Regulatory Information Report

PF24143

Fire resistance test for penetrations through a vertical separating element

Client:	Agnitek Pty Ltd
Test method:	AS1530.4-2014
Report Date:	20/01/2025
Test number:	PF24143

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1.1 Document revision schedule

Revision #	Date	Description
1	20/01/2025	Issued to Client

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		20/01/2025
Authorised by:	Andrew Bain (Authorized signatory)		20/01/2025

ACCREDITED
IANZ
TESTING LABORATORY

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 one layer 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	63NF	63NF	-/60/60
2	DN25 Pex Pipe	63NF	51	-/60/45
3	DN32 Pex Pipe	63NF	16	-/60/15
4	16mm Pex/Al/Pex Pipe	63NF	63NF	-/60/60
5	25mm Pex/Al/Pex Pipe	63NF	63NF	-/60/60
6	32mm Pex/Al/Pex Pipe	63NF	63NF	-/60/60
7	PE Pair Coil	63NF	51	-/60/45
8	FR Pair Coil	63NF	63NF	-/60/60
9	FR Pair Coil + 20mm PVC Pipe + TPS Cable	63NF	63NF	-/60/60

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:

14/01/2025

Installation completion date:

16/12/2024

Termination of The Test:

The test was discontinued at 63 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 PF24143. 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 recognised 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 one layer of 13mm FR Plasterboard fitted to each side of the frame
	Dimensions	Width / Height (W/H): 1200mm × 1200mm

Materials		
1.3	Item	Steel Stud 0.50bmt
	Dimensions	Width / Height (W/H): 64mm x 1200mm
	Installation	Used to construct studs and nogs in steel frame
1.4	Item	Steel Track 0.50bmt
	Dimensions	Width / Height (W/H): 64mm x 1200mm
	Installation	Used to construct top and bottom plates
1.5	Item	Self-Tapping Screw
	Dimensions	10g x 16mm
	Installation	Used to construct steel stud frame
1.6	Item	FR Plasterboard
	Dimensions	Width / Height (W/H): 1200mm x 1200mm
		Thickness (T): 13mm
	Installation	2 layers applied to each face of separating element
1.7	Item	Self Tapping Screw
	Dimensions	41mm
	Installation	Used to secure FR plasterboard to frame
1.8	Item	Plaster
	Dimensions	15L Pail
	Installation	Used to cover screw heads on plasterboard
1.10	Item / Product Name	AGNI-Seal
	Installation	Used to seal around edge of separating element

4.2 Specimens

Services		
2.1	Item	DN16 PEX Pipe
	Dimensions	Diameter (ID): 11.75mm
		Diameter (OD): 16.15mm
		Wall Thickness (T): 2.2mm
2.2	Item	DN25 PEX Pipe
	Dimensions	Diameter (ID): 19.2mm
		Diameter (OD): 25.1mm
		Wall Thickness (T): 2.95mm
2.3	Item	DN32 PEX Pipe
	Dimensions	Diameter (ID): 22.1mm
		Diameter (OD): 32.1mm
		Wall Thickness (T): 5mm
2.4	Item	DN16 PEX/AL/PEX Pipe
	Dimensions	Diameter (ID): 11.15mm
		Diameter (OD): 16.05mm
		Wall Thickness (T): 2.45mm
2.5	Item	DN25 PEX/AL/PEX Pipe
	Dimensions	Diameter (ID): 18.4mm
		Diameter (OD): 25.2mm
		Wall Thickness (T): 3.4mm
2.6	Item	DN32 PEX/AL/PEX Pipe
	Dimensions	Diameter (ID): 23.3mm
		Diameter (OD): 32.3mm
		Wall Thickness (T): 4.5mm
2.7	Item	Polyethylene Insulated Pair Coil Refrigeration Tube – Annealed Copper Tube
	Copper Tube 1	Diameter (ID): 16.77mm
		Diameter (OD): 19.05mm
		Wall Thickness (T): 1.14mm

	Copper Tube 2	Diameter (ID): 7.9mm
		Diameter (OD): 9.52mm
		Wall Thickness (T): 0.81mm
	Insulation	Thickness (T): 6.8mm
		Material: Polyethylene
2.8	Item	Pair FR Rubber Insulated Fire Retardant Pair Coil
	Copper Tube 1	Diameter (ID): 16.84mm
		Diameter (OD): 19.88mm
		Wall Thickness (T): 1.02mm
	Copper Tube 2	Diameter (ID): 7.9mm
		Diameter (OD): 9.52mm
		Wall Thickness (T): 0.81mm
	Insulation	Thickness (T): 16mm
2.9	Item	Marley uPVC 25mm
	Dimensions	Diameter (ID): 23.0mm
		Diameter (OD): 26.9mm
		Wall Thickness (T): 1.95mm
2.10	Item	Electrical Cable 450/750V 2C + E
	Cable	Width x Depth (W/D): 14mm x 6.5mm
		Sheath Material: 3V-90 PVC
		Sheath Thickness (T): 1.24mm
	Core	Number of Cores: 2 (circular shaped)
		Overall Diameter (OD): 4mm
		Conductor Diameter: 0.85mm
		Conductor Material: Copper
		Insulation Material: V-90 PVC
		Insulation Thickness (T): 1.15mm
	Earth	Overall Diameter (OD): 3.2mm
		Wire Diameter: 0.64mm

Sealants		
3.1	Item / Product Name	AGNI-Black
	Dimensions	310mL Cartridge

5. Test Results

5.1 Observations during the test

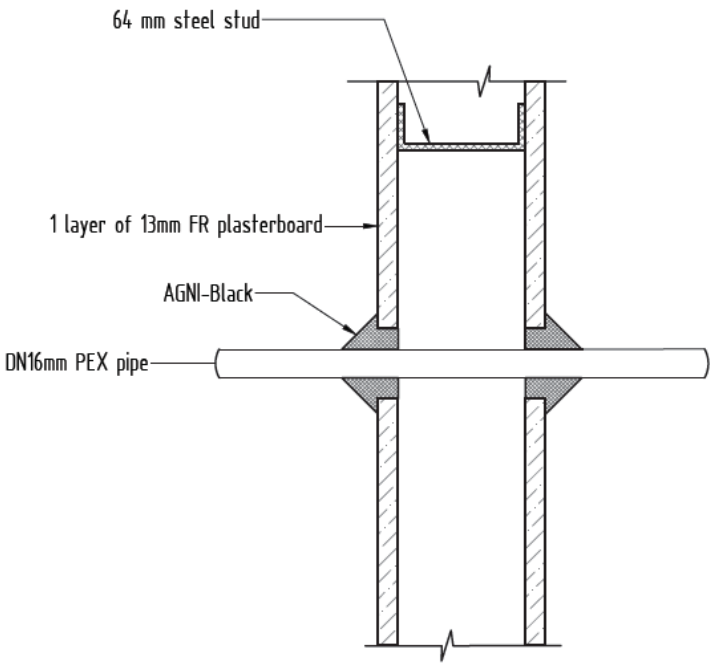
Time min	Test face	SP#	OBSERVATIONS/REMARKS
			No major observations during the test
63			**TEST DISCONTINUED**

NOTE: E – Exposed Face (inside furnace)

U – Unexposed Face (outside furnace)

SE – Separating element

5.2 Specimen 1

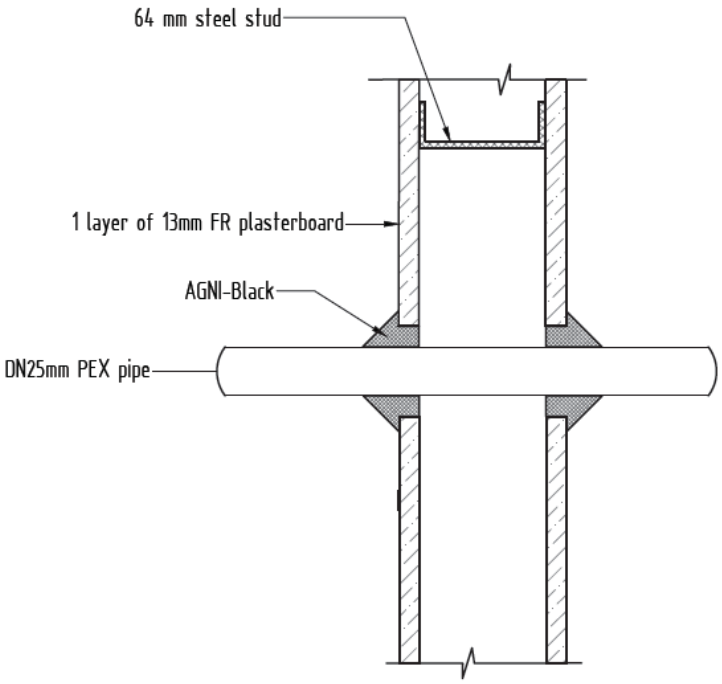


Service penetration details	
Service	DN16 PEX Pipe
Aperture Size	62mm
Annular Spacing	Min: 20mm, Max: 25.85mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
Products	AGNI-Black
Procedure	1. AGNI-Black applied into annular gap to the depth of the lining, 13mm (nominal). 2. 30mm (width) x 20mm (height) AGNI-Black cone was applied around the pipe.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	No failure at 63 minutes

5.3 Specimen 2

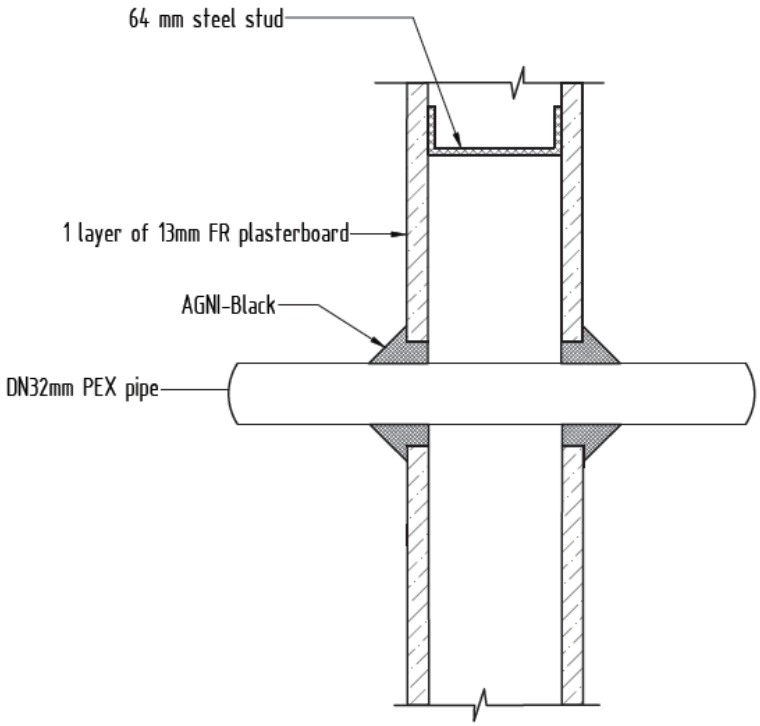


Service penetration details	
Service	DN25 PEX Pipe
Aperture Size	67.8mm
Annular Spacing	Min: 20.3mm, Max: 22.4mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
Products	AGNI-Black
Procedure	1. AGNI-Black applied into annular gap to the depth of the lining, 13mm (nominal). 2. 30mm (width) x 20mm (height) AGNI-Black cone was applied around the pipe.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	51 minutes

5.4 Specimen 3



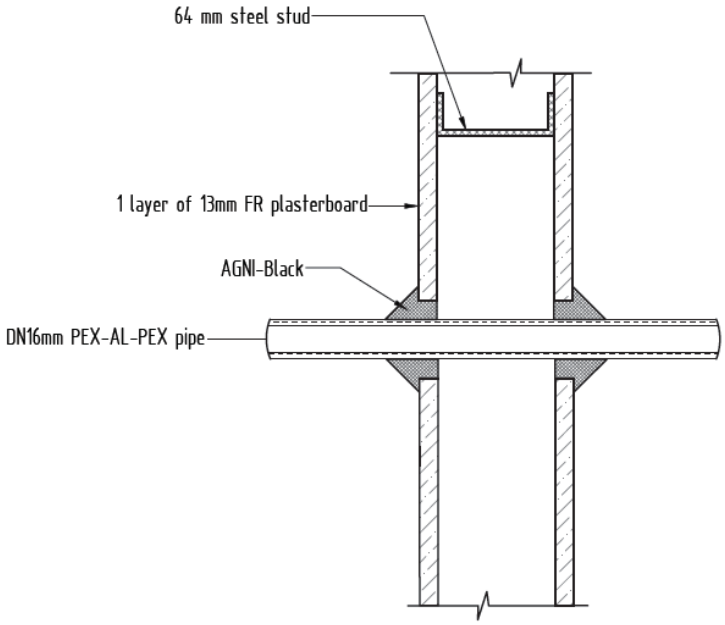
Service penetration details	
Service	DN32 PEX Pipe
Aperture Size	66.7mm
Annular Spacing	Min: 15.8mm, Max: 17.8mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
Products	AGNI-Black
Procedure	1. AGNI-Black applied into annular gap to the depth of the lining, 13mm (nominal). 2. 25mm (width) x 20mm (height) AGNI-Black cone was applied around the pipe.

Test results

Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	16 minutes

5.5 Specimen 4

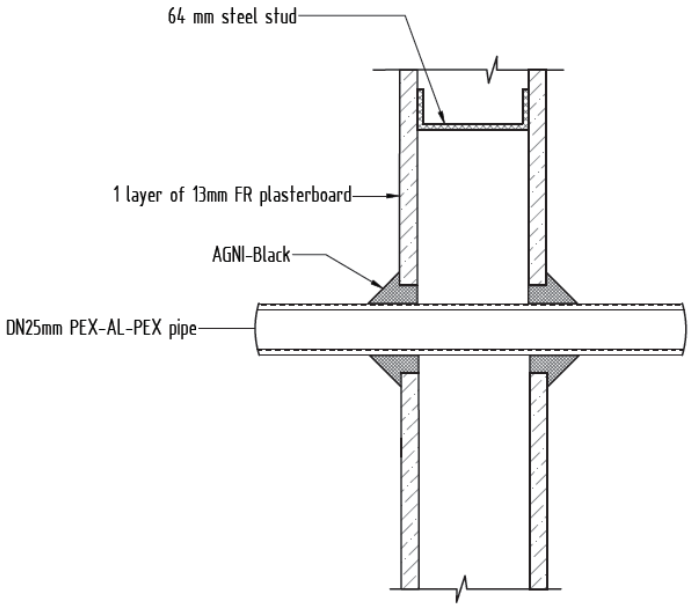


Service penetration details	
Service	DN16 PEX/AL/PEX Pipe
Aperture Size	62.0mm
Annular Spacing	Min: 22.75mm, Max: 23.2mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
Products	AGNI-Black
Procedure	1. AGNI-Black applied into annular gap to the depth of the lining, 13mm (nominal). 2. 30mm (width) x 20mm (height) AGNI-Black cone was applied around the pipe.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	No failure at 63 minutes

5.6 Specimen 5

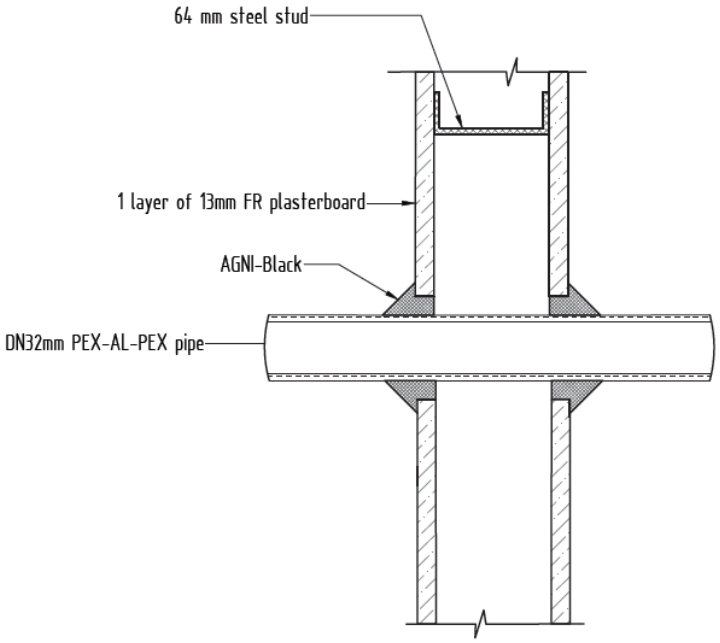


Service penetration details	
Service	DN25 PEX/AL/PEX Pipe
Aperture Size	68.2mm
Annular Spacing	Min: 20.1mm, Max: 22.9mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
Products	AGNI-Black
Procedure	1. AGNI-Black applied into annular gap to the depth of the lining, 13mm (nominal). 2. 30mm (width) x 20mm (height) AGNI-Black cone was applied around the pipe.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	No failure at 63 minutes

5.7 Specimen 6

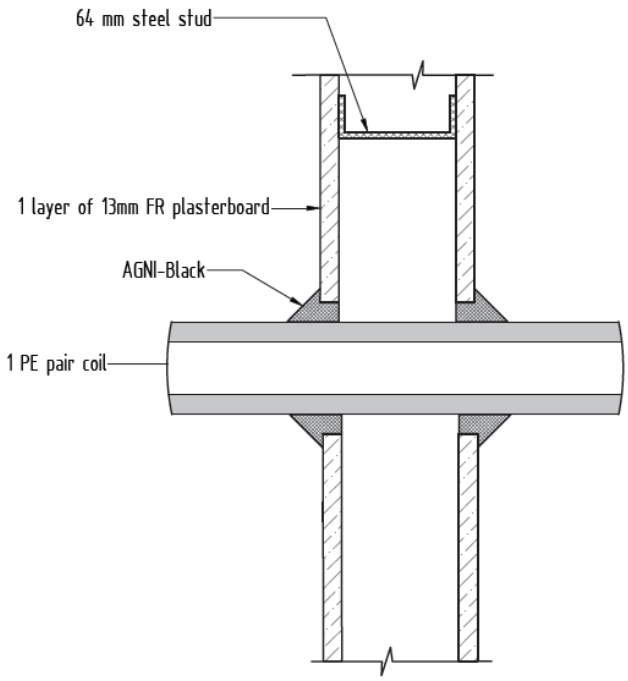


Service penetration details	
Service	DN32 PEX/AL/PEX Pipe
Aperture Size	67.7mm
Annular Spacing	Min: 12.9mm, Max: 22.5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
Products	AGNI-Black
Procedure	1. AGNI-Black applied into annular gap to the depth of the lining, 13mm (nominal). 2. 25mm (width) x 20mm (height) AGNI-Black cone was applied around the pipe.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	No failure at 63 minutes

5.8 Specimen 7

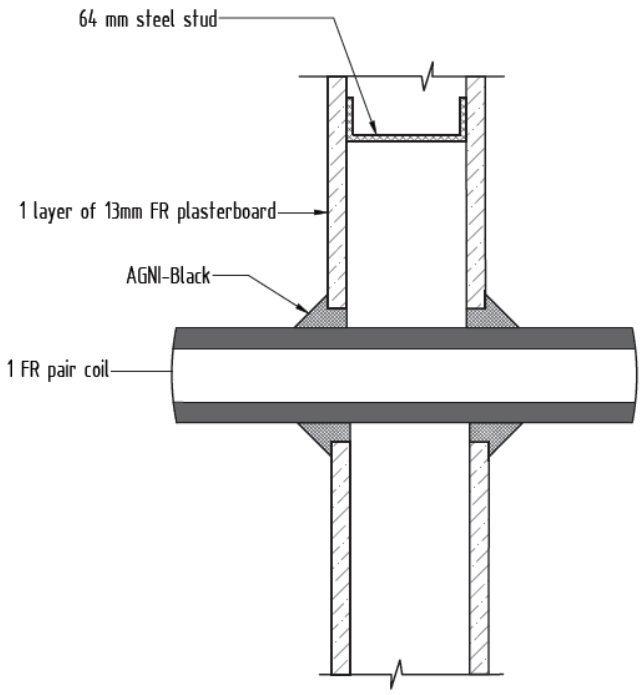


Service penetration details	
Service	One Polyethylene Insulated Pair Coil
Aperture Size	103.1mm
Annular Spacing	Min: 12.2mm, Max: 47.0mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
Products	AGNI-Black
Procedure	1. AGNI-Black applied into annular gap to the depth of the lining, 13mm (nominal). 2. Up to 50mm (width) x 20mm (height) AGNI-Black cone was applied around the pipe.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	51 minutes

5.9 Specimen 8

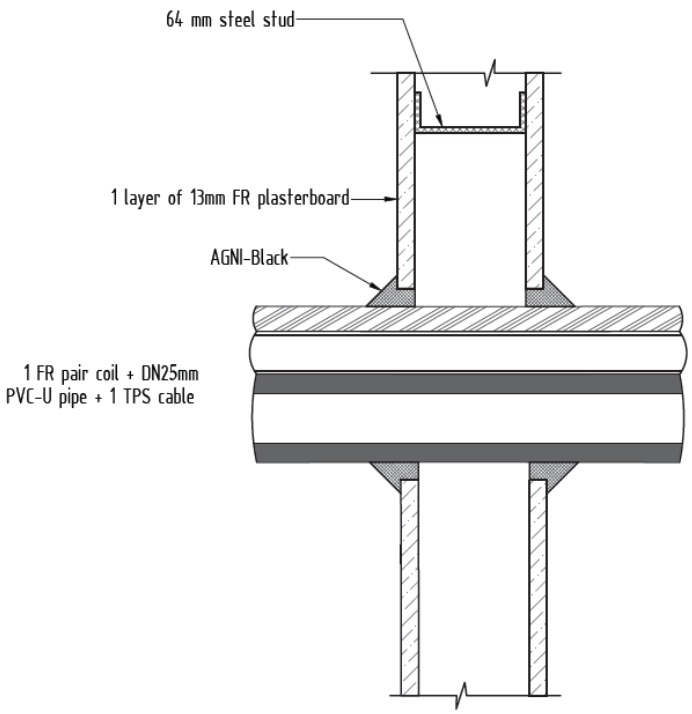


Service penetration details	
Service	One FR Insulated Pair Coil
Aperture Size	138.3mm
Annular Spacing	Min: 11.0mm, Max: 63.9mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
Products	AGNI-Black
Procedure	1. AGNI-Black applied into annular gap to the depth of the lining, 13mm (nominal). 2. Up to 65mm (width) x 20mm (height) AGNI-Black cone was applied around the pipe.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	No failure at 63 minutes

5.10 Specimen 9



Service penetration details	
Service	One FR Insulated Pair Coil **+** Electrical Cable 450/750V 2C+E **+** Marley uPVC 25mm
Aperture Size	141.5mm
Annular Spacing	Min: 14.1mm, Max: 46.3mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of separating element
Products	AGNI-Black
Procedure	1. AGNI-Black applied into annular gap to the depth of the lining, 13mm (nominal). 2. Up to 50mm (width) x 20mm (height) AGNI-Black cone was applied around the pipe.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	No failure at 63 minutes

6. Photos

6.1 Photos before the test

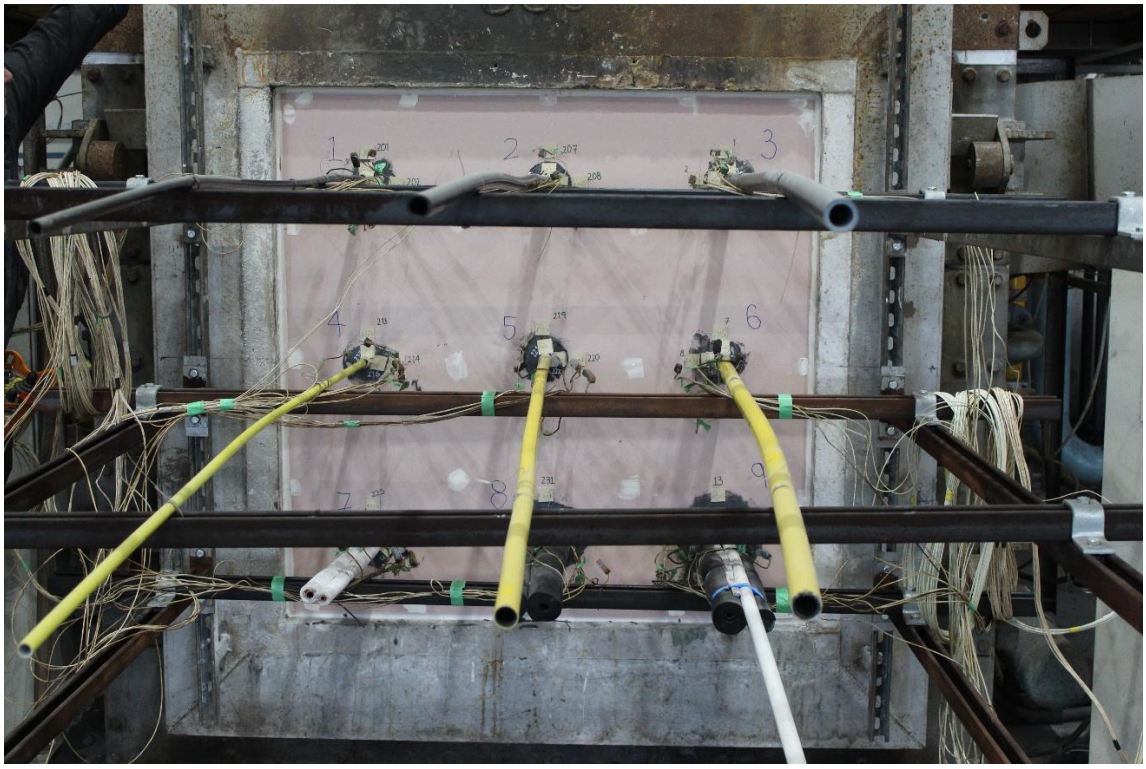


Figure 1 - Unexposed face prior to test commencement

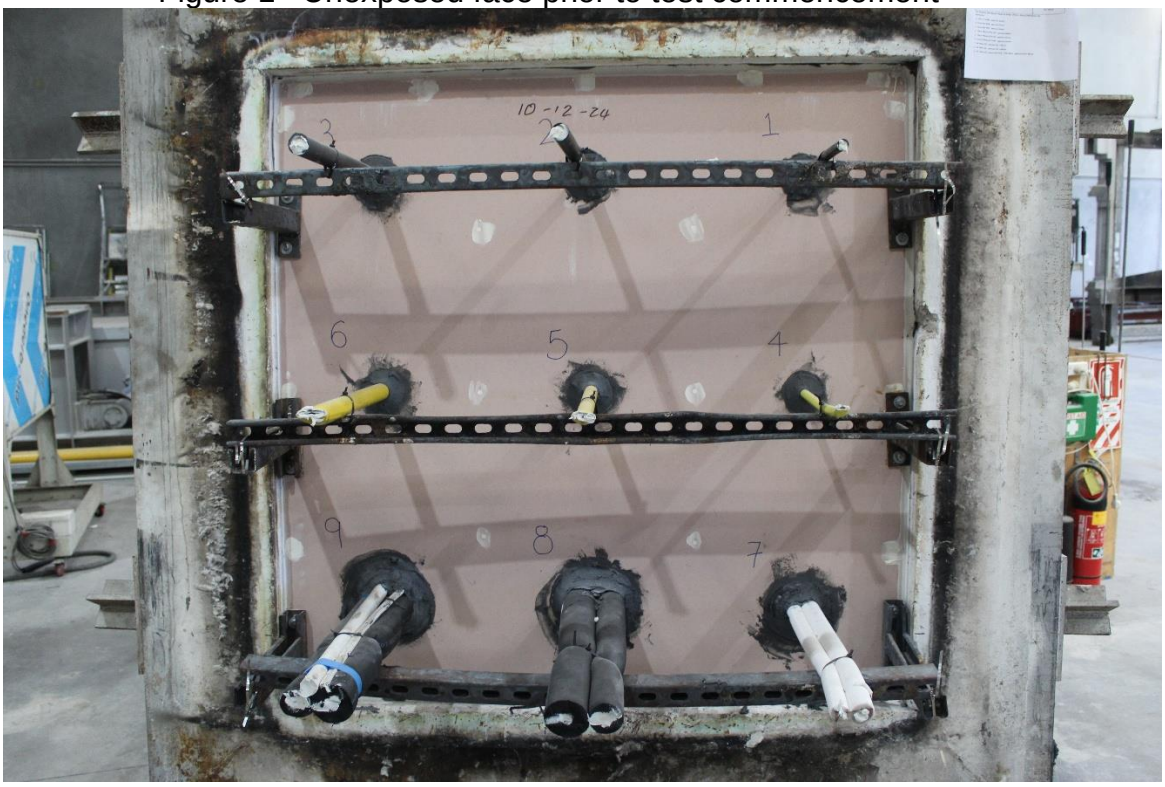


Figure 2 - Exposed face prior to test commencement