Regulatory Information Report

PF24141

Fire resistance test for penetrations through the horizontal separating element

Client:	Agnitek Pty Ltd
Test method:	AS1530.4-2014
Report Date:	10/01/2025
Test number:	PF24141

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1.1 Document revision schedule

Revision #	Date	Description
1	10/01/2025	Issued to Client

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		10/01/2025
Authorised by:	Andrew Bain (Authorized signatory)		10/01/2025

ACCREDITED
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 120mm thick concrete horizontal separating element (concrete slab).

Specimen #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
1	50mm Copper Pipe	123NF	123NF	-/120/120
2	150mm Copper Pipe	123NF	123NF	-/120/120
3	100mm PVC-U Pipe	123NF	123NF	-/120/120
4	32mm Copper Pipe	123NF	123NF	-/120/120
5	50mm Steel Pipe	123NF	123NF	-/120/120
6	50mm PVC-U Pipe	123NF	123NF	-/120/120
7	90mm PPR Green Pipe	123NF	123NF	-/120/120
8	100mm Copper Pipe	123NF	76	-/120/60
9	100mm Copper Pipe	123NF	121	-/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

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. Pipes were capped from exposed side only.

Testing date:

12/12/2024

Installation completion date:

10/12/2024

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 PF24141. 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	Concrete Slab
	Dimensions	Width / Height (W/H): 1390mm × 1390mm
		Slab Thickness (T): 120mm

4.2 Specimens

Services		
2.1	Item / Product Name	50mm COPPER PIPE
	Dimensions	Diameter (ID): 50.8mm
		Diameter (OD): 53.2mm
		Thickness (T): 1.2mm
2.2	Item / Product Name	150mm COPPER PIPE
	Dimensions	Diameter (ID): 151.9mm
		Diameter (OD): 156.6mm
		Thickness (T): 2.35mm
2.3	Item / Product Name	DN100 PVC-U DWV PIPE
	Dimensions	Diameter (ID): 104.0mm
		Diameter (OD): 111.0mm
		Thickness (T): 3.5mm
2.4	Item / Product Name	32mm COPPER PIPE
	Dimensions	Diameter (ID): 31.5mm
		Diameter (OD): 34.3mm
		Thickness (T): 1.4mm
2.5	Item / Product Name	50mm STEEL PIPE
	Dimensions	Diameter (ID): 42.2mm
		Diameter (OD): 48.3mm
		Thickness (T): 3.05mm

2.6	Item / Product Name	DN50 PVC-U DWV PIPE
	Dimensions	Diameter (ID): 52.2mm
		Diameter (OD): 55.8mm
		Thickness (T): 2.8mm
2.7	Item / Product Name	SDR11 PPR PIPE
	Dimensions	Diameter (ID): 74.2mm
		Diameter (OD): 90.6mm
		Thickness (T): 8.2mm
2.8	Item / Product Name	100mm COPPER PIPE
	Dimensions	Diameter (ID): 101.5mm
		Diameter (OD): 105.5mm
		Thickness (T): 2.0mm

Sealants		
3.1	Item / Product Name	AGNI-Seal
	Dimensions	600mL sausage
	Installation	Installed in all specimens

Intumescent		
4.1	Item / Product Name	AGNI-Shield
	Dimensions	Width (W): 300mm – 600mm
		Thickness (T): 13mm
	Installation	Installed around some of the services
4.2	Item / Product Name	AGNI-Collar 50 (25)
	Steel Frame	Height: 24.3mm
		Steel: 0.50bmt
	Intumescent	Height x Thickness (H/T): 23.9mm x 3.5mm
		Installation: 2 layers
	Fixing Points	2
4.3	Item / Product Name	AGNI-Collar 100 (50)
	Steel Frame	Height: 49.0mm

		Steel: 0.75bmt
	Intumescent	Height x Thickness (H/T): 47.5mm x 3.5mm
		Installation: 2 layers
	Fixing Points	4

Fixings		
5.1	Item / Product Name	AGNI-Strap
	Dimensions	Width / Height (W/L): 4.6mm x 450mm
	Installation	Used to secure AGNI-Shield to services
5.2	Item / Product Name	Masonry screws
	Dimensions	6mm x 75mm Hex Head
	Installation	Used to secure AGNI-Collar

Other		
6.1	Item / Product Name	Sika PEF Rod
	Dimensions	Diameter: 10mm
	Installation	Used to provide support for the sealant
6.2	Item / Product Name	SabreFix Reinforced Aluminium Foil Tape
	Dimensions	Width (W): 72mm
	Installation	Used to seal joins in AGNI-Shield

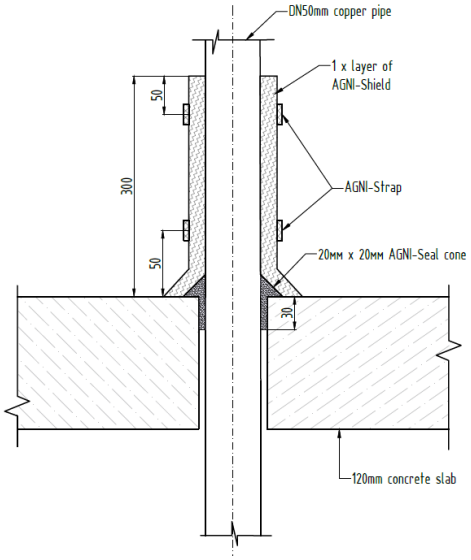
5. Test Results

5.1 Observations during the test

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

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

5.2 Specimen 1

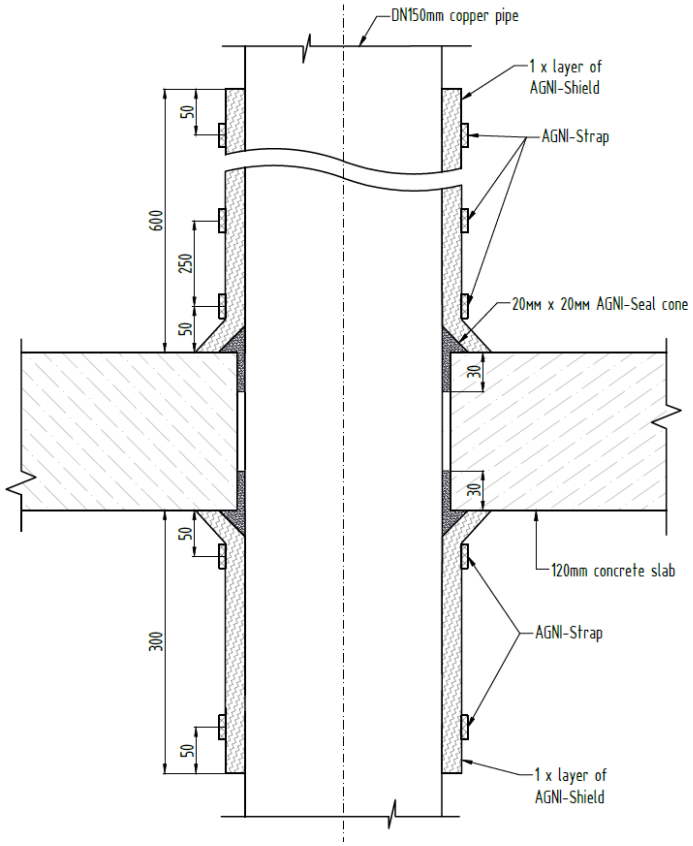


Service penetration details	
Service	50mm Copper Pipe
Aperture Size	68.1mm
Annular Spacing	Min: 6.3mm, Max: 8.6mm

Local Fire-stopping system	
Application	Asymmetrical – installed from unexposed face
System description	1. 30mm deep AGNI-Seal was installed in the annular gap from the top only. 2. A 20mm x 20mm AGNI-Seal sealant cone was applied around the pipe to the separating element. 3. One revolution of 300mm wide AGNI-Shield with a 50mm overlap was wrapped around the pipe to the separating element. 4. Two AGNI-Straps were used to secure the AGNI-Shield to the pipe, they were applied 50mm (nominal) from each end of the AGNI-Shield.

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

5.3 Specimen 2



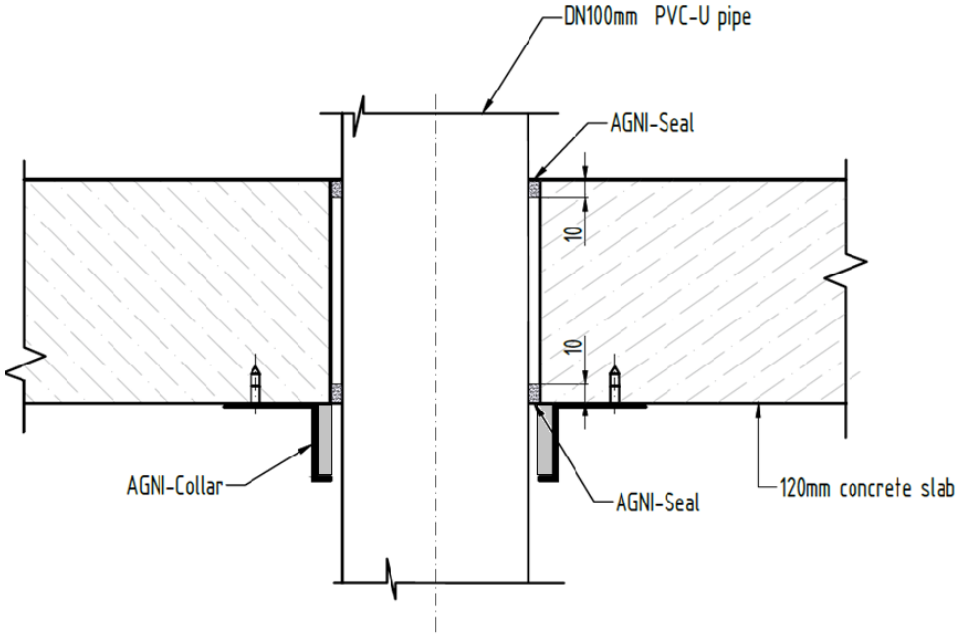
Service penetration details	
Service	150mm Copper Pipe
Aperture Size	168.2mm
Annular Spacing	Min: 5.8mm, Max: 6.6mm

Local Fire-stopping system	
Application	Asymmetrical
System description	Unexposed Face: 1. 30mm deep AGNI-Seal was installed in the annular gap. 2. A 20mm x 20mm AGNI-Seal sealant cone was applied around the pipe to the separating element. 3. One revolution of 600mm wide AGNI-Shield with a 50mm overlap was wrapped around the pipe to the separating element.

	4. Three AGNI-Straps were used to secure the AGNI-Shield to the pipe, they were applied 50mm (nominal) from each end of the AGNI-Shield and one in the centre. Exposed Face: 1. 30mm deep AGNI-Seal was installed in the annular gap. 2. A 20mm x 20mm AGNI-Seal sealant cone was applied around the pipe to the separating element. 3. One revolution of 300mm wide AGNI-Shield with a 50mm overlap was wrapped around the pipe to the separating element. 4. Two AGNI-Straps were used to secure the AGNI-Shield to the pipe, they were applied 50mm (nominal) from each end of the AGNI-Shield.

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

5.4 Specimen 3



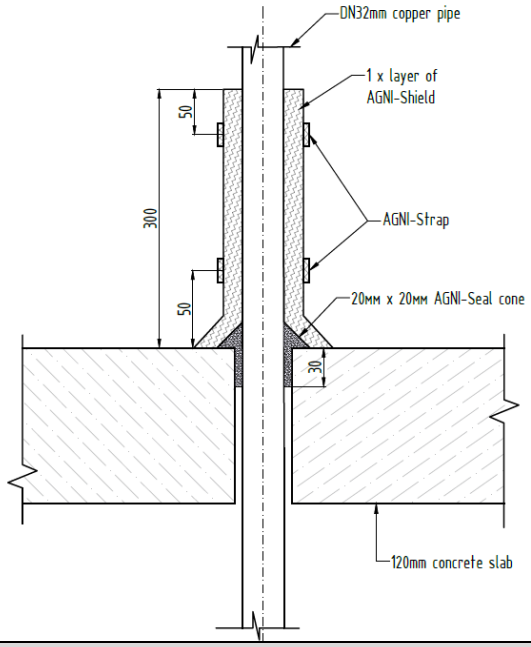
Service penetration details	
Service	DN100 PVC-U DWV Pipe
Aperture Size	127.0mm
Annular Spacing	Min: 7.6mm, Max: 8.4mm

Local Fire-stopping system	
Application	Asymmetrical
System description	Unexposed Face: 1. PEF rod was inserted into the annular gap and pushed down 10mm. 2. AGNI-Seal was applied into the annular gap, 10mm (nominal) deep and finished flush with the separating element. Exposed Face: 1. PEF rod was inserted into the annular gap and pushed up 10mm. 2. AGNI-Seal was applied into the annular gap, 10mm (nominal) deep and finished flush with the separating element.

	3. AGNI-Collar 100 (50) was placed around the pipe and secured using concrete anchor screws in the four fixing points.

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

5.5 Specimen 4

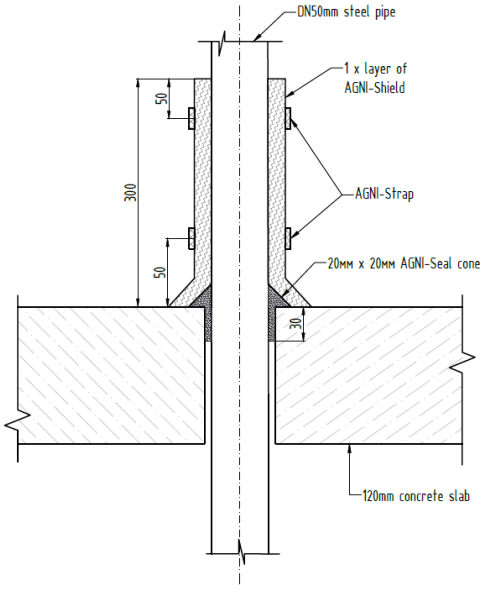


Service penetration details	
Service	32mm Copper pipe
Aperture Size	57.8mm
Annular Spacing	Min: 6.1mm, Max: 17.4mm

Local Fire-stopping system	
Application	Asymmetrical – installed from unexposed face
System description	1. 30mm deep AGNI-Seal was installed in the annular gap from the top only. 2. A 20mm x 20mm AGNI-Seal sealant cone was applied around the pipe to the separating element. 3. One revolution of 300mm wide AGNI-Shield with a 50mm overlap was wrapped around the pipe to the separating element. 4. Two AGNI-Straps were used to secure the AGNI-Shield to the pipe, they were applied 50mm (nominal) from each end of the AGNI-Shield.

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

5.6 Specimen 5

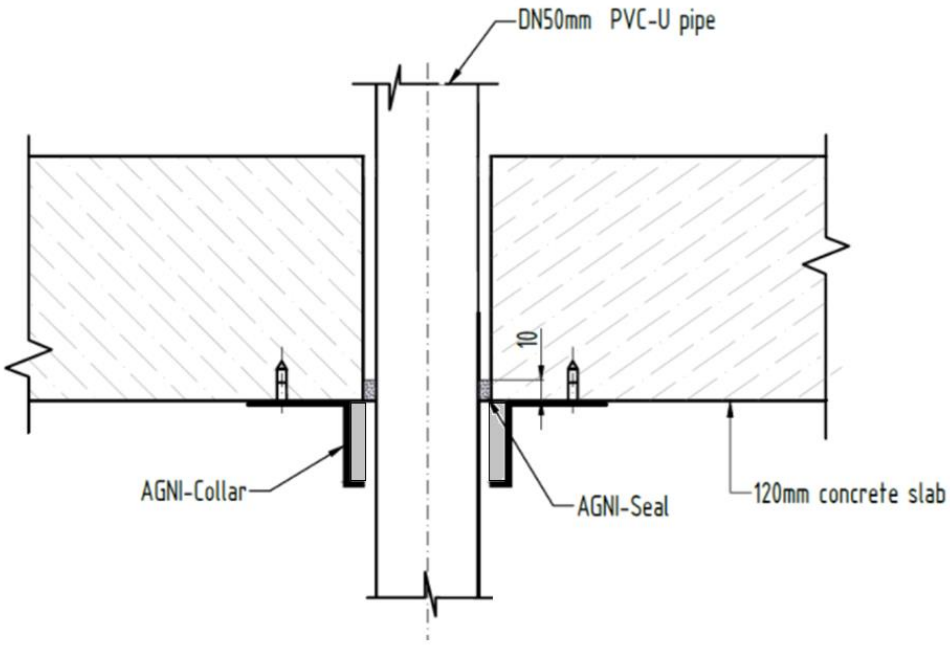


Service penetration details	
Service	50mm Steel Pipe
Aperture Size	66.5mm
Annular Spacing	Min: 5.0mm, Max: 13.2mm

Local Fire-stopping system	
Application	Asymmetrical – installed from unexposed face
System description	1. 30mm deep AGNI-Seal was installed in the annular gap from the top only. 2. A 20mm x 20mm AGNI-Seal sealant cone was applied around the pipe to the separating element. 3. One revolution of 300mm wide AGNI-Shield with a 50mm overlap was wrapped around the pipe to the separating element. 4. Two AGNI-Straps were used to secure the AGNI-Shield to the pipe, they were applied 50mm (nominal) from each end of the AGNI-Shield.

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

5.7 Specimen 6

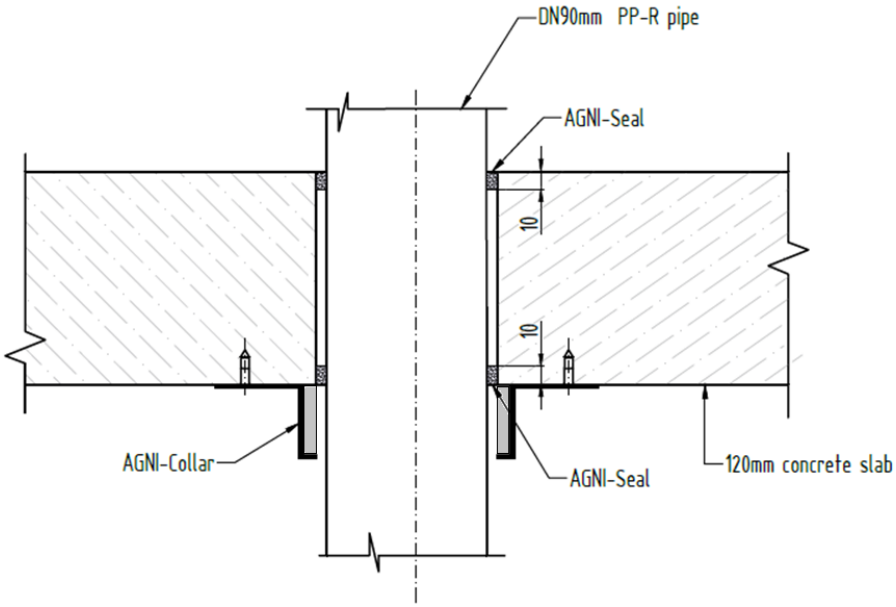


Service penetration details	
Service	DN50 PVC-U DWV Pipe
Aperture Size	71.7mm
Annular Spacing	Min: 4.3mm, Max: 11.6mm

Local Fire-stopping system	
Application	Asymmetrical – installed from exposed face
System description	1. PEF rod was inserted into the annular gap and pushed up 10mm, fire side only. 2. AGNI-Seal was applied into the annular gap, 10mm (nominal) deep and finished flush with the separating element, fire side only. 3. AGNI-Collar 50 (25) was placed around the pipe on the fire side and secured using concrete anchor screws in the two fixing points.

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

5.8 Specimen 7

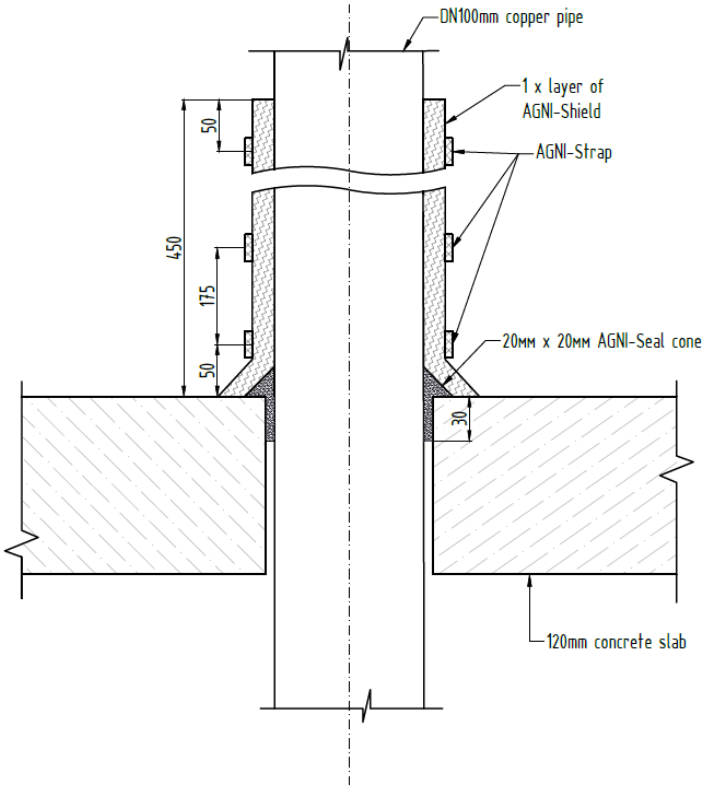


Service penetration details	
Service	SDR11 90mm PPR pipe
Aperture Size	113.2mm
Annular Spacing	Min: 8.7mm, Max: 13.9mm

Local Fire-stopping system	
Application	Asymmetrical
System description	Unexposed Face: 1. AGNI-Seal was applied into the annular gap, 10mm (nominal) deep and finished flush with the separating element. Exposed Face: 2. PEF rod was inserted into the annular gap and pushed up 10mm. 3. AGNI-Seal was applied into the annular gap, 10mm (nominal) deep and finished flush with the separating element. 4. AGNI-Collar 100 (50) was placed around the pipe and secured using concrete anchor screws in the four fixing points.

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

5.9 Specimen 8

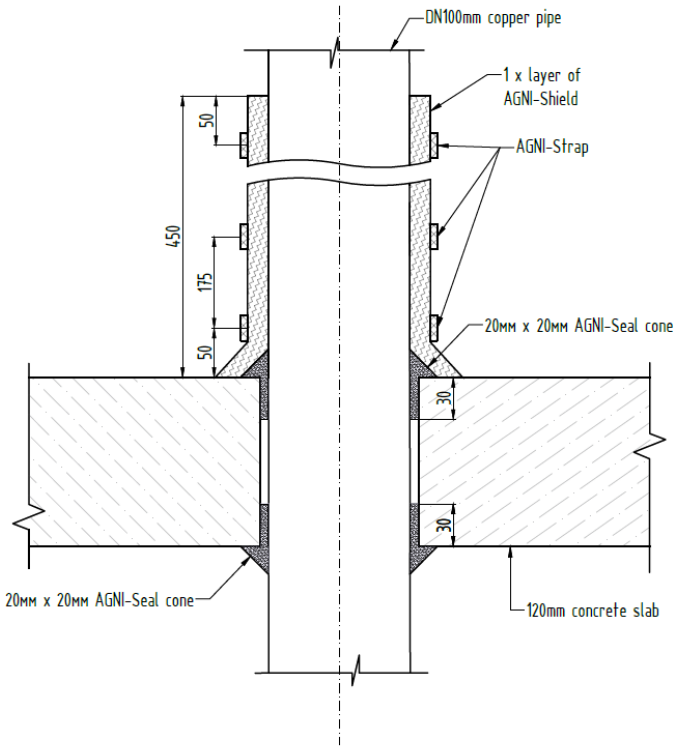


Service penetration details	
Service	100mm Copper Pipe
Aperture Size	128.5mm
Annular Spacing	Min: 7.9mm, Max: 15.2mm

Local Fire-stopping system	
Application	Asymmetrical – installed from unexposed face
System description	1. 30mm deep AGNI-Seal was installed in the annular gap from the top only. 2. A 20mm x 20mm AGNI-Seal sealant cone was applied around the pipe to the separating element. 3. One revolution of 450mm wide AGNI-Shield with a 50mm overlap was wrapped around the pipe to the separating element. 4. Three AGNI-Straps were used to secure the AGNI-Shield to the pipe, they were applied 50mm (nominal) from each end of the AGNI-Shield and one in the centre.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	76 minutes

5.10 Specimen 9



Service penetration details	
Service	100mm Copper Pipe
Aperture Size	128.2mm
Annular Spacing	Min: 6.3mm, Max: 8.6mm

Local Fire-stopping system	
Application	Asymmetrical
System description	Unexposed Face: 1. 30mm deep AGNI-Seal was installed in the annular gap. 2. A 20mm x 20mm AGNI-Seal sealant cone was applied around the pipe to the separating element. 3. One revolution of 450mm wide AGNI-Shield with a 50mm overlap was wrapped around the pipe to the separating element. 4. Three AGNI-Straps were used to secure the AGNI-Shield to the pipe, they were applied 50mm (nominal) from each end of the AGNI-Shield and one in the centre.

	5. Aluminium foil tape was used to seal the join of the AGNI-Shield and seal the top of the AGNI-Shield to the pipe. Exposed Face: 1. 30mm deep AGNI-Seal was installed in the annular gap. 2. A 20mm x 20mm AGNI-Seal sealant cone was applied around the pipe to the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	121 minutes

6. Photos

6.1 Photos before the test

Figure 1 – Unexposed face prior to test commencement