Warringtonfire
Holmesfield Road
Warrington
WA1 2DS

T: +44 (0)1925 655 116
info.warrington@warringtonfire.com
warringtonfire.com

Title:

The Fire Resistance Performance of ROCKWOOL LIMITED 'OSCB 120 LITE' If Tested Utilising The General Principles Of ASFP TGD 19 (November 2017)

WF Assessment Report No:

421826B

Prepared for:

ROCKWOOL LIMITED

Pencoed,
Bridgend,
Mid Glamorgan,
CF35 6NY

Date:

30th January 2020

Warringtonfire Testing and Certification Limited
Registered in England and Wales
Registered Office: 10 Lower Grosvenor Place, London, United Kingdom, SW1W 0EN
Company Registration No: 11371436

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Foreword

This assessment report has been commissioned by ROCKWOOL LIMITED and relates to the performance of Open State Cavity Barriers.

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 of similar Firestopping systems, 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 using the general principles of ASFP TGD 19 (November 2017). This assessment cannot 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 a UKAS accredited laboratory to the relevant test standard. The supporting test evidence has been deemed appropriate to support this assessment.

The defined scope presented in this assessment report relates to the behaviour of the Open State Cavity Barriers under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard.

This assessment has been prepared and checked by product assessors with the necessary competence, who subscribe to the principles outlined in the PFPF guidelines to undertaking assessments in lieu of fire tests. The ROCKWOOL LIMITED 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 in lieu of fire tests 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.

Executive Summary

Objective

This report considers the expected fire resistance performance of ROCKWOOL LIMITED 'OSCB 120 LITE' if tested utilising the general principles of ASFP TGD 19 (November 2017).

Report Sponsor

ROCKWOOL LIMITED

Address

Pencoed,
Bridgend,
Mid Glamorgan,
CF35 6NY

Summary of Conclusions

Should the recommendations given in this report be followed, it can be concluded that the ROCKWOOL LIMITED 'OSCB 120 LITE' should be capable of providing up to 120 minutes integrity and 120 minutes insulation (where appropriate and as discussed within this assessment) performance, if tested utilising the general principles of ASFP TGD 19 (November 2017) when installed into cavities up to 425 mm.

This assessment represents our opinion as to the performance likely to be demonstrated on a test utilising the general principles of ASFP TGD 19 (November 2017), 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 authority 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

30th January 2025

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Introduction

This report considers the expected fire resistance performance of ROCKWOOL LIMITED 'OSCB 120 LITE' up to up to 425 mm overall cavity width, installed horizontally into an open state cavity application.

The proposed barriers are required to provide a fire resistance performance of up to 120 minutes integrity and 120 minutes insulation performance if tested utilising the general principles of ASFP TGD 19 (November 2017)

The Building Regulations 2000, Requirement B3 (4) requires that a building shall be designed and constructed so that the unseen spread of fire and smoke within concealed spaces in its structure and fabric is inhibited. Such sealing is affected by what are termed cavity barriers/closers.

Walls and floors often incorporate 'open-state' voids behind rainscreen cladding to allow for ventilation in cold state. In the case of rainscreen cladding, the fire spread from one part of a building to another is via the cavity between the rainscreen and the backing wall. Such fire spread is usually upwards therefore, it is important that appropriate 'open-state' cladding cavity barriers are fitted to resist the spread of flame from one part of a building to another.

The scope of BS EN 1366-4: 2006 does not specifically include for the testing of cavity closers and by the nature of the open state of such barrier they would fail the integrity requirements of BS EN 1366-4: 2006 before the test has started. With this in mind the ASFP technical group TG3 developed an industry led testing standard ASFP TGD 19 (November 2017) for the fire resistance testing of open state cavity barriers.

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

Supporting construction

It is assumed that the ROCKWOOL LIMITED 'OSCB 120 LITE' will be installed into the horizontal orientation. The associated substrates shall be capable of providing at least the same fire resistance performance required by the fire barriers.

Is further assumed that the substrates are of rigid construction unless detailed within this assessment report.

Cavity Fire Barrier

It is also assumed that the cavity closers will be identical to those detailed in test report WF 397020, WF 397021, WF 399419 and WF 407778 unless specifically detailed otherwise within this appraisal.

Installation

It is assumed that the cavity fire barriers will be fitted by competent installers, in a similar manner to the specimens tested under the references WF 397020, WF 397021, WF 399419 and WF 407778.

Proposals

Open Cavity Up To 25mm

It is proposed that ROCKWOOL LIMITED 'OSCB 120 LITE', incorporating an open cavity of up to 25mm, installed into joint widths between 51 mm and 425 mm should be capable of providing up to 120 minutes integrity and 120 minutes insulation performance, if tested utilising the general principles of ASFP TGD 19 (November 2017).

Open Cavity 26mm – 35mm

It is proposed that ROCKWOOL LIMITED 'OSCB 120 LITE', incorporating an open cavity of 26mm – 30mm, installed into joint widths between 51 mm and 425 mm should be capable of providing up to 60 minutes integrity and 60 minutes insulation performance, if tested utilising the general principles of ASFP TGD 19 (November 2017).

ROCKWOOL LIMITED 'OSCB 120 LITE' fixing details

It is proposed that ROCKWOOL LIMITED 'OSCB 120 LITE' can be fixed back to the substrate using the following methods:

OSCB 120 LITE width	Fixing method
≤ 75 mm	Direct fix using Steel screw 30 mm longer than the width of the cavity barrier.
	Or. ROCKWOOL LIMITED Fixing clip brackets at 500 mm centres.
76 mm - 300 mm	0.9 mm x 25 mm ROCKWOOL LIMITED Fixing clip brackets at 500 mm centres.
300 mm - 425 mm	1.5 mm x 25 mm ROCKWOOL LIMITED Fixing clip brackets at 500 mm centres.

Supporting Substrate

It is proposed that ROCKWOOL LIMITED 'OSCB 120 LITE', when fixed back to 9 mm thick OSB board and incorporating an open cavity of up to 25mm, installed into joint widths between 51 mm and 300 mm should be capable of providing up to 120 minutes integrity and 120 minutes insulation performance, if tested utilising the general principles of ASFP TGD 19 (November 2017).

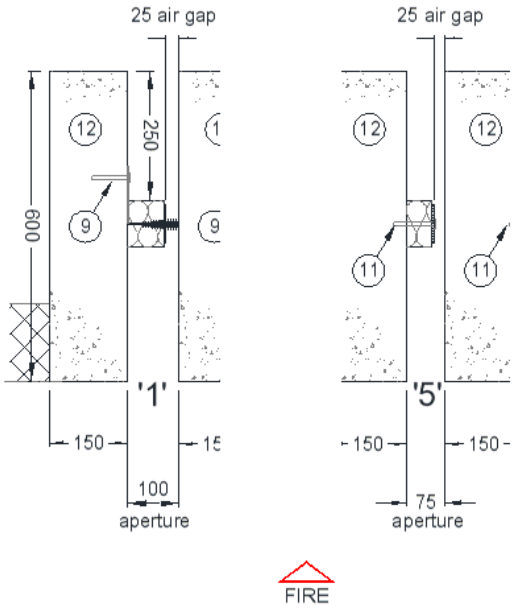
Basic Test Evidence

WF 397020

The test referenced WF 397020 and described briefly in the supporting data section of this report describes a fire resistance test utilising the general principles of ASFP TGD 19 (November 2017). The 'OSCB 60' specimens achieved the following with respect to integrity and insulation.

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
1	132*	132*	132*	132*
5	132*	132*	132*	132*

* The Test Duration. The test was discontinued at 132 minutes

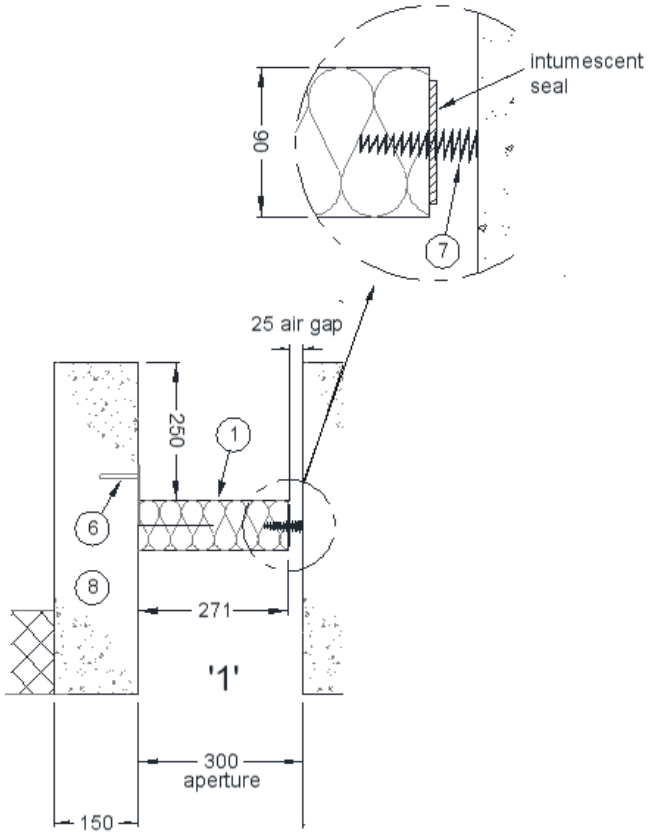


WF 397021

The test referenced WF 397021 and described briefly in the supporting data section of this report describes a fire resistance test utilising the general principles of ASFP TGD 19 (November 2017). The 'OSCB 60' specimen achieved the following with respect to integrity and insulation.

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
1	132*	132*	132*	125

* The Test Duration. The test was discontinued at 132 minutes

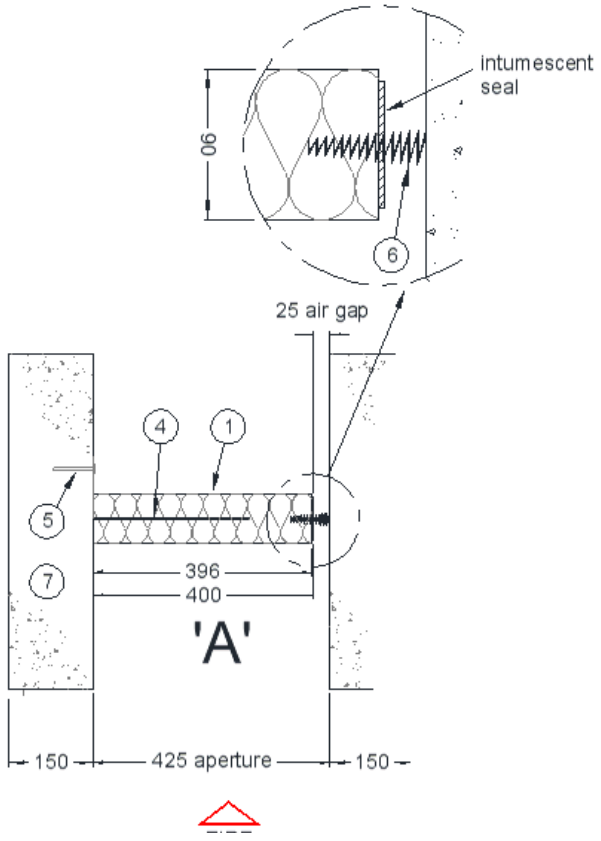


WF 399419

The test referenced WF 399419 and described briefly in the supporting data section of this report describes a fire resistance test utilising the general principles of ASFP TGD 19 (November 2017). The 'OSCB 60' specimen achieved the following with respect to integrity and insulation.

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
A	132*	132*	132*	132*

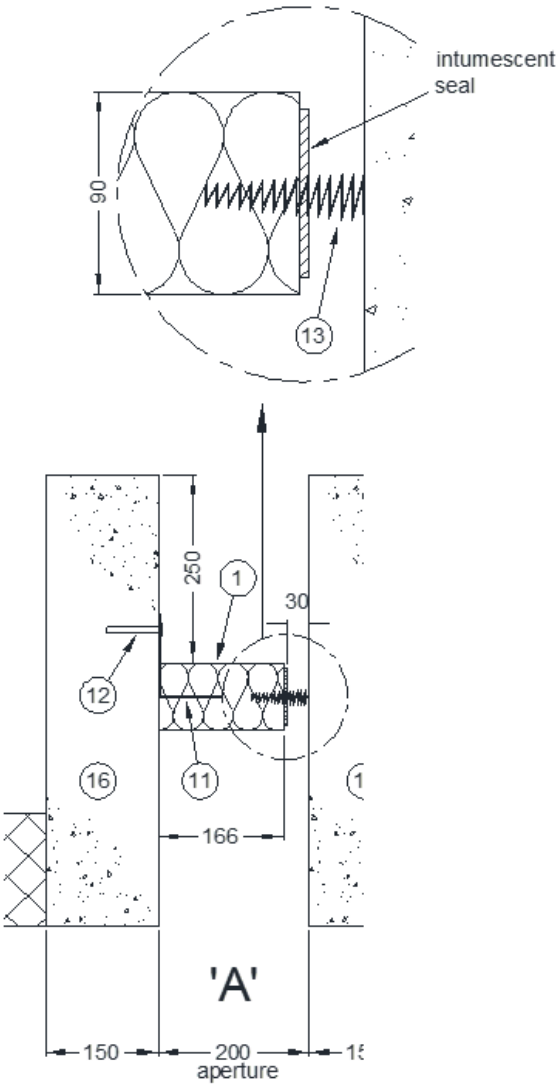
* The Test Duration. The test was discontinued at 132 minutes



WF 399420

The test referenced WF 399420 and described briefly in the supporting data section of this report describes a fire resistance test utilising the general principles of ASFP TGD 19 (November 2017). The 'OSCB 60' specimen achieved the following with respect to integrity and insulation.

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
A	89	92*	79	92*

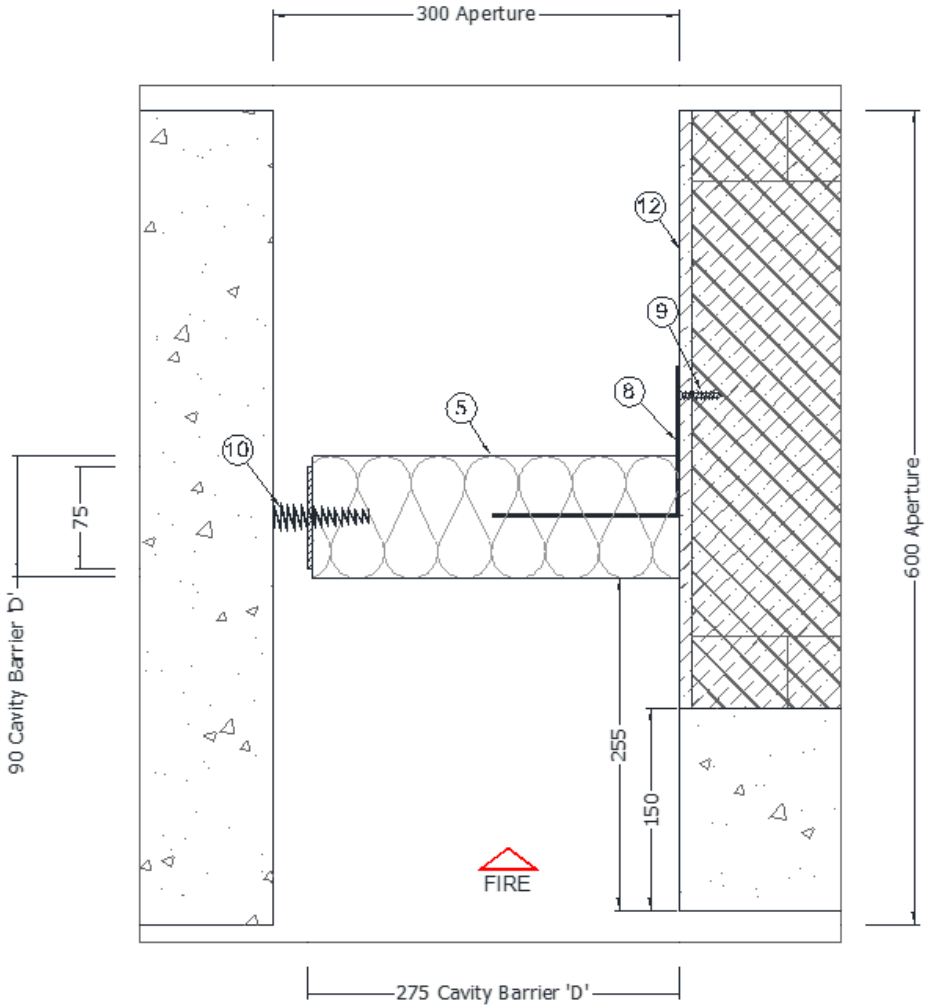


WF 407778

The test referenced WF 407778 and described briefly in the supporting data section of this report describes a fire resistance test utilising the general principles of ASFP TGD 19 (November 2017). The 'OSCB 44' specimen achieved the following with respect to integrity and insulation.

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
D	120	120	120	120

* The Test Duration. The test was discontinued at 132 minutes



Assessed Performance

The product briefly comprises Polythene enclosed stone wool insulation, supplied with a 4 mm thick graphite based intumescent strip fitted along a single edge. The barriers are fastened to one face of the supporting construction using the outlined steel/stainless steel fixings/brackets and allowed a ventilation gap. Coarse wound screws were installed through the outer face of the fire seal at maximum 333 mm centres.

Open Cavity Up To 25mm

Test reports WF 397020, WF 397021 and WF 399419 provide evidence for ROCKWOOL LIMITED 'OSCB 60' used in various overall joint widths. The 25mm open cavity and 4 mm thick intumescent is consistent across the specimens tested three specimens. The tested joint widths were 75mm, 100mm, 300mm and 425mm. In all instances the ROCKWOOL LIMITED 'OSCB 60' product achieved over the required 120 minutes Integrity and Insulation criteria required and so its performance across the range is assured.

Open Cavity 26mm – 30mm

Test report WF 399420 and specifically 'specimen A' incorporated a ROCKWOOL LIMITED 'OSCB 60' product that was installed into a 200 mm cavity. The tested specimen is installed at the mid width of the range covered by the scope of this assessment and the results showed that there was a drop in performance when the product was required to close a larger ventilation joint (30mm as opposed to 25mm). This increase ventilation joint width is clearly a more onerous configuration and therefore its use across the range needs to be discussed.

Specimen	Integrity (minutes)		Insulation (minutes)	Insulation (minutes) (suspended T/C's)
	Cotton Pad	Sustained flaming		
A	89	92*	79	92*

The ROCKWOOL LIMITED 'OSCB 60' when tested at various joint widths and incorporating a consistent 25mm ventilation joint, showed identical performance across the range. The specimens all achieved 132 minutes Integrity and Insulation performance. The assumption can therefore be made that the increase in width of the Stone mineral 'carrier' does not impact on the performance of the intumescent strip. Based on this and given the proven overrun of the above test results, it can be positively appraised that the use of the product within a ventilation gap up to 30 mm, can be positively appraised across the range and up to a maximum joint width of 425mm.

ROCKWOOL LIMITED 'OSCB 120 LITE' fixing details

It is proposed that ROCKWOOL LIMITED 'OSCB 120 LITE' can be fixed back to the substrate using the following methods:

OSCB 120 LITE width	Fixing method
≤ 75 mm	Direct fix using Steel screw 30 mm longer than the width of the cavity barrier.
	Or. ROCKWOOL LIMITED Fixing clip brackets at 500 mm centres.
76 mm - 300 mm	0.9 mm x 25 mm ROCKWOOL LIMITED Fixing clip brackets at 500 mm centres.
300 mm - 425 mm	1.5 mm x 25 mm ROCKWOOL LIMITED Fixing clip brackets at 500 mm centres.

The fixing method outlined within the scope of the above table have been directly tested and shown to achieve in excess of 120 minutes' integrity and insulation performance and as such the scope is positively appraised.

Supporting Substrate

It is proposed that ROCKWOOL LIMITED 'OSCB 120 LITE', when fixed back to 9 mm thick OSB board and incorporating an open cavity of up to 25mm, installed into joint widths between 51 mm and 300 mm should be capable of providing up to 120 minutes integrity and 120 minutes insulation performance, if tested utilising the general principles of ASFP TGD 19 (November 2017).

Test report WF 407778 outlines an 'OSCB 44' open state cavity barrier specimen, which is installed against and fixed to a 9 mm thick OSB board that is fixed back to a timber framed structure. The specimen D achieved the following results:

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
D	120	120	120	120

The tested specimen was not identical to the 'OSCB 120 LITE' product because the Intumescent layer affixed to the face of the stone mineral board 'carrier' was different to that used within 'OSCB 120 Lite' product. The performance of the OSCB 44 product was similar to other tested specimens where the product was installed fixed to a concrete structure. The fixing of back to the OSB board did not have an influence on the performance of intumescent and it remained fixed and stable for 120 minutes Integrity and Insulation.

The proposal is to use Specimen D of WF report 407778 to support a similar fixing method back to 9mm thick OSB board fixed on a timber frame. The supporting data shows that the tested specimen, which was 275 mm long (within a 300 mm cavity), did not suffer from a collapse when fixed back to a more flexible structure. Nor did the flexible structure impact on the performance of the Intumescent. It can therefore be positively appraised that the 'OSCB 60' product can be fixed in a similar manner to the OSCB 44 product and achieve 120 minutes Integrity and Insulation performance.

Conclusions

Should the recommendations given in this report be followed, it can be concluded that the ROCKWOOL LIMITED 'OSCB 120 LITE' should be capable of providing up to 120 minutes integrity and 120 minutes insulation (where appropriate and as discussed within this assessment) performance, if tested utilising the general principles of ASFP TGD 19 (November 2017) when installed into cavities up to 425 mm.

This assessment represents our opinion as to the performance likely to be demonstrated on a test utilising the general principles of ASFP TGD 19 (November 2017), 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 authority 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 ROCKWOOL LIMITED 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 30th January 2025, 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.

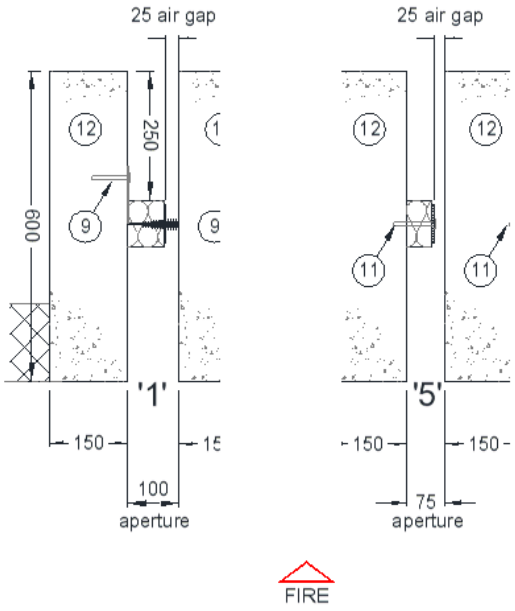
Summary of Primary Supporting Data

WF 397020

The test referenced WF 397020 and described briefly in the supporting data section of this report describes a fire resistance test utilising the general principles of ASFP TGD 19 (November 2017). The 'OSCB 60' specimens achieved the following with respect to integrity and insulation.

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
1	132*	132*	132*	132*
5	132*	132*	132*	132*

* The Test Duration. The test was discontinued at 132 minutes



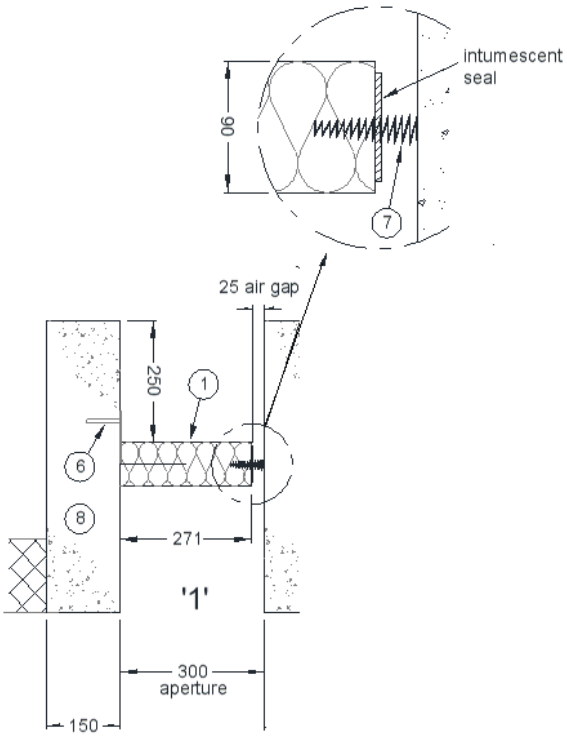
Date of Test: 11th April 2018.

WF 397021

The test referenced WF 397021 and described briefly in the supporting data section of this report describes a fire resistance test utilising the general principles of ASFP TGD 19 (November 2017). The 'OSCB 60' specimen achieved the following with respect to integrity and insulation.

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
1	132*	132*	132*	125

* The Test Duration. The test was discontinued at 132 minutes



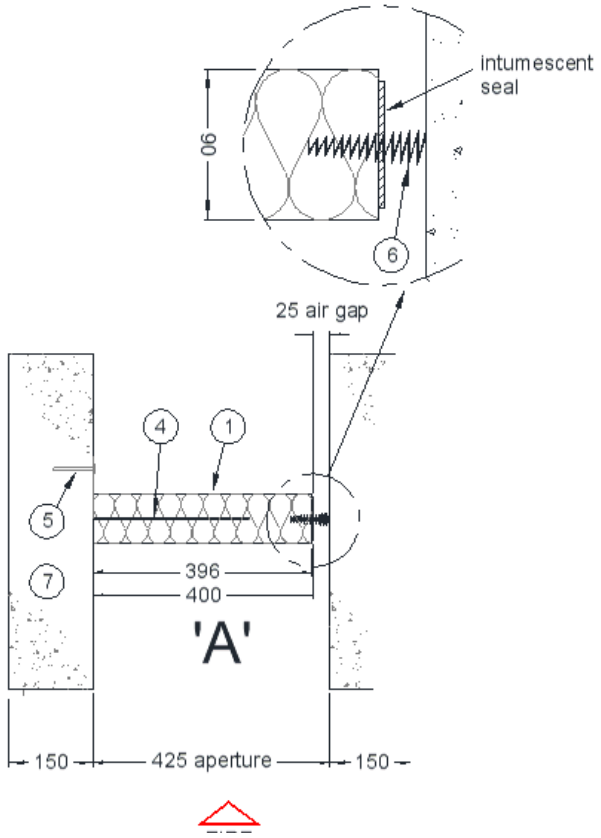
Date of Test: 28th March 2018.

WF 399419

The test referenced WF 399419 and described briefly in the supporting data section of this report describes a fire resistance test utilising the general principles of ASFP TGD 19 (November 2017). The 'OSCB 60' specimen achieved the following with respect to integrity and insulation.

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
A	132*	132*	132*	132*

* The Test Duration. The test was discontinued at 132 minutes

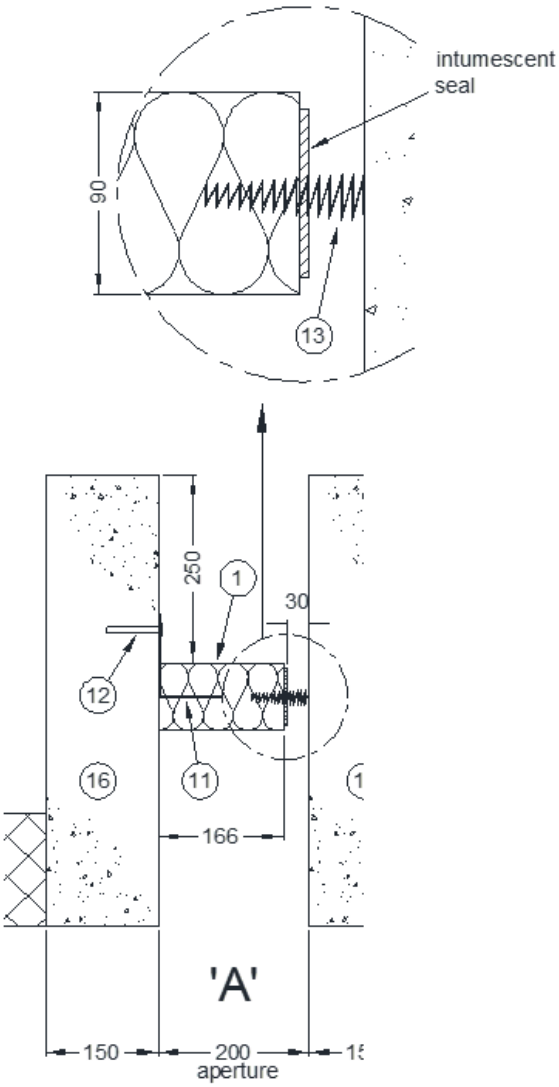


Date of Test: 29th May 2018

WF 399420

The test referenced WF 399420 and described briefly in the supporting data section of this report describes a fire resistance test utilising the general principles of ASFP TGD 19 (November 2017). The 'OSCB 60' specimen achieved the following with respect to integrity and insulation.

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
A	89	92*	79	92*



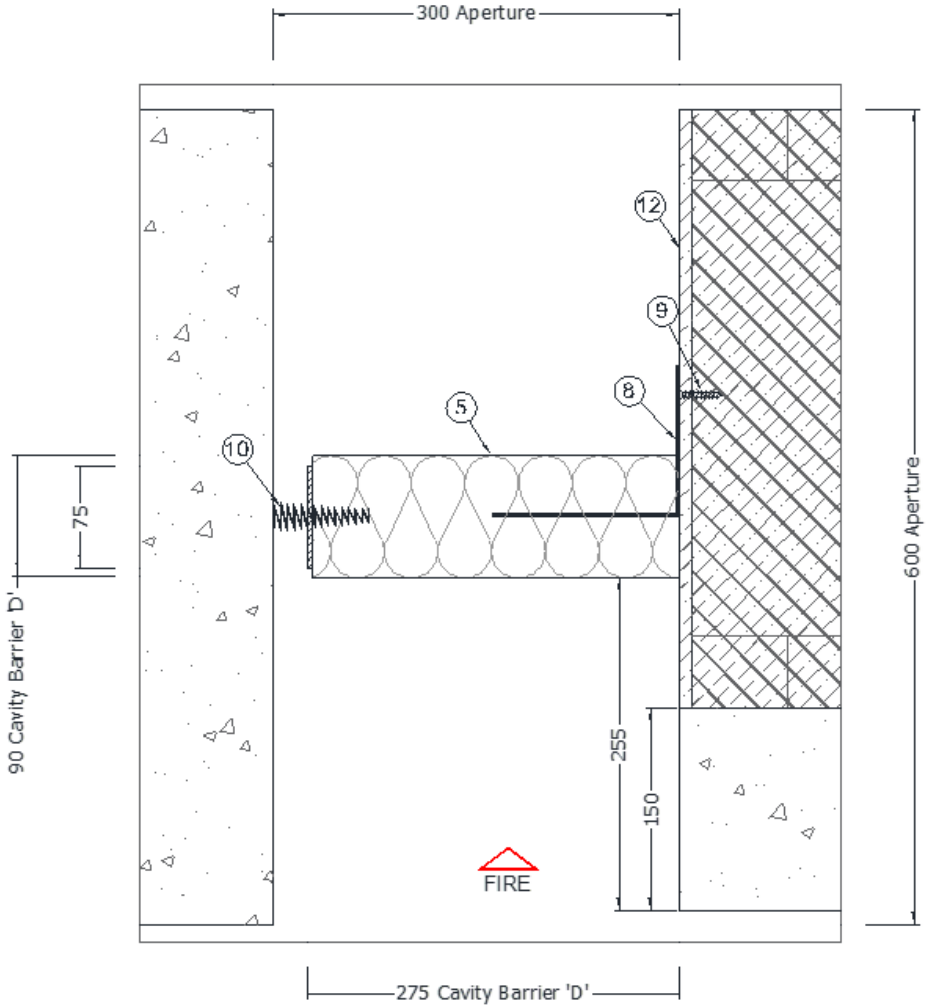
Date of Test: 11th June 2018

WF 407778

The test referenced WF 407778 and described briefly in the supporting data section of this report describes a fire resistance test utilising the general principles of ASFP TGD 19 (November 2017). The 'OSCB 44' specimen achieved the following with respect to integrity and insulation.

Specimen	Integrity (mins)		Insulation (mins)	Insulation (mins) (suspended T/C's)
	Cotton pad	Sustained flaming		
D	120	120	120	120

* The Test Duration. The test was discontinued at 132 minutes



Date of Test: 19th December 2018

Declaration by ROCKWOOL LIMITED.

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 Warringtonfire to withdraw the assessment.

Signed:

_____

For and on behalf of:

_____

Signatories



Responsible Officer

R. Wakefield* - Principal Certification Engineer



Approved

A. Kearns* - Technical Manager

* For and on behalf of Warringtonfire.

Report Issued: 30th January 2020

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

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