Fire Testing Laboratory

Regulatory Information Report

RIRF25008

Fire resistance test for penetration through a vertical separating element

Client:	Agnitek Pty Ltd
Test method:	AS1530.4-2014
Report Date:	09/05/2025
Test number:	PF25008

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Table of Contents

1.1 Document revision schedule

Revision #	Date	Description
1	09/05/2025	Issued to Client

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		09/05/2025
Authorised by:	Andrew Bain (Authorized signatory)		09/05/2025

ACCREDITED
ILAC
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 64mm steel stud wall with two layers of 13mm fire rated plasterboard on each side.

Specimen #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
1	15mm Copper Pipe *with 38mm thick insulation*	123NF	123NF	-/120/120
2	50mm Copper Pipe *with 13mm thick insulation*	123NF	123NF	-/120/120
3	50mm Copper Pipe *with 32mm thick insulation*	123NF	123NF	-/120/120
4	32mm Copper Pipe *with 32mm thick insulation* + 15mm Copper Pipe *with 25mm thick insulation* + 50mm Copper Pipe *with 25mm thick insulation*	123NF	123NF	-/120/120
5	32mm Copper Pipe *with 32mm thick insulation* + 15mm Copper Pipe *with 25mm thick insulation*	123NF	123NF	-/120/120
6	20mm Copper Pipe *with 9mm thick insulation*	123NF	123NF	-/120/120
7	20mm Pex Pipe *with 9mm thick insulation*	123NF	123NF	-/120/120
8	32mm Pex Pipe *with 32mm thick insulation*	123NF	123NF	-/120/120
9	16mm Pex Pipe *with 38mm thick insulation*	123NF	123NF	-/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

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:

11/04/2025

Installation completion date:

03/04/2025

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 PF25008. 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 x Height: 1200mm × 1200mm

Materials		
1.3	Item	Steel Stud 0.50bmt
	Dimensions	Width x Height: 64mm x 1200mm
	Installation	Used to construct studs and nogs in steel frame
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 frame
1.6	Item	FR Plasterboard
	Dimensions	Width x Height: 1200mm x 1200mm
		Thickness: 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	15mm Copper Pipe
	Dimensions	Diameter (OD): 15.1mm
		Diameter (ID): 12.1mm
		Wall Thickness (T): 1.5mm
2.2	Item	Armacell Armaflex Nitrile Rubber Fire Retardant Insulation 15x38
	Dimensions	Diameter (OD): 91.0mm
		Diameter (ID): 15.0mm
		Insulation Thickness (T): 38.0mm
2.3	Item	50x1.22 B 50mm Copper Pipe
	Dimensions	Diameter (OD): 53.2mm
		Diameter (ID): 49.4mm
		Wall Thickness (T): 1.9mm
2.4	Item	Armacell Armaflex Nitrile Rubber Fire Retardant Insulation 50x13
	Dimensions	Diameter (OD): 76.0mm
		Diameter (ID): 50.0mm
		Insulation Thickness (T): 13.0mm
2.5	Item	Armacell Armaflex Nitrile Rubber Fire Retardant Insulation 50x32
	Dimensions	Diameter (OD): 114.0mm
		Diameter (ID): 50.0mm
		Insulation Thickness (T): 32.0mm
2.6	Item	32x1.22 B 32mm Copper Pipe
	Dimensions	Diameter (OD): 34.2mm
		Diameter (ID): 31.1mm
		Wall Thickness (T): 1.65mm
2.7	Item	Armacell Armaflex Nitrile Rubber Fire retardant Insulation 32x32
	Dimensions	Diameter (OD): 96.0mm

		Diameter (ID): 32.0mm
		Insulation Thickness (T): 32.0mm
2.8	Item	Armacell Armaflex Nitrile Rubber Fire Retardant Insulation 15x25
	Dimensions	Diameter (OD): 65.0mm
		Diameter (ID): 15.0mm
		Insulation Thickness (T): 25.0mm
2.9	Item	Armacell Armaflex Nitrile Rubber Fire Retardant Insulation 50x25
	Dimensions	Diameter (OD): 100.0mm
		Diameter (ID): 50.0mm
		Insulation Thickness (T): 25.0mm
2.10	Item	20x1.02 20mm Copper Pipe
	Dimensions	Diameter (OD): 21.2mm
		Diameter (ID): 19.2mm
		Wall Thickness (T): 1.0mm
2.11	Item	K Flex Nitrile Rubber Fire Retardant Insulation 20x9 (nitrile rubber)
	Dimensions	Diameter (OD): 38.0mm
		Diameter (ID): 20.0mm
		Insulation Thickness (T): 9.0mm
2.12	Item	DN20 PEX Pipe
	Dimensions	Diameter (OD): 20.4mm
		Diameter (ID): 14.3mm
		Wall Thickness (T): 3.05mm
2.13	Item	DN32 PEX Pipe
	Dimensions	Diameter (OD): 32.1mm
		Diameter (ID): 22.1mm
		Wall Thickness (T): 5mm
2.14	Item	DN16 PEX Pipe
	Dimensions	Diameter (OD): 16.15mm
		Diameter (ID): 11.75mm

		Wall Thickness (T): 2.2mm

Sealants		
3.1	Item	AGNI-Black
	Dimensions	310mL Cartridge

Intumescent		
4.1	Item	AGNI-Sleeve
	Dimensions	Width: 140mm Thickness: 3.5mm

Fixings		
5.1	Item / Product Name	AGNI-Strap
	Dimensions	Width x Height: 4.6mm x 450mm

5. Test Results

5.1 Observations during the test

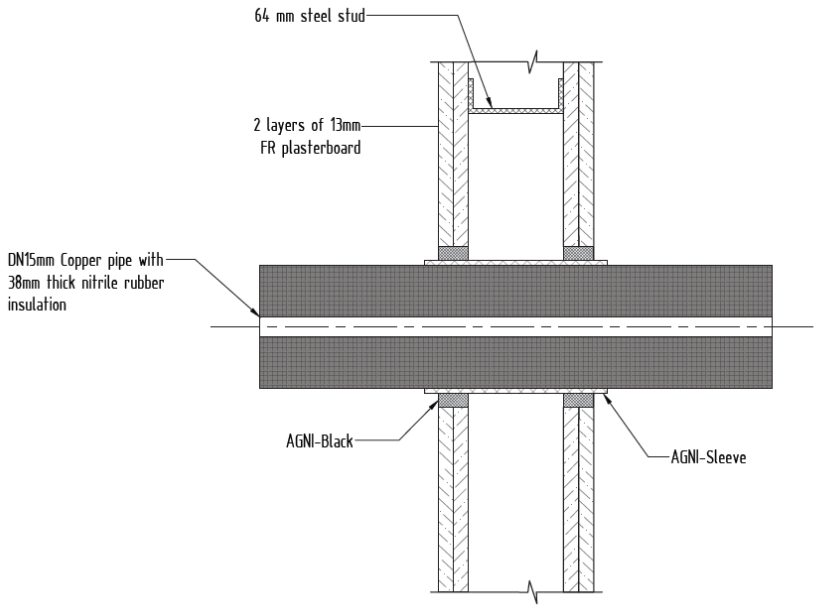
Time min	Test face	SP#	OBSERVATIONS/REMARKS
			No major observations during the test
123			**TEST DISCONTINUED**

NOTE: E – Exposed Face (inside furnace)

U – Unexposed Face (outside furnace)

SE – Separating element

5.2 Specimen 1

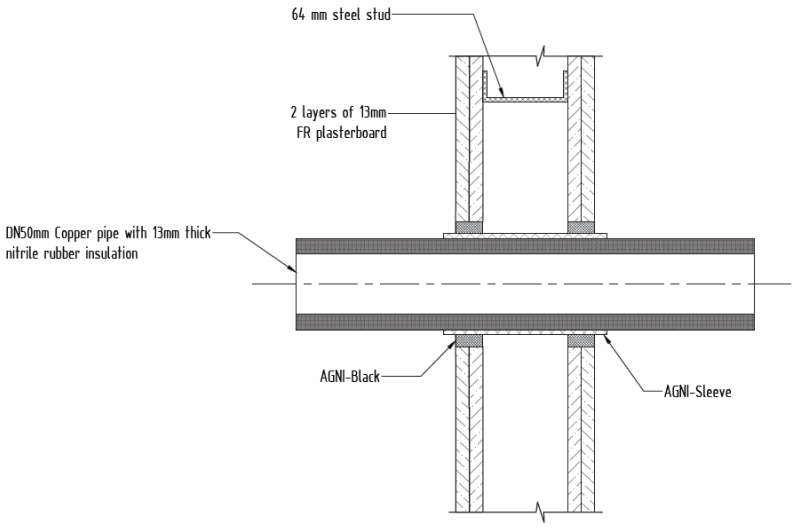


Service penetration details	
Service	15mm Copper Pipe with 38mm thick nitrile rubber insulation
Aperture Size	115.6mm
Annular Spacing	Min: 9.8mm, Max: 11.2mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Sleeve, AGNI-Black
Procedure	1. One revolution of 140mm wide AGNI-Sleeve wrapped around the service and inserted into the aperture, finishing 10mm past each face of the separating element. 2. 10mm (nominal) AGNI-Black applied to seal between the sleeve and 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

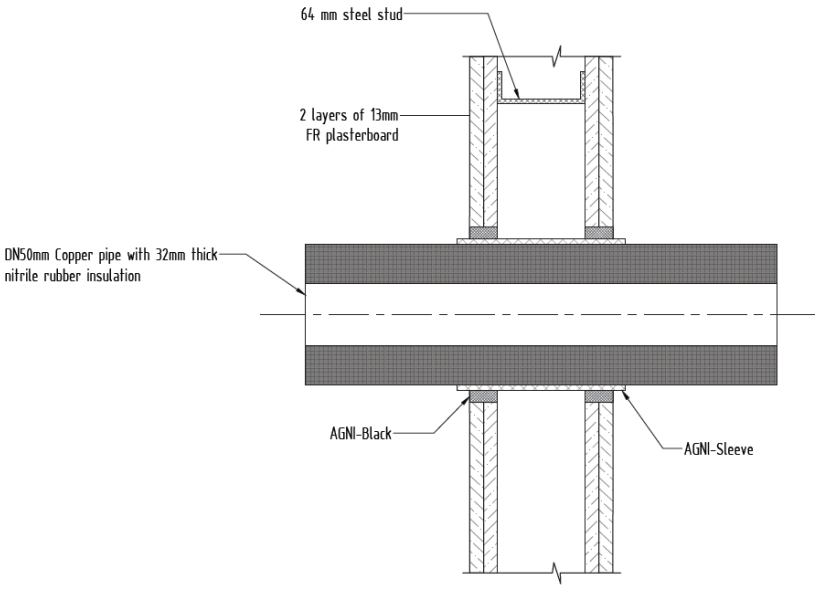


Service penetration details	
Service	50mm Copper Pipe with 13mm thick nitrile rubber insulation
Aperture Size	102.1mm
Annular Spacing	Min: 10.5mm, Max: 12.5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Sleeve, AGNI-Black
Procedure	1. One revolution of 140mm wide AGNI-Sleeve wrapped around the service and inserted into the aperture, finishing 10mm past each face of the separating element. 2. 10mm (nominal) AGNI-Black applied to seal between the sleeve and the separating element.

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

5.4 Specimen 3

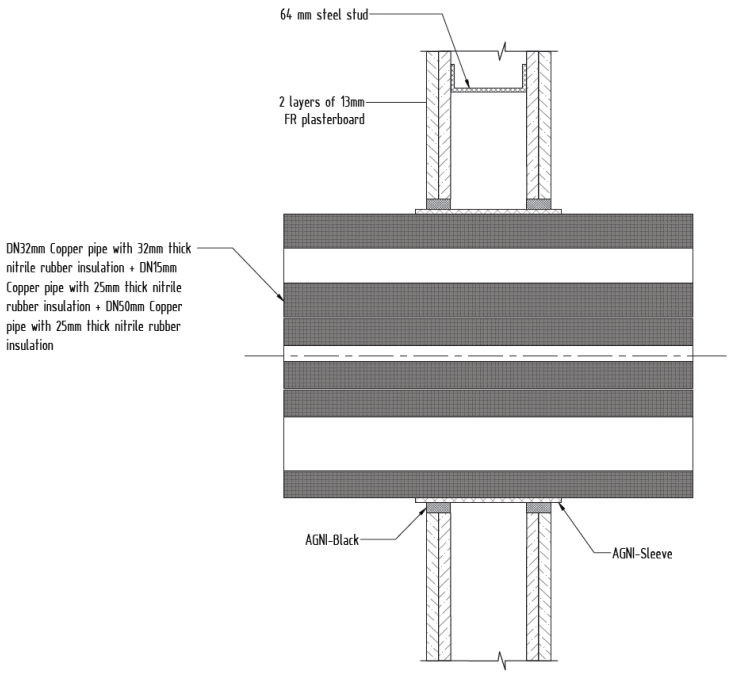


Service penetration details	
Service	50mm Copper Pipe with 32mm thick nitrile rubber insulation
Aperture Size	153.4mm
Annular Spacing	Min: 8.9mm, Max: 11.1mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Sleeve, AGNI-Black
Procedure	1. One revolution of 140mm wide AGNI-Sleeve wrapped around the service and inserted into the aperture, finishing 10mm past each face of the separating element. 2. 10mm (nominal) AGNI-Black applied to seal between the sleeve and the separating element.

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

5.5 Specimen 4

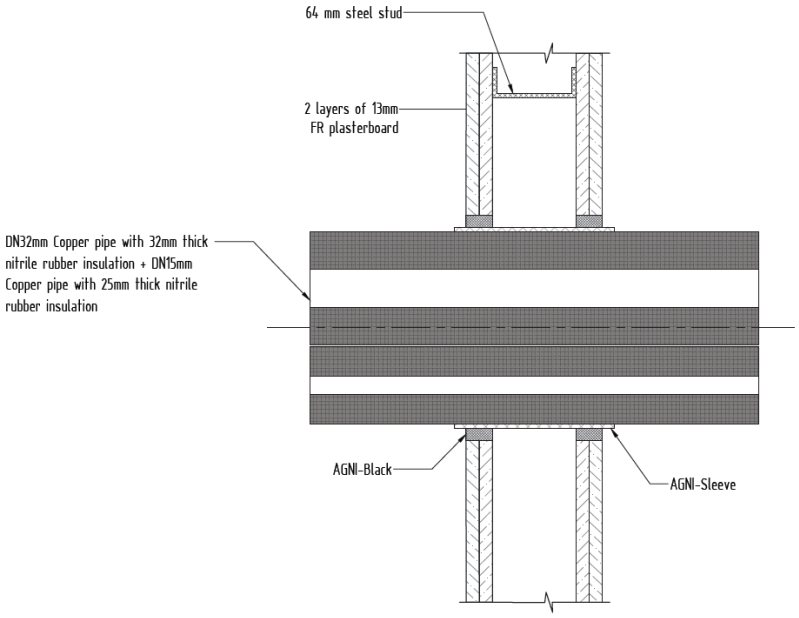


Service penetration details	
Service	32mm Copper Pipe with 32mm thick nitrile rubber insulation + 15mm Copper Pipe with 25mm thick nitrile rubber insulation + 50mm Copper Pipe with 25mm thick nitrile rubber insulation
Aperture Size	222.3mm (wide) x 117.4mm (high)
Annular Spacing	Min: 7.6mm, Max: 18.2mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Sleeve, AGNI-Black
Procedure	1. One revolution of 140mm wide AGNI-Sleeve wrapped around each service 2. One revolution of 140mm wide AGNI-Sleeve wrapped around the bundle of three lagged pipes and inserted into the aperture, finishing 10mm past each face of the separating element. 3. 10mm (nominal) AGNI-Black applied to seal between the sleeve and the separating element and in all gaps within the bundle.

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

5.6 Specimen 5

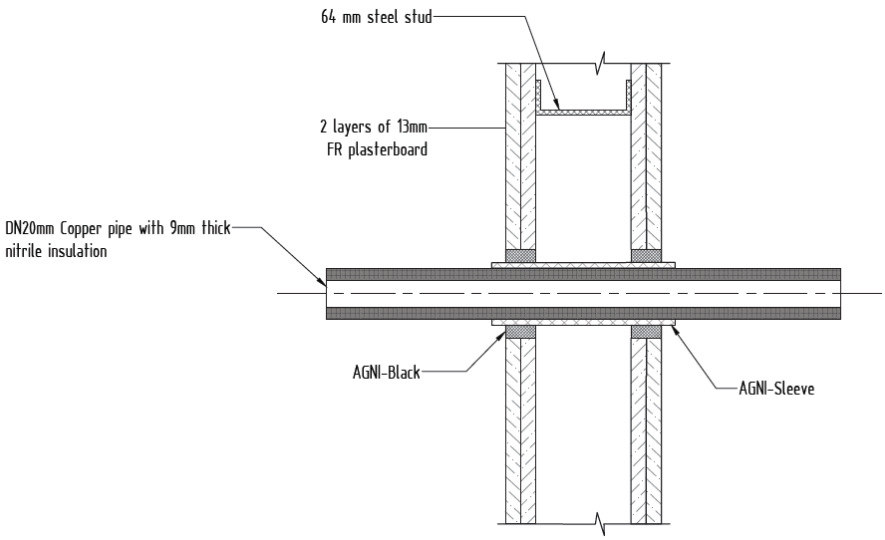


Service penetration details	
Service	32mm Copper Pipe with 32mm thick nitrile rubber insulation + 15mm Copper Pipe with 25mm thick nitrile rubber insulation
Service Support	Exposed Side: 280mm Unexposed Side: 475mm
Aperture Size	199.3mm (wide) x 115.3mm (high)
Annular Spacing	Min: 7.2mm, Max: 14.2mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Sleeve, AGNI-Black
Procedure	1. One revolution of 140mm wide AGNI-Sleeve wrapped around each service 2. One revolution of 140mm wide AGNI-Sleeve wrapped around the bundle of two lagged pipes and inserted into the aperture, finishing 10mm past each face of the separating element. 3. 10mm (nominal) AGNI-Black applied to seal between the sleeve and the separating element and in all gaps within the bundle.

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

5.7 Specimen 6

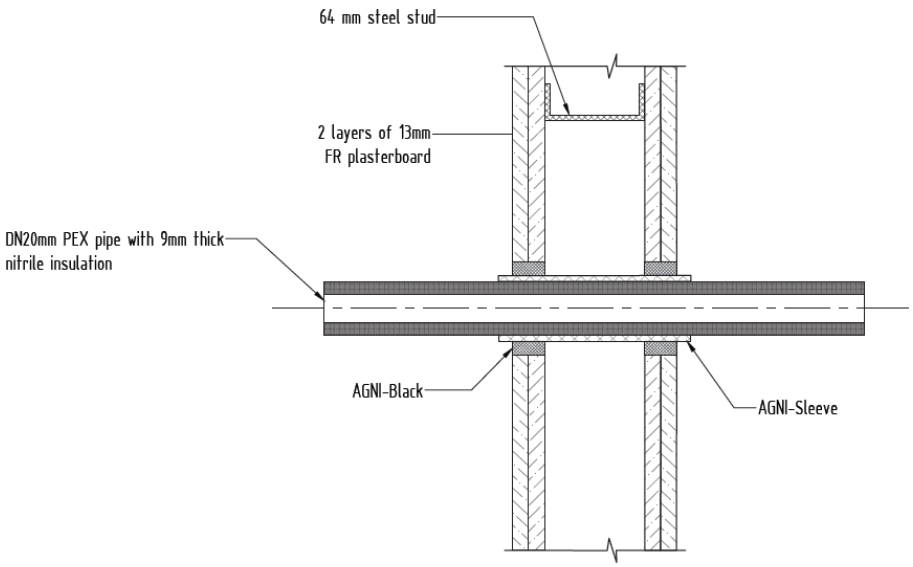


Service penetration details	
Service	20mm Copper Pipe with 9mm thick nitrile rubber insulation
Aperture Size	55.4mm
Annular Spacing	Min: 6.8mm, Max: 11.5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Sleeve, AGNI-Black
Procedure	1. One revolution of 140mm wide AGNI-Sleeve wrapped around the service and inserted into the aperture, finishing 10mm past each face of the separating element. 2. 10mm (nominal) AGNI-Black applied to seal between the sleeve and the separating element.

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

5.8 Specimen 7

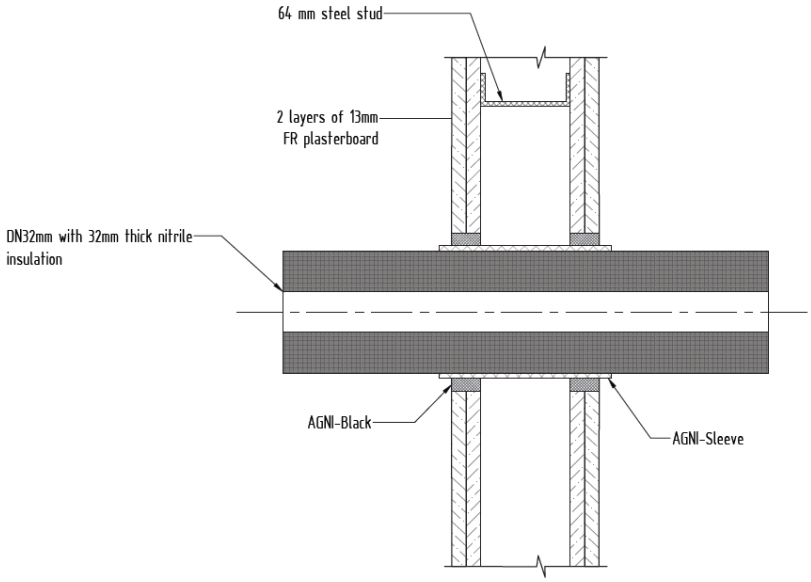


Service penetration details	
Service	16mm Pex Pipe with 38mm thick nitrile rubber insulation
Aperture Size	112.0mm
Annular Spacing	Min: 5.3mm, Max: 9.7mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Sleeve, AGNI-Black
Procedure	1. One revolution of 140mm wide AGNI-Sleeve wrapped around the service and inserted into the aperture, finishing 10mm past each face of the separating element. 2. 10mm (nominal) AGNI-Black applied to seal between the sleeve and the separating element.

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

5.9 Specimen 8

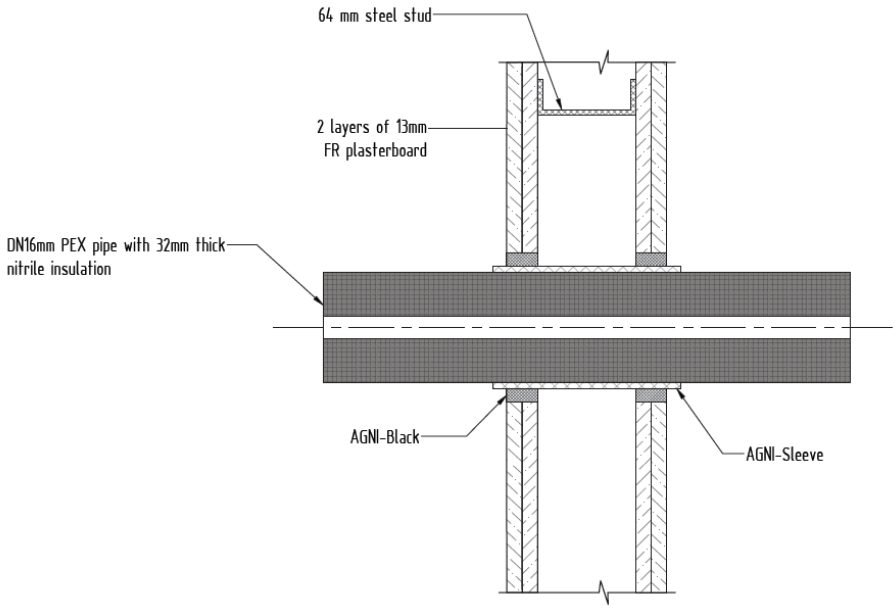


Service penetration details	
Service	32mm Pex Pipe with 32mm thick nitrile rubber insulation
Aperture Size	101.9mm
Annular Spacing	Min: 4.2mm, Max: 5.0mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Sleeve, AGNI-Black
Procedure	1. One revolution of 140mm wide AGNI-Sleeve wrapped around the service and inserted into the aperture, finishing 10mm past each face of the separating element. 2. 10mm (nominal) AGNI-Black applied to seal between the sleeve and the separating element.

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

5.10 Specimen 9



Service penetration details	
Service	20mm Pex Pipe with 9mm thick nitrile rubber insulation
Aperture Size	50.8mm
Annular Spacing	Min: 5.8mm, Max: 10.4mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Sleeve, AGNI-Black
Procedure	1. One revolution of 140mm wide AGNI-Sleeve wrapped around the service and inserted into the aperture, finishing 10mm past each face of the separating element. 2. 10mm (nominal) AGNI-Black applied to seal between the sleeve and 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