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Title:

The Fire Resistance Performance of A Range of Access Panels And A Range Of Loft Access Hatches

WF Assessment Report No:

516268 – Issue 2

Prepared for:

Manthorpe Building Products

Manthorpe House,
Brittain Drive,
Ripley,
Derbyshire,
DE5 3ND

Date:

28th March 2022

Foreword

This assessment report has been commissioned by Manthorpe Building Products and relates to the fire resistance of a range of access panels and a range of loft access hatches.

This assessment 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*, as appropriate.

This assessment uses established empirical methods of extrapolation and experience of fire testing similar assemblies, in order to extend the scope of application 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. This assessment cannot therefore be considered for a CE marking application nor can the conclusion be used to establish a formal classification against EN13501-2.

This assessment has been written using appropriate test evidence generated at an appropriately accredited laboratory to the relevant test standard. The supporting test evidence has been deemed appropriate to support the manufacturers stated design and is summarised in the Supporting data section of this report.

The defined scope presented in this assessment report relates to the behaviour of the proposed design under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the assembly in use.

This assessment has been prepared and checked by product assessors with the necessary competence, who subscribe to the principles outlined in the PFPF Guide to Undertaking Technical Assessments of Fire Performance of Construction Products Based on Fire Test Evidence - 2021. The aim of the PFPF guidelines is to give confidence to end-users that assessments based on fire test evidence that exist in the UK are of a satisfactory standard for building control and other purposes.

The PFPF guidelines are produced by the UK Fire Test Study Group (FTSG) an association of the major fire testing laboratories in the UK and are published by the PFPF, the representative body for the passive fire protection industry in the UK.

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Executive Summary

Objective	This report presents an appraisal of the expected fire resistance performance of a range of access panels and a range of loft access hatches.
Sponsor	**Manthorpe Building Products**
Address	Manthorpe House, Brittain Drive, Ripley, Derbyshire, DE5 3ND
Summary of Conclusions	It can be concluded that the proposed range of access panels and range of loft access hatches should be capable of providing 60 minutes integrity performance, if subjected to a fire resistance test in accordance with BS 476: Part 22: 1987. **This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with BS 476: Part 22: 1987, on the basis of the evidence referred to above. We express no opinion as to whether that evidence, and/or this assessment, would be regarded by any Building Control authorities or any other third parties as sufficient for that or any other purpose. This assessment 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.**
Valid Until	1st November 2027

Introduction

This report presents an appraisal of the expected fire resistance performance of a range of access panels and a range of loft access hatches.

The access panels and loft hatches are required to provide 60 minutes integrity performance, if subjected to a fire resistance test in accordance with BS 476: Part 22: 1987.

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

General Construction

It is assumed that the general construction of the access panels and loft hatches (and the materials used in their construction) will, unless specifically detailed in this report, be identical to those detailed within the test reports referenced in the supporting data section of this report.

Supporting Construction

It is assumed that the access panels and loft hatches shall be fixed to a supporting construction with a fire resistance of at least that required for the access panels and loft hatches.

Door Gaps

It is assumed that the leaf to frame clearance gaps shall not exceed those detailed within the relevant fire test reports.

Installation

It is assumed that the doorsets will be installed by competent installers in a similar manner to that used when installing the fire tested assemblies.

Proposals

Loft Access Hatch

A specimen of a "GL280F" loft hatch has been tested in an aerated concrete supporting construction under WF No. 504897/R - Issue 2, it is proposed that the same hatch will provide 60 minutes integrity performance, as per BS 476: Part 22: 1987, when alternatively installed within a timber joist flexible supporting construction.

It is further proposed that the other loft access hatches in the family may also be installed within either an aerated concrete supporting construction or a timber joist flexible supporting construction and that each design can be fitted with either a T-key lock or a Cam lock option. The full range of product references, within the family, which cover these variants are as follows: GL280F, GL281F, GL270F & GL271F.

Access Panel

A specimen of a "GL450F" access panel has been tested (in a horizontal orientation) in an aerated concrete supporting construction under WF No. 504896/R - Issue 2. It is proposed that the same access panels will provide 60 minutes integrity performance, as per BS 476: Part 22: 1987, when installed within a timber joist flexible supporting construction.

A specimen of a "GL451F" access panel has been tested (in a vertical orientation) in a timber stud flexible supporting construction under WF No. 504896/R - Issue 2. It is proposed that the same access panels will provide 60 minutes integrity performance, as per BS 476: Part 22: 1987, when installed within a concrete/blockwork supporting construction or a steel stud flexible supporting construction.

It is further proposed that the other access panels in the family may also be installed within each of the supporting constructions, as described above, and that each design can be fitted with either a T-key lock or a Cam lock option. The full range of product references, within the family, which cover these variants are as follows: GL150F, GL151F, GL130F, GL131F, GL450F & GL451F.

Basic Evidence

WF No. 504896 (Issue 2)

A test, in accordance with EN 1364-2: 2018, on a non-loadbearing ceiling incorporating a horizontally oriented access panel and a test, following the general principles of EN1634-1: 2014+A1: 2018, on a vertically oriented access hatch.

Briefly the ceiling assembly had overall nominal dimensions of 1590 mm wide by 2075 mm long by 150 mm deep and consisted of aerated concrete slabs laid across the restraint frame. The ceiling incorporated an access hatch referenced "GL450F" with overall dimensions of 498mm high by 498mm wide, constructed from 1.2 mm thick powder-coated mild steel panel tray 445mm x 445mm x 32mm deep, hung on pivots in a 1.2mm thick powder-coated mild steel perimeter frame. The hatch incorporated a lockset which was engaged throughout the test and the panel incorporated an insulation infill of 30 mm thick Rockwool with a stated density of 45 kg/m^3 held in position by an insulation retaining bar.

The wall construction had overall nominal dimensions of 1500 mm high by 1500 mm wide by 75 mm deep and comprised 48 mm deep British Gypsum steel studs, faced on both the unexposed and exposed side with 12.5 mm British Gypsum Fireline Board and insulated with PROROX SL 960 UK. The wall incorporated an access hatch referenced "GL451F" with overall dimensions of 498mm high by 498mm wide, constructed from 1.2 mm thick powder-coated mild steel panel tray 445mm x 445mm x 32mm deep, hung on pivots in a 1.2mm thick powder-coated mild steel perimeter frame. The hatch incorporated a lockset which was engaged throughout the test and the panel incorporated an insulation infill of 30 mm thick Rockwool with a stated density of 45 kg/m^3 held in position by an insulation retaining bar.

Both access hatches were installed such that they opened towards the heating conditions.

The horizontally oriented access hatch satisfied the integrity criteria as follows:

Sustained Flaming: 67 minutes*
Cotton Pad: 52 minutes
Gap Gauge: 67 minutes*

If the vertically oriented access hatch was to be assessed against the integrity criteria of EN1634-1: 2014+A1: 2018, the results could be reported as follows:

Sustained Flaming: 67 minutes*
Cotton Pad: 43 minutes
Gap Gauge: 67 minutes*

*The test was discontinued after a period of 67 minutes.

WF No. 504897 (Issue 2)

A test, in accordance with EN 1364-2: 2018, on a non-loadbearing ceiling incorporating a loft access hatch.

The self-supporting ceiling construction had overall nominal dimensions of 1590 mm wide by 2075 mm long by 150 mm deep and consisted of aerated concrete slabs laid across the restraint frame.

The loft access hatch had overall dimension of 584mm wide by 749mm long and was constructed from a 1.2mm thick powder-coated mild steel panel tray 532 mm wide by 696 mm long by 102 mm deep, hung on pivots to a 1.2mm thick powder-coated mild steel perimeter frame. The access hatch, referenced "GL280F", incorporated a lockset which was engaged throughout the test and was hung in such a way that opened towards the heating conditions. The access hatch incorporated an insulation infill of 100 mm thick Rockwool with a stated density of 45 kg/m^3 held in position by an insulation retaining bar.

The loft access hatch satisfied the integrity criteria as follows:

Sustained Flaming: 68 minutes*
Cotton Pad: 68 minutes*
Gap Gauge: 68 minutes*

*The test was discontinued after a period of 68 minutes.

WF No. 157180

A test utilising the general principles of BS 476: Part 22: 1987.

The test construction had nominal overall dimensions of 1200 mm by 1200 mm and comprised a timber joist floor and plasterboard ceiling construction into which was installed a loft hatch assembly of overall nominal dimensions 580 mm wide by 745 mm long by 102 mm thick, providing an opening size of 528 mm by 688 mm. The loft hatch assembly was constructed using a steel frame; into which was positioned two pieces of nominally 50 mm thick Rockwool 'RW45' Mineral fibre insulation with a black non-woven glass tissue with urea formaldehyde binder, which was laid loose onto the loft hatch tray and retained by a reinforcing strut.

The specimen was mounted within the test construction such that the access hatch opened towards the heating conditions of the test.

The specimen satisfied the integrity criteria for a period of 70 minutes without failure.

WF No. 519667 – Issue 2

A test carried out fully in accordance with Clause 9 of BS 476: Part 22: 1987.

The assembly was of overall size 2400mm long by 1700mm wide and contained a plasterboard ceiling of overall size 2200mm long by 1150mm wide. The ceiling included an aperture of size 708mm long by 543mm wide. Centrally mounted in the ceiling was an insulated panel of overall 749mm long by 584mm wide incorporating a panel of overall size 696mm long by 530mm wide by 100mm deep.

The assembly was constructed from a framework of softwood timber joists, of cross-sectional size 72mm deep by 38mm wide, at 600mm nominal centres. The ceiling consisted of two layers of 12.5mm thick 'Gyproc Fireline' screw fixed to the timber framework.

The access panel was formed from 1mm thick powder coated finish Zintec steel. The access panel was lined with stone mineral wool 100mm thick having a nominal density 45kg/m^3. The insulation was laid inside the access panel and retained with insulation retaining brace. The panel was hung in such a way that opened towards the heating conditions. The access panel contained a pin hinge, a lockset rotary cam and a door seal made from a PVC foam. The lockset cam was engaged at the start of the test. An acrylic sealant was used to seal the joint between the access panel and the ceiling boards on the exposed face.

The specimen satisfied the integrity criteria for a period of 66 minutes without failure.

Assessed Performance

The following appraisal is being made against the requirements of BS 476: Part 22: 1987. Some of the test evidence cited in the following discussion is as per the requirements of EN 1364-2: 2018. Testing experience has demonstrated that this represents a more arduous test compared with BS 476: Part 22: 1987.

The main reason being that, although the two test methods specify a near identical temperature/time heating curve, the furnace thermocouples specified by the EN test method are less responsive to temperature rise compared with those specified for a test to BS 476: Part 22: 1987. The consequence of this is that it is necessary for the furnace to be worked harder for a test to EN 1364-2: 2018 in order to maintain the specified furnace temperature, particularly during the early stages of the test due to the required rapid temperature increase.

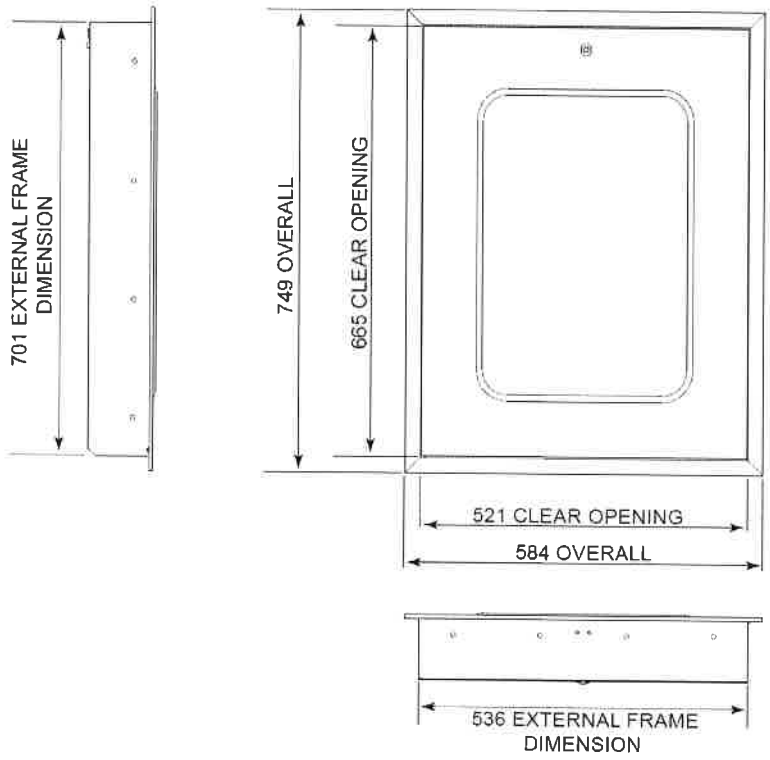
Furthermore WF No. 157180, used in support of the appraised constructions, was a test carried out as per BS 476: Part 22: 1987 and so this standard shall be adopted for this appraisal as the lowest common denominator.

Loft Access Hatch (Horizontal Orientation Only)

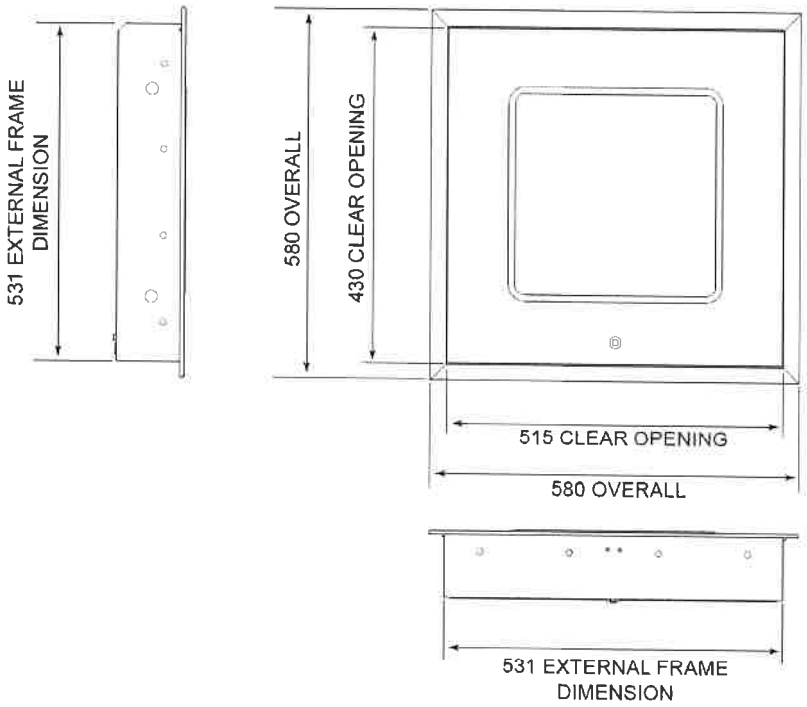
It is proposed that the range of loft access hatches, referenced GL280F, GL281F, GL270F & GL271F, can be assessed for use at smaller dimensions than those tested, can be fitted with either a T-key lock or a Cam lock option and can be installed in to either a rigid supporting construction or a timber joist flexible supporting construction. It is required that the proposed constructions would satisfy the integrity criteria of BS 476: Part 22: 1987 for a period of 60 minutes.

Test report WF No. 504897/R – Issue 2, was a test to EN 1364-2: 2018, on a non-loadbearing ceiling incorporating a GL280F loft access hatch. The tested construction achieved 68 minutes fire resistance integrity (without failure). The only difference between the tested GL280F and the GL281F is that the "281" variant is lockable. The use of the different lock options is discussed later in this report. The difference between the tested GL280F compared to the GL270F is that the "270" variant has smaller overall dimensions. The GL271F then has the same variation in terms of the locking mechanism. Again the use of the different lock options is discussed later in this report.

The tested GL280F had overall dimensions of 749mm long by 584mm wide. These dimensions incorporate a lip which overlaps on to the face of the supporting construction. This is further shown in the drawing below:

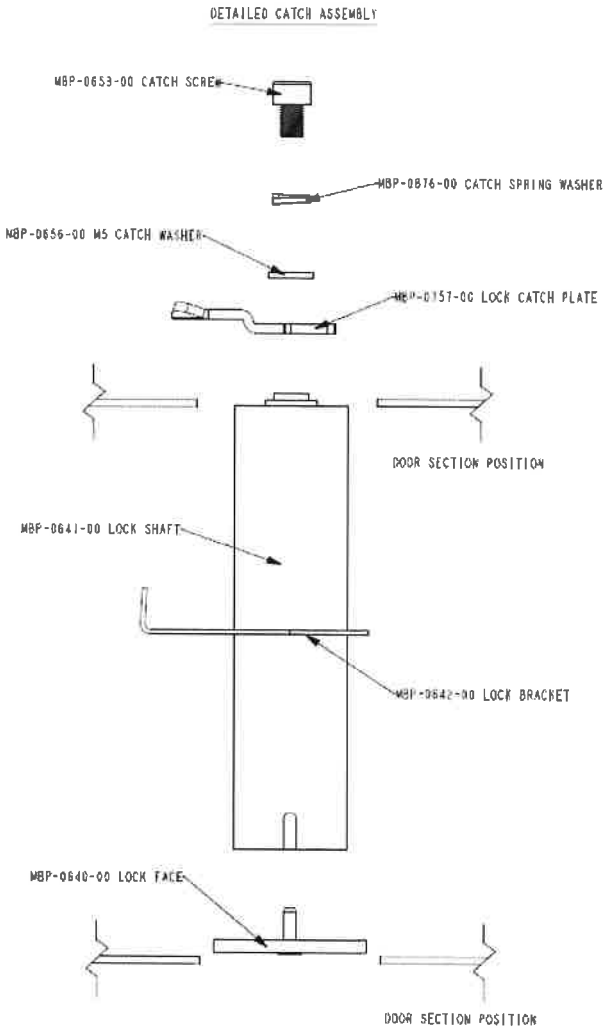


The GL270F & GL271F variants have overall dimensions of 580mm long by 580mm wide. These dimensions incorporate a lip which overlaps on to the face of the supporting construction. This is further shown in the drawing below:

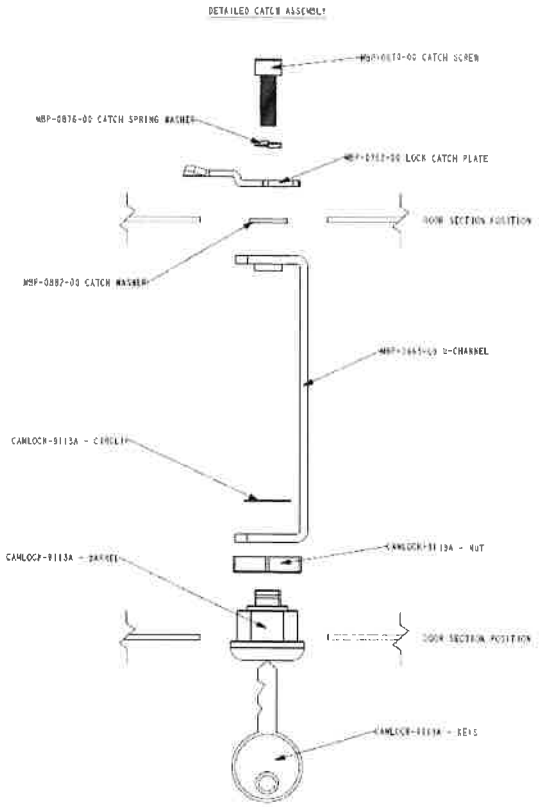


Given that the tested GL280F design is the largest in the family and, therefore, generally considered the more onerous construction; it is not thought that a reduction in overall dimensions represents a risk to the fire resistance performance of the construction. In fact it is considered that a reduction in dimensions will only be of benefit to the fire resistance performance of the construction. It is considered therefore that the smaller GL270F (and GL271F variant by extension) can be positively appraised.

The tested GL280F included a budget lock (operated by a T-Key) as shown below:



The T-Key simply rotates the locking mechanism thus engaging the "lock catch plate" section, of the above lock construction, onto the frame of the doorset. The lock was engaged throughout the test. The "281" variant operates using the same basic principle, however, the design includes a cam-lock thus allowing the doorset to be securely locked (for security purposes). The GL280F and GL281F are identical in all other aspects. The cam-lock is shown in the below drawing:



Given the similarities in design and the very basic principle of operation, the use of either the budget lock with T-Key (GL280F) or the cam-lock (GL281F) design can be positively appraised. Further reassurance can be taken from the fact that the cam-lock was used in fire resistance test WF No. 504896 – Issue 2, albeit in a vertically oriented construction of a different product (but of very similar design and dimensions – thus inducing similar stresses on the lock), which also demonstrated a fire resistance in excess of 60 minutes.

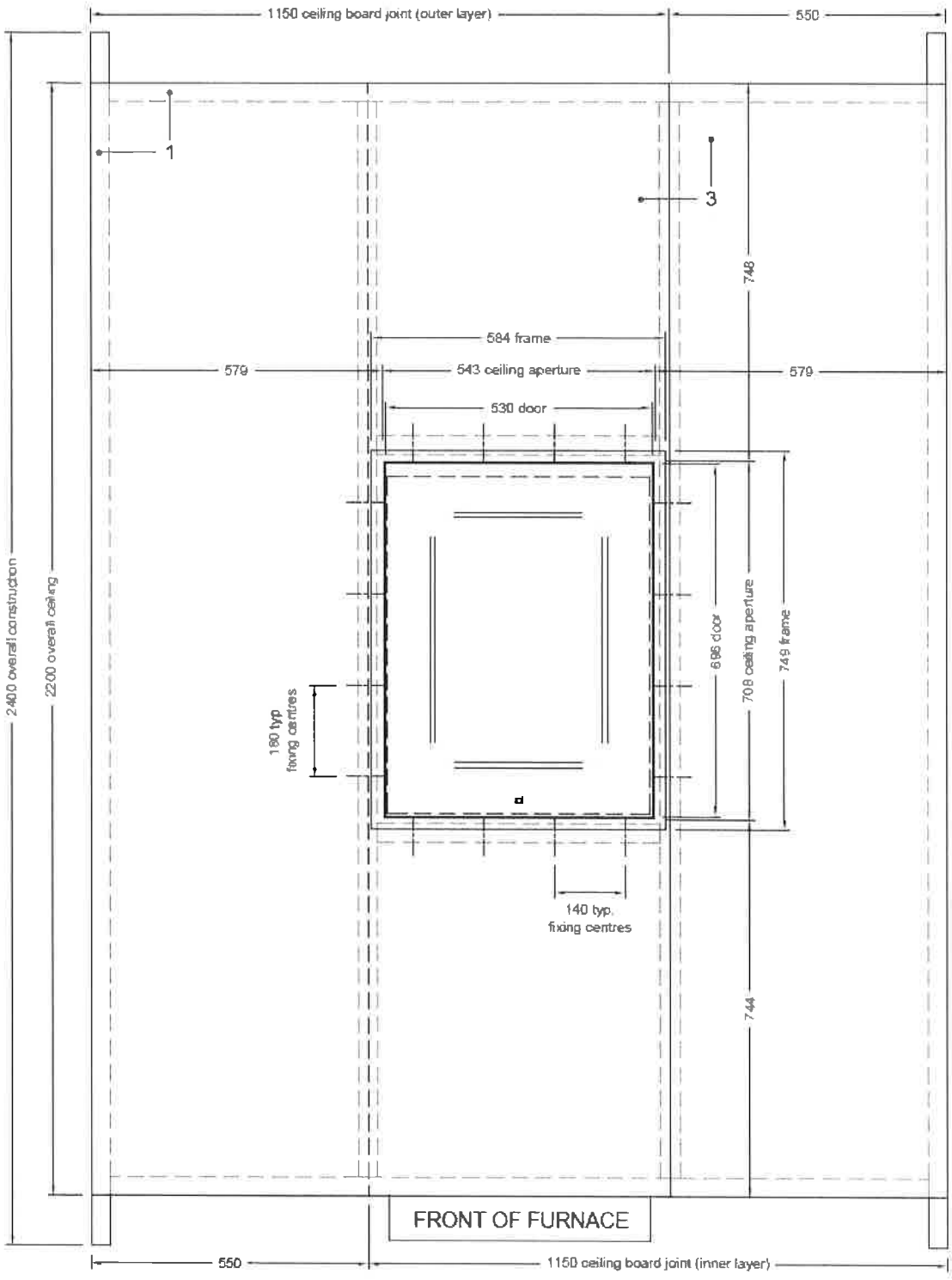
The above discussion points, therefore, positively appraise the use of all four variants (in terms of dimensions and lock option) – GL280F, GL281F, GL270F & GL271F. The following discussion is in regards the allowable supporting construction in to which any of the above four variants may be fitted.

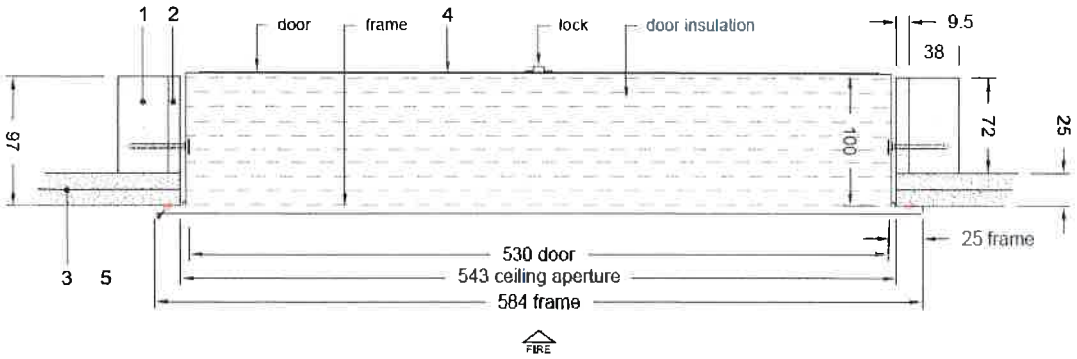
It is proposed that the range of loft access hatches can be installed in to either a rigid supporting construction or a timber joist flexible supporting construction.

The loft access hatch tested in WF No. 504897 – Issue 2 (a GL280F design) was installed in to a rigid supporting construction. This rigid supporting construction consisted of a 150mm thick aerated concrete slab. This type of supporting construction can, therefore, be positively appraised as direct test evidence exists in support of this. The number, type and centre of the fixings used shall be identical as those used in the test when installing in to supporting construction of this type.

Test report WF No. 519667/R was a test of the same loft access hatch design, carried out in accordance with Clause 9 of BS 476: Part 22: 1987, which achieved 66 minutes integrity (without failure).

The loft access hatch was, in this instance, installed within a timber joist floor and plasterboard ceiling construction. The basic design of which is shown below:





TYPICAL TRANSVERSE SECTION THROUGH ACCESS PANEL

Given that this test was carried out as per BS 476: Part 22: 1987 and that the European Norm for the testing of doorsets (EN1634-1) does not currently address the testing of horizontally oriented constructions, there is very little guidance in regards allowable variation in regards supporting constructions.

It is considered, therefore, prudent to restrict the use of (all four variants of) the loft access hatch to timber joist, plasterboard clad ceiling constructions of the type tested in WF No. 519667/R. Installations of this type shall be framed out on all four sides, as was done in the test, using timber joists of at least the same dimensions as those in the reference test (38mm wide by 72mm tall) and the aperture shall also be lined out with boards, of a minimum thickness of 9.5mm, as was done in the test. The frame of the loft access hatch shall be fixed (as per the reference test) using 50mm long by 4.0mm diameter steel screws, positioned so that 4 off (at 140mm centres) are used on the latch and hinge sides (short sides) and 4 off (at 180mm centres) are used on the jamb sides (long sides). All screws are to fix through the frame and in to the joists.

Access Panel

It is proposed that the range of access panels, referenced GL150F, GL151F, GL130F, GL131F, GL450F & GL451F, can be assessed for use at smaller dimensions than those tested, can be fitted with either a T-key lock or a Cam lock option and can be installed into rigid supporting constructions (horizontally or vertically), timber or steel stud flexible supporting constructions (vertically) and a timber joist flexible supporting construction (horizontally). It is required that the proposed constructions would satisfy the integrity criteria of BS 476: Part 22: 1987 for a period of 60 minutes.

Horizontal Orientation

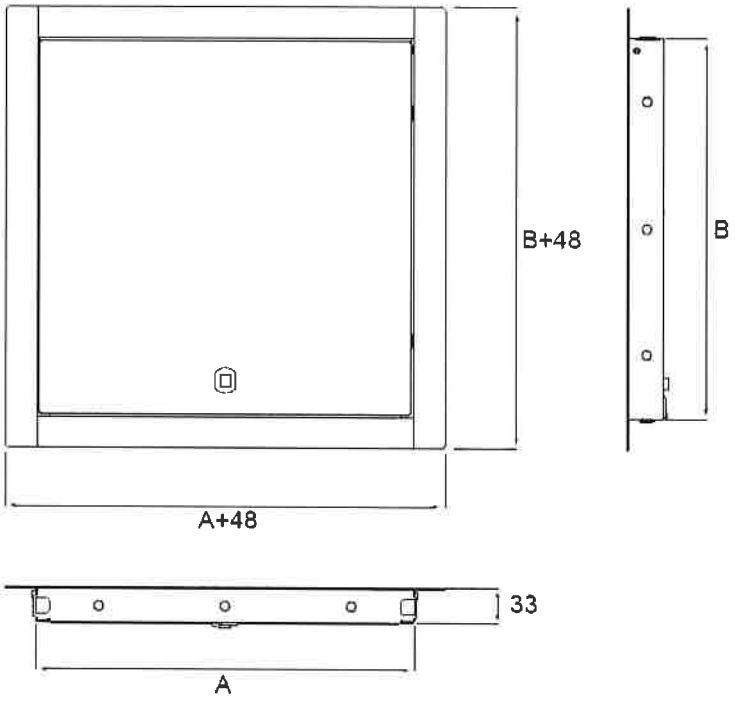
Test report WF No. 504896/R – Issue 2, was a test to EN 1364-2: 2018, on a non-loadbearing ceiling incorporating a GL450F access panel. Incidentally test report WF No. 504896/R – Issue 2 also provides detail of a fire resistance test utilising the general principles of EN 1634-1: 2014+A1: 2018 on a flexible wall construction incorporating a GL451F access panel.

The horizontally tested construction achieved 67 minutes fire resistance integrity (sustained flaming and gap gauge criteria) without failure. The cotton pad failure recorded at 52 minutes shall be disregarded as per the rule stated within EN 13501-2: 2016; Where an element is classified without an insulation classification, the value of integrity is that determined by the time to failure of only the cracks/openings or sustained flaming aspects, whichever fails first.

Further to the above, given that this appraisal is being carried out as per the requirements of BS 476: Part 22: 1987, the guidance provided within BS 476: Part 20 (general principles) is applicable – and it states that the; "use of the cotton pad shall be discontinued when the unexposed face of the construction indicates a temperature in excess of 300°C". The average unexposed surface temperature exceeded 300°C at 48 minutes test duration and so cotton pad failure shall be disregarded.

The only difference between the tested GL450F and the GL451F is that the "451" variant is lockable. The use of the different lock options is discussed later in this report. The difference between the tested GL450F compared to the GL150F and the GL130F is that the "150" and "130" variants have smaller overall dimensions. The GL151F and GL131F variants then have the same variation in terms of the locking mechanism. Again the use of the different lock options is discussed later in this report.

The tested GL450F had overall dimensions of 450mm long by 450mm wide. These dimensions do not incorporate the lip which overlaps on to the face of the supporting construction. This is further shown in the drawing below:



The GL150F & GL130F variants have smaller overall dimensions. Again, these dimensions do not incorporate a lip which overlaps on to the face of the supporting construction. Further details are shown in the below table:

Dimension Table:		
Product Code:	A (mm)	B (mm)
GL150F / GL151F	200	150
GL130F / GL131F	300	300
GL450F / GL451F	450	450

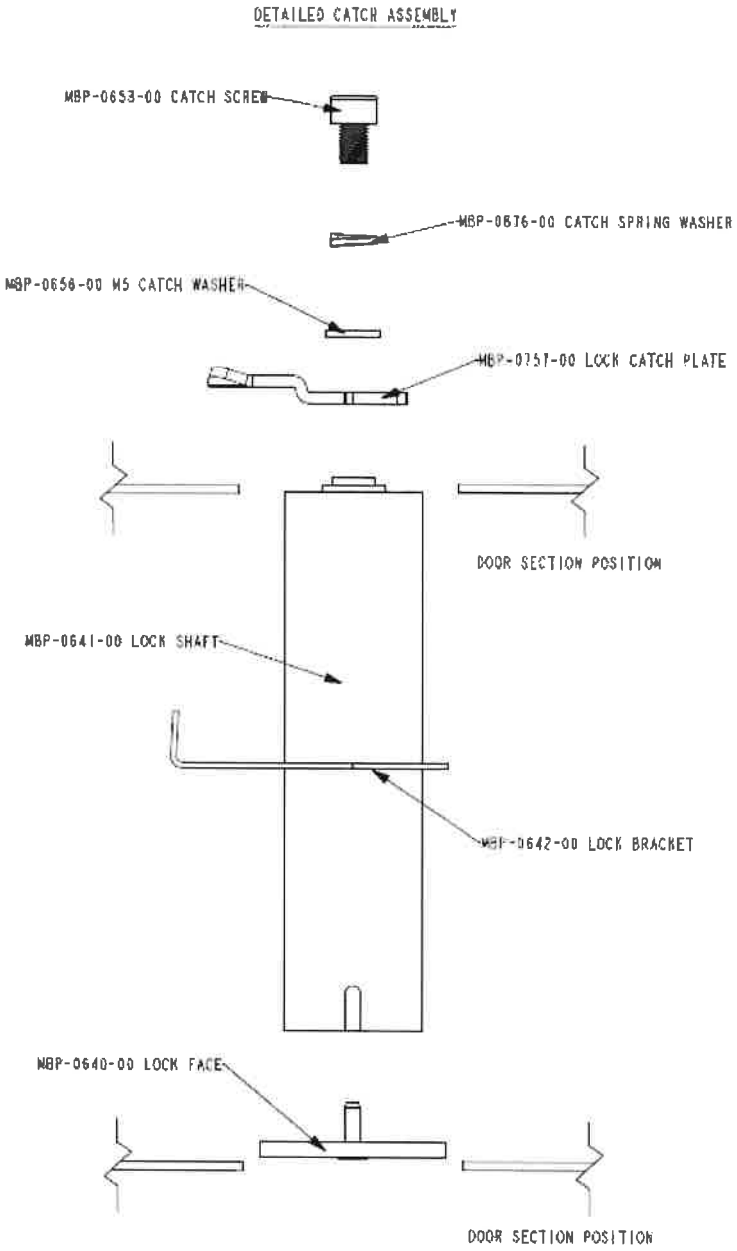
Given that the tested GL450F design is the largest in the family and, therefore, generally considered the more onerous construction; it is not thought that a reduction in overall dimensions represents a risk to the fire resistance performance of the construction. In fact it is considered that a reduction in dimensions will only be of benefit to the fire resistance performance of the construction.

It shall be noted at this point, however, that the smallest designs (the GL150F & GL151F), which have latch & hinge sides measuring 200mm and jamb sides measuring 150mm, as shown in the above table, do not incorporate the centrally transverse 'Insulation Retaining Bar' which is included in the larger design variants. Below is a drawing of the, tested, GL450F design showing this detail:

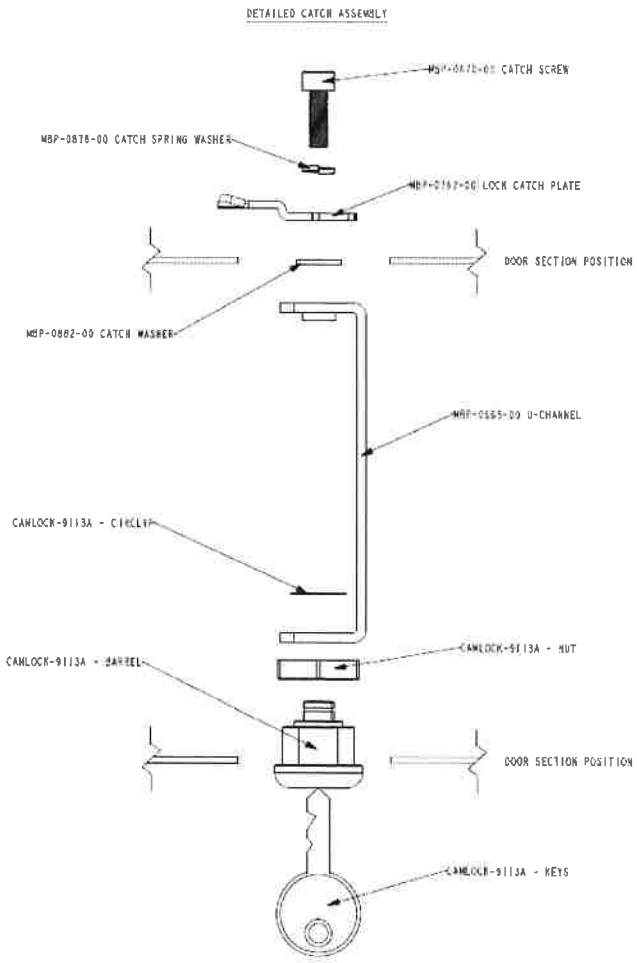
The 'Insulation Retaining Bar' itself measures 1mm thick by 30mm wide and is simply fitted in to cut outs in the 10mm returned edge of the access panel tray. It is not mechanically fixed in place – it is simply friction fitted. It is only the 200mm x 150mm design variant (GL150F & GL151F) for which this feature is ommitted. Given the relatively small dimensions of these design variants, it is considered that the ommission of this bar, can be positively appraised.

Given the above it is considered therefore that the smaller GL150F & GL130F (and GL151F & GL131F variants by extension) can be positively appraised.

The tested GL450F included a budget lock (operated by a T-Key) as shown below:



The T-Key simply rotates the locking mechanism thus engaging the "lock catch plate" section, of the above lock construction, on to the frame of the doorset. The lock was engaged throughout the test. The "451" variant operates using the same basic principle, however, the design includes a cam-lock thus allowing the doorset to be securely locked (for security purposes). The GL450F and GL451F are identical in all other aspects. The cam-lock is shown in the below drawing:



Given the similarities in design and the very basic principle of operation, the use of either the budget lock with T-Key (GL450F) or the cam-lock (GL451F) design can be positively appraised. Further reassurance can be taken from the fact that the cam-lock was used in the vertically oriented specimen which was also tested in WF No. 504896 – Issue 2, which utilised the general principles of EN1634-1: 2014+A1: 2018, which also demonstrated a fire resistance in excess of 60 minutes.

The above discussion points, therefore, positively appraise the use of all six variants (in terms of dimensions and lock option) – GL450F, GL451F, GL150F, GL151F, GL130F & GL131F. The following discussion is in regards the allowable supporting construction in to which any of the above six variants may be fitted.

It is proposed that the range of access can be installed (horizontally) in to either a rigid supporting construction or a timber joist flexible supporting construction.

The horizontally oriented access panel tested in WF No. 504896 – Issue 2 (a GL450F design) was installed in to a rigid supporting construction. This rigid supporting construction consisted of a 150mm thick aerated concrete slab. This type of supporting construction can, therefore, be positively appraised as direct test evidence exists in support of this. The number, type and centre of the fixings used shall be identical as those used in the test when installing in to supporting construction of this type.

There is no direct test evidence for this access panel being tested, when installed in a horizontal orientation, within a flexible supporting construction. It shall be noted, however, that the loft access hatch, discussed previously within this report, is of a very similar design and was itself subject to a fire resistance test when installed within a timber joist floor and plasterboard ceiling construction. The test utilised the general principles of BS 476: Part 22: 1987 and achieved 70 minutes integrity (without failure). This is reported in WF No. 157180.

The main differences between the loft access hatch and the access panel being assessed here are as follows; the loft access hatch frame is 105mm deep whereas the access panel frame is only 33mm deep. This is simply a function of the depth of the tray (or leaf) that each product is designed to accommodate – loft access hatch tray (leaf) is 102mm deep and the access panel tray (leaf) is 32mm deep. This, in turn, is a function of the depth of the insulation material that each product is designed to accommodate – loft access hatch insulation is 100mm thick and the access panel insulation is 30mm thick.

The lack of direct test evidence of the access panel, oriented horizontally, in a timber joist floor and plasterboard ceiling construction is mitigated by the fact that the access panels are much smaller than the loft access hatch. Also, the fact that the access panels (and the loft access hatches) are single skin means that the differential expansion of the exposed face (when compared to the unexposed face) and the related levels of distortion would be expected to be minimised. Indeed, it is clear from the test report WF No. 504896/R, for both the horizontally oriented and the vertically oriented access panels that no gaps formed throughout the entire 67 minute test duration. This is evidenced by the observations and photographs in the test report as well as the fact that the gap gauge criteria were not the subject of a failure. Furthermore, the test was discontinued after a period of 67 minutes without failure. The access panel is also latched, lending a degree of rigidity to the doorset. Both the loft access hatch and the access panel use a 1mm thick by 30mm wide by 5.5mm high reinforcing strut transversely across the leaf, to retain the insulation material in place. This serves to also provide rigidity to the design. Furthermore there is direct test evidence of the access panel, oriented horizontally, but in a concrete supporting construction. Also, there is direct test evidence of the access panel in a flexible supporting construction, but oriented vertically.

All of these factors combine to allow the use of the access panels, oriented horizontally, in a timber joist floor and plasterboard ceiling construction, to be positively appraised. Installations of this type shall be framed out on all four sides, as was done in the test WF No. 157180, using timber joists of at least the same dimensions as those in the reference test (46mm wide by 170mm tall). The frame of the access panel shall be fixed using 50mm long by 5.2mm diameter steel screws (as per the reference test), positioned so that a minimum of 4 off (at maximum 150mm centres) are used on each side. All screws are to fix through the frame and in to the joists.

Vertical Orientation

Test report WF No. 504896/R – Issue 2 also provides detail of a fire resistance test utilising the general principles of EN 1634-1: 2014+A1: 2018 on a flexible wall construction incorporating a GL451F access panel. Incidentally test report WF No. 504896/R – Issue 2 also provides detail of a fire resistance test to EN 1364-2: 2018, on a non-loadbearing ceiling incorporating a GL450F access panel.

The vertically tested construction achieved 67 minutes fire resistance integrity (sustained flaming and gap gauge criteria) without failure. The cotton pad failure recorded at 43 minutes shall be disregarded as per the rule stated within EN 13501-2: 2016; Where an element is classified without an insulation classification, the value of integrity is that determined by the time to failure of only the cracks/openings or sustained flaming aspects, whichever fails first.

Further to the above, given that this appraisal is being carried out as per the requirements of BS 476: Part 22: 1987, the guidance provided within BS 476: Part 20 (general principles) is applicable – and it states that the; "use of the cotton pad shall be discontinued when the unexposed face of the construction indicates a temperature in excess of 300°C". The average unexposed surface temperature exceeded 300°C at 38 minutes test duration and so cotton pad failure shall be disregarded.

The previous discussion, for the horizontally oriented access panels, as it pertains to the range of panels within the family, the range of allowable dimensions and the use of the two lock options, also applies here for the vertically oriented constructions with no need for the repetition of the discussion.

It is proposed that the range of access panels can be installed (vertically) in to either a rigid supporting construction or a timber stud flexible supporting construction or a steel stud flexible supporting construction.

The vertically tested construction, reported in WF No. 504896/R – Issue 2 was a successful test carried out utilising the general principles of EN 1634-1: 2014+A1: 2018, on a specimen installed within a steel stud flexible supporting construction.

Given that this appraisal is being carried out as per the requirements of BS 476: Part 22: 1987, the following is applicable; Section 6.1.2 of BS 476: Part 20: 1987 (general principles) states that "...where a reduced size furnace is used...the furnace aperture shall be greater in area than the exposed face of the specimen by a ratio of at least 1.5:1. The additional area between the element and the furnace aperture shall be filled by means of an associated construction or a furnace closure as appropriate". This requirement was met so, therefore, the test can be appraised as being fully in accordance with the requirements of BS 476: Part 22: 1987.

Given the above, the use of the access panels when installed within steel stud supporting constructions can be positively appraised.

Further to the above, it is also proposed that the access panels may also be installed within timber stud flexible supporting constructions. Test experience shows that, particularly over the relatively short period of 60 minutes, timber stud flexible supporting constructions are more thermally stable than their steel stud equivalents. This tends to lend itself to a lower degree of thermally induced distortion within the construction as a whole. The result being that the access panels are likely to be subject to a lower level of induced deflection when mounted within a timber stud flexible supporting construction, than when fitted within a steel stud flexible supporting construction (as was used in test report WF No. 504896/R – Issue 2). If concerns are raised with regards an increased likelihood of gap formation due to deflection of the access panel leaf (caused by a lower level of sympathetic movement of the access panel frame) then it shall be noted that the access panel has also been successfully tested when installed within a concrete supporting construction (which experiences minimal thermally induced distortion).

Given the above, the use of the access panels when installed within timber stud supporting constructions can be positively appraised.

It shall be noted that the aperture, in to which the access hatch is fitted, within both steel stud and timber stud flexible supporting constructions shall be lined with the same plasterboard as used for the face of the construction (for which it is assumed there is separate fire resistance test evidence, to at least the same fire resistance performance and duration as is required for the access panels themselves).

It is proposed that, alternatively, the construction may be installed within a vertical rigid supporting construction. The access panel has been subject to test in a horizontal orientation in a rigid supporting construction (as discussed previously within this report). It is considered that the horizontal orientation represents a more onerous test condition, when compared to the vertically oriented access panel, due to the influence of gravity on the doorset (it shall be noted that both specimens, horizontal and vertical, opened towards the heating conditions – and as a result there was no "door stop" assisting the horizontally oriented construction against the effects of gravity) and the fact that a horizontally oriented access panel is subject to a more direct heating regime than a vertically oriented access panel. Given the successful test on a horizontally oriented access panel in a rigid construction and the successful test on a vertically oriented access panel in a flexible supporting construction; the use of a vertically oriented access panel in a rigid supporting construction can be positively appraised.

Conclusions

It can be concluded that the proposed range of access panels and range of loft access hatches should be capable of providing 60 minutes integrity performance, if subjected to a fire resistance test in accordance with BS 476: Part 22: 1987.

This assessment represents our opinion as to the performance likely to be demonstrated on a test in accordance with BS 476: Part 22: 1987, on the basis of the evidence referred to above. We express no opinion as to whether that evidence, and/or this assessment, would be regarded by any Building Control authorities or any other third parties as sufficient for that or any other purpose. This assessment 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.

Validity

This assessment is issued on the basis of test data and information available at the time of issue. If contradictory evidence becomes available to Warringtonfire the assessment will be unconditionally withdrawn and Manthorpe Building Products 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 November 2027, 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.

Summary of Primary Supporting Data

WF No. 504896

A test, in accordance with EN 1364-2: 2018, on a non-loadbearing ceiling incorporating a horizontally oriented access panel and a test, following the general principles of EN1634-1: 2014+A1: 2018, on a vertically oriented access hatch.

Briefly the ceiling assembly had overall nominal dimensions of 1590 mm wide by 2075 mm long by 150 mm deep and consisted of aerated concrete slabs laid across the restraint frame. The ceiling incorporated an access hatch referenced "GL450F" with overall dimensions of 498mm high by 498mm wide, constructed from 1.2 mm thick powder-coated mild steel panel tray 445mm x 445mm x 32mm deep, hung on pivots in a 1.2mm thick powder-coated mild steel perimeter frame. The hatch incorporated a lockset which was engaged throughout the test and the panel incorporated an insulation infill of 30 mm thick Rockwool with a stated density of 45 kg/m^3 held in position by an insulation retaining bar.

The wall construction had overall nominal dimensions of 1500 mm high by 1500 mm wide by 75 mm deep and comprised 48 mm deep British Gypsum steel studs, faced on both the unexposed and exposed side with 12.5 mm British Gypsum Fireline Board and insulated with PROROX SL 960 UK. The wall incorporated an access hatch referenced "GL451F" with overall dimensions of 498mm high by 498mm wide, constructed from 1.2 mm thick powder-coated mild steel panel tray 445mm x 445mm x 32mm deep, hung on pivots in a 1.2mm thick powder-coated mild steel perimeter frame. The hatch incorporated a lockset which was engaged throughout the test and the panel incorporated an insulation infill of 30 mm thick Rockwool with a stated density of 45 kg/m^3 held in position by an insulation retaining bar.

Both access hatches were installed such that they opened towards the heating conditions.

The horizontally oriented access hatch satisfied the integrity criteria as follows:

Sustained Flaming: 67 minutes*
Cotton Pad: 52 minutes
Gap Gauge: 67 minutes*

If the vertically oriented access hatch was to be assessed against the integrity criteria of EN1634-1: 2014+A1: 2018, the results could be reported as follows:

Sustained Flaming: 67 minutes*
Cotton Pad: 43 minutes
Gap Gauge: 67 minutes*

*The test was discontinued after a period of 67 minutes.

Test sponsor	:	Manthorpe Building Products
Test date	:	12th August 2021

WF No. 504897 (Issue 2)

A test, in accordance with EN 1364-2: 2018, on a non-loadbearing ceiling incorporating a loft access hatch.

The self-supporting ceiling construction had overall nominal dimensions of 1590 mm wide by 2075 mm long by 150 mm deep and consisted of aerated concrete slabs laid across the restraint frame.

The loft access hatch had overall dimension of 584mm wide by 749mm long and was constructed from a 1.2mm thick powder-coated mild steel panel tray 532 mm wide by 696 mm long by 102 mm deep, hung on pivots to a 1.2mm thick powder-coated mild steel perimeter frame. The access hatch, referenced "GL280F", incorporated a lockset which was engaged throughout the test and was hung in such a way that opened towards the heating conditions. The access hatch incorporated an insulation infill of 100 mm thick Rockwool with a stated density of 45 kg/m^3 held in position by an insulation retaining bar.

The loft access hatch satisfied the integrity criteria as follows:

Sustained Flaming: 68 minutes*
Cotton Pad: 68 minutes*
Gap Gauge: 68 minutes*

*The test was discontinued after a period of 68 minutes.

Test sponsor : Manthorpe Building Products

Test date : 13th August 2021

WF No. 157180

A test utilising the general principles of BS 476: Part 22: 1987.

The test construction had nominal overall dimensions of 1200 mm by 1200 mm and comprised a timber joist floor and plasterboard ceiling construction into which was installed a loft hatch assembly of overall nominal dimensions 580 mm wide by 745 mm long by 102 mm thick, providing an opening size of 528 mm by 688 mm. The loft hatch assembly was constructed using a steel frame; into which was positioned two pieces of nominally 50 mm thick Rockwool 'RW45' Mineral fibre insulation with a black non-woven glass tissue with urea formaldehyde binder, which was laid loose onto the loft hatch tray and retained by a reinforcing strut.

The specimen was mounted within the test construction such that the access hatch opened towards the heating conditions of the test.

The specimen satisfied the integrity criteria for a period of 70 minutes without failure.

Test sponsor : Manthorpe Building Products

Test date : 15th August 2006

WF No. 519667 – Issue 2

A test carried out fully in accordance with Clause 9 of BS 476: Part 22: 1987.

The assembly was of overall size 2400mm long by 1700mm wide and contained a plasterboard ceiling of overall size 2200mm long by 1150mm wide. The ceiling included an aperture of size 708mm long by 543mm wide. Centrally mounted in the ceiling was an insulated panel of overall 749mm long by 584mm wide incorporating a panel of overall size 696mm long by 530mm wide by 100mm deep.

The assembly was constructed from a framework of softwood timber joists, of cross-sectional size 72mm deep by 38mm wide, at 600mm nominal centres. The ceiling consisted of two layers of 12.5mm thick 'Gyproc Fireline' screw fixed to the timber framework.

The access panel was formed from 1mm thick powder coated finish Zintec steel. The access panel was lined with stone mineral wool 100mm thick having a nominal density 45kg/m^3. The insulation was laid inside the access panel and retained with insulation retaining brace. The panel was hung in such a way that opened towards the heating conditions. The access panel contained a pin hinge, a lockset rotary cam and a door seal made from a PVC foam. The lockset cam was engaged at the start of the test. An acrylic sealant was used to seal the joint between the access panel and the ceiling boards on the exposed face.

The specimen satisfied the integrity criteria for a period of 66 minutes without failure.

Test sponsor	:	Manthorpe Building Products
Test date	:	7th July 2022

Declaration by Manthorpe Building Products

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

We confirm that any changes to a component or element of structure which are the subject of this assessment have not to our knowledge been tested to the standard against which this assessment has been made.

We agree to withdraw this assessment from circulation should the component or element of structure, or any of its component parts be the subject of a failed fire resistance test to the standard against which this assessment is being made.

We understand that this assessment is based on test evidence and will be withdrawn should evidence become available that causes the conclusion to be questioned. In that case, we accept that new test evidence may be required.

We are not aware of any information that could affect the conclusions of this assessment. If we subsequently become aware of any such information, we agree to ask the assessing authority to withdraw the assessment.

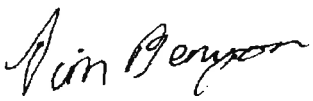
(in accordance with the principles of FTSG Resolution No. 82: 2001)

Signed: 

For and on behalf of:

MANTHORPE BUILDING PRODUCTS.

Signatories



Responsible Officer

T. Benyon* - Senior Certification Engineer

Approved

D. Hankinson * - Technical Manager – Separating Elements

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

Issue 2: Modification to the flexible supporting construction details for the loft hatch and to the details of the aperture liner (largest loft hatch only). Also modification to reinforcing strut details and minor increase in validity. (4th October 2022)

Report Issued: 28th March 2022

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