Regulatory Information Report

RIRF24008

Fire resistance test for control joints in the vertical separating element

Client:	Agnitek Pty Ltd
Test method:	AS1530.4-2014
Report Date:	30/08/2024
Test number:	PF24008

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1.1 Document revision schedule

Revision #	Date	Description
1	30/08/2024	Issued to Client

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		30/08/2024
Authorised by:	Andrew Bain (Authorized signatory)		30/08/2024

ACCREDITED
TESTING LABORATORY

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

2. Report Summary

Five control joints were tested. Four of these control joints (A-D) were constructed using 64mm steel studs and two layers of 13mm thick FR Plasterboards. The fifth joint (E) was situated at the top of other four joints in horizontal direction between the plasterboard and a concrete slab on fire and non-fire side.

Specimen	Joint description	Integrity	Insulation	FRL
A	10mm x 20mm vertical joint (AGNI-Seal) Both fire and non-fire sides	129NF	129NF	-/120/120
B	20mm x 20mm vertical joint (AGNI-Seal) Both fire and non-fire sides	129NF	129NF	-/120/120
C	30mm x 20mm vertical joint (AGNI-Seal) Both fire and non-fire sides	129NF	129NF	-/120/120
D	40mm x 26mm vertical joint (AGNI-Seal) Both fire and non-fire sides	129NF	129NF	-/120/120
E	40mm x 26mm horizontal joint (AGNI-Seal) Both fire and non-fire sides	129NF	129NF	-/120/120

NF: No Failure

3. General Information

3.1 Testing Scope

Applicable Standards:

AS 1530.4-2014 Section 10: Service penetrations and control joints

AS 4072.1-2005 (r. 2016) Components for the protection of openings in fire-resistant separating elements. Part 1: Service penetrations and control joints

Departures from Testing Method:

No departures from the testing method

Test conditions:

Conditions complied with the Standard

3.2 Contact Details

Accredited Testing Laboratory

Fire TS Lab - Passive Fire Inspection and Test Services Ltd

Accreditation Number - 1335

1/113 Pavilion Drive, Mangere, Auckland, 2022

New Zealand

Contact e-mail: tests@firelab.co.nz

Client/Applicant:

Agnitek Pty Ltd

8 Clare St, Bayswater, VIC, 3153

Australia Contact e-mail: info@agnitek.com.au

Manufacturer:

Same as Client/Applicant

3.3 Specimen Preparation, Conditioning and Timeline

Specimens conditioning and delivery to Laboratory:

Separating element was built by the Laboratory in line with Client instructions. Installation of fire stopping system was performed by Laboratory in line with Client instructions. The Laboratory was not involved in sampling of the materials. Laboratory checked materials during construction of the specimen.

Testing date:

20/05/2024

Installation completion date:

16/04/2024

Termination of The Test:

The test was discontinued at 129 minutes.

3.4 Use of the Report

This report shall not be reproduced, except in full.

A regulatory information report was issued in addition to the full test report PF24008. This provides the minimum information required for regulatory compliance

This report details the methods of construction, test conditions and the results obtained when the specific element of construction described herein was tested following the procedure outlined in AS 1530.4. Any significant variation with respect to size, constructional details, loads, stresses, edge or end conditions, other than that allowed under the field of direct application in the relevant test method, is not covered by this report.

Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

The test results relate to the specimens of the product in the form in which they were tested. Differences in the composition or thickness of the product may significantly affect the performance during the test and may therefore invalidate the test results. Care should be taken to ensure that any product, which is supplied or used, is fully represented by the specimens, which were tested.

The specimens were supplied by the sponsor and the Laboratory was not involved in any of selection or sampling procedures.

The results of these fire tests may be used to directly assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all fire conditions.

4. Specimen Description

4.1 Supporting Construction

Support Construction		
1.1	Item	Steel stud wall with two layers of 13mm FR Plasterboard each side and a 120mm concrete slab on top
	Dimensions	Width / Length (W/L): 1200mm × 1200mm (Nominal)
		Thickness (T): 116mm
		Cavity: 64mm

Materials		
1.2	Item	64mm Deflection Track
	Dimensions	Height / Length (H/L): 51mm × 1200mm
		Thickness (T): 0.75BMT
	Installation	Used to construct separating element
1.3	Item	64mm steel stud
	Dimensions	Flange Height / Length (FH/L): 33mm × 1050mm
		Thickness (T): 0.5BMT
	Installation	Used to construct separating element
1.4	Item	64mm Steel Track
	Dimensions	Flange Height / Length (FH/L): 30mm × 1200mm
		Thickness (T): 0.55BMT
	Installation	Used to construct separating element
1.5	Item	Metal Pin Anchor 6.5 x 38mm
	Dimensions	Diameter (D): 6.5mm
		Length (L): 38mm
	Installation	Fix the tracks on the refractory frame
1.6	Item	Self-Tapping Screw
	Dimensions	Diameter (D): 4mm
		Length (L): 16.5mm
	Installation	Fix the studs and tracks together

1.7	Item	Self-Tapping Drywall Screw 6 x 41mm
	Dimensions	Length (L): 41mm
	Installation	Fix the Plasterboard to the steel frame
1.8	Item	Concrete Slab
	Dimensions	Weight / Height (W/H): 1175mm × 120mm
	Installation	Used to construct separating element

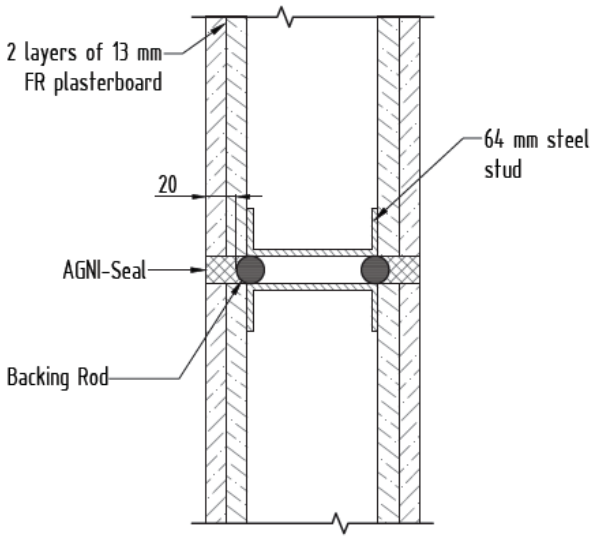
4.2 Specimens

Backing		
2.1	Item	PEF Rod
	Dimensions	Diameter (D): 15mm
	Installation	Installed to joint, allowing 20mm depth for AGNI-Seal
2.2	Item	PEF Rod
	Dimensions	Diameter (D): 25mm
	Installation	Installed to joint, allowing 20mm depth for AGNI-Seal
2.3	Item	PEF Rod
	Dimensions	Diameter (D): 35mm
	Installation	Trimmed and installed to joint, allowing 20mm depth for AGNI-Seal
2.4	Item	PEF Rod
	Dimensions	Diameter (D): 50mm
	Installation	Trimmed and installed to joint, allowing 26mm depth for AGNI-Seal

Sealants		
3.1	Item	AGNI-Seal (Fire-rated Acrylic sealant)
	Dimensions	Capacity: 600ml tube
	Installation	Filled in the joint with specified depth and width

5. Test Results

5.1 Specimen A

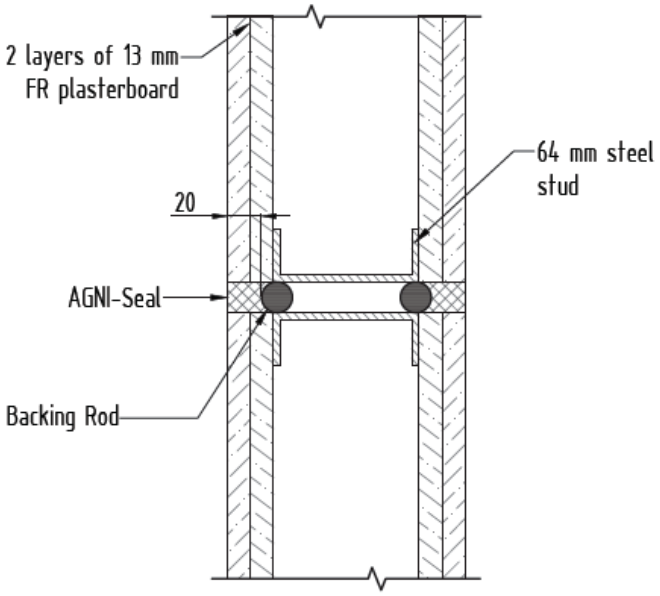


Joint Description	
Dimension	Width: 10mm (nominal)
Backing Rod	15mm Diameter PEF Rod
Sealant Depth	20mm
Joint Length	1000mm

Local fire-stopping system	
Application	Symmetrical - both faces of separating element
System description	Install backing rod into the joint, allowing 20mm depth for sealant. Applying and firmly pressing AGNI-Seal in the joint on top of backing rod. Smoothen the surface of sealant and ensure that it is flush with plasterboard surface.

Test results	
Structural adequacy	Not applicable
Integrity	No Failure at 129 minutes
Insulation	No Failure at 129 minutes

5.2 Specimen B

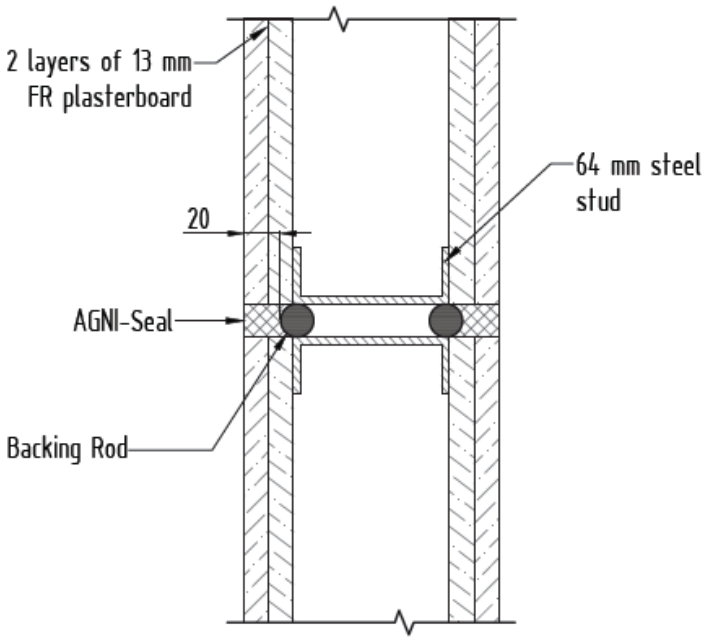


Joint Description	
Dimension	Width: 20mm (nominal)
Backing Rod	25mm Diameter PEF Rod
Sealant Depth	20mm
Joint Length	1000mm

Local fire-stopping system	
Application	Symmetrical - both faces of separating element
System description	Install backing rod into the joint, allowing 20mm depth for sealant. Applying and firmly pressing AGNI-Seal in the joint on top of backing rod. Smoothen the surface of sealant and ensure that it is flush with plasterboard surface.

Test results	
Structural adequacy	Not applicable
Integrity	No Failure at 129 minutes
Insulation	No Failure at 129 minutes

5.3 Specimen C

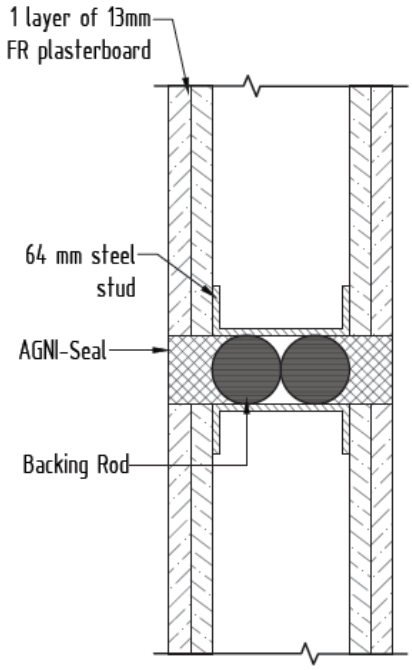


Joint Description	
Dimension	Width: 30mm (nominal)
Backing Rod	35mm Diameter PEF Rod
Sealant Depth	20mm
Joint Length	1000mm

Local fire-stopping system	
Application	Symmetrical - both faces of separating element
System description	Install backing rod into the joint, allowing 20mm depth for sealant. Applying and firmly pressing AGNI-Seal in the joint on top of backing rod. Smoothen the surface of sealant and ensure that it is flush with plasterboard surface.

Test results	
Structural adequacy	Not applicable
Integrity	No Failure at 129 minutes
Insulation	No Failure at 129 minutes

5.4 Specimen D

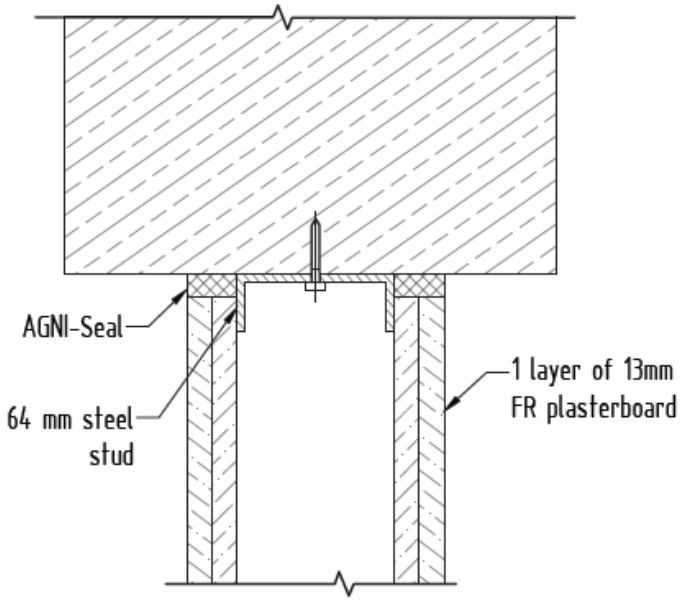


Joint Description	
Dimension	Width: 40mm (nominal)
Backing Rod	50mm Diameter PEF Rod
Sealant Depth	26mm
Joint Length	1000mm

Local fire-stopping system	
Application	Symmetrical - both faces of separating element
System description	Install backing rod into the joint, allowing 26mm depth for sealant. Applying and firmly pressing AGNI-Seal in the joint on top of backing rod. Smoothen the surface of sealant and ensure that it is flush with plasterboard surface.

Test results	
Structural adequacy	Not applicable
Integrity	No Failure at 129 minutes
Insulation	No Failure at 129 minutes

5.5 Specimen E



Joint Description	
Dimension	Width: 40mm (nominal)
Backing Rod	N/A (applied over the head track)
Sealant Depth	26mm
Joint Length	1200mm

Local fire-stopping system	
Application	Symmetrical - both faces of separating element
System description	26mm deep sealant was applied. Firmly pressing AGNI-Seal in the joint on top of steel track, smoothen the surface of sealant and ensure that it is flush with plasterboard surface.

Test results	
Structural adequacy	Not applicable
Integrity	No Failure at 129 minutes
Insulation	No Failure at 129 minutes

6. Observations during the test

Time min	Test face	SP#	OBSERVATIONS/REMARKS
7	U	E	Smoke emerged from the fissures at the mid width of specimen E.
15	E	All	Sealant in all joints expanded.
30	U	E	Clear liquid flowed down from the right end of specimen E.
41	U	E	Clear liquid accumulated at the interface of the concrete slab and sealant above TC213, flowing down along SE.
98	U	E	The sealant expanded on the right-hand side of TC213.
102	U	E	The sealant expanded on the left-hand side of TC213.
102	U	A, B, C	The sealant in joint experienced slight expansion.
107	E	B, C	The sealant partly disengaged from joints and dropped.
120	U	A, B, C, E	The expansion of the sealant progressed.
120	U	D	The sealant in joint experienced slight expansion.
129			**Test Discontinued.**

NOTE: E – Exposed Face (inside furnace)

U – Unexposed Face (outside furnace)

SE – Separating element

7. Photos

7.1 Photos before the test

Figure 1 – Unexposed face prior to test commencement

Figure 12 – Exposed face prior to test commencement