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Testing. Advising. Assuring.

**Title:**

The fire performance of an access panel, incorporating several modifications, for installation within previously fire tested timber stud, steel stud, concrete or masonry wall assemblies or within a previously fire tested ceiling construction

**WF Report No:**

399568

**Prepared for:**

**Panel Technologies**

49-61 Jodrell Street  
Nuneaton  
Warwickshire  
England  
CV11 5EG

**Date:** 14<sup>th</sup> May 2018

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## Executive Summary

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<b>Objective</b>	This report provides a considered opinion with regard to the fire resistance integrity performance of an access panel, incorporating several modifications, for installation within previously fire tested timber stud, steel stud, concrete or masonry wall assemblies or within a previously fire tested ceiling construction.
<b>Report Sponsor</b>	<b>Panel Technologies</b>
<b>Address</b>	49-61 Jodrell Street Nuneaton Warwickshire England CV11 5EG
<b>Summary of Conclusions</b>	It can be concluded that the proposed access panels should provide 60 minutes integrity performance, if subjected to a fire test in accordance with EN1634-1: 2014 when installed vertically within a previously fire tested timber stud, steel stud, concrete or masonry wall assembly or installed horizontally within a previously fire tested ceiling construction.
<b>Valid until</b>	1 <sup>st</sup> June 2023

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## Introduction

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This report presents an appraisal of the fire resistance integrity performance of a modified access panel design for installation vertically within timber stud, steel stud, concrete or masonry wall assemblies or horizontally within a ceiling construction, of proven fire performance.

The proposed access panel is required to provide 60 minutes integrity performance, if subjected to a fire test in accordance with EN1634-1: 2014 when installed vertically within a previously fire tested timber stud, steel stud, concrete or masonry wall assembly or installed horizontally within a previously fire tested ceiling construction

### FTSG

The data referred to in the supporting data section has been considered for the purpose of this appraisal which has been prepared in accordance with the Fire Test Study Group Resolution No. 82: 2001.

## Assumptions

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It is assumed that the proposed access panels will be in the fully 'closed' position and that that all locks and clips will be fully tightened and engaged.

It is also assumed that the wall or ceiling assembly into which the access panels are fitted are capable of providing adequate support for the required period of up to 60 minutes.

It is further assumed that the access panels will be installed within a supporting wall or ceiling construction that has been previously tested (or assessed by **Exova Warringtonfire**) and has been shown to be capable of satisfying the integrity performance criteria of the relevant EN standard for the required period of 60 minutes.

The access panels are required to provide the required integrity performance for exposure from outside to inside only i.e. opening towards the heating conditions.

## Proposals

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The access panels shall be of the same design tested and reported in report No. WF 390808 with the following variations and modifications:

- The access panels may be installed in to vertical (wall) constructions in addition to the horizontal (ceiling) construction in which it was tested.
- When installed in to steel stud, timber stud, concrete or masonry walls the 'FlipFix Device' may be replaced by screw fixing.
- Use of the 'CKL' lock type as an alternative to the 'budget' lock as tested and use of the 'KRL' lock insert for use with either the 'CKL' or 'budget' locks, for both horizontal and vertical applications.
- An increase in maximum leaf size, to 643mm x 643mm, for both horizontal and vertical applications.

## Primary Supporting Evidence

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**Test Report No.  
WF 390808**

This report describes a fire resistance test generally in accordance with EN 1634-1: 2014, which was conducted on two ceiling mounted access panels, of the same design but different sizes, for a heating period of 66 minutes.

## Assessed Performance

### Vertical Installation Option

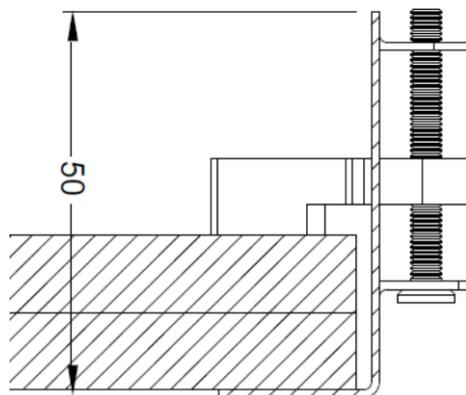
The access panels were tested generally in accordance with EN1634-1: 2014 – ‘Fire resistance tests for doors and shutter assemblies – Part 1: Fire doors and shutters’. This test standard only applies to vertical elements. The principles (heating regime, furnace pressure etc) of this test standard were applied and the specimens were judged on their ability to comply with the performance criteria, for integrity and insulation, contained therein despite being in a horizontal orientation as part of a ceiling construction.

Specimen ‘A’ failed the gap gauge criteria for integrity at a time of 65 minutes duration at the right hand side of the leading edge. This shows that the construction is capable of maintaining its integrity rating for a period in excess of that required (60 minutes). It is considered that a horizontal oriented test represents a fractionally more onerous set of conditions due to the influence that gravity will have on the potential for deflection / distortion of the test specimen. Other than this minor difference it is considered that a test in either the horizontal or vertical orientation would give the same result.

The use, therefore, of the access panel in a vertical orientation for fire from outside only (opening towards the heating conditions) can be positively appraised when installed within a supporting wall construction that has been previously tested (or assessed by **Exova Warringtonfire**) and has been shown to be capable of satisfying the integrity performance criteria of the relevant EN standard for the required period of 60 minutes.

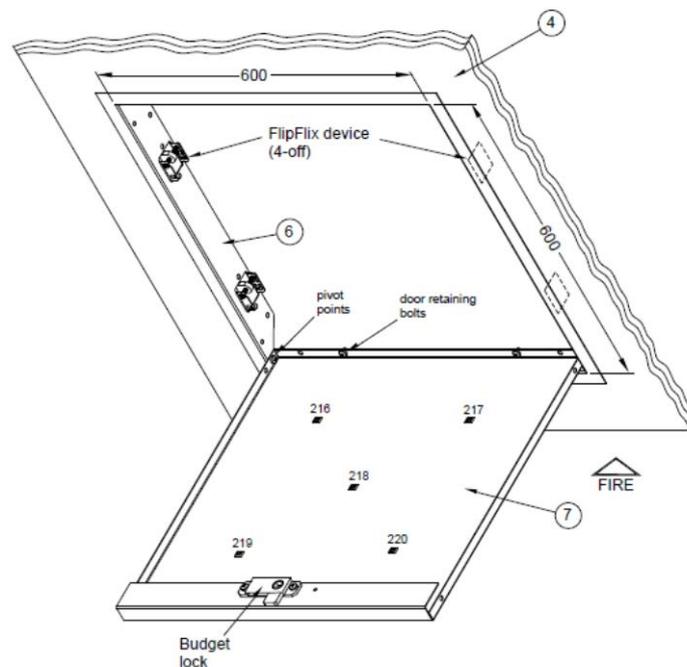
### Screw Fixing

The tested construction was secured in place by the use of the ‘FlipFix Device’ shown in Figure 1 below.



**Figure 1**

This is an adjustable “clamp” type fixing device using the lip/return of the access panel frame as the clamp arm on the exposed face and the device itself as the clamp arm on the unexposed side. The positioning of the ‘FlipFix Device’ is further detailed in Figure 2 below.



**Figure 2**

Figure 2 shows the larger specimen 'A' from the referenced test which incorporated four 'FlipFix Devices'.

It is proposed that when the access panel is to be installed in a vertical orientation, in to steel stud or timber stud, the 'FlipFix Device' may be replaced by screw fixing using 3.5mm diameter x 25mm long 'Bright Zinc Plated Steel Countersunk Pozi Bugle Head Cross Recess Self-drilling Drywall Screws' and for installation in to concrete or masonry walls '70mm long M6 anchor bolts' may be used. In the case of installation in to a steel or timber stud walls these screws must pass in to the stud frame itself (not just in to the plasterboard). In all cases the screws must be positioned at the same centres used for the 'FlipFix Devices' during the referenced test (maximum 300mm centre to centre distance) positioned an equal distance from hinge edge and leading edge. This is the minimum requirement – an increase in the number of fixing points would only be of benefit to the rigidity of the construction. It is considered that this type of mechanical fixing represents a more secure form than the clamp type fixing that the 'FlipFix Device' utilises. The screw fixing is to be through the frame sides (in the same position as the 'FlipFix Device') and not through the face of the access panel frame. This will afford a good deal of protection to the screw fixing as it will not be exposed to the heating conditions. This is in contrast to the tested construction where the clamp arm, formed from the lip/return of the access panel frame, was exposed to the heating conditions of the test.

The use of screw fixing, in vertical orientation, in to steel stud, timber stud, concrete or masonry walls, of the access panel can, therefore, be positively appraised.

## Alternative Locks

The construction tested, in report referenced WF No. 390808, included the use of a 'budget' lock. The position of which is shown in figure 2 above. This is a simple steel lock device. It is proposed that this may be substituted for the manufacturers 'CKL' lock device which is constructed from bronze. Bronze has a melting point of approximately 950°C and shall be fitted in the same position, thus it will be shielded from the direct radiant heat of the furnace by the rest of the construction. Furthermore the specified heating regime used in the EN 1634-1 test method only reaches 945°C at the 60 minute mark. It is not considered that this represents a significant risk to the fire resistance integrity performance of the access panel.

It is further proposed that the plastic grommet lock cover, as tested, may be replaced by the die cast zinc 'KRL lock insert'. The plastic grommet lock cover was positioned on the exposed face of the tested construction, as shown below in figure 3, and will have melted or burnt away in the early stages of the test (no gap gauge or sustained flaming failure was deemed to occur). Replacing this part with a die cast zinc component will only be of benefit to the construction due to the likelihood of it remaining in position for a longer period of time thus plugging the hole. This modification can, therefore, be positively appraised.

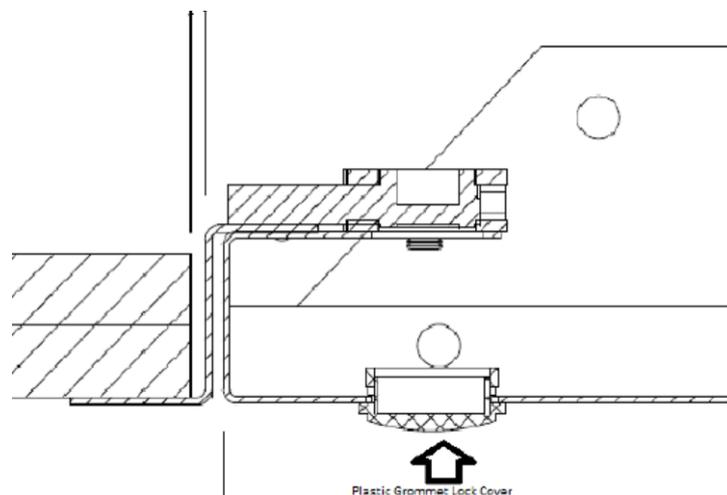


Figure 3

## Size Increase

Specimen 'A' of the tested construction had leaf dimensions of 595mm x 595mm (0.35m<sup>2</sup>) and achieved 65 minutes integrity performance. This represents a 5 minute (or 8%) test time overrun compared to the 60 minute requirement. It is proposed that this 8% overrun may be used to off-set an increase in leaf dimensions to a maximum of 643mm x 643mm (0.41m<sup>2</sup>). This represents an increase of 48mm in each dimension. It is considered that due to the stability of the construction during test, the relatively minor increase and the 8% test time overrun this, increase in dimensions, is permissible.

## Conclusions

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It can be concluded that the proposed access panels should provide 60 minutes integrity performance, if subjected to a fire test in accordance with EN1634-1: 2014 when installed vertically within a previously fire tested timber stud, steel stud, concrete or masonry wall assembly or installed horizontally within a previously fire tested ceiling construction.

## Validity

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This assessment is issued on the basis of test data and information available at the time of issue. If contradictory evidence becomes available to **Exova Warringtonfire** the assessment will be unconditionally withdrawn and Panel Technologies will be notified in writing. Similarly the assessment is invalidated if the assessed construction is subsequently tested because actual test data is deemed to take precedence over an expressed opinion. The assessment is valid initially for a period of five years i.e. until 1st June 2023, after which time it is recommended that it be returned for re-appraisal.

The appraisal is only valid provided that no other modifications are made to the tested construction other than those described in this report.

## Supporting Evidence

### Test Report No. WF 390808

This report describes a fire resistance test generally in accordance with EN 1634-1: 2014, which was conducted on two ceiling mounted access panels, of the same design but different sizes, for a heating period of 66 minutes. The full assembly was nominally 3000mm wide by 4000mm long. The flooring consisted of a steel stud framework clad on the exposed face with two layers of 10mm thick Glasroc F Multiboard. The two access panels were fitted in to this construction. Access Panel 'A' was fitted in to an aperture measuring 605mm x 605mm and had frame dimensions of 600mm x 600mm and incorporated a door leaf measuring 595mm x 595mm. Access Panel 'B' was fitted in to an aperture measuring 305mm x 305mm and had frame dimensions of 300mm x 300mm and incorporated a door leaf measuring 297mm x 297mm. The frame, of both access panels, had a 20mm lip on the front, exposed, face which overlapped the Glasroc F Multiboard. This provided one half of the "clamp" used to hold the frame in place – the other half of the "clamp" was provided by the 'FlipFix Device'. The larger specimen used a total of 4x 'FlipFix Devices' (two on each side) at 300mm centres. The smaller specimen used a total of 2x 'FlipFix Devices' (one on each side) at mid-point. The frame also incorporated a 15mm stop to meet the leading edge of the leaf. Both specimens incorporated a budget lock on the leading edge of the access panel leaf. The specimens were positioned so that they opened towards the heating conditions of the test.

The specimens satisfied the integrity and insulation criteria of the test standard for the following durations:

		Specimen A	Specimen B
Integrity	Sustained Flaming	66 minutes*	66 minutes*
	Gap Gauge	65 minutes	66 minutes*
	Cotton Pad	10 minutes	13 minutes
Insulation		1 minute	2 minutes

\* The test duration. The test was discontinued after 66 minutes.

Date of test                      3<sup>rd</sup> February 2018

Test sponsor                      Panel Technologies

## Declaration by Panel Technologies

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We the undersigned confirm that we have read and complied with the obligations placed on us by the UK Fire Test Study Group Resolution No. 82: 2001.

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 the assessment is being made.

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.

We are not aware of any information that could adversely affect the conclusions of this assessment.

If we subsequently become aware of any such information we agree to cease using the assessment and ask **Exova Warringtonfire** to withdraw the assessment.

Signed:

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For and on behalf of:

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## Signatories

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Responsible Officer

T. Benyon\* - Certification Engineer



Approved

D. Hankinson\* - Principal Certification Engineer

\* For and on behalf of **Exova Warringtonfire**.

Report Issued: 14<sup>th</sup> May 2018

The assessment report is not valid unless it incorporates the declaration duly signed by the applicant.

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