

Exova Warringtonfire
Chiltern House
Stocking Lane
Hughenden Valley
High Wycombe
Buckinghamshire
HP14 4ND

T: +44 (0) 1494 569 800
F: +44 (0) 1494 564 895
E: globalfire@exova.com
W: www.exova.com



Testing, calibrating, advising.

**Fire Resistance
Assessment of:**

Steel Access Hatches for:
120 Minutes Fire Resistance
Performance

WF Report No:

WF382113

Valid From: 29th June 2018

Valid Until: 29th June 2023

Prepared For:

Panel Technologies Limited
49-61 Jodrell Street
Nuneaton
CV11 5EG

Exova Warringtonfire – the new name for BM TRADA

On December 1st 2015, Chiltern International Fire Limited (trading as BM TRADA) commenced trading under the name Exova Warringtonfire.

To coincide with this change, our Technical Reports, Test Reports, Product Assessments, company stationery and marketing collateral have been updated to reflect the Exova Warringtonfire branding.

The validity of all documents previously issued by Chiltern International Fire Limited including certificates, test reports and product assessments is unaffected by this change. A letter to this effect is available upon request by e-mailing globalfire@exova.com.

About Exova Warringtonfire

Exova Warringtonfire is part of the Exova Group one of the world's leading laboratory-based testing groups, trusted by organisations to test and advice on the safety, quality and performance of their products and operations. Headquartered in Edinburgh, UK, Exova operates 143 laboratories and offices in 32 countries and employs around 4,500 people throughout Europe, the Americas, the Middle East and Asia/Asia Pacific. With over 90 years' experience, Exova specialises in testing across a number of key sectors from health sciences to aerospace, transportation, oil and gas, fire and construction.

Be assured that whilst the name will change, your service provision and primary contacts have not. What will be available to you is a wider team of testing experts and an extended range of testing capabilities including structural steelwork testing, ventilation duct and damper testing, ASTM testing, water mist system testing and smoke toxicity testing and covering additionally both the rail and marine sectors.

If you have any questions, please do not hesitate to contact a member of the team and we will do our best to answer them. We appreciate your business to date and we look forward to working with you in the future.

Kind regards

Exova Warringtonfire

T: +44 (0) 1494 569 800

E: globalfire@exova.com

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1 Introduction

This document constitutes a global assessment relating to Panel Technologies Ltd fire resisting steel access hatches for 120 minutes integrity performance. The assessment uses established extrapolation and interpolation techniques in order to extend the scope of application. It achieves this by determining the limits for the design, based on the tested constructions and performances obtained. The assessment is an evaluation of the potential fire resistance performance, if the elements were to be tested in accordance with BS 476 Part 22: 1987.

The application of this assessment is for national (UK) application only and cannot be considered as a means to CE marking of the product.

2 General Description of Construction

The tested construction of metal faced 120 minute access hatch comprises a horizontal profiled steel panel. The following table summarises the main components:

Element		Materials	Dimensions (mm)	Details
Facings	Exposed Face	Profiled steel tray, welded at corners	25 high x 0.9 thick	14 wide platform to sides and hanging edge and 38 wide platform to closing edge.
Internal stiffeners		None fitted	-	-
Frame		Profiled steel Z section with integral stop and architrave	27 high x 1.2 thick with 15 wide integral stop and 25 wide architrave to exposed face	-
Frame Fixings		4 No. steel tabs to each long edge	-	Fitted at 100mm, 435mm, 770mm and 1100mm from one edge with 2No. 40mm long screws per tab
Hinges		2 No.5Ø steel bolts to one edge	5 Ø	Ø5mm steel bolts and threaded inserts engage into holes in the frame
Latch		Two engaged budget locks	79 x 22	Welded 250mm and 950m on the platform of the opposite edge to the hinged edge

For full construction details refer to the test report cited in appendix A.

3 Configurations and Plane Orientation

Based on the test evidence listed in appendix A, this assessment covers the following configurations.

Abbreviation	Description
LSASD	Horizontal plane orientation: Latched single acting single panels, opening either away from or towards the fire risk.
LSASD	Vertical plane orientation: Latched single acting single panels, opening either away from or towards the fire risk.

Note: The tested horizontal plane configuration allows assessment to cover the vertical plane orientation.

4 Leaf Sizes

An increase in leaf dimensions is permitted based on the performance of the hatches tested in IF15014 (see appendix A). The tested hatches were 1200mm x 600mm and achieved a category B performance when tested under the conditions of BS 476 Part 20: 1987 and the principles of BS 476 Part 22:1987. Recorded distortion was 40% of the effective rebate depth.

The methodology used for extending leaf sizes is based upon the extended field of application rules adopted in BS EN 15269-2:2012, which permits an increase of 20% in height or width with a maximum area increase of 25% for category B doorsets with a medium level of distortion ($\geq 40\%$ of the effective rebate depth).

Based on the above methodology, leaf size may be increased within the following range:

Maximum Leaf Dimensions	Height x Width (mm)
From	1250 x 720
To	1440 x 625

The range of permitted leaf dimensions is represented by the graph contained in appendix C.

Non insulating steel doorsets (hatches) containing leaves with smaller dimensions than those stated are deemed to be less onerous and are therefore automatically covered.

5 Door Gaps

To ensure that hatches expand and jam into the frame, it is important that the sizes of the gaps between the leaf and the frame, are controlled. Based on the test evidence, the assessed gap sizes for these hatches are as follows.

Location	Dimension (mm)	Tolerance (mm)
All edges	1.3	± 0.3

6 Leaf Construction

6.1 General

The essential hatch design must remain as tested and detailed in section 2.

6.2 Leaf Facing Materials

Whilst the testing conducted on this design evaluated a nominally 0.9mm thick powder coated steel face, it is considered that an increase of 10% in facing thickness will not be detrimental to integrity performance and may be used if required.

A leaf facing between 0.90mm and 1.00mm is therefore assessed as acceptable.

6.3 Decorative and Protection Facings

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

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

6.4 Galvanisation Process

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

- Hot dip
- Electro-galvanisation
- Aluzinc.

7 Door Frames

All frame sections are fabricated from single 1.2mm thick profiled powder coated Zintec Z steel sections, which include a 25mm wide integral architrave to all unexposed edges.

The frame is fixed back to the structural surround by means of 4 No. steel tabs on each long edge, each screwed to the structural surround with 2 No. 40mm long steel screws.

The frame profiles must be as tested and shown below.

The frame material may be increased from the tested 1.2mm by up to 30% but may not be decreased. The remaining frame dimensions must remain as tested.

The frame sections must be assembled utilising welded mitre joints at each corner. The joints must be tight and secure with no gaps.

A drawing showing the frame details for each edge of the hatch is contained in appendix D.

8 Intumescent

No intumescent were tested for this design and they are therefore not required or permitted.

9 Tested Hardware

The following hardware has been successfully incorporated in the tests on this design.

Element	Make/type	Size (mm)	Location/fixings
Hinge	Pivot type steel bolts	5Ø	2 No. one fitted to each edge of the hanging side
Lock– engaged as tested in IF15014	Budget lock with rods acting at top and bottom.	79 x 22	2 No. each fitted 250mm from the ends of the long edge
Fixings	Steel tabs	-	4 No. to each long edge (sides of vertical hatches)

For hatches with a long edge more than the tested 1200mm, 3 No. budget locks must be fitted, 2 No. as tested, 250mm from each corner and 1 No. fitted centrally between the first two.

For hatches with a long edge of 500mm or less a single budget lock may be centrally fitted to maintain the tested distance between the lock and the corners.

10 Additional & Alternative Hardware

Hardware must either be as tested or components of equal specification that have demonstrated contribution to the required performance of this type of insulated steel doorset design, when tested to BS 476: Part 22: 1987 or BS EN1634-1, for up to 120 minutes integrity.

Additionally, for hatches supplied to countries within the EU, the following items of hardware must also bear the CE mark:

- locks and latches (EN 12209)
- single axis hinges (EN 1935).

10.1 Hinges

Leaves must be mounted on pivot hinges, as tested.

10.2 Environmental and Smoke Seals

This design was not tested with seals and their incorporation is therefore not permitted.

11 Structural Openings

Based on the test evidence cited in this report, the supporting construction must comprise a plasterboard ceiling or vertical partition capable of remaining in place and intact for the full period of fire resistance required from the hatch. The aperture must be lined with a 65mm deep section of 10mm thick BG Glasroc F multiboard on all edges, as tested.

Reference may be made to technical information provided by gypsum plasterboard manufacturers for full details of applicable supporting construction installation methods.

Additionally, for vertical plane applications assessment is made that the access panel may be utilised in rigid wall constructions.

12 Fixings

The supporting construction must be capable of staying in place and intact for the full period of fire resistance required from the hatch. The steel tab fixings must be installed as tested, using steel retaining screws.

Fixings must be no more than 150mm from any corner and at maximum 360mm centres.

13 Sealing to Structural Opening

Gaps between the frame/integral architrave and the structural surround should be controlled to a maximum of 5mm. For gaps up to 5mm a 5mm wide bead of intumescent acrylic mastic, fire performance 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), must be inserted between the frame and surround.

14 Conclusion

If the Panel Technologies steel access hatches, constructed in accordance with the specification documented in this global assessment, were to be tested:

- in accordance with BS 476 Part 22: 1987 when in a vertical plane orientation ,
- to the conditions of BS 476 Part 20: 1987, at a pressure equating to 20 Pascals just below the ceiling soffit, when in a horizontal plane orientation,

it is the opinion of Exova Warringtonfire that they would provide a minimum fire resistance integrity performance of 120 minutes.

15 Declaration by the Applicant

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

Signed:

Name:

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

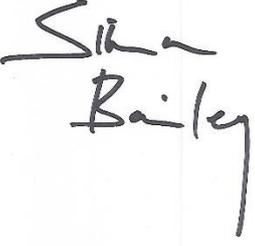
16 Limitations

The following limitations apply to this assessment:

1. This assessment addresses itself solely to the elements and subjects discussed and does not cover any other criteria. All other details not specifically referred to should remain as tested or assessed.
2. This assessment is issued on the basis of test data and information to hand at the time of issue. If contradictory evidence becomes available, Exova Warringtonfire reserves the right to withdraw the assessment unconditionally but not retrospectively.
3. This assessment has been carried out in accordance with Fire Test Study Group Resolution No 82: 2001.
4. This assessment relates only to those aspects of design, materials and construction that influence the performance of the element(s) under fire resistance test conditions. It does not purport to be a complete specification ensuring fitness for purpose and long-term serviceability. It is the responsibility of the client to ensure that the element conforms to recognised good practice in all other respects and that, with the incorporation of the guidance given in this assessment, the element is suitable for its intended purpose.

17 Validity

1. The assessment is initially valid for five years after which time it must be submitted to Exova Warringtonfire for technical review and revalidation.
2. This assessment report is not valid unless it incorporates the declaration given in Section 17 duly signed by the applicant.

Signatures:		
Name:	S Bailey	Dr K D S Towler
Title:	Senior Product Assessor	Senior Product Assessor

Appendix A

Performance Data

Primary Data

Report Reference	Configuration	Leaf Size (mm) ¹	Test Standard	Performance (mins)	
IF15014	B: LSASD ⁴	1200 600 25	Conditions of: BS 476: Part 20: 1987 + principles of: BS 476: Part 22 1987	Integrity:	132 ²
				Insulation:	0 ³

Notes:

1. Leaf dimensions: height x width x thickness.
2. No failure of the specimen at termination of the test
3. The specimen was not evaluated for insulation.
4. LSASD = Latched Single Acting Single Doorset tested in a horizontal plane.

Appendix B

Revisions

Revision	Exova Warringtonfire Reference	Date	Description

Appendix C

Data Sheets

for:

Panel Technologies Ltd

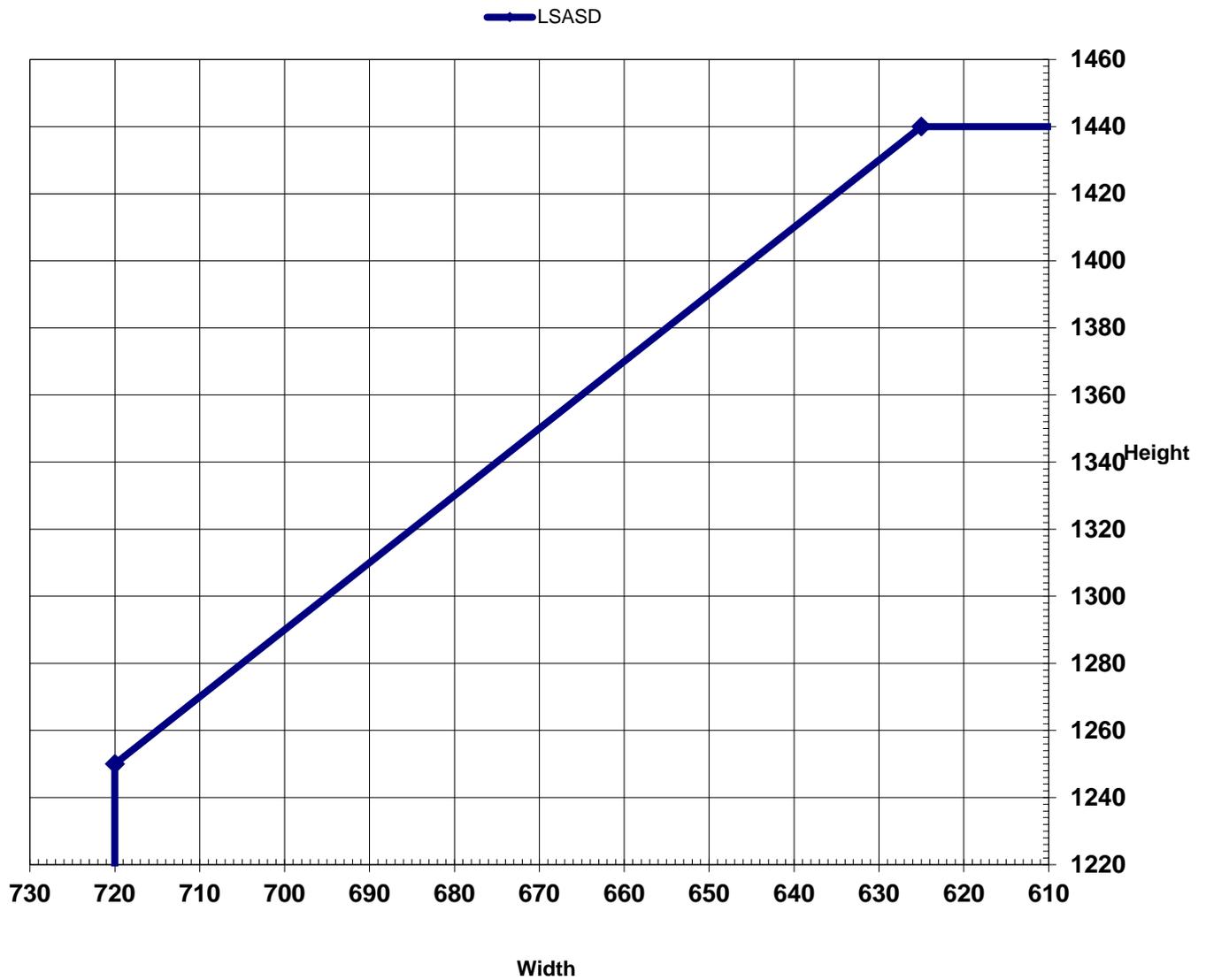
120 Minutes Steel Access Doorsets

Panel Technologies Steel Access Hatches: 120 Minutes Fire Resistance

Latched, Single Acting Single Leaf Access Doorsets

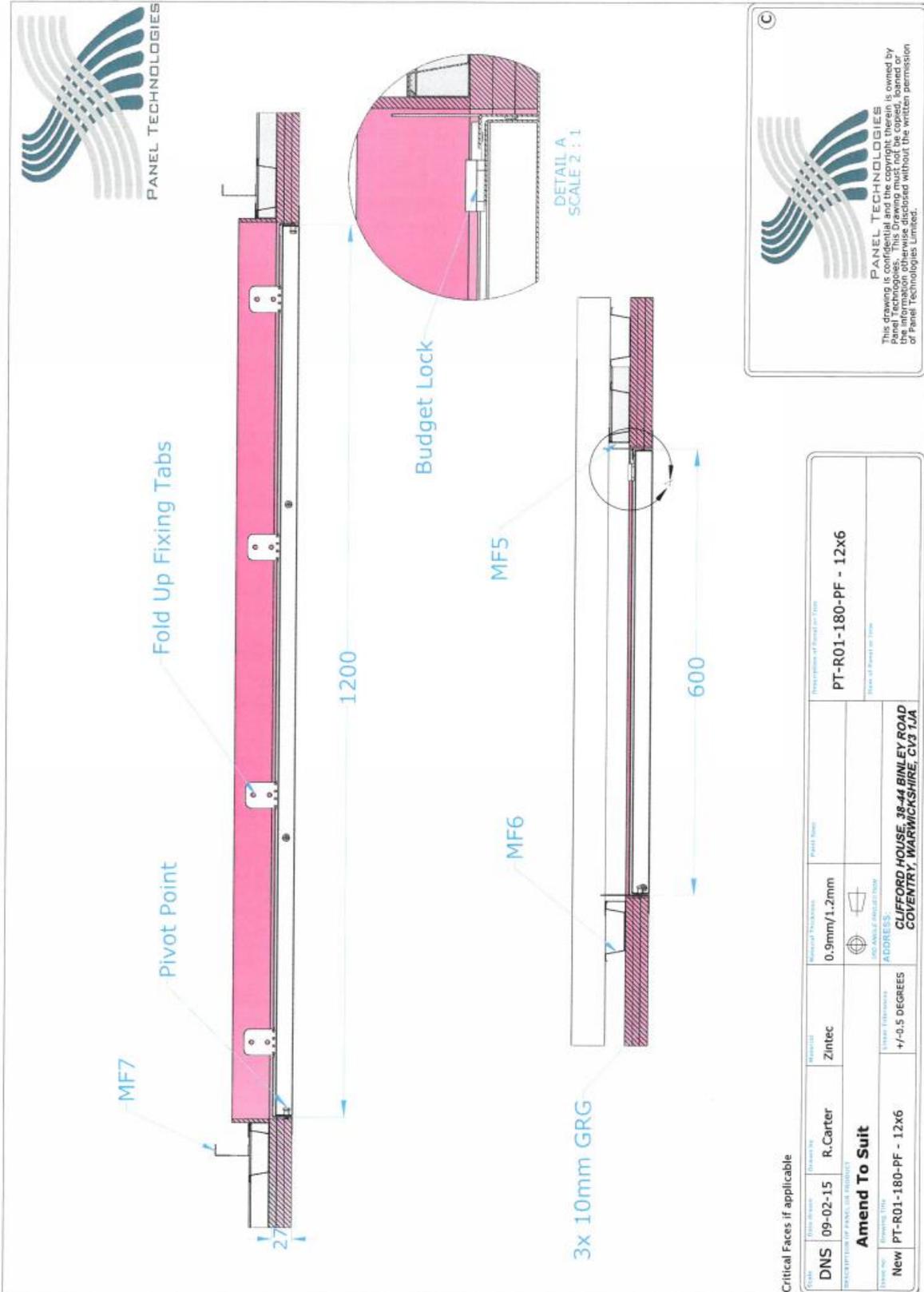
Leaf Sizes	Configuration		Height (mm)		Width (mm)
	LSASD	From:	1250	x	720
	To:	1440	x	625	

Maximum Door Leaf Size



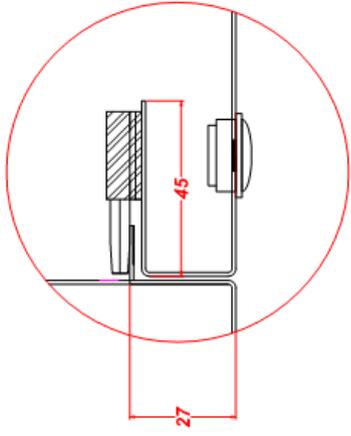
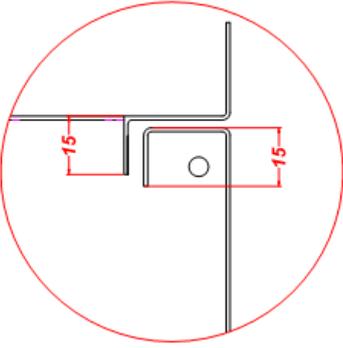
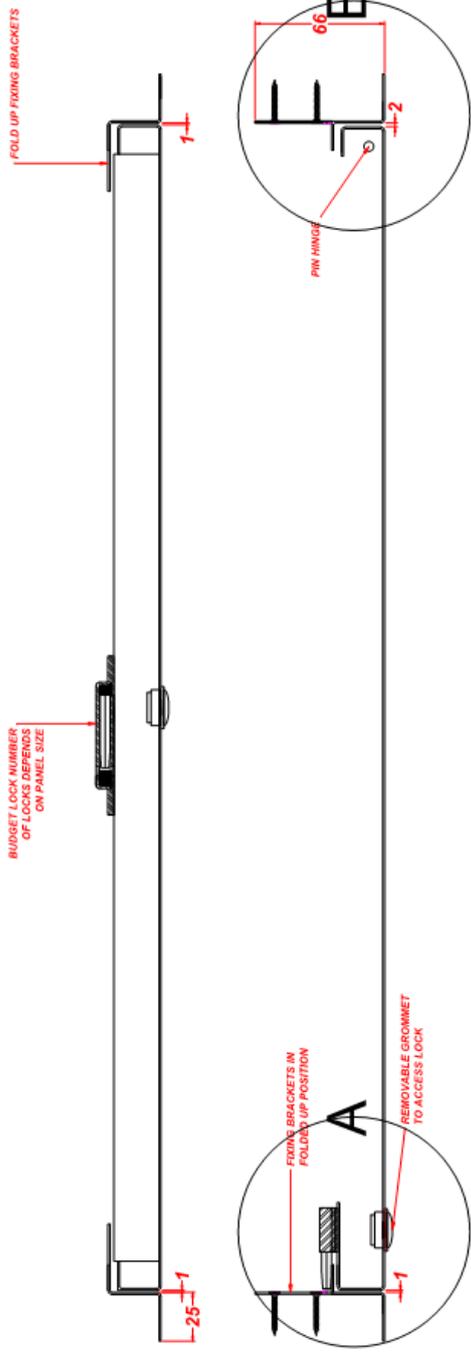
Appendix D

Construction Drawings



PANEL TECHNOLOGIES

This drawing is confidential and the copyright therein is owned by Panel Technologies. This Drawing must not be copied, loaned or otherwise disseminated without the written permission of Panel Technologies Limited.



DETAIL B

DETAIL A

Critical Faces if applicable - - - - -

Scale	Do Not Scale	16/04/18	RS	Drawn by	ZINTEC	Material Thickness	0.9mm	Panel Size	N/A	Description of Panel or Title	2 HOUR FIRE RATED WALL ACCESS PANEL
Drawn by	01-120-MD-PF		Project Reference		ADDRESS :		ASSEMBLY		Description of Panel or Title		
Drawn by	AMEND TO SUIT		Project Reference		49-61 Jodrell Street, Nuneaton,		WARWICKSHIRE, CV11 5EG.		Description of Panel or Title		
Drawn by	1		Project Reference		H+0.5 DEGREES		ASSEMBLY		Description of Panel or Title		

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