

BRE Global Assessment Report

An assessment of the fire performance of MTFD single-leaf access panels mounted in ceiling membrane and partition systems

Prepared for: Fire Proofing Services Limited

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1 Introduction

A fire resistance test has been carried out on a ceiling membrane system incorporating an MTFD single-leaf access panel. This assessment report considers the fire performance of similar access panels when installed in non-loadbearing ceiling membrane and partition systems having a fire resistance of at least 60 minutes.



2 Scope

This assessment report considers the fire resistance of MTFD single-leaf access panels, up to 1200mm x 600mm, mounted in non-loadbearing ceiling membrane and partition systems against the integrity criteria of BS 476: Part 22: 1987, for fire exposure from either side in the case of panels mounted vertically and for fire exposure from the underside in the case of panels mounted horizontally.



3 Supporting data

3.1 BRE test report no. 254906

Two Fireproofing Services single-leaf access panels installed in a ceiling membrane system were submitted to a fire resistance test in accordance with BS 476: Part 22: 1987 on 27 July 2009, for a duration of 66 minutes.

The ceiling membrane consisted of a steel perimeter channel, 19.5mm x 26mm x 28mm x 0.46mm thick, which was fixed to the furnace test frame via 50mm-side tabs that were cut into the 19.5mm side of the channel. These were bent upwards to provide a means of fixing the channel to the test frame using 6mm x 40mm Rawl fixings.

Primary channels, formed from 14mm x 45mm x 14mm x 1.20mm-thick C-section steel channel, were supported by the perimeter channel and spanned the width of the test frame at 600mm centres, being additionally suspended at the locations of the structural openings for the access panels from three I-section beams which spanned the length of the test frame. Furring channels, nominally 25mm deep and spanning the length of the ceiling, were then located at 600mm centres, being attached to the primary channels and perimeter channel.

Two structural openings, each 1205mm x 605mm, were provided for the access panels. These were formed from a length of primary channel joined to the top of a length of perimeter channel. The openings were lined with a single layer of 12.5mm-thick Gtec plasterboard.

The first layer of plasterboard was attached to the ceiling grid using 32mm drywall screws and the second layer using 50mm screws, all at nominal 250mm centres. Joints between the boards forming each layer were staggered, with joints between boards on the exposed face being sealed with British Gypsum Gyproc Ready-Mix Joint Cement and 50mm mesh scrim tape.

Two different designs of single-leaf access panel were fitted into the ceiling, one into each of the structural openings.

One panel was described as a PBFD panel, which is not relevant to this assessment, and the other was described as an MTFD panel. The latter, which had overall dimensions of 1200mm x 600mm, comprised a 0.9mm-thick door tray with no insulation.

The ceiling, incorporating the access panels (opening towards the furnace), achieved the following fire resistance:

Integrity: 13 minutes



4 Description of the proposed system

The proposed access panels have the same construction as that tested in BRE report no. 254906 except that the frame depth may vary between 50mm and 75mm. The panels are installed in non-loadbearing ceiling membrane and partition systems comprising at least two layers of plasterboard or calcium silicate board fixed to a steel framework. The ceiling membrane or partition system must have a fire resistance of at least 60 minutes with respect to the integrity criteria of BS 476: Part 22: 1987. The maximum size of the panels is 1200mm high x 600mm wide, as tested.

Details of the proposed installation methods are shown in figures 1 and 2 for ceiling membranes and figures 3 and 4 for partitions.



5 Assessment

The specimen tested in BRE report no. 254906 suffered two failures against the integrity criteria of the standard. The first of these occurred after 13 minutes when the leaf of the PBF access panel sagged, resulting in a gap developing between the leaf and the frame. The second occurred at 54 minutes when a cotton wool pad was applied to a joint between two of the plasterboard sheets forming the ceiling membrane and ignited. Neither of these failures was related to the installation of the MTFD access panel, which maintained its integrity for the duration of the test (66 minutes). It is therefore reasonable to expect it to provide the same level of performance if installed in a 60-minute ceiling membrane, providing that it is independently supported so that it applies no load to the ceiling grid.

We would also expect the MTFD access panel to provide at least the same level of fire resistance if installed vertically in a 60-minute partition system. We would consider this orientation less onerous as the bowing of the panels should not be as severe. This together with the good performance of the tested panel, their relatively small size and the use of two pivots and two budget locks should ensure that no gaps open around the panel perimeter.

The reduction in the depth of the frame from the tested 75mm to 50mm should not have a detrimental effect on the fire performance. The frame has a Z-section and overlaps the perimeter of the aperture into which the access panel is installed. Therefore any reduction in depth is unlikely to affect the fire performance provided that the access panel frame is still securely fixed back to the steel framework of the ceiling membrane or partition using the same method as that tested.

It should be noted that the access panels are only considered suitable for installation in ceiling membrane and partition systems comprising at least two layers of plasterboard or calcium silicate board fixed to a steel framework.



6 Conclusion

Therefore it is our opinion that MTFD access panels mounted in ceiling membrane and partition systems, as described in section 4, are suitable for applications where a fire resistance of up to 60 minutes is required with respect to the integrity criteria of BS 476: Part 22: 1987, for fire exposure from either side when installed vertically and for fire exposure from below when installed horizontally.



7 Validity of the assessment

7.1 Declaration by applicant

- We the undersigned confirm that we have read and complied with the obligations placed on us by the PFPF Guide to Undertaking Assessments in Lieu of Fire Tests.
- 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.
- 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 BRE Global to withdraw the assessment.

Signed:

For and on behalf of:

7.2 BRE Global declaration

This assessment was reviewed on 18 December 2014. We have received written confirmation from Fire Proofing Services Limited that there have been no changes in the specification of their MTFD single-leaf access panels since the original date of the assessment. There have been no changes in the fire test procedures or methods of assessment, which would adversely affect the fire performance of the A system. We are therefore satisfied that the validity of this assessment may be extended for a further five years.

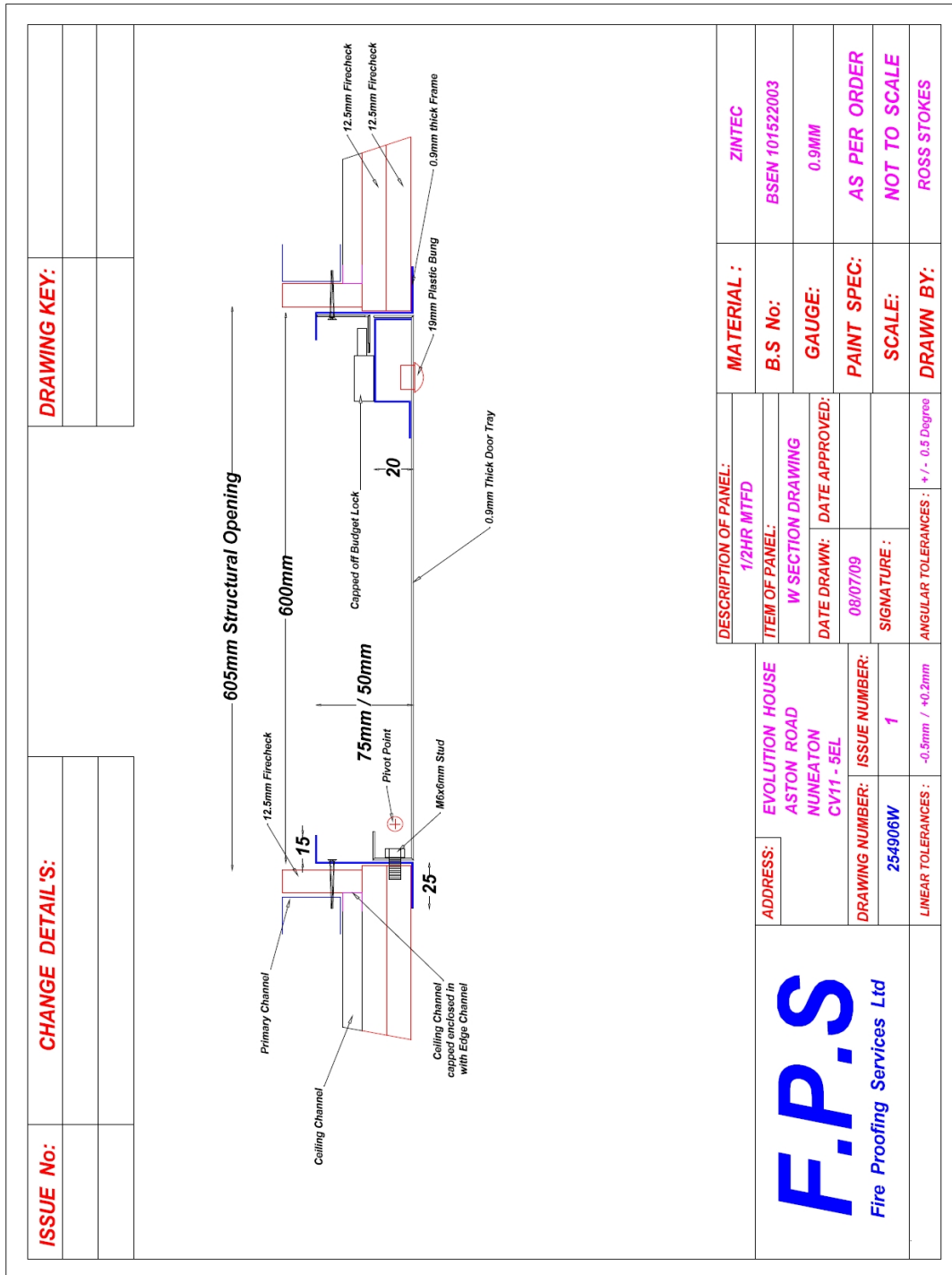
This assessment is based on test data, experience and the information supplied. If contradictory evidence becomes available to BRE Global the assessment will be unconditionally withdrawn and the applicant will be notified in writing. Similarly the assessment is invalidated if the assessed construction is subsequently tested since actual test data is deemed to take precedence over an expressed opinion. The assessment is valid for a period of five years after which it should be returned for review to consider any additional data, which has become available or any changes in the fire test procedures. Any changes in the specification of the product will invalidate this assessment.

This assessment has been carried out in accordance with Fire Test Study Group Resolution No. 82. It relates to the fire performance of the product and does not cover aspects of quality, durability, maintenance nor service requirements. This assessment relates only to the specimen(s) assessed and does not by itself infer that the product is approved under any Loss Prevention Certification Board approval or certification scheme or any other endorsements, approval or certification scheme.

Next review date: 15 January 2020



8 Figures



| | | | |
|------------------------------|--|-----------------------------|--|
| DESCRIPTION OF PANEL: | | MATERIAL : | |
| 1/2HR MTFD | | ZINTEC | |
| ITEM OF PANEL: | | B.S No: | |
| W SECTION DRAWING | | BSEN 101522003 | |
| DATE DRAWN: | | GAUGE: | |
| 08/07/09 | | 0.9MM | |
| DATE APPROVED: | | PAINT SPEC: | |
| SIGNATURE : | | AS PER ORDER | |
| ISSUE NUMBER: | | SCALE: | |
| 254906W | | NOT TO SCALE | |
| ISSUE NUMBER: | | DRAWN BY: | |
| 1 | | ROSS STOKES | |
| LINEAR TOLERANCES : | | ANGULAR TOLERANCES : | |
| -0.5mm / +0.2mm | | +/- 0.5 Degree | |

F.P.S

Fire Proofing Services Ltd

Figure 1

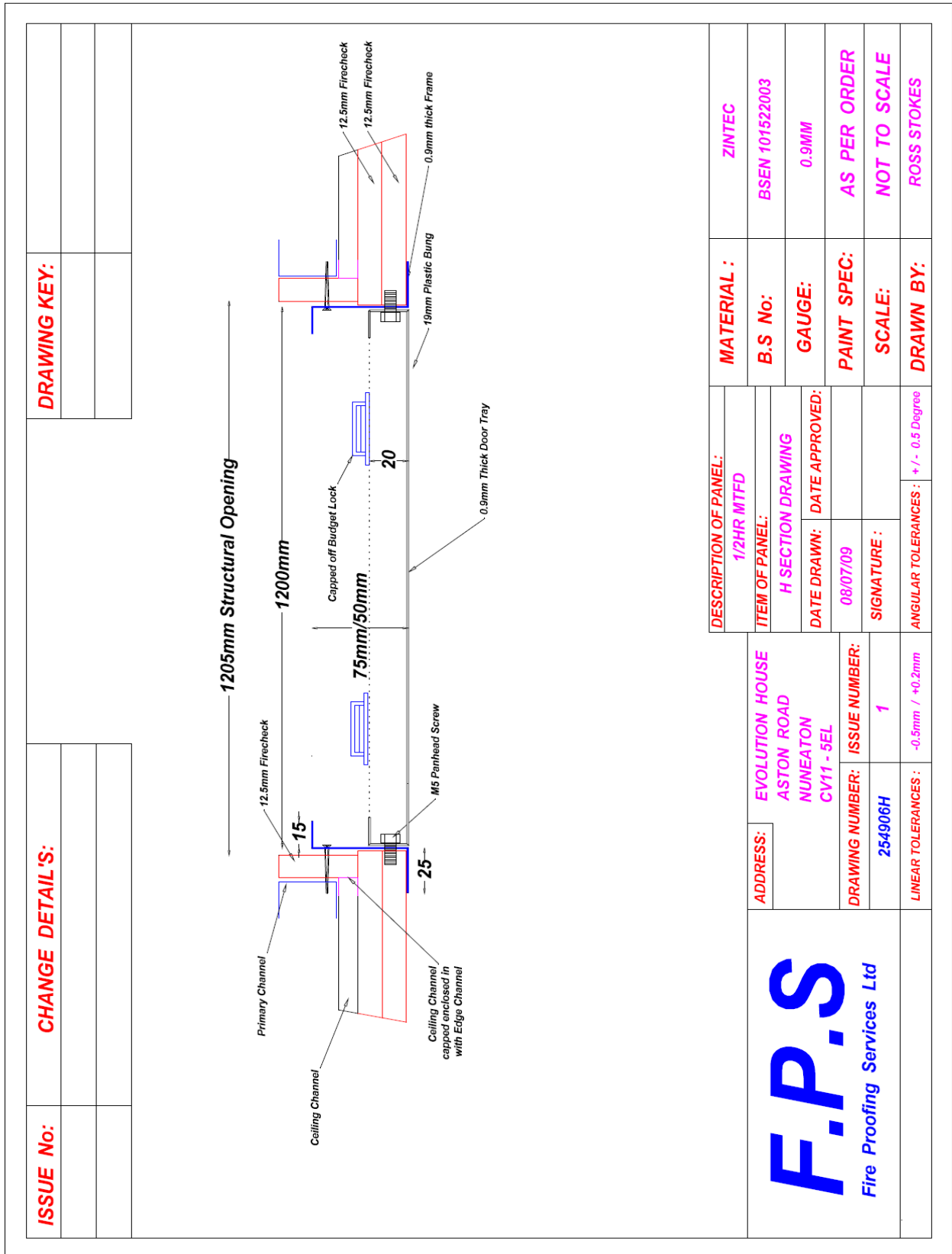


Figure 2

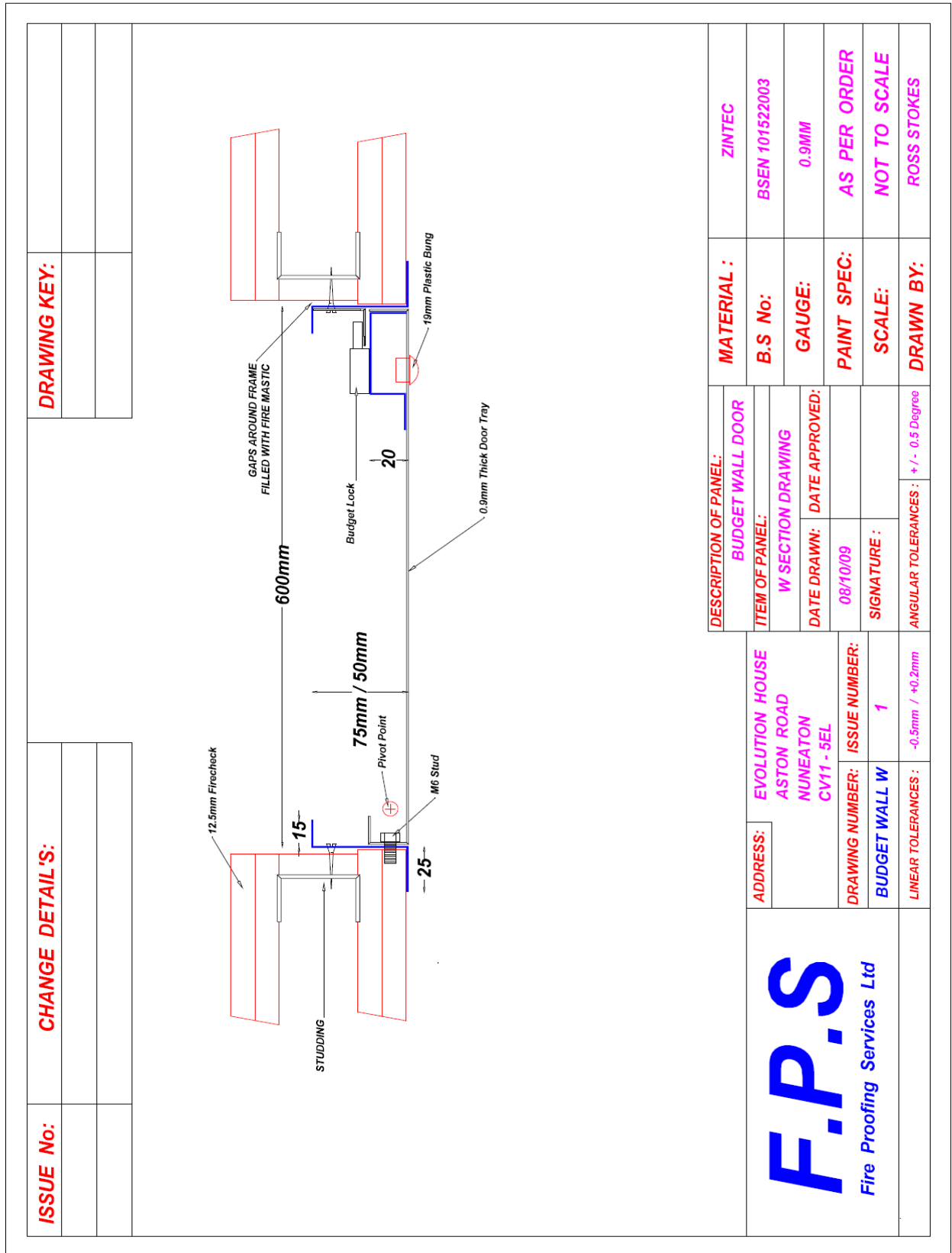


Figure 3

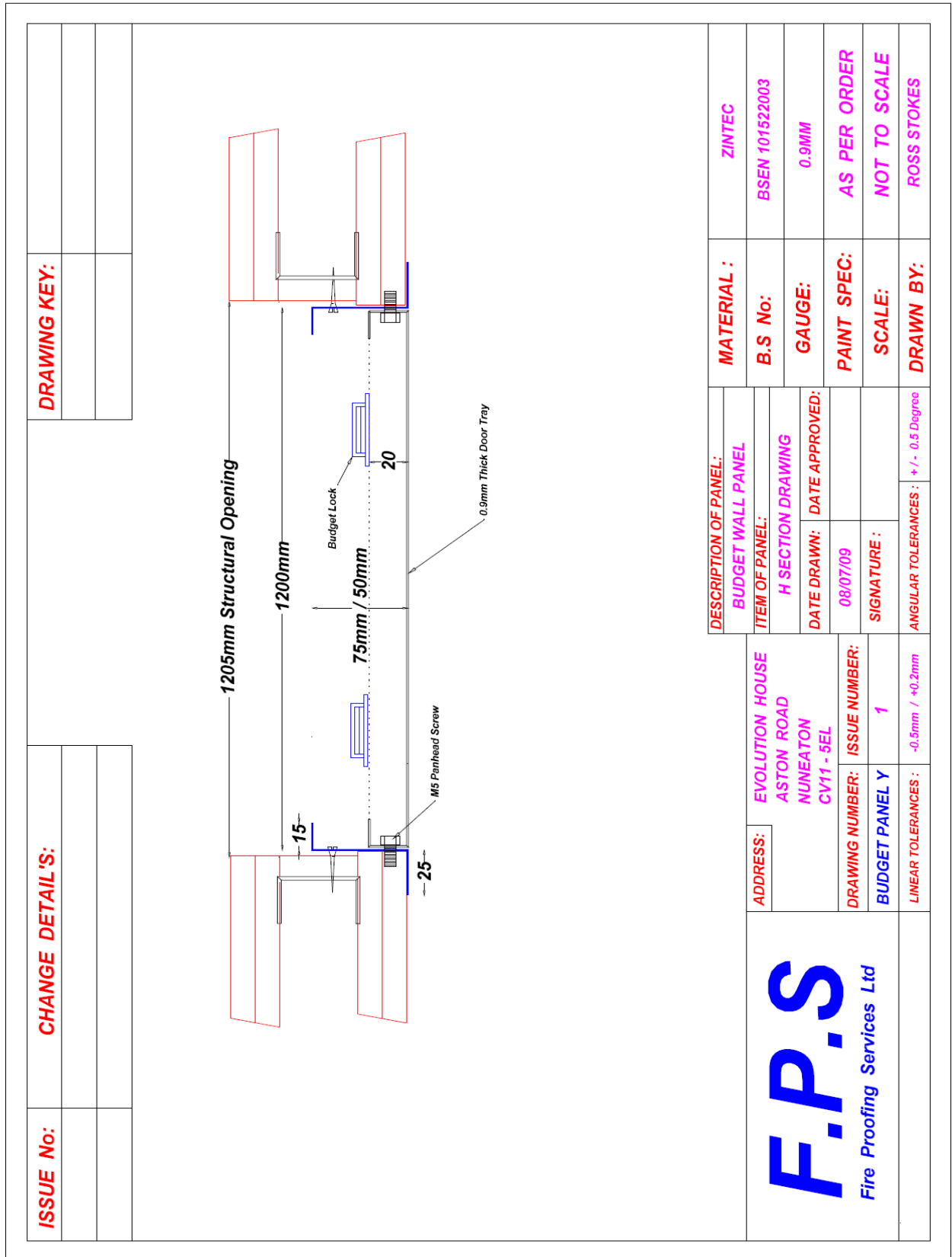


Figure 4