

Regulatory Information Report

RIRF24101

**Fire resistance test for penetrations through a
vertical separating element**

Client: Agnitek Pty Ltd

Test method: AS1530.4-2014

Report Date: 14/01/2025

Test number: PF24101



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2.1 Document revision schedule

Revision #	Date	Description
1	28/10/2024	Issued to Client
2	14/01/2025	Amended as per Client request

2.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		14/01/2025
Authorised by:	Andrew Bain (Authorized signatory)		14/01/2025



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



2. Report Summary

Service penetrations were tested passing through two layers of 13mm FR Plasterboard on each side of a 64mm (nominal) steel frame.

Specimen #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
1	DN16 PEX PIPE	123NF	123NF	-/120/120
2	DN25 PEX PIPE	123NF	104	-/120/90
3	DN40 PEX PIPE	123NF	16	-/120/-
4	DN25 PEX PIPE – insulated cavity	123NF	123NF	-/120/120
5	16mm PEX/AL/PEX PIPE	123NF	123NF	-/120/120
6	25mm PEX/AL/PEX PIPE	123NF	112	-/120/90
7	32mm PEX/AL/PEX PIPE	123NF	24	-/120/-
8	25mm PEX/AL/PEX PIPE – insulated cavity	123NF	48	-/120/30
9	15mm POLYBUTENE PIPE	123NF	123NF	-/120/120
10	22mm POLYBUTENE PIPE	123NF	123NF	-/120/120
11	28mm POLYBUTENE PIPE	123NF	123NF	-/120/120
12	28mm POLYBUTENE PIPE – insulated cavity	123NF	123NF	-/120/120

NF – No failure during the test

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 the Laboratory in line with Client instructions. The Laboratory was not involved in sampling of the materials. The Laboratory checked materials during construction of the specimen. Services were capped on fire side only

Testing date:

26/09/2024

Installation completion date:

10/09/2024

Termination of The Test:

The test was discontinued at 123 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 PF24101. 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

Separating element		
1.1	Item	64mm (nominal) steel stud frame with two layers of 13mm FR Plasterboard fitted to each side of the frame
	Dimensions	Width / Height (W/H): 1200mm x 1200mm

Materials		
1.3	Item / Product Name	Steel Stud
	Dimensions	Width / Height (W/H): 64mm x 1200mm
	Installation	Used to construct studs in steel frame and nogs
1.4	Item / Product Name	Steel Track
	Dimensions	Width / Height (W/H): 64mm x 1200mm
	Installation	Used to construct top and bottom plates in steel frame
1.5	Item / Product Name	Self-Tapping Screw
	Dimensions	10g x 16mm
	Installation	Used to construct steel stud frame – secure studs, tracks and nogs together
1.6	Item / Product Name	FR Plasterboard
	Dimensions	Width / Height (W/H): 1200mm x 1200mm
		Thickness (T): 13mm
Installation	Two layers applied to each face of the frame to create separating element	
1.7	Item / Product Name	Self Tapping Screw
	Dimensions	41mm
	Installation	Used to secure GIB Fyreline to frame
1.8	Item / Product Name	Plaster
	Dimensions	5L Pail
	Installation	Used to cover screw heads on plasterboard



4.2 Specimens

Services		
2.1	Item / Product Name	DN16 SDR9 PE-X PIPE
	Dimensions	Diameter (OD): 16mm
		Diameter (ID): 12mm
		Thickness (T): 2mm
2.2	Item / Product Name	DN25 SDR9 PE-X PIPE
	Dimensions	Diameter (OD): 25.5mm
		Diameter (ID): 18.5mm
		Thickness (T): 3.5mm
2.3	Item / Product Name	DN40 SDR7.4 PEX pipe
	Dimensions	Diameter (OD): 40mm
		Diameter (ID): 29mm
		Thickness (T): 5.5mm
2.4	Item / Product Name	DN16 PE/AL/PEX
	Dimensions	Diameter (OD): 16mm
		Diameter (ID): 11mm
		Thickness (T): 2.5mm
2.5	Item / Product Name	DN25 GAS PE-X/AL/PE-X PIPE
	Dimensions	Diameter (OD): 26mm
		Diameter (ID): 19mm
		Thickness (T): 3.5mm
2.6	Item / Product Name	DN32 PE-X/AL/PE-X PIPE
	Dimensions	Diameter (OD): 32mm
		Diameter (ID): 26mm
		Thickness (T): 3mm
2.7	Item / Product Name	15mm PB L1 PIPE
	Dimensions	Diameter (OD): 13mm
		Diameter (ID): 9.4mm
		Thickness (T): 1.8mm
	Item / Product Name	22mm PB L1 PIPE

2.8	Dimensions	Diameter (OD): 22.7mm
		Diameter (ID): 18mm
		Thickness (T): 2.35mm
2.9	Item / Product Name	28mm PN16 PB L1 PIPE
	Dimensions	Diameter (OD): 27.8mm
		Diameter (ID): 21.4mm
		Thickness (T): 3.2mm
Location	1 included in specimen 6	

Sealants		
3.1	Item / Product Name	AGNI-Seal
	Dimensions	600mL Sausage
	Installation	Used to seal around edge of separating element
3.2	Item / Product Name	AGNI-BLACK
	Dimensions	300mL Cartridge
	Installation	Used to seal between pipe and separating element

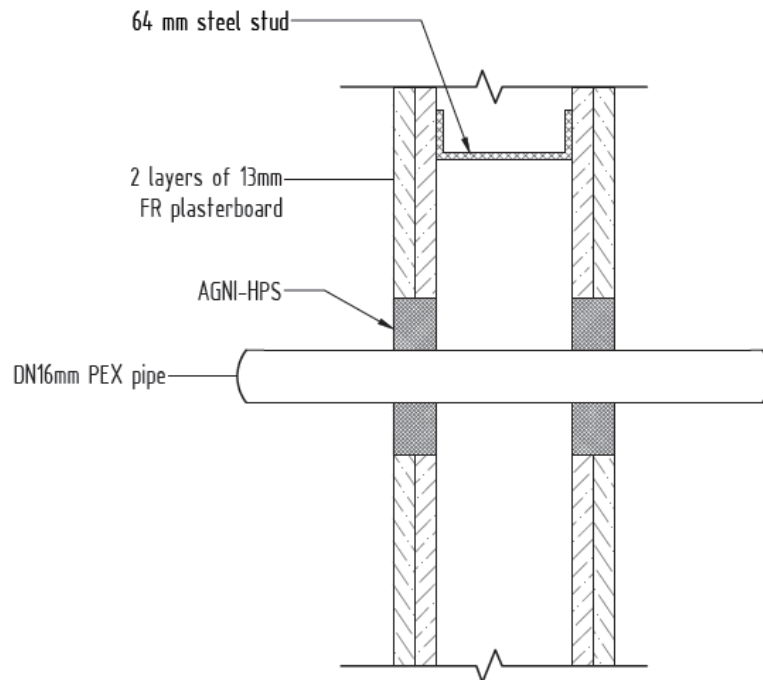
5. Test Results

5.1 Observations during the test

Time min	Test face	SP#	OBSERVATIONS/REMARKS
5	E	1-4, 9-12	Pipes fallen away from separating element
7	E	ALL	Sealant expanded
10	E	5-8	Pipes fallen away from separating element
12	U	4	Pipe distorted close to separating element
16	U	3, 4	Sealant starting to expand
23	U	7, 8	Sealant starting to expand
43	U	6	Sealant starting to expand
64	U	2	Separating element starting to discolour
66	U	2, 11	Smoke coming from around the sealant
68	U	1	Separating element starting to discolour
75	U	2, 6	Sealant starting to expand
78	U	11	Separating element starting to discolour
87	U	5	Sealant starting to expand
105	U	1	Sealant starting to expand
123			TEST DISCONTINUED

NOTE: E - Exposed Face (inside furnace)
 U - Unexposed Face (outside furnace)
 SE - Separating element

5.2 Specimen 1



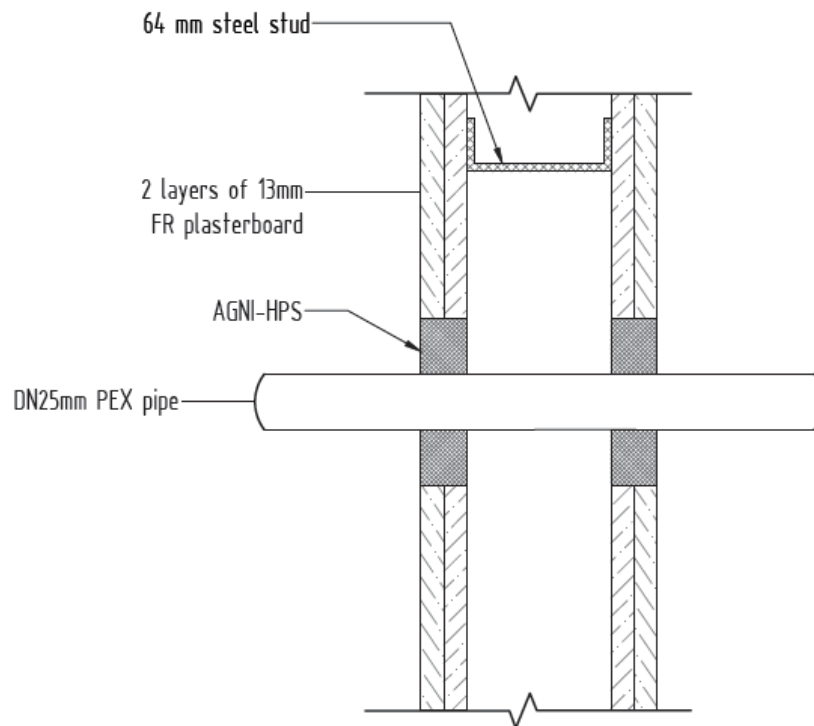
Service penetration details	
Service	DN16 SDR9 PE-X PIPE
Aperture Size	38mm
Annular Spacing	Min: 6mm, Max: 16mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	No failure at 123 minutes

5.3 Specimen 2



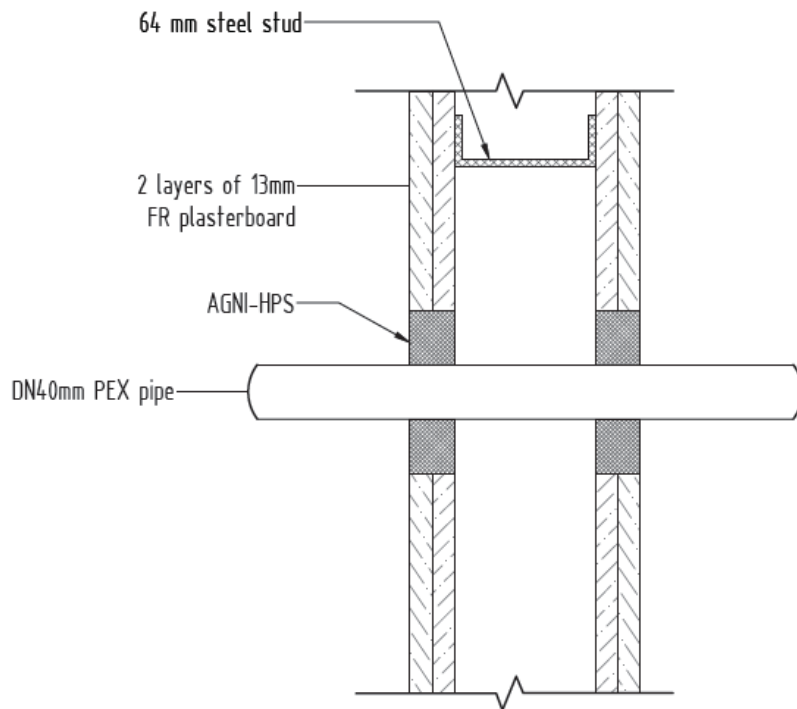
Service penetration details	
Service	DN25 SDR9 PE-X PIPE
Aperture Size	46mm
Annular Spacing	Min: 5.5mm, Max: 15mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	104 minutes

5.4 Specimen 3



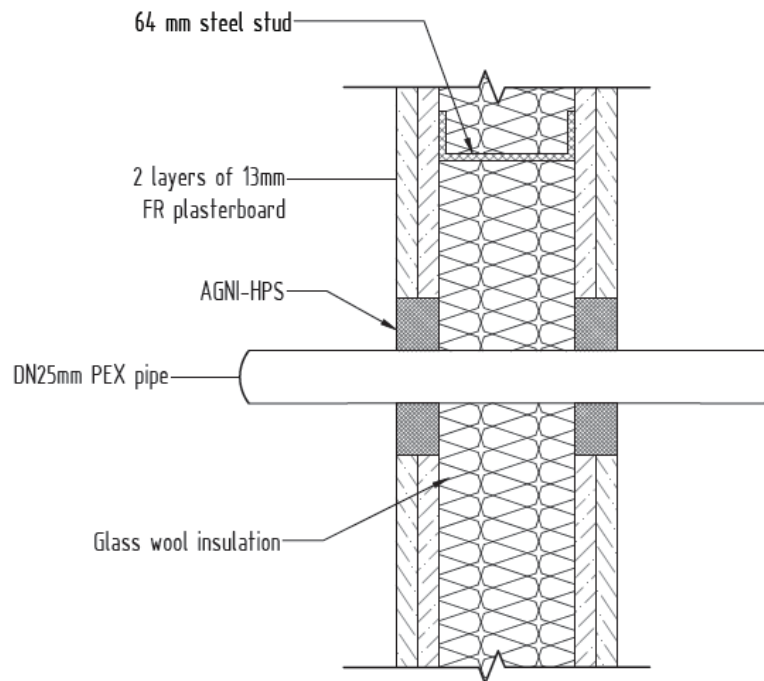
Service penetration details	
Service	DN40 SDR7.4 PEX PIPE
Aperture Size	58mm
Annular Spacing	Min: 5mm, Max: 13mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	16 minutes

5.5 Specimen 4



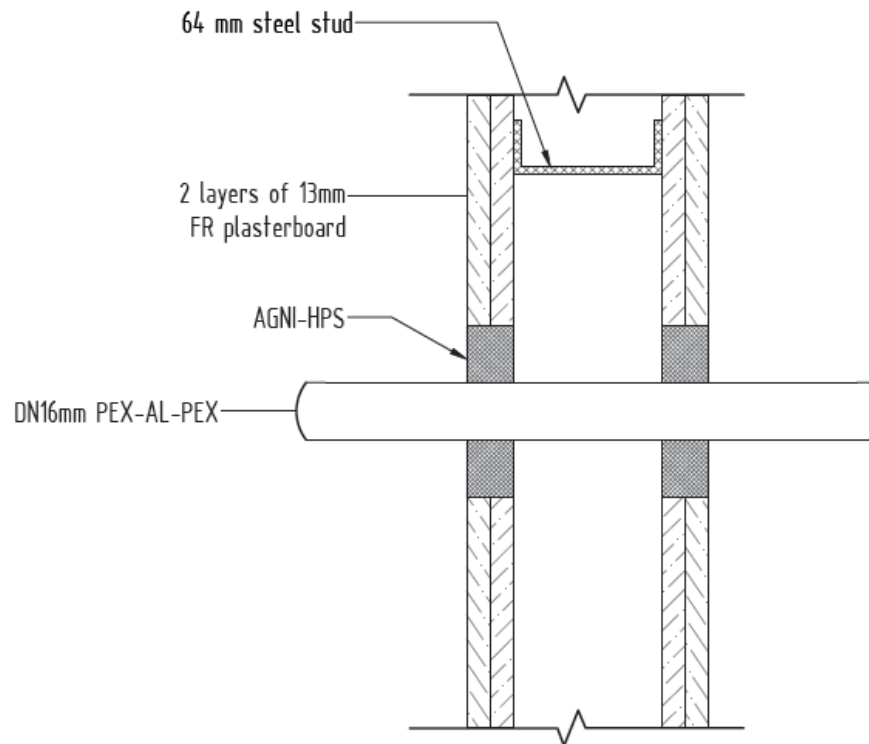
Service penetration details	
Service	DN25 SDR9 PE-X PIPE
Aperture Size	46mm
Annular Spacing	Min: 5mm, Max: 15.5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	Glass wool insulation was installed into the cavity. AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	No failure at 123 minutes

5.6 Specimen 5



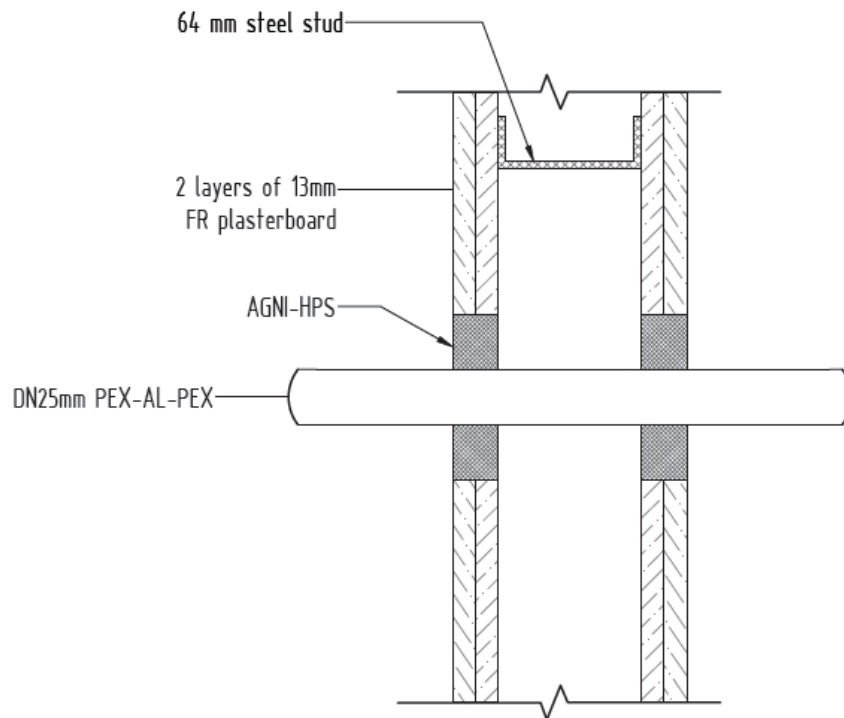
Service penetration details	
Service	DN16 PE/AL/PEX PIPE
Aperture Size	38mm
Annular Spacing	Min: 6mm, Max: 16mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	No failure at 123 minutes

5.7 Specimen 6



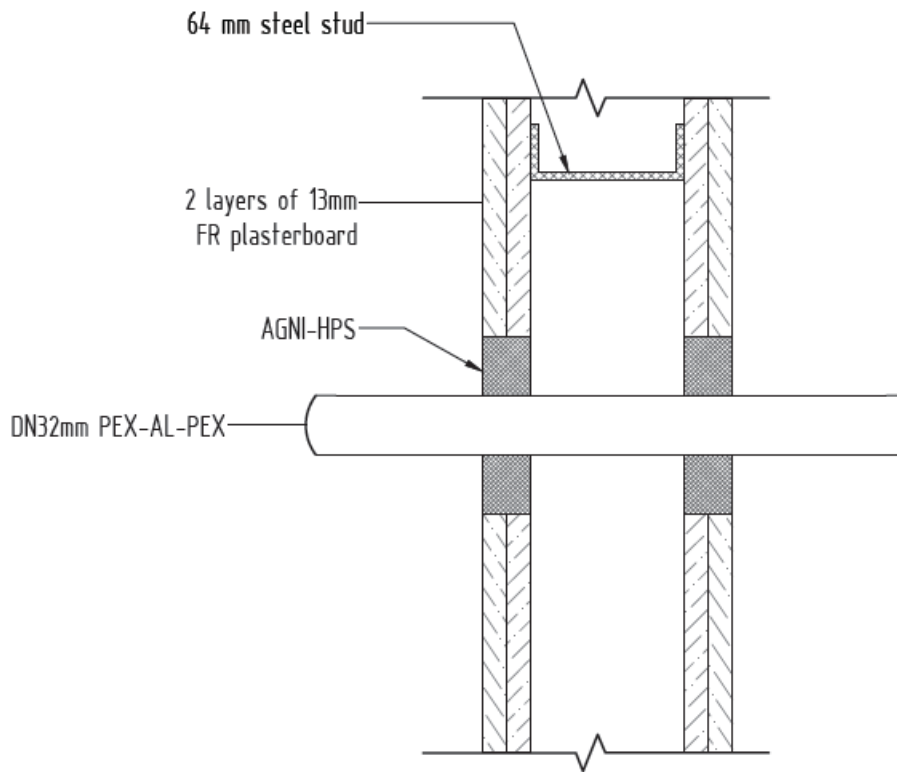
Service penetration details	
Service	DN25 GAS PE-X/AL/PE-X PIPE
Aperture Size	46mm
Annular Spacing	Min: 5mm, Max: 15mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	112 minutes

5.8 Specimen 7



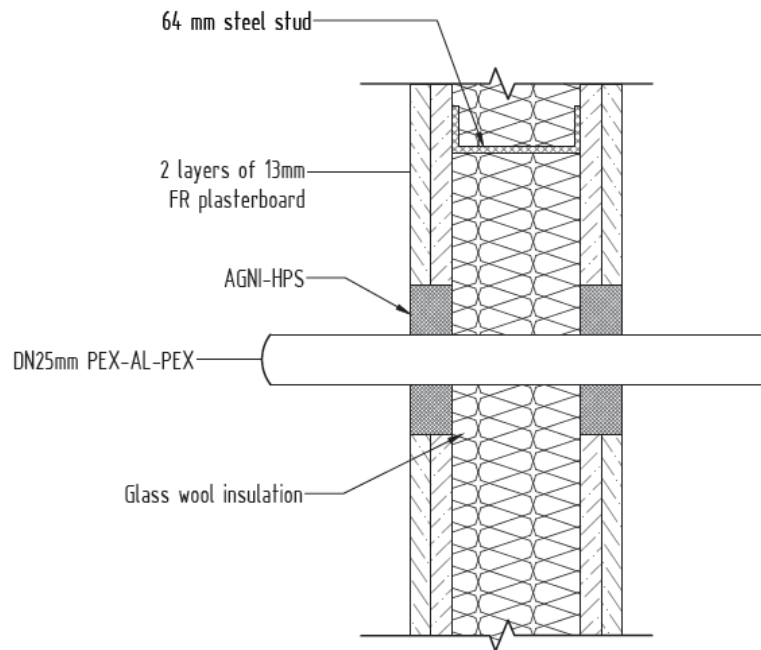
Service penetration details	
Service	DN32 PE-X/AL/PE-X PIPE
Aperture Size	54mm
Annular Spacing	Min: 7mm, Max: 15mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	24 minutes

5.9 Specimen 8



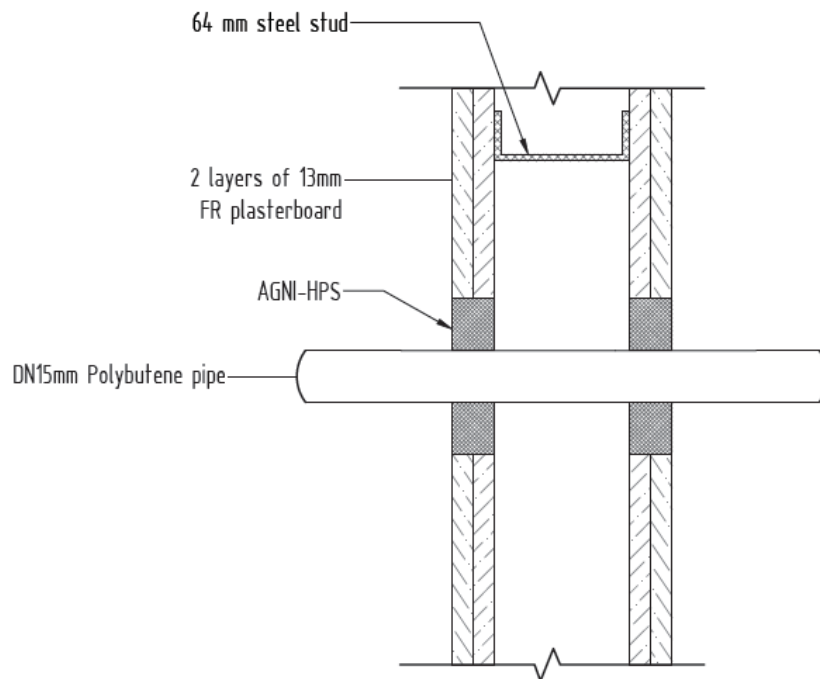
Service penetration details	
Service	DN25 GAS PE-X/AL/PE-X PIPE
Service Support	Exposed side: Multistrut at 240mm Unexposed side: Multistrut at 360mm and 1530mm
Aperture Size	46mm
Annular Spacing	Min: 5mm, Max: 15mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	Glass wool insulation was installed into the cavity. AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	48 minutes

5.10 Specimen 9



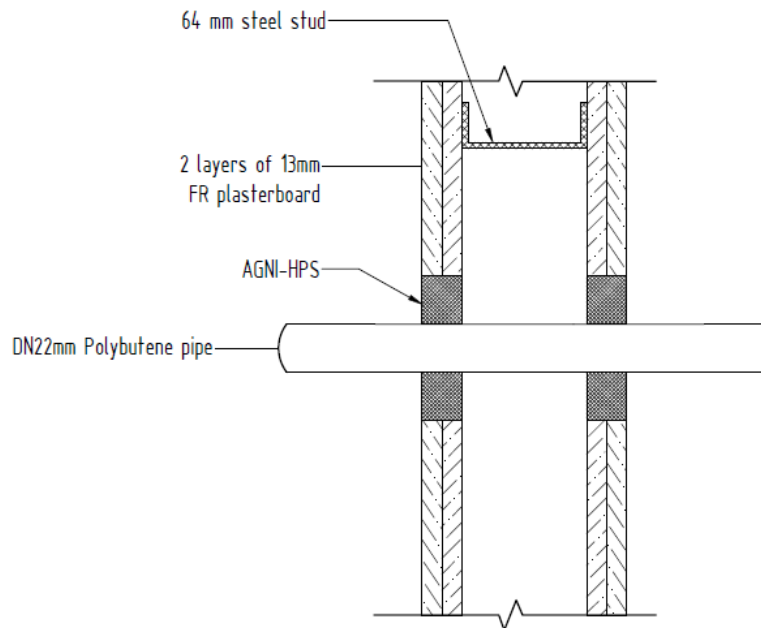
Service penetration details	
Service	DN15 PB L1
Aperture Size	36mm
Annular Spacing	Min: 7mm, Max: 16mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	No failure at 123 minutes

5.11 Specimen 10



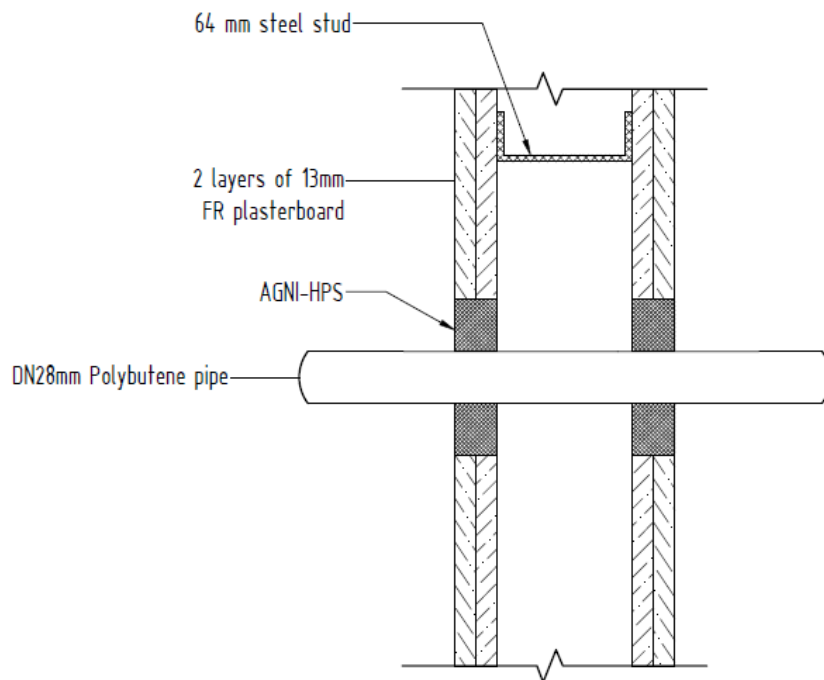
Service penetration details	
Service	DN22 PB L1
Aperture Size	46mm
Annular Spacing	Min: 6mm, Max: 17mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	No failure at 123 minutes

5.12 Specimen 11



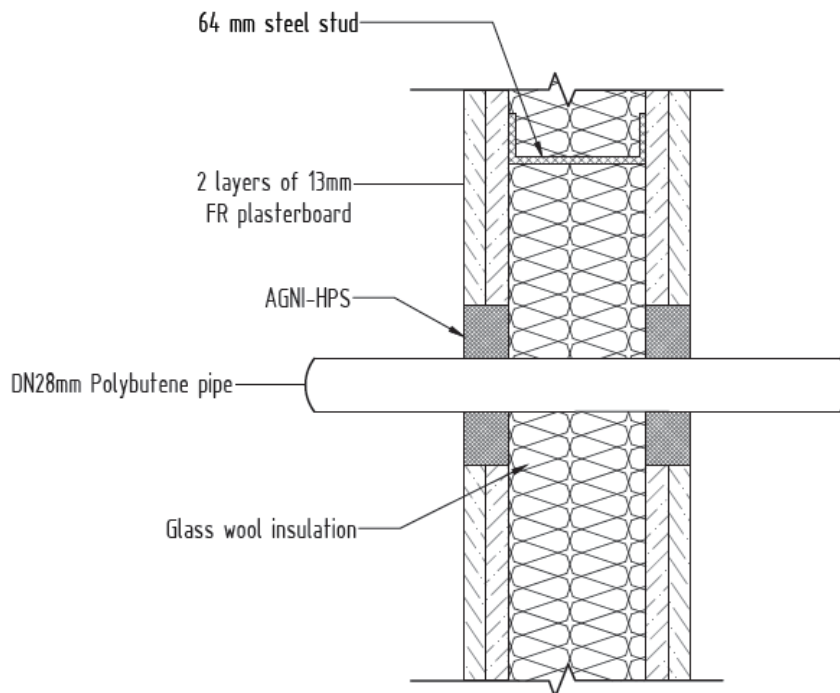
Service penetration details	
Service	DN28 PB L1
Aperture Size	52mm
Annular Spacing	Min: 7mm, Max: 17mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	No failure at 123 minutes

5.13 Specimen 12



Service penetration details	
Service	DN28 PN16 PB L1
Aperture Size	52mm
Annular Spacing	Min: 7mm, Max: 17mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
System description	Glass wool insulation was installed into the cavity. AGNI-BLACK was applied in the annular gap between the separating element and the pipe, 26mm (depth of lining) into the aperture, finishing flush with the separating element

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	No failure at 123 minutes

6. Photos

6.1 Photos before the test

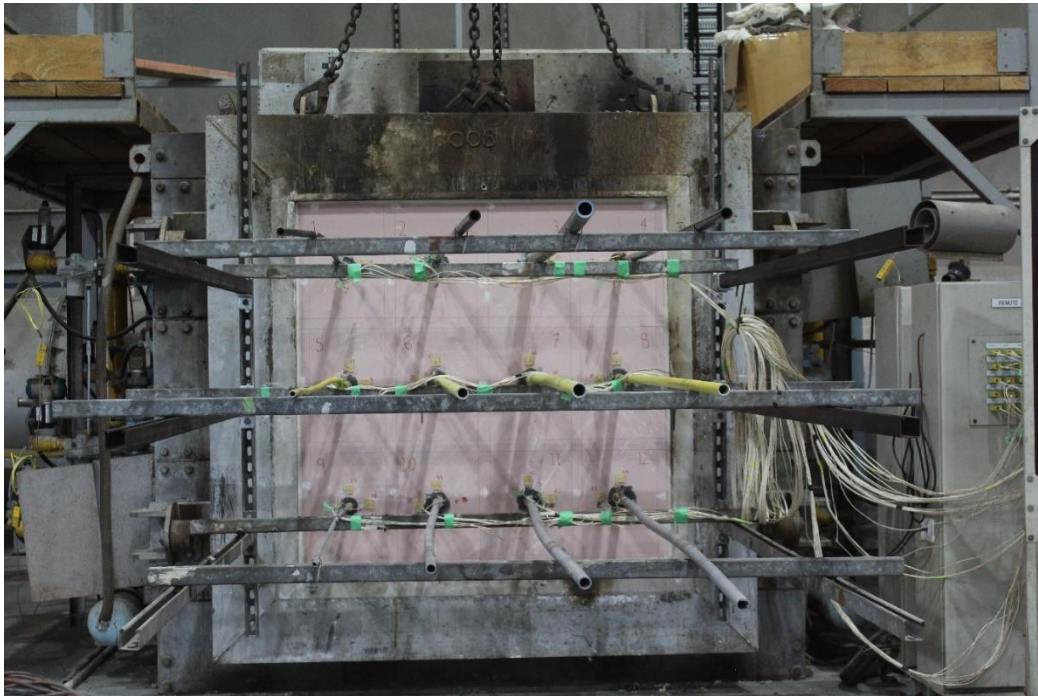


Figure 1 – Unexposed face prior to test commencement



Figure 2 – Exposed face prior to test commencement