified for the Vistamatic VS2 vision panel detailed within this report.

| | | |
|---|---|---|
| **Validity period** | From: | 1st October 2021 |
| | To: | 1st October 2026 |
| **Identification of assessing body** | Warringtonfire Testing & Certification Ltd | |
| **Assessment Sponsor** | Falcon Panel Products Ltd | |
| **Summary of assessment** | Graduated density particleboard core doorsets for 30 minute fire resisting applications. The assessment extends the scope of application of the tested design based on a series of full scale fire resisting tests and covers:<br>• Permitted configurations<br>• Maximum leaf sizes<br>• Intumescent specifications<br>• Frame<br>• Hardware | |
| **Test Standard** | BS 476 Part 22: 1987 | |

### 3.2.3 Field of Application report Chilt/F15159 Revision F – Stredor 44

The referenced field of application contains the test evidence used to support the fire resistance of the Stredor 44 doorset design. Construction of these proprietary fire resisting doorsets must be in accordance with the requirements of the field of application report, other than as specified for the Vistamatic VS2 vision panel detailed within this report.

| | | |
|---|---|---|
| **Validity period** | From: | 1st July 2022 |
| | To: | 1st July 2027 |
| **Identification of assessing body** | Warringtonfire Testing & Certification Ltd | |
| **Assessment Sponsor** | Falcon Panel Products Ltd | |
| **Summary of assessment** | Door leaves comprise a tri-layer lamel core with plywood or MDF faces for 30 minute fire resisting applications. The assessment extends the scope of application of the tested design based on a series of full scale fire resisting tests and covers:<br>• Permitted configurations<br>• Maximum leaf sizes<br>• Intumescent specifications<br>• Frame<br>• Hardware | |
| **Test Standard** | BS 476 Part 22: 1987 | |

### 3.2.4 Field of Application report FEA/F97174 Part 1 Revision J – Prima 30

The referenced field of application contains the test evidence used to support the fire resistance of the Prima 30 doorset design with timber frames. Construction of these proprietary fire resisting doorsets must be in accordance with the requirements of the field of application report, other than as specified for the Vistamatic VS2 vision panel detailed within this report.

| | | |
|---|---|---|
| **Validity period** | From: | 11th April 2022 |
| | To: | 18th March 2027 |
| **Identification of assessing body** | Warringtonfire Testing & Certification Ltd | |
| **Assessment Sponsor** | Halspan Ltd | |
| **Summary of assessment** | Solid particleboard core doorsets for 30 minute fire resisting applications. The assessment extends the scope of application of the tested design based on a series of full scale fire resisting tests and covers:<br>• Permitted configurations<br>• Maximum leaf sizes<br>• Intumescent specifications<br>• Timber based Door Frames<br>• Hardware | |
| **Test Standard** | BS 476 Part 22: 1987 | |

### 3.2.5 Field of Application report FEA/F97174 Part 2 Revision J – Prima 30

The referenced field of application contains the test evidence used to support the fire resistance of the Prima 30 doorset design with metal frames. Construction of these proprietary fire resisting doorsets must be in accordance with the requirements of the field of application report, other than as specified for the Vistamatic VS2 vision panel detailed within this report.

| | | |
|---|---|---|
| **Validity period** | From: | 19th October 2022 |
| | To: | 18th October 2027 |
| **Identification of assessing body** | Warringtonfire Testing & Certification Ltd | |
| **Assessment Sponsor** | Halspan Ltd | |
| **Summary of assessment** | Solid particleboard core doorsets for 30 minute fire resisting applications. The assessment extends the scope of application of the tested design based on a series of full scale fire resisting tests and covers:<br>• Permitted configurations<br>• Maximum leaf sizes<br>• Intumescent specifications<br>• Steel & Aluminium Door Frames<br>• Hardware | |
| **Test Standard:** | BS 476 Part 22: 1987 | |

### 3.2.6 Field of Application report Chilt/A01204 Part 1 Revision H – Optima 30

The referenced field of application contains the test evidence used to support the fire resistance of the Optima 30 doorset design with timber frames. Construction of these proprietary fire resisting doorsets must be in accordance with the requirements of the field of application report, other than as specified for the Vistamatic VS2 vision panel detailed within this report.

| | | |
|---|---|---|
| **Validity Period** | From: | 15th November 2023 |
| | To: | 8th October 2025 |
| **Identification Of Assessing Body** | Warringtonfire Testing & Certification Ltd | |
| **Assessment Sponsor** | Halspan Ltd | |
| **Summary Of Assessment** | Solid particleboard core doorsets for 30 minute fire resisting applications. the assessment extends the scope of application of the tested design based on a series of full scale fire resisting tests and covers:<br>• Permitted Configurations<br>• Maximum Leaf Sizes<br>• Intumescent Specifications<br>• Frame<br>• Hardware | |
| **Test Standard** | BS 476 Part 22: 1987 | |

### 3.2.7 Field of Application report FEA/F98164 Revision P – Flamebreak 30

The referenced field of application contains the test evidence used to support the fire resistance of the Flamebreak 30 doorset design. Construction of these proprietary fire resisting doorsets must be in accordance with the requirements of the field of application report, other than as specified for the Vistamatic VS2 vision panel detailed within this report.

| | | |
|---|---|---|
| **Validity period** | From: | 27th August 2024 |
| | To: | 27th August 2029 |
| **Identification of assessing body** | Warringtonfire Testing & Certification Ltd | |
| **Assessment Sponsor** | Pacific Rim Wood Ltd | |
| **Summary of assessment** | Lamella core doorsets for 30 minute fire resisting applications. The assessment extends the scope of application of the tested design based on a series of full scale fire resisting tests and covers:<br>• Permitted configurations<br>• Maximum leaf sizes<br>• Intumescent specifications<br>• Frame<br>• Hardware | |
| **Test Standard** | BS 476 Part 22: 1987 | |

# 4. Technical Specification

## 4.1 General

The technical specification for the proposed door assemblies is given in the following sections and is based on the primary test evidence for the Vistamatic VS2 Vision Panel and primary FoA reports, summarised in section 3.

## 4.2 Permitted Proprietary Doorset Designs

The proprietary doorset designs proposed to be fitted with the glass and glazing systems detailed herein must be fully constructed in accordance with their associated primary FoA report (see section 3.2).

The field of application supporting the performance of the doorset design will provide full information on:

- Intended use
- Permitted configurations
- Orientations
- Leaf dimensions
- Intumescent specifications
- Permitted hardware options
- Installation methodologies.

The supporting primary FoA reports considered for use with this supplementary field of application are detailed in section 3.2 and are specific to the revision detailed. The following proprietary door designs have been considered for use with the glazing systems detailed in sections 4.6 & 5 of this supplementary FoA:

- Halspan 30 Prima in both timber and steel door frames
- Halspan 30 Optima
- Halspan XT60, IT60, XT60R, XT60 Head Rail
- Falcon Strebord 44
- Falcon Stredor 44
- Pacific Rim Wood Flamebreak 30

## 4.3 Intended Use

The intended use of the proposed door assemblies 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.

## 4.4 Glazing Proprietary Doorsets – General Considerations

The testing conducted on the proprietary doorset designs demonstrates that they are capable of tolerating glazed apertures, whilst providing a margin of over performance, this is supported by the summarised test evidence within the appropriate primary field of applications (as identified within section 3.2).

The glass and glazing systems considered herein have therefore been considered acceptable providing the following parameters, for the specified doorset, are maintained:

1. In all cases, the aperture shapes considered herein are rectilinear. Alternative shapes are not permitted.
2. Apertures cannot be rotated (e.g. a square to be rotated to create a diamond effect).
3. The minimum distance between the glazed aperture and the edges of the leaf defined within the supporting primary FoA for the doorset design must be observed and may not be reduced.
4. The aperture dimensions (i.e. height, width and area) for each glazing system application in section 5 below must take precedence over those in the supporting primary FoA for the doorset design e.g. the glazed area, maximum height and width permitted for a specific glazing system application in section 5 below may not be increased on the basis of the area, height and width permitted within the relevant primary FoA for the doorset design. If the area, height and width in the relevant primary FoA for the doorset design is smaller than that for the glazing system in section 5, the smaller dimension will take precedence.
5. The provision of multiple apertures, including maximum total glazed area permitted, will be determined by the appropriate primary FoA for the specific doorset design. If multiple apertures are not permitted within the primary FoA for the doorset design, only single apertures may be fitted.
6. Where multiple apertures are permitted within the supporting primary FoA for the specific doorset design, the distances between apertures must be as determined within the appropriate primary FoA.

## 4.5 Doorset Configurations & Maximum Leaf Sizes

### 4.5.1 General

Based on the testing conducted on the various doorset designs listed in section 4.2, each of which has been tested incorporating glazed apertures in single and/or double leaf configurations and the testing conducted on the Vistamatic VS2 Vision Panel, this supplementary FoA report imposes no additional restrictions on leaf sizes or doorset configurations over and above those permitted in the primary FoA for the specified doorset.

### 4.5.2 Orientation

The primary testing for the Vistamatic VS2 Vision Panel has been conducted on doors opening towards the furnace or fixed specimens of door leaves. The glass and glazing system is not symmetrical and therefore can be considered for use only where the fire risk side of the doorset can be determined with the Vistamatic VS2 vision panel oriented as detailed in sections 5.2 - 5.4 below with respect to the fire risk face.

This supplementary FoA therefore supports the use of the Vistamatic VS2 Vision Panel oriented as detailed in sections 5.2 – 5.4 below with respect to the fire risk face, further limitations on direction of opening and fire risk may be dictated by the primary FoA for the specified door design.

## 4.6 Description of the Vistamatic VS2 vision panel

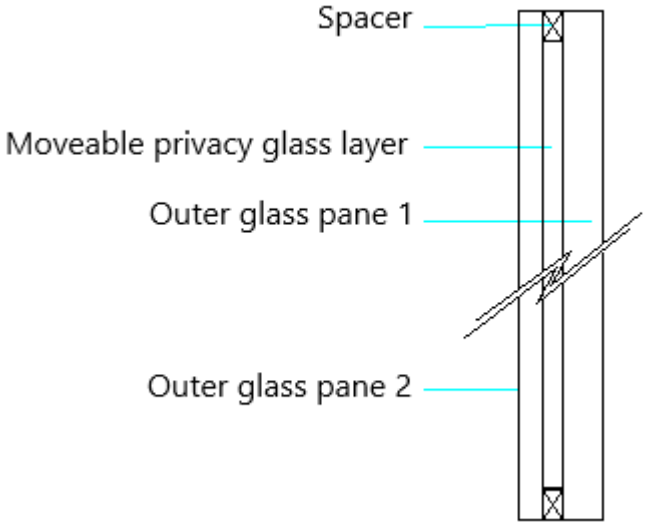
The tested Vistamatic VS2 vision panel comprises of two outer panes of toughened glass, one which must be 10mm thick and the other may be 6 – 10mm thick, complete with a stainless steel spacer between the two panes and a moveable middle layer of annealed glass for privacy. Alternative glass types to those listed in the table below and in sections 5.2 -5.4 are not permitted.

The table below gives a summary of the tested VS2 glazing panel assembly.

| Element | Specification | Location |
|---|---|---|
| Outer glass panes | 10mm thick Pyro-EX toughened glass – from Express Toughening | Fitted on the fire side |
| | 6 - 10mm thick Pyro-EX toughened glass – from Express Toughening | Fitted on the non-fire side. The operating lever penetrate this outer pane only |
| Middle glass layer (moveable) | 4mm thick annealed glass – from Express Toughening | Fitted between the outer glass layers (see note below) |
| Stainless steel spacer bar – DGS (Product ref: SS/BT05.5) | 5.5mm wide | Fitted between the outer glass layers |
| Operating lever | 80mm long, chrome plated zinc alloy | Fitted in the mid width of panel, 43mm up from the base. |
| Seal/Adhesive | Glass layers and spacer are sealed together as a single unit using Bostik hotmelt adhesive | - |

**Note:** Moveable middle layer of glass may be fitted at full height of the vision panel or fitted at the top half of the vision panel only, whilst the bottom half remains fixed.

The following figure shows the essential elements of the double glazed unit.




**Example cross section of the Vistamatic VS2 vision panel double glazed unit**
Note that operating lever and middle glass layer is not shown in the above drawing

The vision panel is retained within the door leaf with either timber or steel beads, which must meet the specifications detailed in the sections 5.2 - 5.4.

# 5. Glazing within the Door Leaf

## 5.1 General

The test evidence summarised in section 3.1 demonstrates that the Vistamatic VS2 vision panel system is capable of protecting glazed apertures, whilst providing a margin of over-performance.

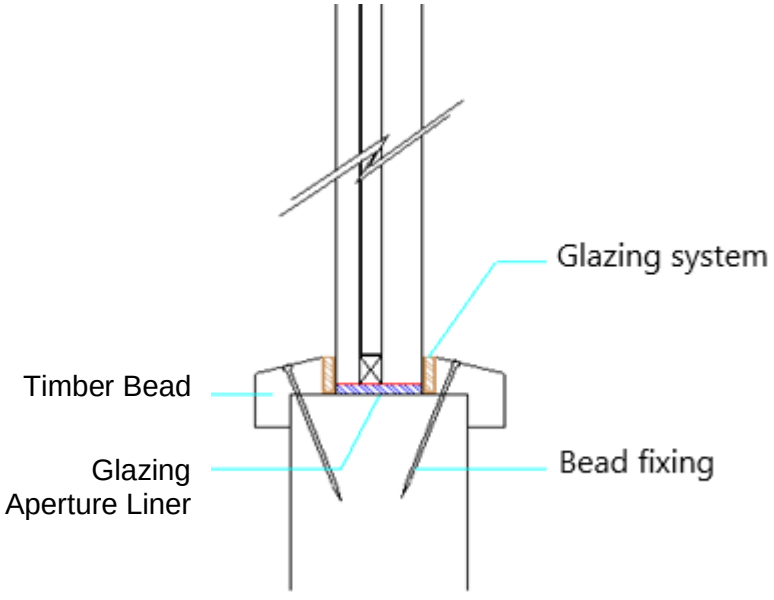
Glazing using Vistamatic VS2 Vision Panel is therefore acceptable, within the proprietary doorsets listed in section 4.2, in line with the limitations below and subject to the considerations in this supplementary FoA. Sections 5.2 - 5.4 summarise the scope of coverage for each of the glazing systems in terms of aperture dimensions (height, width and area) and glass type.

The glass and glazing variations within the Vistamatic VS2 vision panel system as detailed below have either been tested or assessed based on the test evidence detailed within section 3 and it is therefore possible to consider the following glazing scope with the identified proprietary doorset designs (as detailed in section 4.2).

When using the VS2 vision panel within any of the permitted proprietary fire resisting doorsets referenced in section 4.2, the following must be adhered to:

1. The maximum dimensions for the VS2 vision panel specified in the tables in section 5.2 – 5.4, must not exceed the maximum glazing dimensions for the proprietary doorset as specified in the primary Field of Application report.
2. Other than the installation specification of the VS2 vision panel given in sections 5.2 – 5.4, all other installation requirements (e.g., distance from leaf edges, acceptability of multiple glazed apertures, proximity to other elements of door construction, etc) must be in accordance with the specification given in the primary Field of Application report for the proprietary doorset being used.

## 5.2 Vistamatic VS2 vision panel – with timber beads




The figure shows a cross sectional drawing of the tested VS2 vision panel assembly with timber beads.

Based on the test evidence Chilt/RF12065 Revision B (Doorset A) and WF502390 Revision 1 summarised in section 3.1, the specifications for the VS2 vision panel assembly with timber beads detailed in the following table must be complied with.

| Element | Specification | Location |
|---|---|---|
| Bead material | Hardwood timber (with minimum density of 640kg/m$^3$)<br>Timber for glazing beads must be straight grained joinery quality hardwood, free from knots, splits and checks. | - |
| Bead size | A minimum of 20mm high x 17mm wide including a 9mm x 9mm bolection return.<br>Bead to be chamfered 15$^o$. | - |
| Bead fixings | 40mm long no. 6-8 steel screws or 40mm long x 1.8mm diameter steel pins.<br>Fixings must locate into the door core to a depth of approximately 20 – 25mm. | Located at minimum 150mm centres and 50mm from each corner. Fixings must be inserted at 35-40$^o$ to the vertical and located to 'cradle' the vision panel. |
| Glazing system | thick Mann McGowan Ltd Pyroglaze 30 strips – 10mm high x 3mm | Fitted between the glass and bead on both faces. |
| Glazing aperture liner | Norseal Ltd Fire Wizard intumescent mastic – nominally 3mm thick bead the full width of the unit | Fitted lining the glazing aperture between the Pyroglaze 30 glazing system. |
| Intumescent around centre glass actuator spindle | 5mm thick overall, comprised of 2No Norseal Ltd graphite strip ref: 2.5-390 x 10/SA | Fitted around the spindle lining the aperture in the outer glass layers |
| Expansion allowance | Non-combustible or hardwood setting blocks, 3-4mm thick to all around the edges of the glazing unit. | - |
| Maximum VS2 unit dimensions | Height: 1800mm<br>Width: 600mm<br>Area: 0.93m$^2$ | - |

**Note:** Maximum VS2 unit dimensions given in the table above are based on test evidence WF502390 Revision 1

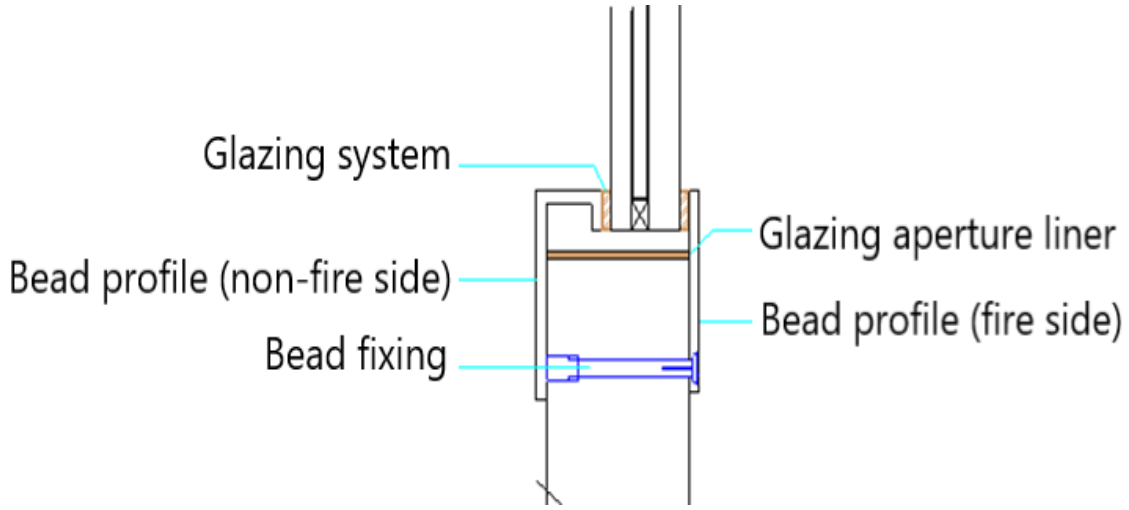
## 5.3 Vistamatic VS2 vision panel – with steel beads

Based on the test evidence Chilt/RF12065 Revision B (Doorset B) and WF502390 Revision 1 summarised in section 3.1, the specifications for the VS2 vision panel assembly with steel beads detailed in the following table must be complied with.

| Element | | Specification | Location |
|---|---|---|---|
| Bead material | | 2mm thick stainless steel profile | - |
| Bead Profile | Exposed Face | 50mm high x 2mm thick | Fitted around the glazing aperture on the exposed face |
| | Unexposed Face | 50mm high x 20 mm wide x 2mm thick | Fitted on the unexposed face |
| Bead fixings | | M5 x 40mm long machine steel screws fixed from the exposed face to the threaded studs on the unexposed face | Fitted at minimum 20mm from corners and 170mm centres. |
| | | M5 x 12mm long threaded studs | Welded to the unexposed face bead |
| Glazing system | | Norseal Ltd graphite gasket ref: 2.5-390 x 10/SA – 10mm high x 2.5mm thick | Fitted between the glass and beads on both faces |
| Glazing aperture liner | | Norseal Ltd graphite gasket ref: 1.8-408 x 53/SA – 1.8mm thick x 44mm | Fitted lining the glazing aperture |
| Intumescent around centre glass actuator spindle | | 5mm thick overall, comprised of 2No Norseal Ltd graphite strip ref: 2.5-390 x 10/SA | Fitted around the spindle lining the aperture in the outer glass layers |
| Expansion allowance | | 4mm all around the edges of the glazing unit, using non-combustible or hardwood setting blocks at the bottom edge. | - |
| Maximum VS2 unit dimensions | | Height: 1800mm<br>Width: 600mm<br>Area: 0.75m$^2$ | - |

**Note:** Maximum VS2 unit dimensions given in the table above are based on test Chilt/RF12065 Revision B (Doorset B)

The figure below shows cross sectional drawing of the tested VS2 vision panel assembly with steel beads.



## 5.4 Vistamatic VS2 vision panel with Med-X glass – with timber beads only

For applications requiring an x-ray shielding functionality, the Pilkington Med-X glass which has been successfully tested in test reference Chilt/RF05102, proven for 30 minutes integrity performance when used in a multi-pane glazing unit, fitted within a fire resisting timber based door leaf.

It is therefore considered acceptable for the Pilkington Med-X glass to be used as an alternative glass type on either the fire or non-fire side of the Vistamatic VS2 vision panel. The second outer pane may be 6- 10mm thick toughened glass meeting the requirements in section 4.6.

The following table summarises the permitted specification for the alternative glass type:

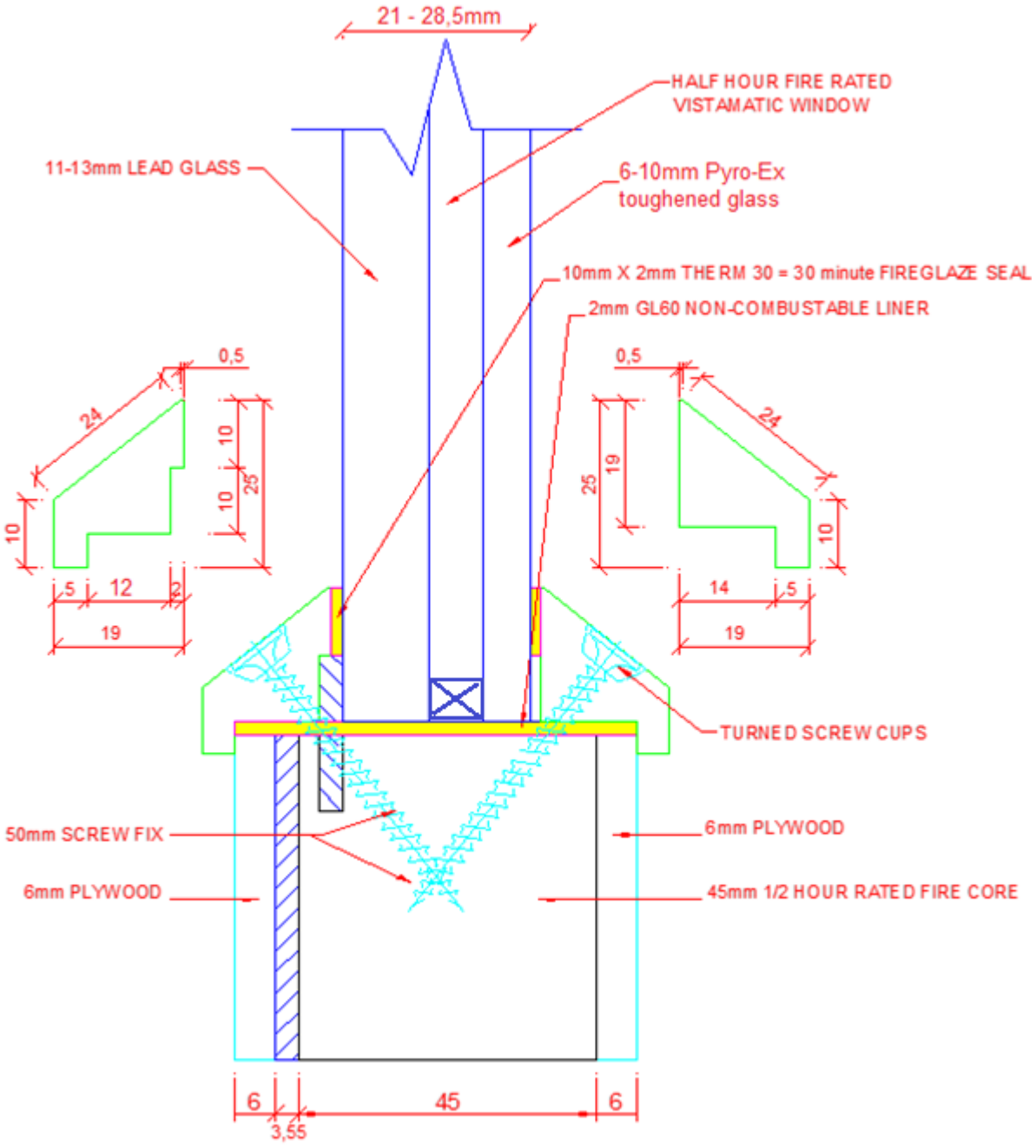
| Glass Reference | Manufacturer / Supplier | Size (mm) |
|---|---|---|
| Pilkington Med-X<br>(X-ray shielding glass type RWB46) | Pilkington | 11 – 13 thick |

The following requirements must be complied with when using the Pilkington Med-X glass:

| Element | Specification | Location |
|---|---|---|
| Bead material | Hardwood timber (with minimum density of 640kg/m$^3$) | - |
| Bead size | A minimum of 25mm high x 19mm wide (when using a 13mm thick Med-X glass), including a 5mm x 5mm bolection return. Bead to be chamfered 36$^o$.<br>The bead retaining the Med-X glass includes a 2mm deep rebate to accept the lead. (see figure below) | - |
| Bead fixings | 50mm long no. 6-8 steel screws<br>(see figure below) | Located at minimum 150mm centres and 50mm from each corner. Fixings must be inserted at 30$^o$ to the vertical and located to ‘cradle’ the vision panel. |
| Glazing system | 10mm high x 2mm thick Fireglaze seal. (See figure below). | Fitted between the glass and bead on both faces. |
| Glazing aperture liner | Sealmaster GL60 2mm thick liner. (See figure below). | Fitted lining the glazing aperture between the Pyroglaze 30 glazing system. |
| Intumescent around centre glass actuator spindle | 5mm thick overall, comprised of 2No Norseal Ltd graphite strip ref: 2.5-390 x 10/SA | Fitted around the spindle lining the aperture in the outer glass layers |
| Expansion allowance | 2 - 3mm all around the edges of the glazing unit | - |
| Maximum VS2 unit dimensions | Height: 963mm<br>Width: 963mm<br>Area: 0.8m$^2$ | - |
| Operating lever | Must be fitted through the Pyro-Ex glass only. (See note) | - |

**Note:** The spindle and turn handle require a hole to be drilled through the glass in order to connect to the lever which operates the central annealed glass, and this has not been tested on the Med-X glass. Therefore, the spindle and turn handle cannot be fitted through the Med-X glass.

The figure below shows a vertical cross section of the Vistamatic VS2 vision panel incorporating the alternative Pilkington Med-X glass which must use timber beads.



## 6. Conclusion

This supplementary FoA report permits the use of the Vistamatic VS2 vision panel system with the proprietary timber based doorset designs listed in section 4.2. Providing the Vistamatic VS2 vision panel system and variations are fitted in accordance with the information provided in this supplementary FoA and all other details meet the requirements given in the relevant primary FoA for the doorset design (see section 3.2), it is our opinion that the resulting doorset design would provide a minimum of 30 minutes integrity performance if tested in accordance with BS476 Part 22: 1987.

## 7. 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 supplementary FoA have not to our knowledge been tested to the standard against which this assessment has been made.
3) We agree to withdraw this supplementary FoA 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 supplementary FoA 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 supplementary FoA. 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: Signed by: Mark Nash 05EA73AF1261415...

Name: Mark Nash

Position: Director

Date: 27-Jan-2025

For and on behalf of: **Vistamatic Limited**

## 8. Limitations

The following limitations apply to this supplementary FoA:

1) This supplementary 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 supplementary 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 supplementary 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 supplementary 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 supplementary field of application report represents our opinion as to the performance likely to be demonstrated on a test in accordance with BS476 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 supplementary field of application 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 supplementary 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.

## 9. Validity

1) The supplementary field of application is initially valid for five years after which time it is recommended to be submitted to Warringtonfire for re-appraisal.

2) This supplementary FoA is only valid when used in conjunction with the primary field of application reports detailed in section 3.2.This supplementary field of application is not valid unless it incorporates the declaration given in Section 7 duly signed by the applicant.

| Position: | Assessor | Reviewer |
|---|---|---|
| Signature: | Signed by: DE15B987D373423... | Signed by: 3A9C822F3E7F487... |
| Name: | *A M Winning | *C Newton |
| Title: | Senior Product Assessor | Senior Product Assessor |

* For and on behalf of Warringtonfire

# Appendix A: Revisions

| Revision | Warringtonfire Reference | Date | Description |
|---|---|---|---|
| A | 404612 | 20.09.2018 | Technical review and update, revalidation for a further 5 years, and update to Exova Warringtonfire format. |
| B | 504149 | 14.04.2023 | Technical review of report, summary of changes.<br>(1). Addition of alternative glass type (Pilkington Med-X glazing)<br>(2). Removal of scope for fanlight, sidelight, non-proprietary fire doors, and amended size of glazing unit based on the Warringtonfire's current rule of assessment.<br>(3). Rebranding of report to the new Warringtonfire styling and layout. |
| C | 533742 | 01.11.2023 | Clarification of descriptions of the Vistamatic unit, addition of Falcon Panel Products Stredor 44 blank option |
| D | 548945 | 18.12.2024 | Format revision and update to primary FoA references |
| | | | |