
Title

Field of Application Report for:
Un-insulating steel access panel
design.

For up to 120 minutes Fire
Resistance

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Prepared for:

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1 Foreword

This Field of Application report has been commissioned by Panel Technologies Ltd and relates to un-insulating steel access panels for up to 120 minutes fire resistance.

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 steel doorsets/hatches/access panel, 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 BSEN 1634-1: 2014 +A1: 2018.

This scope document cannot be used as supporting documentation for either a CE marking application nor can the conclusion be used to establish a formal classification against EN 13501-2.

This Field of Application 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 manufacturer's stated access panel design and is summarised in section 3.

The scope presented in this report relates to the behaviour of the proposed access panel 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 access panel 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.

2 Proposal

It is proposed to consider the fire resistance performance of the specified proprietary un-insulated steel access panel designs, for up to 120 minutes fire resistance integrity performance if the doorset designs were to be tested to the requirements of BS EN 1634-1: 2014 + A1: 2018, *Fire resistance test for door and shutter assemblies and openable windows*.

The Field of Application defined in this report is based on the fire resistance test evidence for the access panel 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.

The testing of this access panel was conducted with the panel fitted to the unexposed face of the supporting wall construction. The arrangement was not symmetrical so this assessment only considers the performance of the access panel fixed on the unexposed face of the wall i.e. the non-risk side.

3 Test Data

The test evidence summarised below has been generated to support the fire resistance performance of the access panel designs that are the subject of this Field of Application. The summary details are considered to be the key aspects of the design tested.

Appendix B (Performance Data) also shows a table of all supporting evidence considered in this assessment.

Note:

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

3.1 Primary Test Evidence

3.1.1 Test Report WF435047

The referenced test report, the essential details of which are summarised below, is the primary data for a latched, single acting, single leaf steel access panel.

Date of Test:	11 th January 2021
Identification of Test Body:	Warringtonfire Testing and Certification Ltd (High Wycombe). UKAS No 1762
Sponsor:	Panel Technologies Ltd
Tested Product:	Latched, Single Acting, Single Leaf, Un-insulated steel access panel – LSASD
Tested Orientation:	Opening away from heating condition and fitted to the unexposed face of the supporting wall construction
Sampling Information:	None detailed
Summary of Test Specimen:	<p><u>Leaf:</u> Overall Size: 1198 (h) x 695 (w) x 24 (t). Facing/Skin: Zintec coated mild steel tray profile, 0.9 thick x 24 deep x 20 wide return. Lock Channel: Zintec coated mild steel profile, 0.9 thick x 23 high x 48 wide 'U' channel with a 15mm flange welded to the leaf face. Leaf Reinforcement: none fitted. Core: none fitted</p> <p><u>Frame:</u> Material: Zintec coated mild steel profile Head & Threshold dimensions: 150 deep x 50 wide x 1 thick overall, with 20 wide integral stop. Jamb dimensions: 150 deep x 90 wide x 1 thick overall, with 20 wide integral stop. Fire Stopping: Mann McGowan Pyromas A intumescent acrylic sealant. Frame to Supporting Construction Fixing: Ø5 x 60 long steel masonry screws, 5No per jamb and 3No per head & threshold.</p> <p><u>Intumescent & Sealing Material:</u> Frame Reveal: 15x4.5mm Norseal FS1000 intumescent foam seal. Fitted on the stop.</p> <p><u>Hardware:</u> Hinges: pivot pin type hinge, one sprung and one screwed (product reference not stated). Lock/Latch: 2No single point budget lock (product reference not stated). Fitted on lock channel. Lock/Latch Size: 54 high x 25 wide (case) Lock Status: Engaged at all points Closer: none fitted</p> <p><u>Supporting Construction:</u> AAC Blockwork</p>
Test Standard:	BS EN 1634-1: 2014 + A1: 2018 & BS EN 1363-1: 2012
Performance:	Integrity: 132 minutes Insulation: 1 minutes

4 Technical Specification

4.1 General

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

4.2 Intended Use

The intended use of the proposed access panel assembly is summarised below:

A pedestrian doorset (or access panel) 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 Access Panel Leaf

Leaves to this access panel design comprises of only type of leaf construction, referred to as Leaf 1 in subsequent sections.

4.3.1 Leaf 1

The basic construction of this leaf comprises of a 0.9mm thick mild steel sheet folded to form a 24mm deep tray with 20mm wide return, and an empty core. See section 5 for further constructional detail.

This leaf design can include the following design features:

- 1) Empty core.
- 2) Specific hardware.
- 3) Decorative finishes.
- 4) Alternative galvanisation processes.

4.4 Access Panel Frame

Frames to this access panel design comprises of only one type of frame construction, referred to as Frame 1 in subsequent sections.

4.4.1 Frame 1

This frame construction comprises a single rebate profile, made from a minimum 1mm thick galvanised mild steel sheet. See section 6 for further constructional detail.

4.5 Access Panel Orientation, Configuration & Leaf Sizes

4.5.1 General

The evaluation of the leaf size and access panel configuration is based on the test evidence summarised in section 3 and takes into account:


- 1) Achieving a Category B overrun as stated in BS EN 1634-1: 2014 + A1: 2018.
- 2) The characteristics exhibited during test and
- 3) The access panel configuration tested.

4.5.2 Orientation

Based on the test evidence, access panels of this design should be fitted on the unexposed face of the supporting construction with the frame projecting from the wall (like a cantilever) and the leaf opening away from the fire risk side. See section 9 for installation details.

4.5.3 Configuration

Based on the test evidence summarised in section 3, the access panel configurations given in the table below are permitted.

Depiction	Abbreviation	Description
	LSASD	Locked Single Acting Single Leaf Doorset/Access Panel

The following sections detail the maximum and minimum leaf sizes for the assessed integrity ratings and configuration.

4.5.4 Leaf Sizes

This is based on the successfully tested specimen in the referenced test report WF435047, which achieved a Category B overrun at 120 minutes integrity rating.

Tested leaf size: **1198mm (height) x 695mm (width)**

4.5.4.1 Single Leaf Sizes

4.5.4.1.1 60, 90 & 120 Minutes Integrity Performance

Based on a Category B overrun and a high level of distortion, the leaf may be increased by 15% in height and 15% in width but not amounting to more than a 20% increase in leaf area (in accordance with Annex A, section A.2.2 – A.2.4 of BS EN 15269-2: 2012).

Unlimited leaf size reduction is permitted (in accordance with Annex B, Table B.1 of BS EN 1634-1: 2014+A1: 2018).

Leaf size may be varied within the following range as specified in the table below.

Leaf Dimension	Height (mm)		Width (mm)
Minimum	No limit	x	No limit
Maximum	From:	1377	x 725
	To:	1250	x 799

Note: A high leaf distortion (at 60, 90 & 120 minutes) has been assumed in this case due to an incomplete distortion reading given in the referenced test report.

5 General Description of Leaf Construction

5.1 Tested Leaf Construction

Fabrication of the access panel leaf must be as tested. The table in the following sections summarises the main components of the tested access panel leaf design. For full construction details, reference should be made to the full test report which is summarised in section 3.

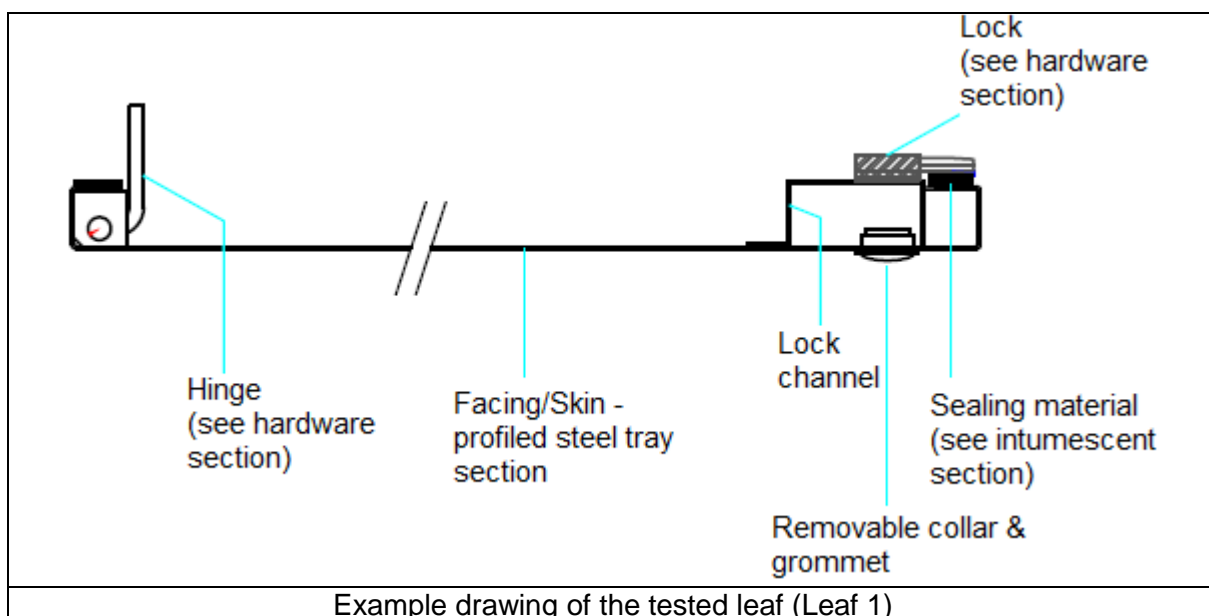
The tested access panel leaf thickness is 24mm. See section 5.2 for assessed variations to the tested leaf construction.

5.1.1 Leaf 1 – For up to 120 Minutes Integrity Performance

The basic construction of this leaf design comprises the following:

Element	Product or Material	Dimensions (mm)
Facing/Skin	Zintec coated mild steel tray profile.	0.9 thick x 24 deep x 20 wide return. (see section 5.2 for assessed maximum & minimum thicknesses)
Core	None	-
Lock Channel	Zintec coated mild steel 'U' profile	0.9 thick x 23 high x 48 wide 'U' channel with 15 wide flange welded to the leaf face.

The figure below shows an example detail of Leaf 1. For full construction details, reference should be made to the full test report which is summarised in section 3.



5.2 Variations to Tested Leaf Construction

5.2.1 Leaf Thickness

Increase in the tested leaf thickness is not permitted, for high leaf distortion (in accordance with section A.2.5 of BS EN 15269-2: 2012).

Note: A high leaf distortion (at 60, 90 & 120 minutes) has been assumed in this case due to an incomplete distortion reading given in the referenced test report.

A reduction by up to 10% in the tested leaf thickness is permitted (in accordance with section A.2.6 of BS EN 15269-2: 2012).

The permitted leaf thickness is therefore, as follows:

Maximum leaf thickness (without finishes) = **24mm**

Minimum leaf thickness (without finishes) = **21.6mm**

5.2.2 Leaf Facing / Skin

5.2.2.1 Leaf Facing/Skin Thickness

Whilst the testing conducted on this design evaluated nominally **0.9mm** thick Zintec coated mild steel facing/skin, it is considered (in accordance with section A.3.21 of BS EN 15269-2: 2012) that a maximum 10% increase in the thickness of the steel sheet is permitted.

It is the opinion of Warringtonfire that the thickness may not be reduced any further than the tested thickness.

The permitted thickness of leaf facing/skin is therefore, as follows:

Maximum facing thickness (without finishes) = **0.99mm**.

Minimum facing/skin thickness (without finishes) = **0.9mm**. (as tested)

5.2.2.2 Alternative Leaf Facing/Skin Material

Alternative leaf facing/skin material is not permitted, for high leaf distortion (in accordance with section A.3.23 of BS EN 15269-2: 2012). Leaf facing/skin material must remain as tested.

Note: A high leaf distortion (at 60, 90 & 120 minutes) has been assumed in this case due to an incomplete distortion reading given in the referenced test report.

5.2.3 Decorative and Protective Finishes

The following additional finishes are permitted for this access panel design since they would either degrade rapidly or remain inert under test conditions without significant effect to the fire resistance performance of the access panel.

Facing Material	Maximum Permitted Thickness (mm)
Paint	0.2
Vitreous Enamel	1.0
Stove Enamelling	0.1
Epoxy Powder Coating	0.4

5.2.4 Galvanisation Process

It is the opinion of Warringtonfire, that the effect the use of a particular galvanisation process will have on the access panel design tested, will be insignificant. Therefore, any of the galvanisation processes listed below are acceptable:

- Hot dip
- Electro-galvanisation
- Aluzinc.

6 Door Frame Construction

6.1 Tested Frame Construction

The fabrication of the access panel frame must be as the tested, fabricated from a minimum 1mm thick zintec coated mild steel sheet. The assessed maximum and minimum dimensions of the frame profile are specified in section 6.2.

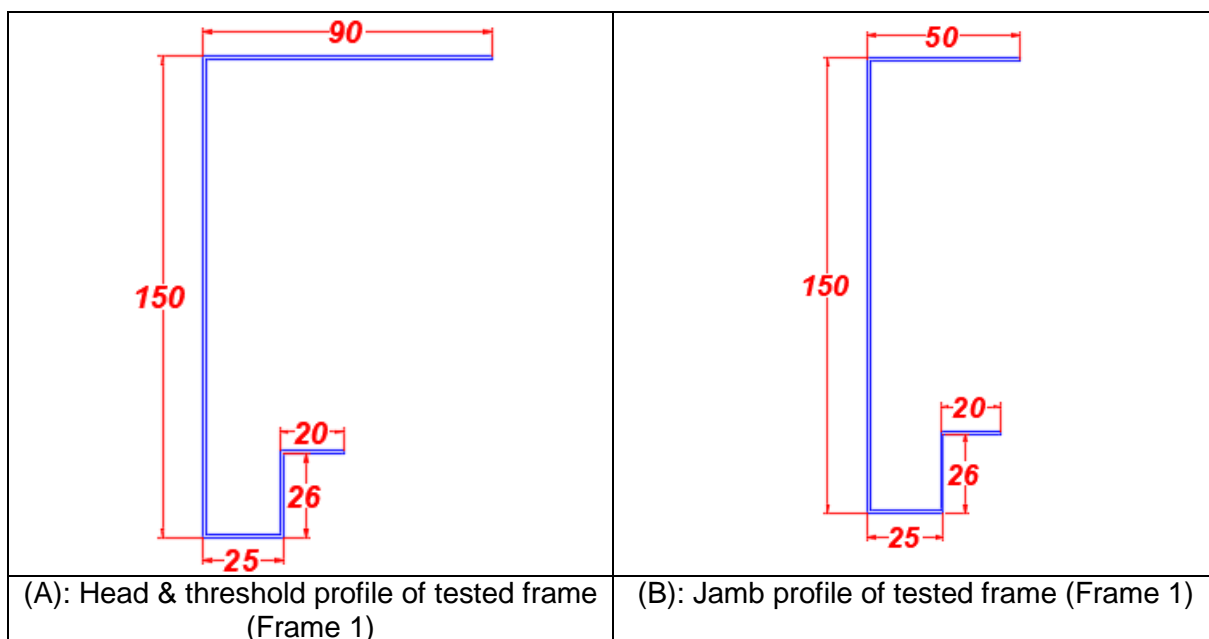
The following section details the tested frame profile, for full construction detail reference should be made to the full test report summarised in section 3.

6.1.1 Frame 1 – Up to 120 Minute Fire Resistance Performance

This is a four-sided single rebate frame construction based on the referenced test evidence.

Element	Material or Product	Dimensions (mm)
Head & Threshold	Zintec coated profiled steel section, featuring an integral stop	150 deep x 90 wide x 1 thick overall.
Jambs	Zintec coated profiled steel section, featuring an integral stop	150 deep x 50 wide x 1 thick overall.
Stop	Integral	20 deep

The figures below shows example detail of the tested frame profile.



6.2 Variations to Tested Frame

The frame projection (depth) from the supporting construction and the frame material thickness may be varied within the maximum and minimum sizes specified in the table below. All other dimensions of the frame profile must remain as tested.

Parameter	Minimum Dimension (mm)	Maximum Dimension (mm)
Frame Projection/Depth:	60	150 (as tested)
Frame Thickness:	1	1.5

Note: The tested frame was installed projecting from the supporting construction by 150mm, which may be reduced to 60mm. It is considered to be a structurally less onerous construction than the 150mm depth/projection tested due to a lesser moment at the fixings exerted by the weight of the access panel and this will result in lower distortion along the depth of the frame. The reduced projection size will also produce lower thermal strain along the length of the frame and hence lower

thermally induced distortions reducing the likelihood of gaps occurring between frame and panel in the event of a fire.

6.3 Frame Joint

The head to jambs and threshold to jambs jointing must be a welded type construction as tested. Joints must be tight and secure with no gaps. For further details reference should be made to the full test report summarised in section 3.

7 Intumescent & Sealing Materials

Intumescent and/or sealing materials tested and assessed for this steel access panel design are as follows:

Application	Manufacturer / Supplier	Make / Type	Location
Frame reveal	Norseal Ltd	15x4.5 FS1000 – Foam buffer seal	Fitted on the stop to all four edges of the frame
Leaf Edges	-	None fitted.	-

8 Hardware

8.1 Tested Hardware

The following hardware has been successfully incorporated in the test referred to in this assessment up to a performance rating of 120 minutes.

Hardware	Manufacturer / Supplier	Make / Type	Size (mm)	Location
Hinges	Not stated	Ref: not stated Pivot pin type hinges (one sprung & one screwed)	Ø8 (pin size)	Fitted at the top & bottom of the leaf
Closer (see note 1)		None fitted	-	-
Latch/Lock (see note 2)	Not stated	Ref: not stated 2No single point budget locks	54 high x 25 wide (case)	Fitted at 300mm and 900mm from the bottom of the leaf

Note:

1. Closer – the access panels do not require self-closing devices since they must be kept locked shut when not in use. A metal 'Fire Door Keep Locked Shut' sign must be fixed to the access panel face.
2. Lock – all leaves must be fitted with the 2No single point locks as tested, which must be engaged when the access panel is in the closed position.
3. No other hardware is approved for use with this steel access panel design.

8.1.1 Lock Requirement

The lock must be no further than 300mm from the top or bottom of the leaf. This implies that when the leaf is less than 600mm high a single lock can be used.

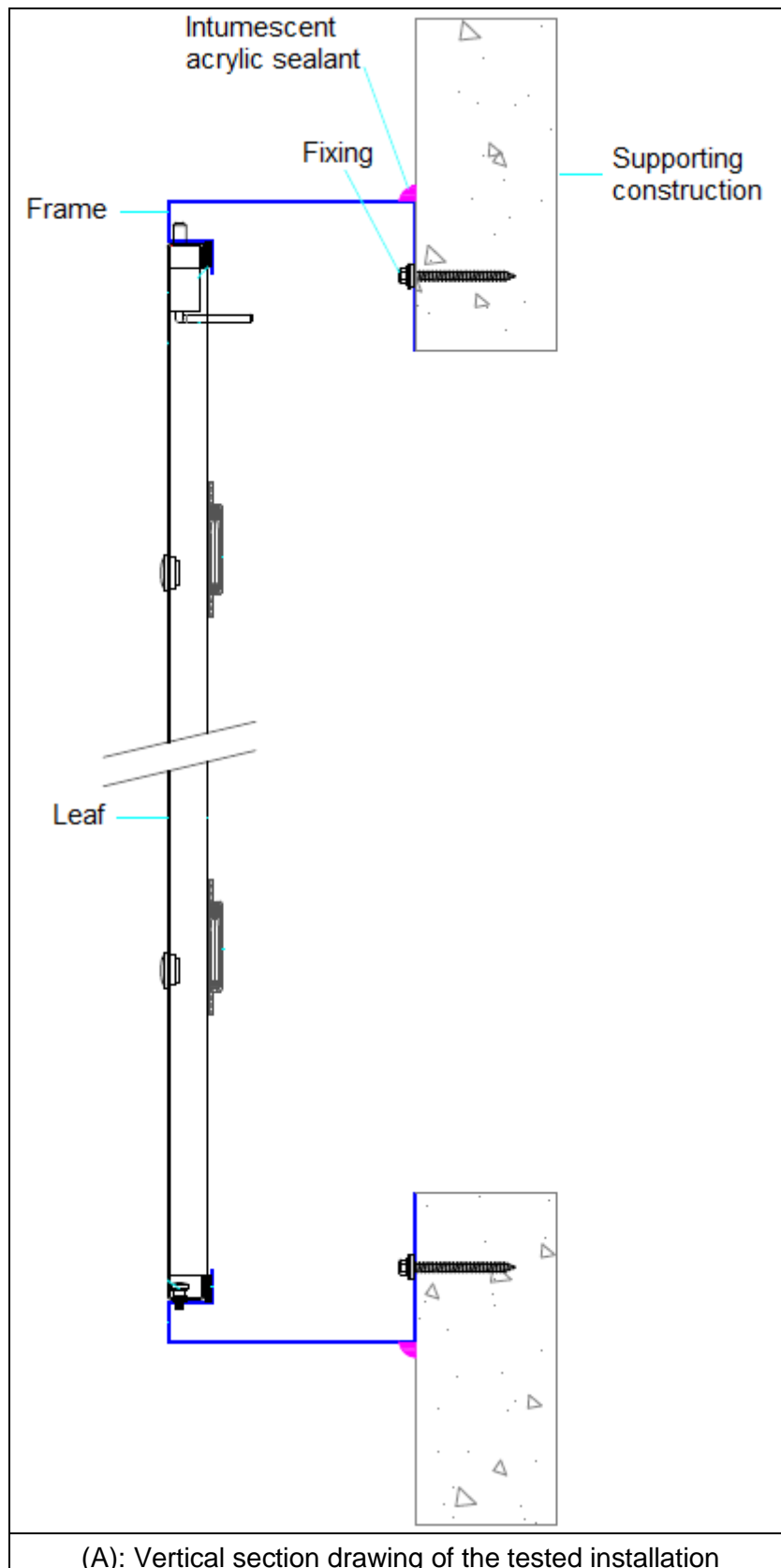
9 Installation

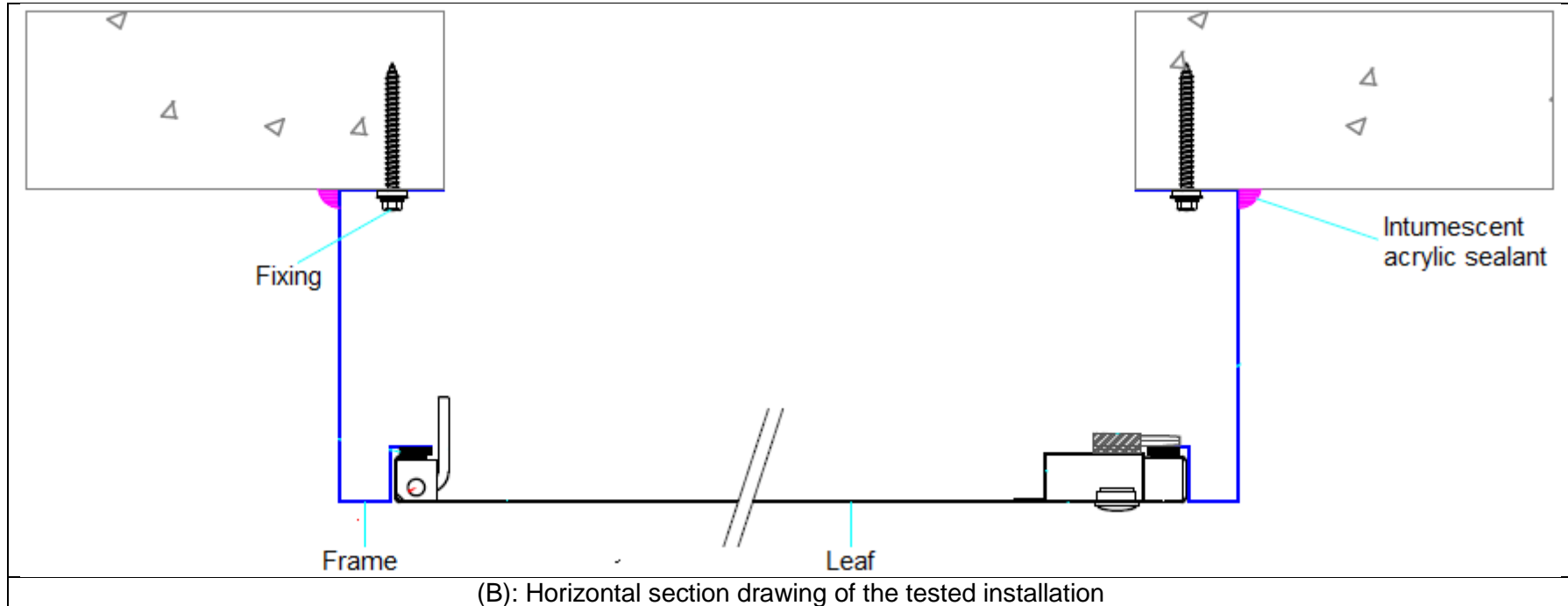
The steel access panel must be installed on the unexposed face of the supporting construction with the leaf opening away from the fire risk side as tested.

The following sections details the installation for this access panel design.

9.1 Tested Frame Installation Detail

The figure below shows example details of the tested installation. For further detail, reference should be made to the full test report summarised in section 3.





9.2 Structural Openings

The supporting construction should be a rigid wall type (e.g. brickwork, blockwork), and must provide at least the required level of fire resistance designated for the access panel design and should be a suitable medium to permit adequate fixity.

Based on the testing conducted, the following supporting constructions are assessed for use with this design.

Supporting Construction	Requirements
Masonry	Density: 1600kg/m ³
Light weight cast concrete	Density: ≥ 2100kg/m ³
Cast concrete	Density: ≥ 2400kg/m ³

9.3 Sealing to Structural Opening

Fitting of the frame to the structural opening should be a tight fit leaving no gaps between the back of the frame and the face of the supporting construction.

A continuous bead of intumescent acrylic sealant must be applied sealing the frame to the face of the supporting construction (see installation drawing above). Sealant should be Mann Mcgowan Pyromas A, as tested, or must have been previously fire tested to BS 476: Part 20 or Part 22: 1987 or BS EN 1363-1: 1999 or BS EN 1634-1 for the required period of fire resistance and between the required substrates.

9.4 Fixings

Fixings to the structural surround must be manufactured from steel or stainless steel and must be a suitable type for the structural opening medium and of sufficient length to penetrate the main structure by a minimum of 50mm.

The frame jambs are to be fixed using steel fixings at 300mm maximum centres and with a fixing at a maximum of 150mm from all corners.

The frame head and threshold are to be fixed to the supporting construction using steel fixings at 300mm maximum centres and with a fixing at a maximum of 100mm from corners.

In all instances the fixing position must be such that it provides adequate restraint to the element of construction throughout the exposure to fire. This may therefore sometimes necessitate a twin line of fixings.

9.5 Leaf to Frame Door Gaps

Based on the test evidence, the leaf edge to frame gap sizes must be controlled within the following limits.

Location	Dimension (mm)	Tolerance (mm)
Jambs	2.0	±0.5
Head	2.0	±0.5
Threshold	2.0	±1.0

Note: Leaf must not be proud of the door frame by more than 1mm.

10 Conclusion

It is the opinion of Warringtonfire that, if the Panel Technologies steel access panel, constructed in accordance with the specification documented within this report, were to be tested in the assessed configuration in accordance with BS EN 1634: Part 1: 2014 + A1: 2018, it would provide a minimum fire resistance integrity performance of 120 minutes, subject to the access panel being fitted on the unexposed face of the supporting construction and opening away from the fire risk side.

11 Declaration by the Applicant

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

Signed:

R. Stokes

Name:

R. Stokes

For and on behalf of: **Panel Technologies Ltd**

12 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. 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, Warringtonfire reserves the right to withdraw the report unconditionally but not retrospectively.
- 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. 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 EN 1634-1: 2014, 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 authority as sufficient for that or any other purpose. This field of application report is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.
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- 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.

13 Validity

- 1) The Field of Application is initially for 5 years from the date of issue, after which time it must be submitted to Warringtonfire for technical review and revalidation.
- 2) This Field of Application report is not valid unless it incorporates the declaration given in Section 11, duly signed by the applicant.
- 3) This assessment supersedes all previous revisions of this assessment from the 29th March 2021.

Signature:		
Name:	*K D S Towler	*A. Winning
Title:	Senior Product Assessor	Senior Product Assessor

* For and on behalf of Warringtonfire

Appendix A – Revision and Revalidation Table

Rev.	WF Job Ref.	Date	Description
First issue	501185	29.03.2021	First issue of report

Appendix B – Performance Data

Report Reference	Configuration	Leaf Size (mm)	Test Standard	Performance (minutes)
WF435047	LSASD	1198 (h) 695 (w) 24 (t)	BS EN 1634-1: 2014 + A1: 2018 & BS EN 1363-1: 2012	Integrity: 132

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