Regulatory Information Report

RIRF24127

Fire resistance test for penetrations through a vertical separating element

Client:	Agnitek Pty Ltd
Test method:	AS1530.4-2014
Report Date:	09/01/2025
Test number:	PF24127

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1.1 Document revision schedule

Revision #	Date	Description
1	09/01/2025	Issued to Client

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		09/01/2025
Authorised by:	Andrew Bain (Authorized signatory)		09/01/2025

ACCREDITED
IANZ
TESTING LABORATORY

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

2. Report Summary

Service penetration was 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	**3 x AGNI-Boxes – empty**	**88**	**88**	**-/60/60**
2	**AGNI-Box – empty**	**124NF**	**124NF**	**-/120/120**
3	**AGNI-Box – filled**	**100**	**34**	**-/90/30**
3a	*PE Pair Coil*	*100*	*34*	-
3b	*3 x PE Pair Coil (bundle)*	*100*	*100*	-
4	**AGNI-Box – filled**	**112**	**101**	**-/90/90**
4a	*Kelox with insulation*	*112*	*112*	-
4b	*Kelox (bare)*	*112*	*112*	-
4c	*3 x PE Pair Coil (bundle)*	*112*	*101*	-
5	**AGNI-Box – filled**	**100**	**66**	**-/90/60**
5a	*Kelox with insulation*	*100*	*97*	-
5b	*Kelox (bare)*	*100*	*66*	-
5c	*25mm Pex/Al/Pex Pipe with Armaflex*	*100*	*100*	-

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.

Testing date:

02/12/2024

Installation completion date:

27/11/2024

Termination of The Test:

The test was discontinued at 124 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 PF24127. 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 × 1200mm

Materials		
1.3	Item / Product Name	Steel Stud
	Dimensions	Width / Height (W/H): 64mm x 1200mm
	Installation	Used to construct studs and nogs in steel frame
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

4.2 Specimens

Services		
2.1	Item / Product Name	AGNI-Box
	Dimensions	Width / Height (W/H): 300mm x 151mm (OD)
	Construction	The Black AGNI-Box is constructed using 0.90bmt steel measuring 297mm (width) x 150mm (height) x 200mm (depth). A 50mm recessed steel lip surrounds all four side of both faces of the AGNI-Box and holds two layers of 3.5mm intumescent material that are cut to size. The recessed space on both faces of the AGNI-box was fitted with 50mm thick foam to both faces of the AGNI-Box.
2.2	Item / Product Name	Polyethylene Pair Coil Insulated Refrigeration Tube
	Copper Tube 1	Diameter (OD): 19.05mm
		Wall Thickness (T): 1.14mm
	Copper Tube 2	Diameter (OD): 9.52mm
		Wall Thickness (T): 0.81mm
	Insulation	Thickness (T): 8mm
		Material: Polyethylene
2.3	Item / Product Name	KM133 KELOX Plus CEW Insulated Pipe
	Dimensions	Pipe Diameter (ID): 14.7mm
		Pipe Diameter (OD): 20.0mm
		Pipe Thickness (T): 2.65mm
		PE Insulation Thickness (T): 13mm
2.4	Item / Product Name	KM133 KELOX Plus CEW Insulated Pipe
	Dimensions	Pipe Diameter (ID): 20mm
		Pipe Diameter (OD): 25mm
		Pipe Thickness (T): 2.5mm
		PE Insulation Thickness (T): 13mm
2.5	Item / Product Name	KELOX PE-RT MULTILAYER PIPE
	Dimensions	Diameter (ID): 14.7mm
		Diameter (OD): 20.0mm
		Thickness (T): 2.65mm

2.6	Item / Product Name	DN25 SDR9 PEX PIPE
	Dimensions	Diameter (ID): 19.5mm
		Diameter (OD): 26.0mm
		Thickness (T): 3.25mm
2.7	Item / Product Name	ARMAFLEX 25mm
	Dimensions	Diameter (ID): 25mm
		Diameter (OD): 59mm
		Thickness (T): 17mm

Sealants		
3.1	Item / Product Name	AGNI-Seal
	Dimensions	600mL Sausage
	Installation	Used to seal around edge of separating element and in all specimens

Fixings		
4.1	Item / Product Name	Self Tapping Screw
	Dimensions	41mm
	Installation	Used to secure AGNI-Box to steel frame
4.2	Item / Product Name	Self-Tapping Screw
	Dimensions	10g x 16mm
	Installation	Used to construct AGNI-Box steel frame
4.3	Item / Product Name	AGNI-Strap
	Dimensions	Width / Length (W/L): 4.6mm x 450mm
	Installation	Used to secure AGNI-Shield

Intumescent		
5.1	Item	AGNI-Shield
	Dimensions	Width (W): 300mm
		Thickness (T): 13mm
	Installation	Installed around services in specimen 2 and 4

Other		
6.1	Item / Product Name	Steel Stud 64mm 0.55bmt
	Dimensions	Width / Height (W/H): 300mm x 151mm
	Installation	Used to create frame for the AGNI-Box

5. Test Results

5.1 Observations during the test

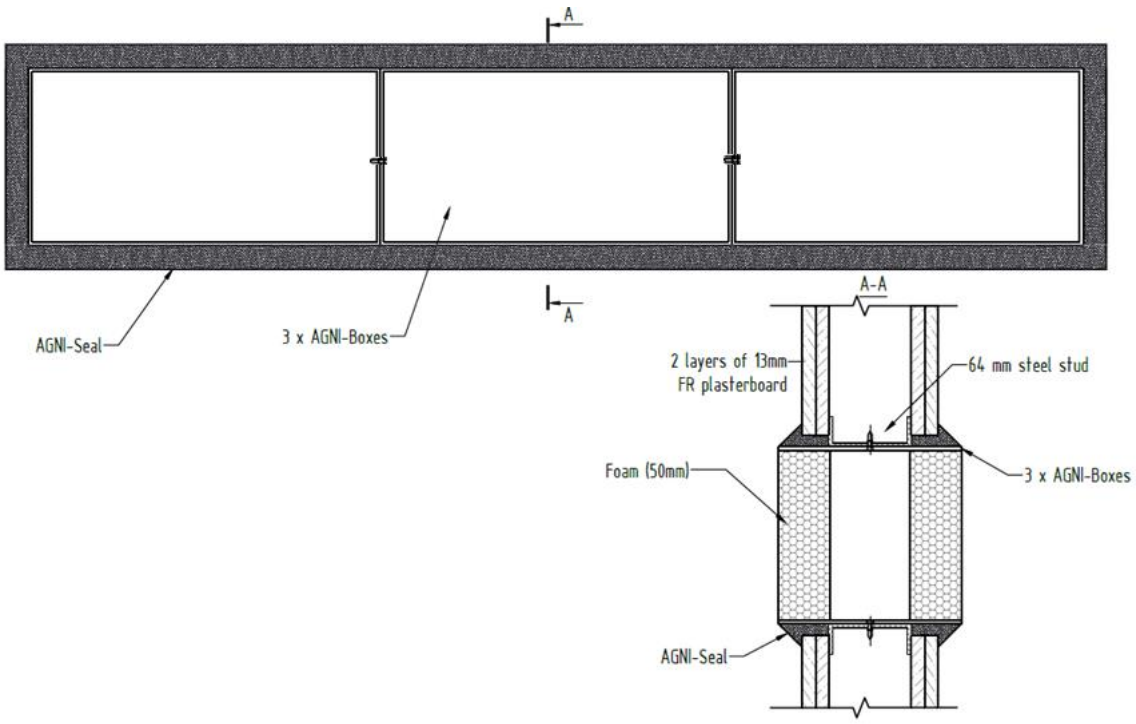
Time min	Test face	SP#	OBSERVATIONS/REMARKS
1	U	1, 3	Smoke coming from the edge of the AGNI-Box foam face
3	U	5	Smoke coming from the edge of the AGNI-Box foam face
88	U	1	Cotton pad test performed on AGNI-Box “B” – FAIL
100	U	3, 5	Naked flame observed + 10sec – FAIL
112	U	4	Naked flame observed + 10sec – FAIL
124			**TEST DISCONTINUED**

NOTE: E – Exposed Face (inside furnace)

U – Unexposed Face (outside furnace)

SE – Separating element

5.2 Specimen 1

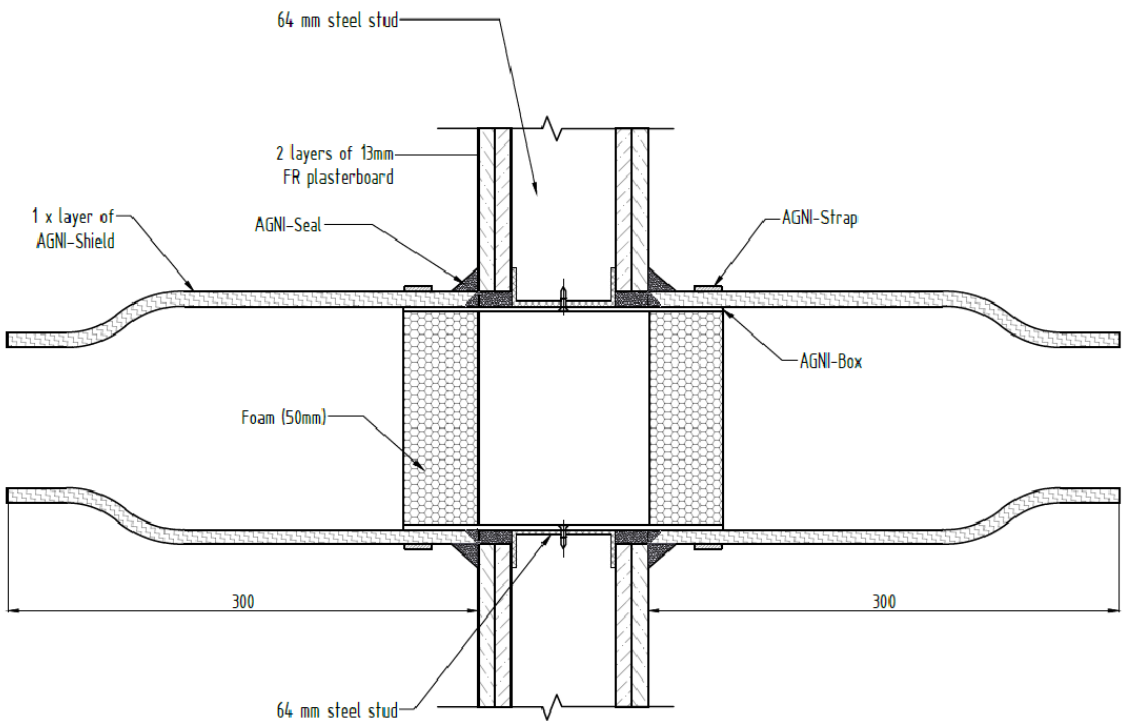


Service penetration details	
Service	Three AGNI-Boxes
Aperture Size	903 x 151mm
Annular Spacing	Min: 0mm, Max: 5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
System description	1. Three AGNI-Boxes were fixed together in the centre of the adjoining surface using the bolts and nuts through the pre-punched holes in the centre. 2. All gaps between the AGNI-Boxes were sealed with a 5mm (nominal) thick bead of AGNI-Seal. 3. 64mm steel stud was used to create a frame for the aperture of the three AGNI-Boxes. 4. 41mm screws were used to secure AGNI-Boxes to the aperture's steel framing. 5. A 40mm x 40mm AGNI-Seal sealant cone was applied to the perimeter of the three AGNI-Boxes, sealing between the AGNI-Boxes and the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	88 minutes
Insulation	88 minutes

5.3 Specimen 2



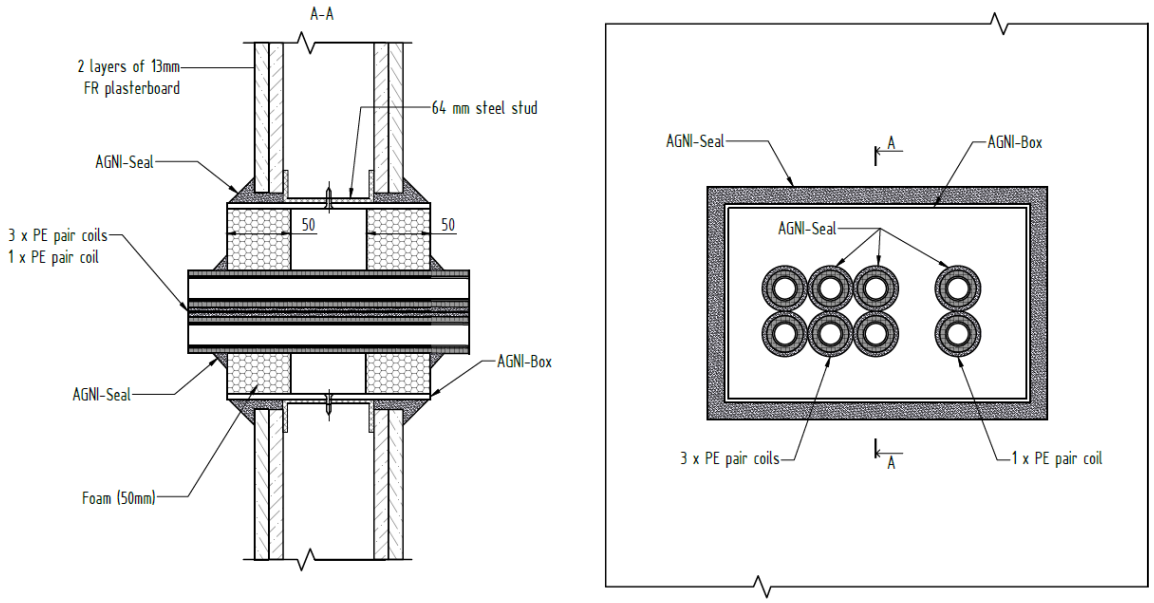
Service penetration details	
Service	AGNI-Box – empty
Aperture Size	297mm x 150mm
Annular Spacing	Min: 0mm, Max: 1mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
System description	1. 64mm steel stud was used to create a frame for the AGNI-Box. 2. One AGNI-Box was installed and secured to the steel stud frame using 41mm screws on each of the four sides of the AGNI-Box. 3. A 10mm (nominal) thick bead of AGNI-Seal was applied to seal between the AGNI-Box and the separating element. 4. One revolution of 300mm wide AGNI-Shield with a 100mm overlap was wrapped around the AGNI-Box.

	5. The AGNI-Shield was secured using two AGNI-Straps, applied 50mm from each end of the AGNI-Shield. 6. 10mm (nominal) thick AGNI-Seal was applied to seal between the AGNI-Shield and the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 124 minutes
Insulation	No failure at 124 minutes

5.4 Specimen 3



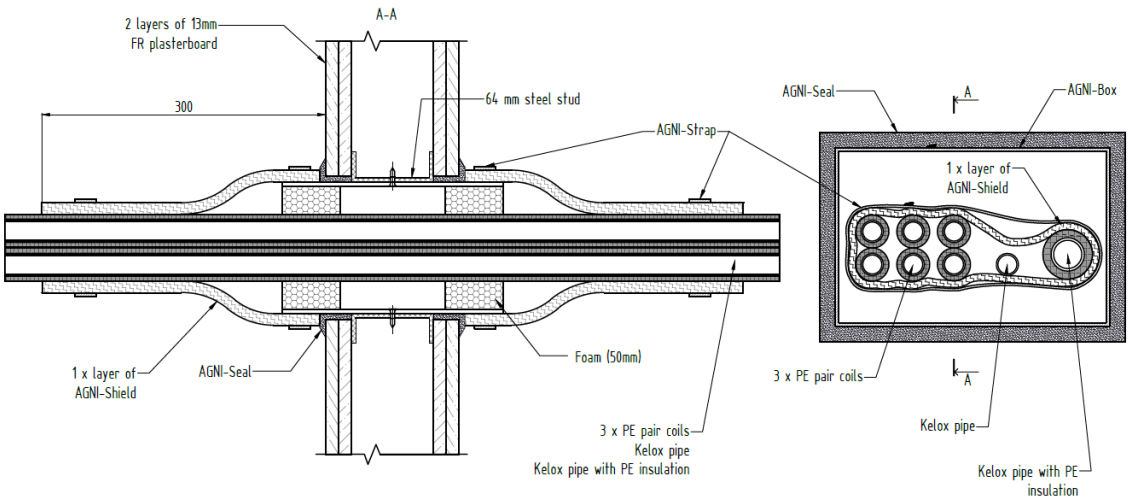
Service penetration details	
Service	AGNI-Box – filled (1 x PE Pair Coil + 3 x PE Pair Coils)
Aperture Size	297mm x 150mm
Annular Spacing	Min: 0mm, Max: 1mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
System description	1. 64mm steel stud was used to create a frame for the AGNI-Box. 2. AGNI-Box was installed and secured to the steel stud frame using 41mm screws on each of the four sides of the AGNI-Box. 3. A 40mm x 40mm AGNI-Seal sealant cone was applied to the perimeter of the AGNI-Box, sealing between the AGNI-Box and the separating element. 4. Services were installed passing through the AGNI-Box. 5. The foam face of the AGNI-Box was cut to fit around the services. 6. 10mm (nominal) AGNI-Seal was applied to seal between the services and the foam face of the AGNI-Box.

Test results	
Structural adequacy	Not applicable
Integrity	100 minutes
Insulation	34 minutes

Specimen #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
3	**AGNI-Box – filled**	**100**	**34**	**-/90/30**
3a	*PE Pair Coil*	*100*	*34*	-
3b	*3 x PE Pair Coil (bundle)*	*100*	*100*	-

5.5 Specimen 4



Service penetration details	
Service	AGNI-Box – filled (Kelox with insulation + Kelox + 3 x PE Pair Coils)
Service Support	No support required
Aperture Size	297mm x 150mm
Annular Spacing	Min: 0mm, Max: 1mm

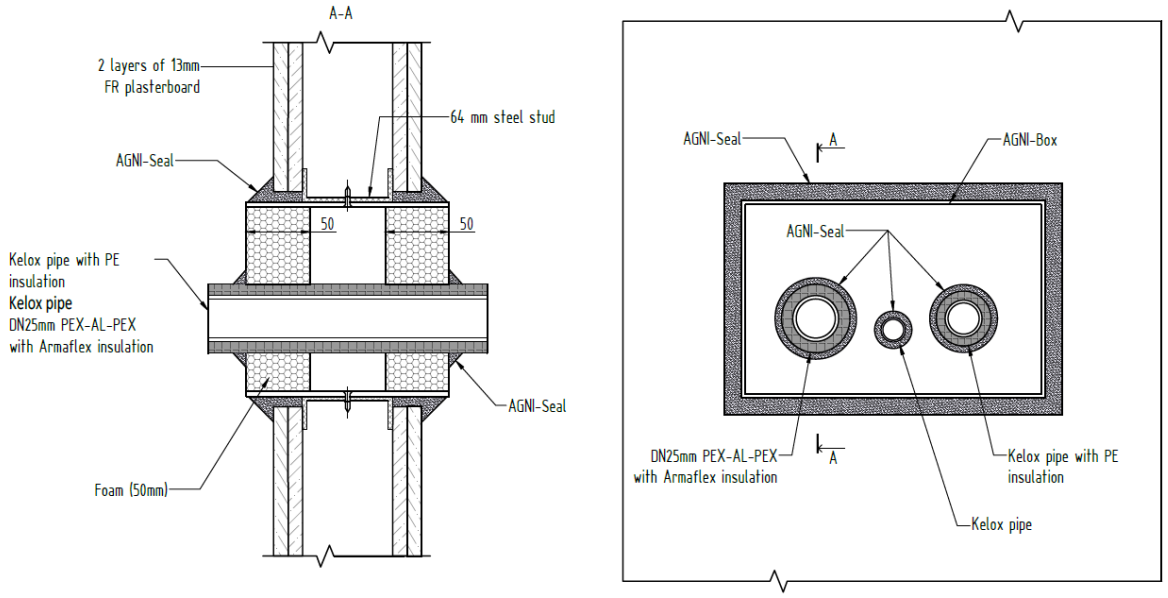
Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
System description	1. 64mm steel stud was used to create a frame for the AGNI-Box. 2. One AGNI-Box was installed and secured to the steel stud frame using 41mm screws on each of the four sides of the AGNI-Box. 3. A 10mm (nominal) thick bead of AGNI-Seal was applied to seal between the AGNI-Box and the separating element. 4. Services were installed passing through the AGNI-Box. 5. The foam face of the AGNI-Box was cut to fit around the services. 6. One revolution of 300mm wide AGNI-Shield with a 100mm overlap was wrapped around the AGNI-Box. 7. The AGNI-Shield was secured using two AGNI-Straps, applied 50mm from each end of the AGNI-Shield.

	8. 10mm (nominal) thick AGNI-Seal was applied to seal between the AGNI-Shield and the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	112 minutes
Insulation	101 minutes

Specimen #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
4	**AGNI-Box – filled**	**112**	**101**	**-/90/90**
4a	*Kelox with insulation*	*112*	*112*	-
4b	*Kelox (bare)*	*112*	*112*	-
4c	*3 x PE Pair Coil (bundle)*	*112*	*101*	-

5.6 Specimen 5



Service penetration details	
Service	AGNI-Box – filled (Kelox with insulation + Kelox + 25mm Pex/Al/Pex with Armaflex)
Aperture Size	297mm x 150mm
Annular Spacing	Min: 0mm, Max: 1mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
System description	1. 64mm steel stud was used to create a frame for the AGNI-Box. 2. AGNI-Box was installed and secured to the steel stud frame using 41mm screws on each of the four sides of the AGNI-Box. 3. A 40mm x 40mm AGNI-Seal sealant cone was applied to the perimeter of the AGNI-Box, sealing between the AGNI-Box and the separating element. 4. Services were installed passing through the AGNI-Box. 5. The foam face of the AGNI-Box was cut to fit around the services. 6. 10mm (nominal) AGNI-Seal was applied to seal between the services and the foam face of the AGNI-Box.

Test results	
Structural adequacy	Not applicable
Integrity	100 minutes
Insulation	66 minutes

Specimen #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
5	**AGNI-Box – filled**	**100**	**66**	**-/90/60**
5a	*Kelox with insulation*	*100*	*97*	-
5b	*Kelox (bare)*	*100*	*66*	-
5c	*25mm Pex/Al/Pex Pipe with Armaflex*	*100*	*100*	-

6. Photos

6.1 Photos before the test

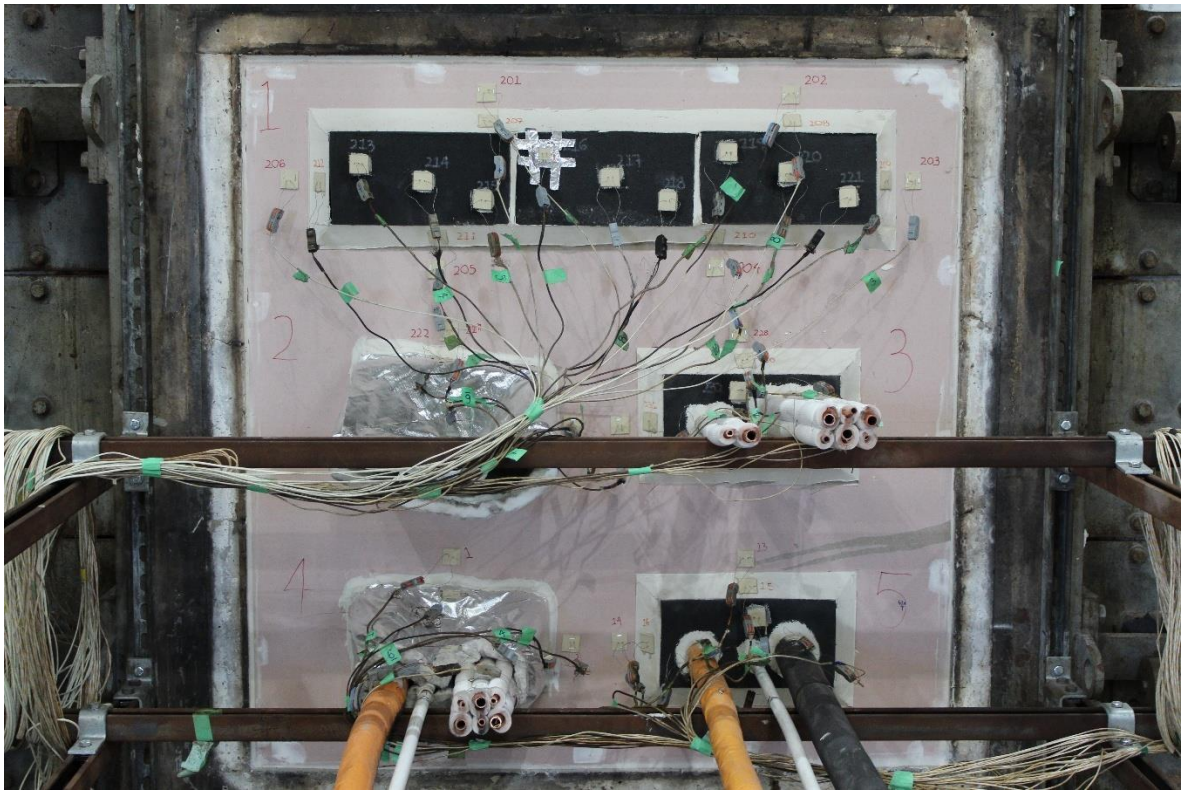


Figure 1 – Unexposed face prior to test commencement

Figure 2 – Exposed face prior to test commencement