Fire Testing Laboratory

Regulatory Information Report

RIRF25006

Fire resistance test for penetration through a vertical separating element

Client:	**Agnitek Pty Ltd**
Test method:	AS1530.4-2014
Report Date:	23/04/2025
Test number:	PF25006

Passive Fire Inspection and Test Services Limited
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1.1 Document revision schedule

Revision #	Date	Description
1	17/04/2025	Issued to Client
2	23/04/2025	Typo errors are corrected

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		23/04/2025
Authorised by:	Andrew Bain (Authorized signatory)		23/04/2025

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 a 25mm thick Shaftliner/16mm fire rated plasterboard vertical separating element.

Specimen #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
1	30mm Aluminium Cable	63NF	63NF	-/60/60
2	100mm Copper Pipe	63NF	6	-/60/-
3	Cable Bundle – 10 x Data Cables	63NF	63NF	-/60/60
4	4.8mm Optic Cable	63NF	63NF	-/60/60
5	Cable Bundle – 8 x Alarm Cables	63NF	63NF	-/60/60
6	2 x separate cables and 1 x cable (spaced 20mm apart) – 1 x Data, 1 x TPS and bundle of 2 x Alarm cables	63NF	63NF	-/60/60
6a	*2 x Alarm Cables*	63NF	63NF	-/60/60
6b	*Data Cable*	63NF	63NF	-/60/60
6c	*TPS Cable*	63NF	63NF	-/60/60
7	60mm Steel Pipe + Alarm Cable	63NF	17	-/60/15
8	16mm Pex Pipe	63NF	63NF	-/60/60
9	25mm Copper Cable	63NF	63NF	-/60/60
10	25mm PVC Rigid Conduit *(empty)*	63NF	63NF	-/60/60
11	20mm Pex Pipe	63NF	63NF	-/60/60
12	25mm PVC Rigid Conduit *(filled – 3 x Data Cables + 3 x Alarm Cables + 3 x 4.8mm Optic Cables)*	63NF	63NF	-/60/60

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

FTSL - 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

Supplier/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 the fire side.

Testing date:

03/04/2025

Installation completion date:

24/03/2025

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 PF25006. 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

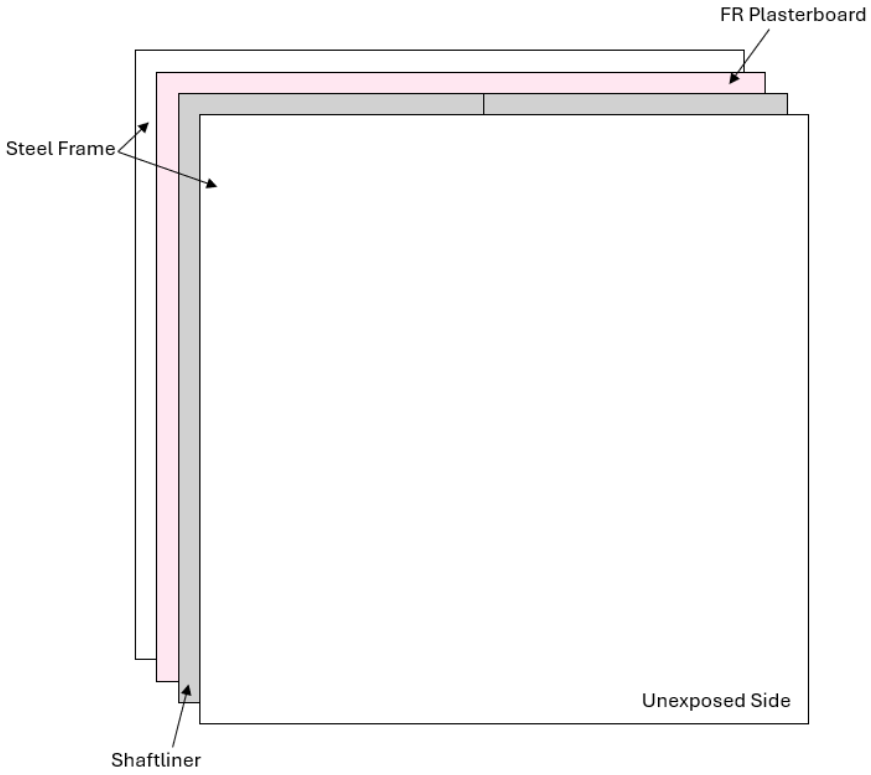


Figure 1 - Separating element drawing

Separating element		
1.1	Item	Shaftliner / FR Plasterboard Steel Framed Wall
	Dimensions	Width x Height: 1200mm x 1200mm Lining Thickness: 41mm
	Installation	25mm thick Shahtliner plasterboard and 16mm FR plasterboard were installed hard against each other, external steel stud frame on exposed and unexposed face was used as a support.

Materials		
1.3	Item	Steel Stud 0.50bmt
	Dimensions	Width x Height: 64mm x 1200mm
	Installation	Used to construct studs and nogs in steel frames
1.4	Item	Steel Track 0.50bmt
	Dimensions	Width x Height: 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 frames
1.7	Item	FR Plasterboard
	Dimensions	Width x Height: 1200mm x 1200mm Thickness: 16mm
	Installation	1 layer installed to the interior of the steel studs on the exposed side of the separating element
1.8	Item	Shaftliner Plasterboard
	Dimensions	Width x Height: 600mm x 1200mm Thickness: 25mm
	Installation	1 layer installed to the interior of the steel studs on the unexposed side of the separating element
1.9	Item / Product Name	AGNI-Seal
	Installation	Used to between the wall linings and the refractory frame of the separating element

4.2 Specimens

Services		
2.1	Item	Multicore Aluminium Flexible Rubber (Fixed Wiring) 4 Core + Earth Cable
	Cable	Overall Diameter: 30.5mm
		Sheath Material: E-Rubber S-20
		Sheath Thickness: 3.0mm
	Core	Number of Cores: 4 (circular shaped)
		Overall Diameter: 9.2mm
		Conductor Diameter: 0.53mm
		Conductor Material: Aluminium
		Insulation Material: LSFLEX R-70
		Insulation Thickness: 1.3mm
	Item	100x1.63 B 100mm Copper Pipe

2.2	Dimensions	Diameter (OD): 104.8mm
		Diameter (ID): 101.5mm
		Wall Thickness (T): 1.65mm
2.3	Item	CAT6 Blue Solid Cable
	Cable	Overall Diameter: 6.3mm
		Sheath Material: PVC
		Sheath Thickness: 0.5mm
	Core	Overall Diameter: 2.6mm
		Conductor Diameter: 0.24mm
		Conductor Material: Copper
		Insulation Material: V-90 PVC
		Insulation Thickness: 0.65mm
2.4	Item	Optical Cable
	Cable	Overall Diameter: 4.8mm
		Sheath Thickness: 1.3mm
	Core	Overall Diameter: 2.15mm
		Conductor Diameter: 0.94mm
		Conductor Material: Optic Fibre
		Insulation Thickness: 0.5mm
2.5	Item	2 Core 0.75mm² Red Fire Alarm Cable TCW
	Cable	Overall Diameter: 6.95mm
		Sheath Material: 5V-90 PVC
		Sheath Thickness: 1.2mm
	Core	Number of Cores: 2 (circular shaped)
		Overall Diameter: 2.6mm
		Conductor Diameter: 0.24mm
		Conductor Material: Copper
		Insulation Material: V-90 PVC
		Insulation Thickness: 0.65mm
2.6	Item	Firesense cable - Core 1.5mm²
	Cable	Overall Diameter: 6.5mm x 3.75mm

		Sheath Material: PVC
		Sheath Thickness: 0.54mm
	Core	Number of Cores: 2 (circular shaped)
		Overall Diameter: 2.62mm
		Conductor Diameter: 0.63mm
		Conductor Material: Copper
		Insulation Material: V-90 PVC
		Insulation Thickness: 0.85mm
2.7	Item	Electrical Cable 450/750V 2C + E 2.5mm²
	Cable	Width x Depth: 12mm x 5.5mm
		Sheath Material: 3V-90 PVC
		Sheath Thickness: 0.92mm
	Core	Number of Cores: 2 (circular shaped)
		Overall Diameter: 3.3mm
		Conductor Diameter: 0.64mm
		Conductor Material: Copper
		Insulation Material: V-90 PVC
		Insulation Thickness: 0.6mm
	Earth	Overall Diameter: 3.2mm
		Wire Diameter: 0.64mm
2.8	Item	60mm Steel Pipe
	Dimensions	Diameter (OD): 60.5mm
		Diameter (ID): 53.6mm
		Wall Thickness (T): 3.45mm
2.9	Item	DN16 PEX Pipe
	Dimensions	Diameter (OD): 16.15mm
		Diameter (ID): 11.75mm
		Wall Thickness (T): 2.2mm
2.10	Item	Cable X-90 0.6/1 kV CU 3C+E
	Cable	Overall Diameter: 19.3mm
		Sheath Material: PVC

		Sheath Thickness: 1.98mm
	Core	Number of Cores: 3 (circular shaped)
		Overall Diameter: 6.64mm
		Conductor Diameter: 1.7mm
		Conductor Material: Copper
		Insulation Material: X-90 PVC
		Insulation Thickness: 1.04mm
	Earth	Overall Diameter: 4.57mm
		Conductor Diameter: 1.01mm
2.11	Item	uPVC Electrical Conduit 25mm
	Dimensions	Diameter (OD): 26.9mm
		Diameter (ID): 23.0mm
		Wall Thickness (T): 1.95mm
2.12	Item	DN20 PEX Pipe
	Dimensions	Diameter (OD): 20.4mm
		Diameter (ID): 14.3mm
		Wall Thickness (T): 3.05mm

Sealants		
	Item	AGNI-Seal
	Dimensions	600mL sausage
	Item	AGNI-Black
	Dimensions	310mL Cartridge

Intumescent		
	Item	AGNI-Wrap 50
	Dimensions	Width: 50mm Thickness: 3.5mm

Insulation		
	Item	AGNI-Shield

	Dimensions	Width: 50mm Thickness: 13mm

5. Test Results

5.1 Observations during the test

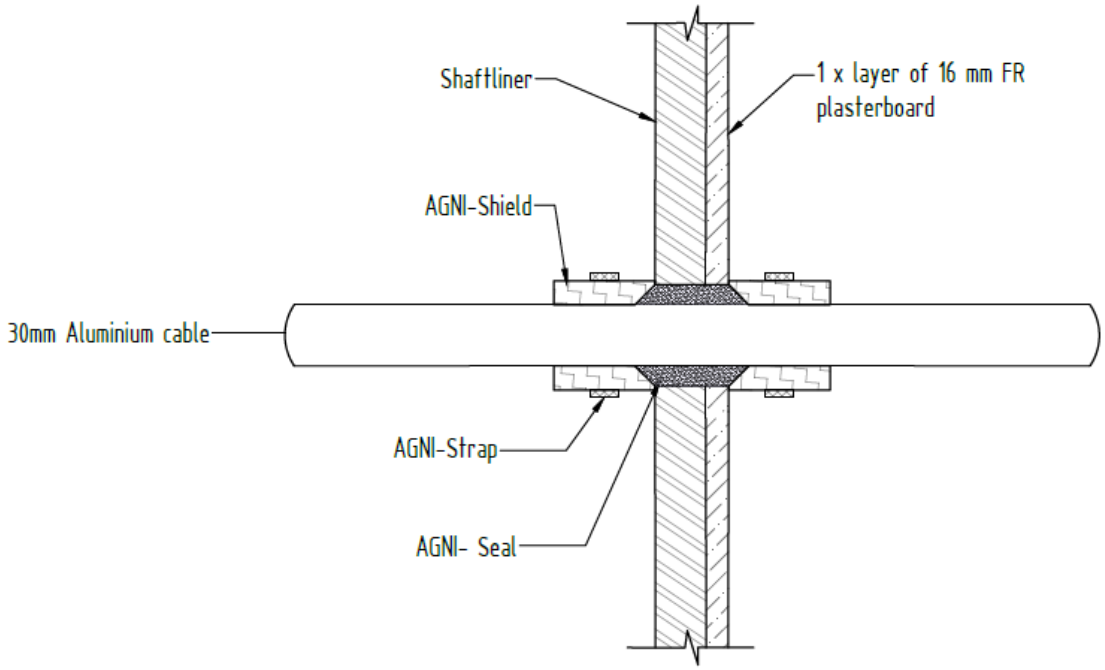
Time min	Test face	SP#	OBSERVATIONS/REMARKS
			No major observations during the test
63			**TEST DISCONTINUED**

NOTE: E – Exposed Face (inside furnace)

U – Unexposed Face (outside furnace)

SE – Separating element

5.2 Specimen 1

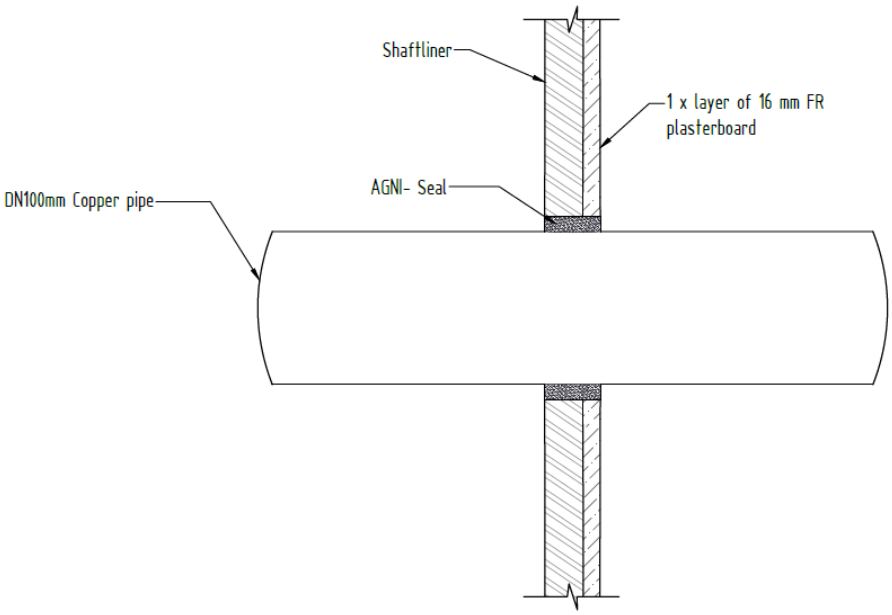


Service penetration details	
Service	Multicore Aluminium Flexible cable 4 Core + Earth Cable
Aperture Size	44.4mm
Annular Spacing	Min: 6.4mm, Max: 7.5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Seal, AGNI-Shield, AGNI-Strap
Procedure	1. Sealant applied to the full depth of the annular space, 41mm (nominal) deep and finished flush with the separating element. 2. 10mm sealant cone applied around the service. 3. One revolution of 50mm wide AGNI-Shield with a 50mm overlap wrapped around the cable and secured using AGNI-Strap in the centre.

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

5.3 Specimen 2

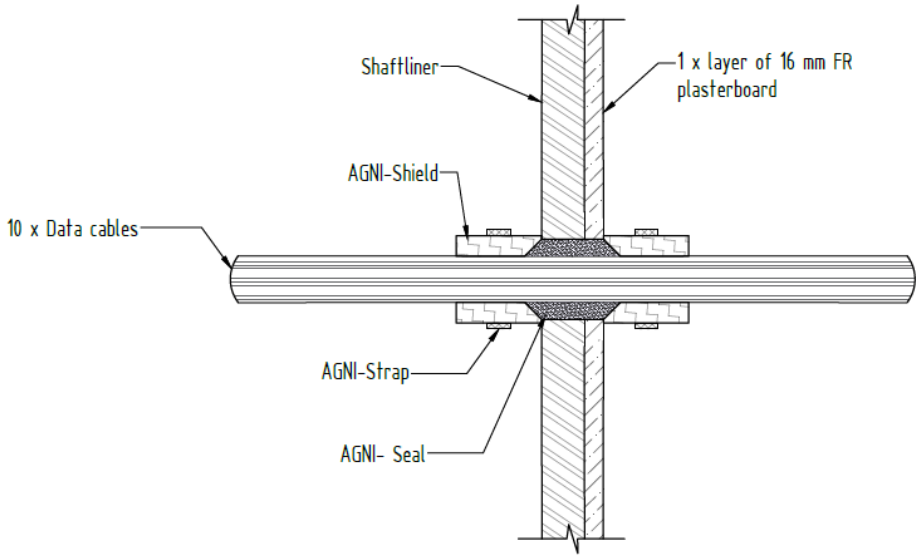


Service penetration details	
Service	100mm Copper Pipe
Aperture Size	122.9mm
Annular Spacing	Min: 8.3mm, Max: 9.8mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Seal
Procedure	Sealant applied to the full depth of the annular space, 41mm (nominal) deep and finished flush with the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	6 minutes

5.4 Specimen 3

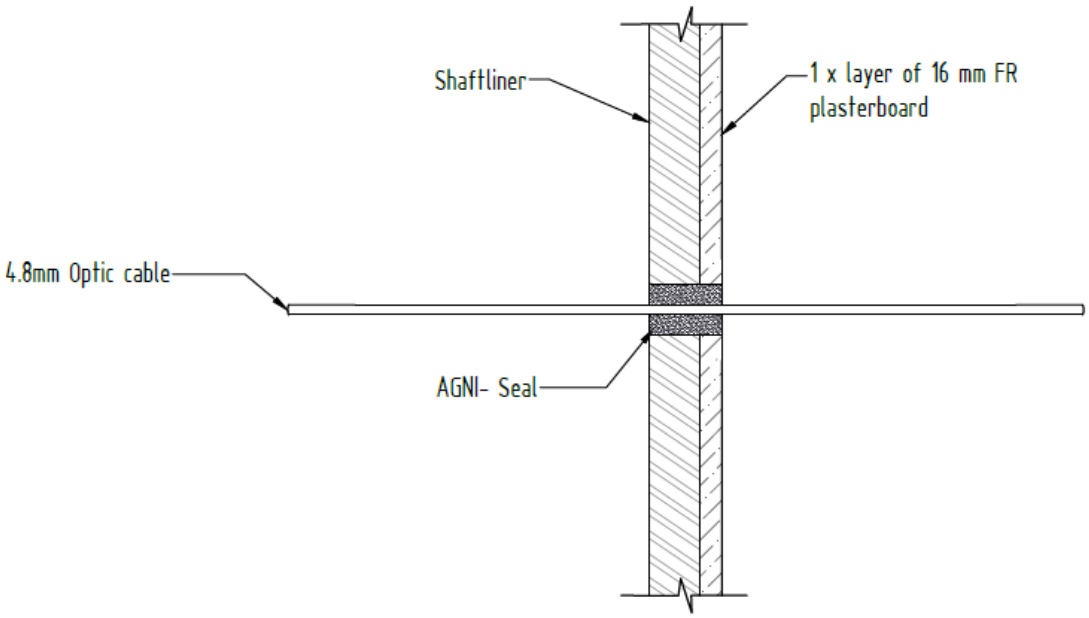


Service penetration details	
Service	CAT6 Blue Solid Cable x 10
Aperture Size	43.8mm
Annular Spacing	Min: 6.4mm, Max: 9.5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Seal
Procedure	1. Sealant applied to the full depth of the annular space, 41mm (nominal) deep and finished flush with the separating element. 2. 10mm sealant cone applied around the service. 3. One revolution of 50mm wide AGNI-Shield with a 50mm overlap wrapped around the cable and secured using AGNI-Strap in the centre.

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

5.5 Specimen 4

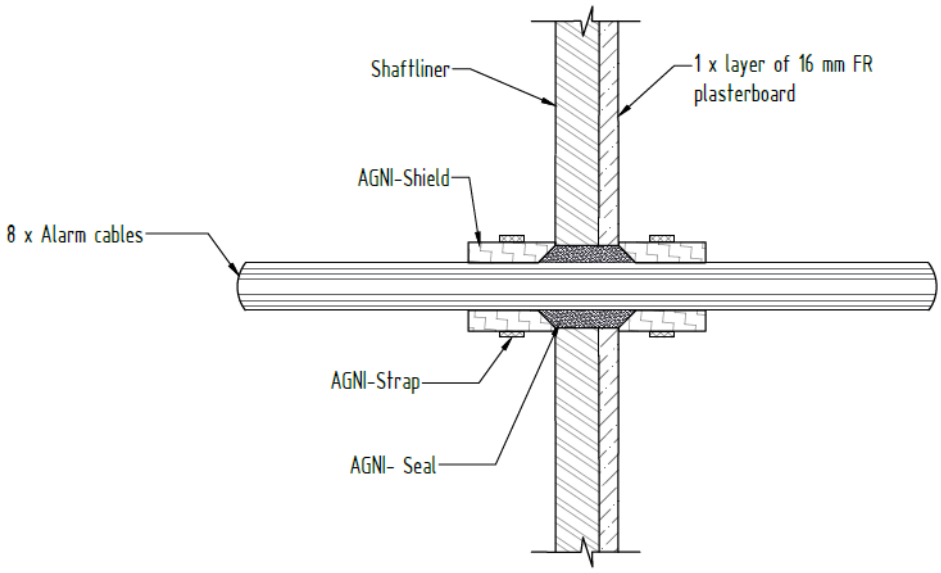


Service penetration details	
Service	4.5mm Optical Cable (NBN)
Aperture Size	14.5mm
Annular Spacing	Min: 4.0mm, Max: 5.7mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Seal
Procedure	1. Sealant applied to the full depth of the annular space, 41mm (nominal) deep and finished flush with the separating element.

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

5.6 Specimen 5

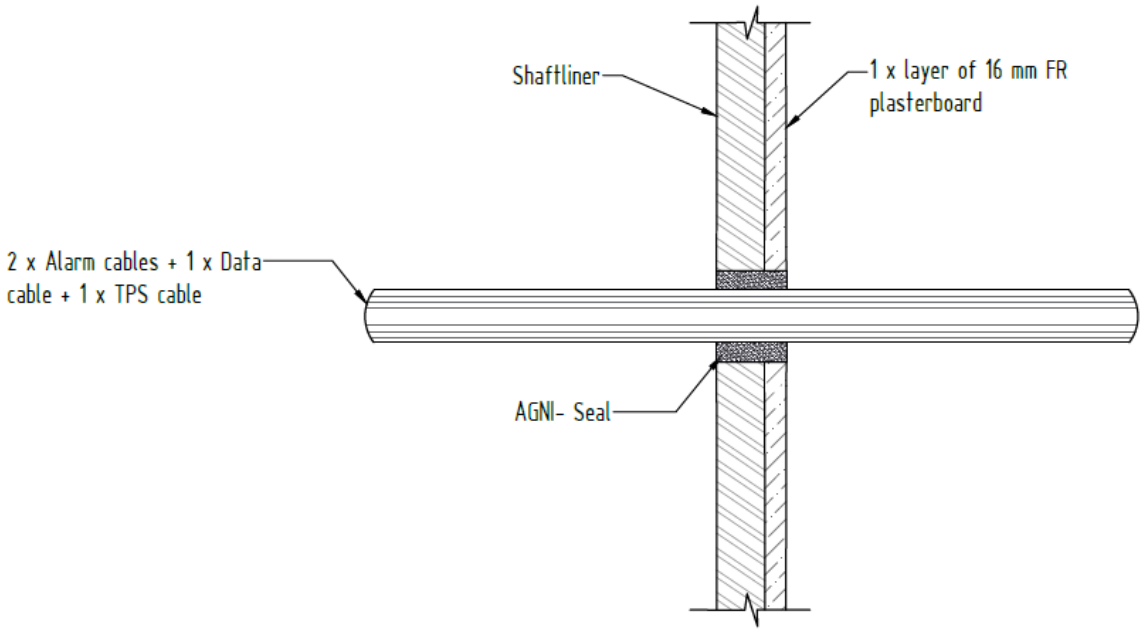


Service penetration details	
Service	Fire Alarm Cable TCW x 8
Aperture Size	40.0mm
Annular Spacing	Min: 3.2mm, Max: 8.5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Seal
Procedure	1. Sealant applied to the full depth of the annular space, 41mm (nominal) deep and finished flush with the separating element. 2. 10mm sealant cone applied around the service. 3. One revolution of 50mm wide AGNI-Shield with a 50mm overlap wrapped around the cable and secured using AGNI-Strap in the centre.

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

5.7 Specimen 6

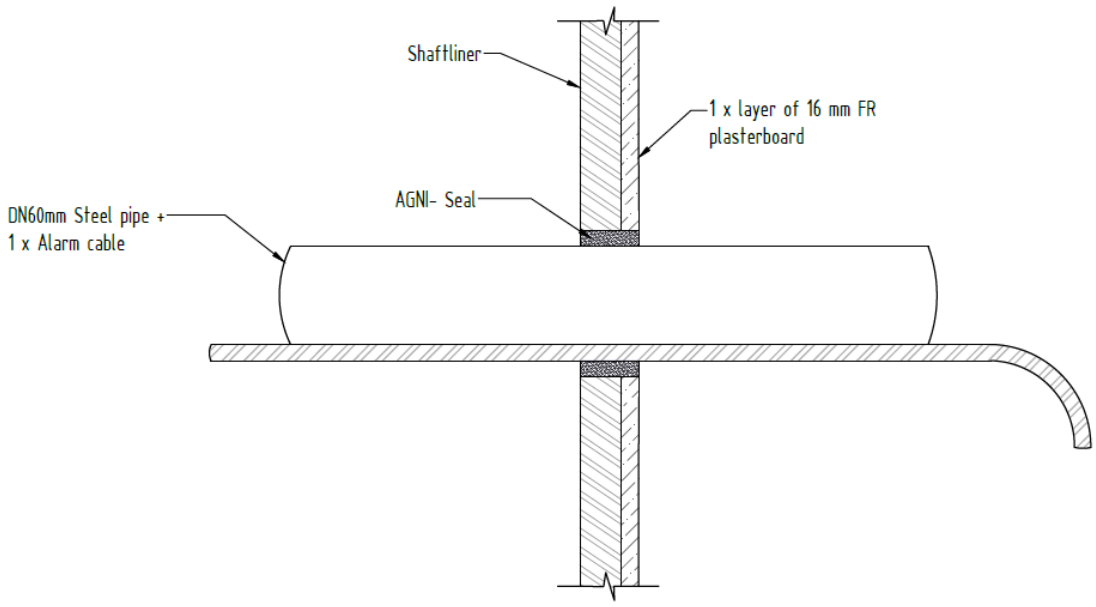


Service penetration details	
Service	2 x separate cables and 1 x cable (spaced 20mm apart) – 1 x Data, 1 x TPS and bundle of 2 x Alarm cables
Aperture Size	Alarm Cables: 13.7mm Data Cable: 12.9mm TPS Cable: 18.5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Seal
Procedure	1. Sealant applied to the full depth of the annular space, 41mm (nominal) deep and finished flush with the separating element.

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

5.8 Specimen 7

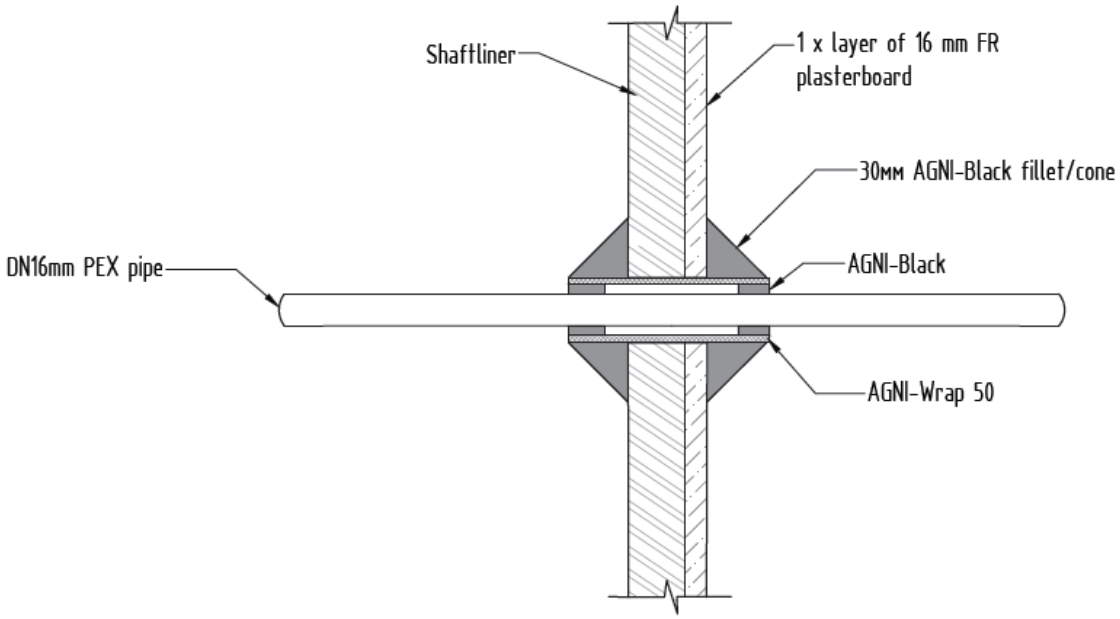


Service penetration details	
Service	60mm Steel Pipe + 1 x Alarm Cable
Aperture Size	80.5mm
Annular Spacing	Min: 8.6mm, Max: 11.4mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Seal
Procedure	1. Sealant applied to the full depth of the annular space, 41mm (nominal) deep and finished flush with the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 63 minutes
Insulation	17 minutes

5.9 Specimen 8

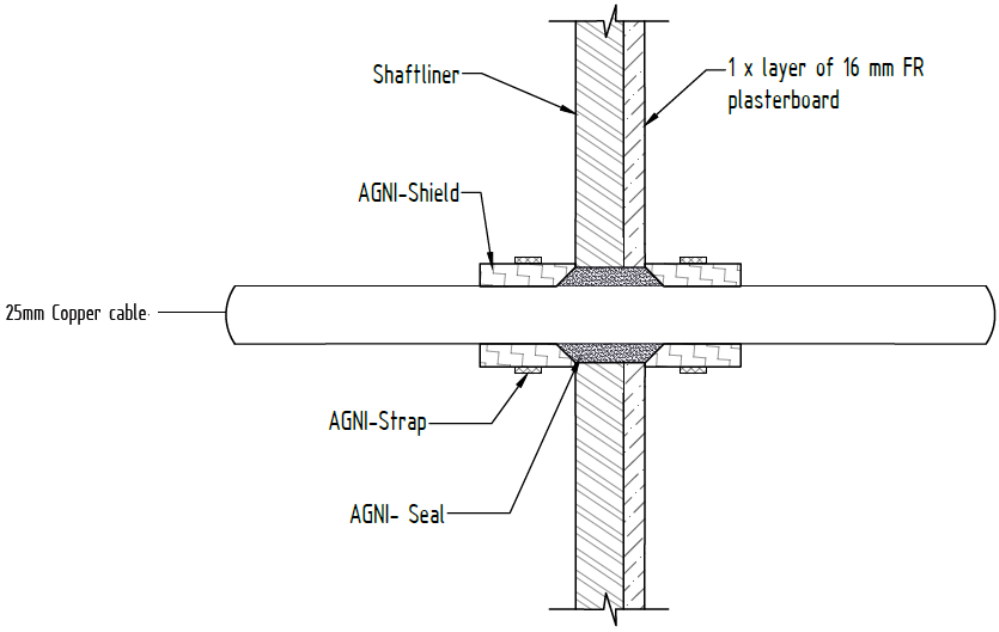


Service penetration details	
Service	16mm PEX pipe
Aperture Size	29.1mm
Annular Spacing	Min: 4.6mm, Max: 8.3mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Wrap 50, AGNI-Black
Procedure	1. Cut one revolution of AGNI-Wrap 50 to fit aperture. 2. Insert wrap into aperture 20mm (nominal) deep. 3. Sealant applied 10mm deep between the wrap and the pipe, finished flush with the wrap. 4. 30mm sealant cone applied around the wrap.

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

5.10 Specimen 9

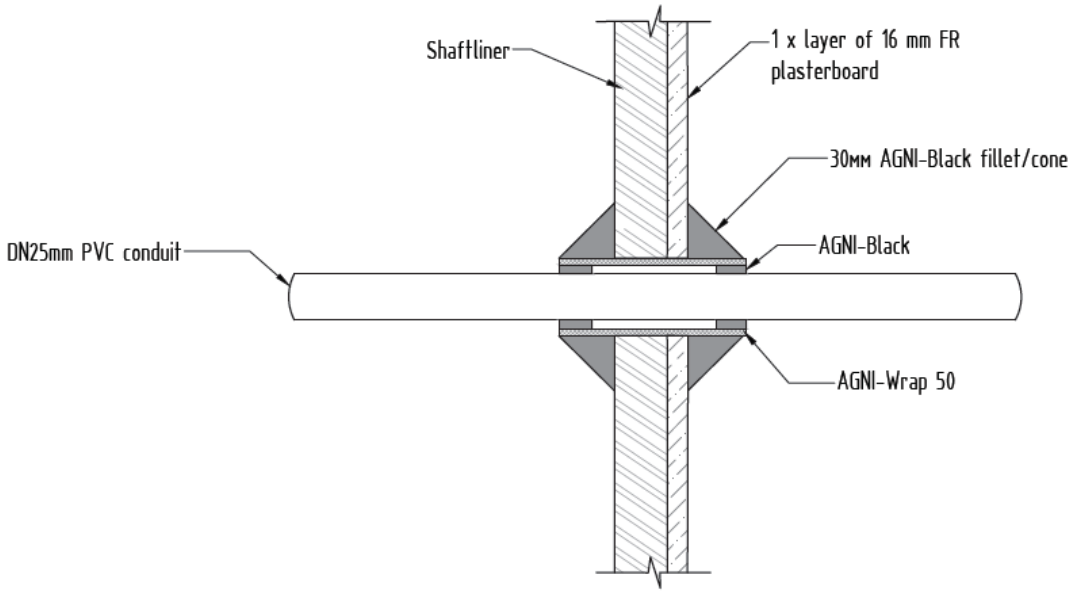


Service penetration details	
Service	Electric Cable X-90 0.6/1 kV CU
Aperture Size	45.0mm
Annular Spacing	Min: 11.3mm, Max: 14.4mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Seal
Procedure	1. Sealant applied to the full depth of the annular space, 41mm (nominal) deep and finished flush with the separating element. 2. 10mm sealant cone applied around the service. 3. One revolution of 50mm wide AGNI-Shield with a 50mm overlap wrapped around the cable and secured using AGNI-Strap in the centre.

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

5.11 Specimen 10

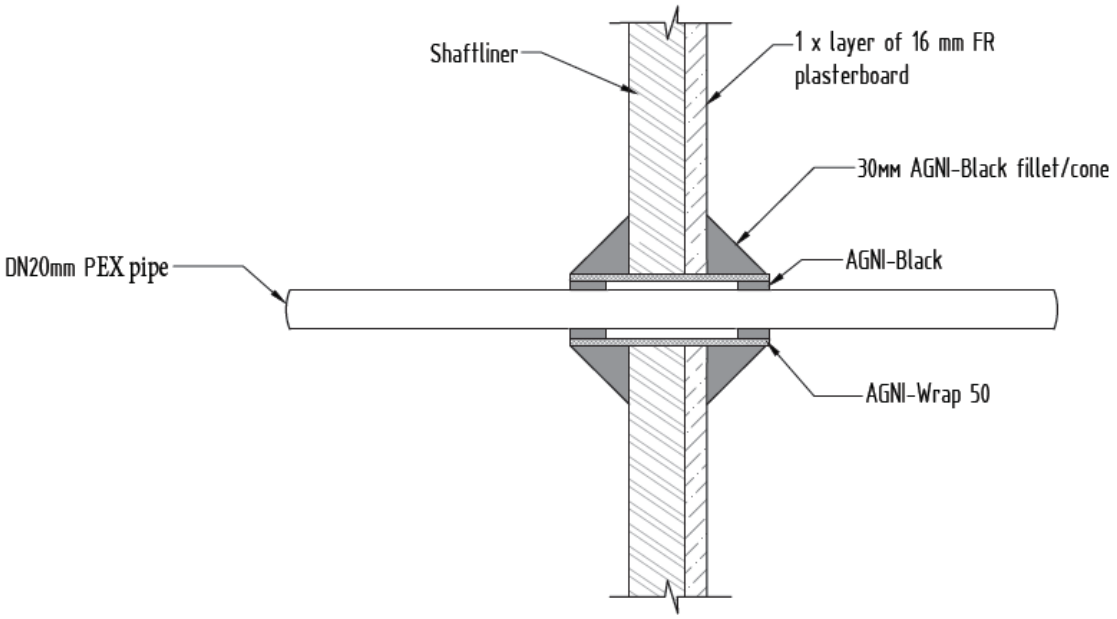


Service penetration details	
Service	uPVC Electrical Conduit 25mm (empty)
Aperture Size	40.0mm
Annular Spacing	Min: 6.7mm, Max: 8.3mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Wrap 50, AGNI-Black
Procedure	1. Cut one revolution of AGNI-Wrap 50 to fit aperture. 2. Insert wrap into aperture 20mm (nominal) deep. 3. Sealant applied 10mm deep between the wrap and the pipe, finished flush with the wrap. 4. 30mm sealant cone applied around the wrap.

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

5.12 Specimen 11

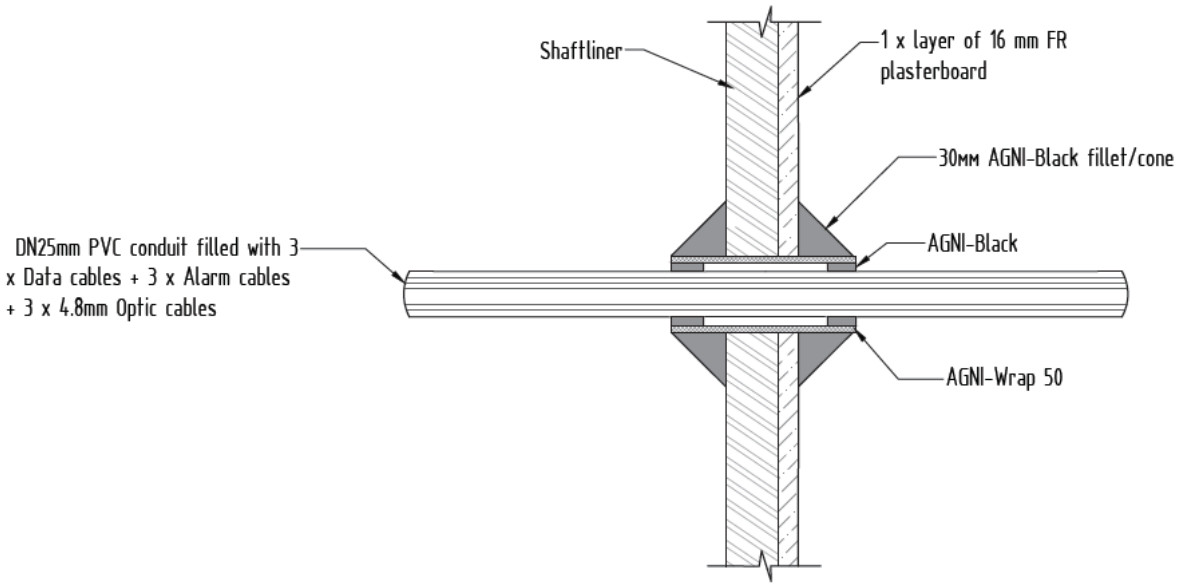


Service penetration details	
Service	20mm PEX pipe
Aperture Size	37.5mm
Annular Spacing	Min: 7.4mm, Max: 9.7mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Wrap 50, AGNI-Black
Procedure	1. Cut one revolution of AGNI-Wrap 50 to fit aperture. 2. Insert wrap into aperture 20mm (nominal) deep. 3. Sealant applied 10mm deep between the wrap and the pipe, finished flush with the wrap. 4. 30mm sealant cone applied around the wrap.

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

5.13 Specimen 12



Service penetration details	
Service	uPVC Electrical Conduit 25mm (filled) – 3 x Alarm cables + 3 x Data Cables + 3 x Optic Cables
Aperture Size	39.5mm
Annular Spacing	Min: 5.8mm, Max: 8.7mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Wrap 50, AGNI-Black
Procedure	1. Cut one revolution of AGNI-Wrap 50 to fit aperture. 2. Insert wrap into aperture 20mm (nominal) deep. 3. Sealant applied 10mm deep between the wrap and the pipe, finished flush with the wrap. 4. 30mm sealant cone applied around the wrap.

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

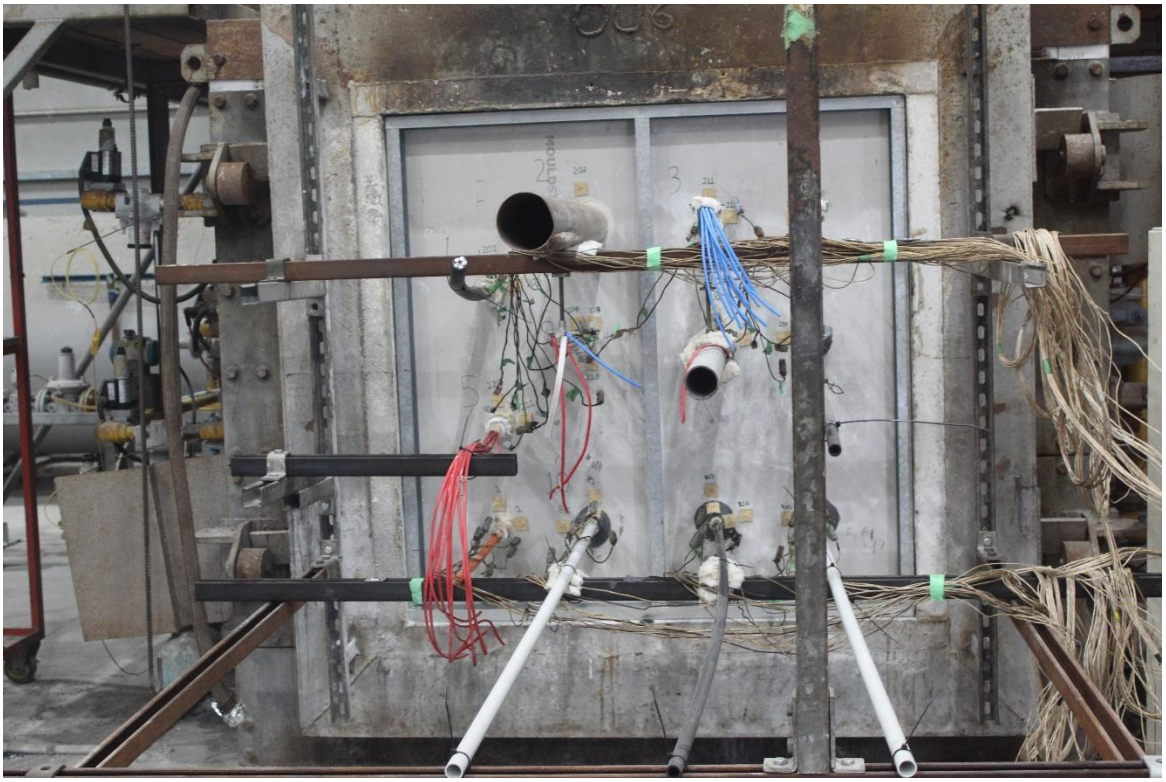


Figure 2 - Unexposed face prior to test commencement

Figure 3 - Exposed face prior to test commencement