Regulatory Information Report

RIRF24122

Fire resistance test for penetrations through the horizontal separating element

Client:	Agnitek Pty Ltd
Test method:	AS1530.4-2014
Report Date:	27/11/2024
Test number:	PF24122

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Table of Contents

1.1 Document revision schedule

Revision #	Date	Description
1	27/11/2024	Issued to Client

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		27/11/2024
Authorised by:	Andrew Bain (Authorized signatory)		27/11/2024

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 100mm thick concrete horizontal separating element (concrete slab).

Specimen #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
1	DN32 PVC-U PIPE	123NF	123NF	-/120/120
2	DN50 PVC-U PIPE	123NF	123NF	-/120/120
3	DN65 PVC-U PIPE	123NF	123NF	-/120/120
4	PPR GREEN PIPE 90mm	123NF	123NF	-/120/120
6	DN80 PVC-U PIPE	123NF	123NF	-/120/120
7	PPR GREEN PIPE 32mm	123NF	123NF	-/120/120
8	DN100 PVC-U PIPE	123NF	121	-/120/120
9	DN150 PVC-U PIPE	94	94	-/90/90

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:

29/10/2024

Installation completion date:

22/10/2024

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 PF24122. 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): 1500mm × 1500mm
		Slab Thickness (T): 100mm

4.2 Specimens

Services		
2.1	Item / Product Name	DN32 PVC-U DWV PIPE
	Dimensions	Diameter (ID): 31.8mm
		Diameter (OD): 36.6mm
		Thickness (T): 2.4mm
2.2	Item / Product Name	DN50 PVC-U DWV PIPE
	Dimensions	Inner Diameter (ID): 50.4mm
		Outer Diameter (OD): 56.3mm
		Thickness (T): 2.95mm
2.3	Item / Product Name	DN65 PVC-U DWV PIPE
	Dimensions	Diameter (ID): 63mm
		Diameter (OD): 69mm
		Thickness (T): 3mm
2.4	Item / Product Name	SDR11 S 90mm PPR PIPE
	Dimensions	Inner Diameter (ID):72mm
		Outer Diameter (OD): 90.2mm
		Thickness (T): 9.1mm
2.6	Item / Product Name	DN80 PVC-U DWV PIPE
	Dimensions	Inner Diameter (ID): 75.6mm
		Outer Diameter (OD): 82.2mm
		Thickness (T): 3.3mm

2.7	Item / Product Name	SDR11 S 32mm PPR PIPE
	Dimensions	Inner Diameter (ID):24.8mm
		Outer Diameter (OD): 32.0mm
		Thickness (T): 3.6mm
2.8	Item / Product Name	DN100 PVC-U DWV PIPE
	Dimensions	Inner Diameter (ID): 104.0mm
		Outer Diameter (OD): 110.5mm
		Thickness (T): 3.25mm
2.9	Item / Product Name	DN150 PVC-U DWV PIPE
	Dimensions	Inner Diameter (ID): 152.1mm
		Outer Diameter (OD): 160.2mm
		Thickness (T): 4.05mm

Sealants		
3.1	Item / Product Name	AGNI-Seal
	Dimensions	600mL
	Installation	Installed 10mm (nominal) deep between separating element and pipe for specimens 1-4 and 6-9

Intumescent		
4.1	Item / Product Name	AGNI-Sleeve
	Dimensions	Width (W): 100mm – 250mm
		Thickness (T): 3.5mm
	Installation	Installed around services

Fixings		
5.1	Item / Product Name	Concrete Anchor
	Dimensions	Width / Height (W/H): 6mm x 30mm
	Installation	Used to secure AGNI-Sleeve to concrete slab on unexposed face

Other		
5.2	Item / Product Name	AGNI-Strap – stainless steel tie
	Dimensions	Width (W): 5mm
	Installation	Used for the specimen 9

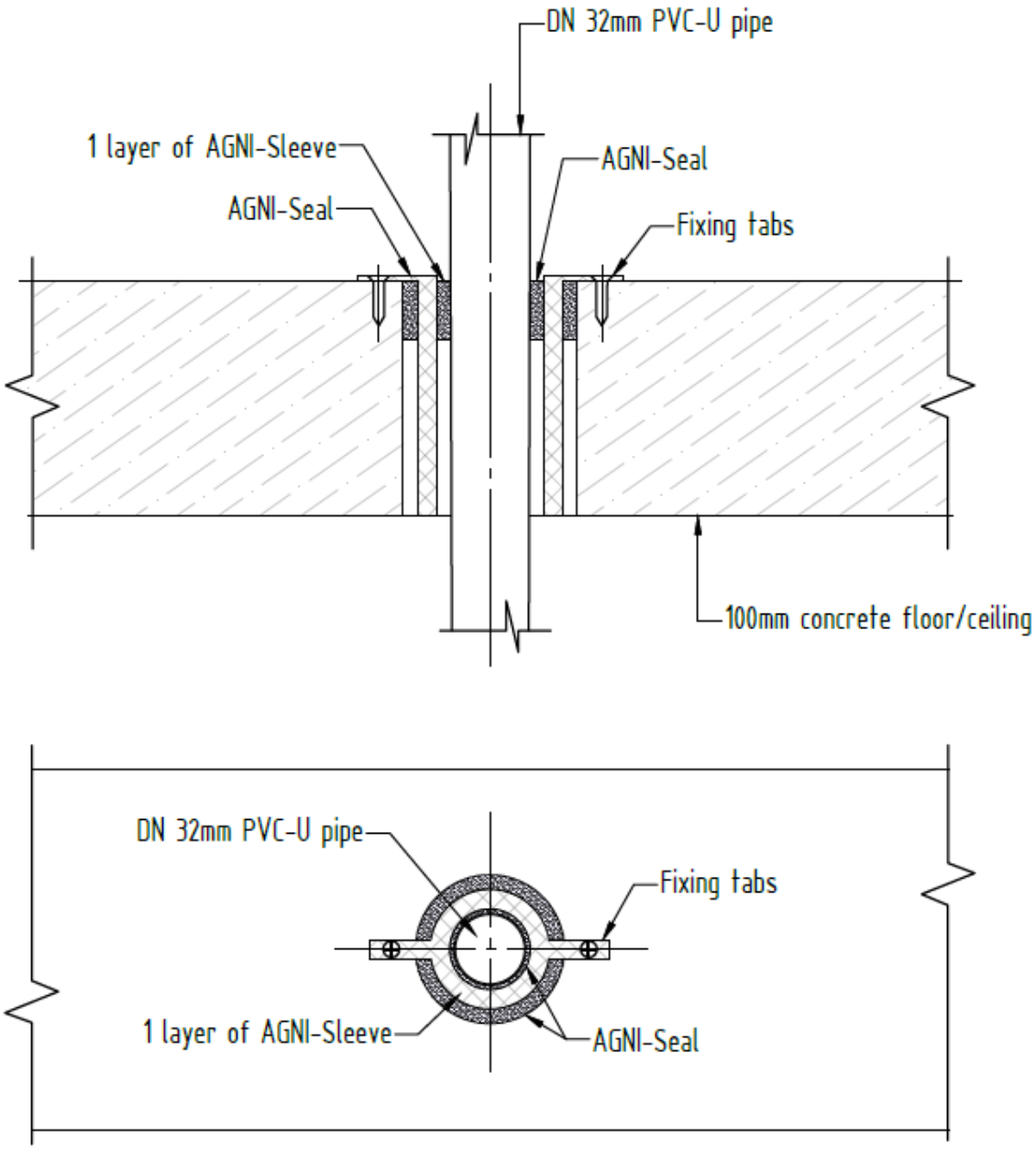
6. Test Results

6.1 Observations during the test

Time min	Test face	SP#	OBSERVATIONS/REMARKS
94	U	9	Holes appearing in the pipe, flame seen through holes. Naked flame + 10sec - FAIL
122			**TEST DISCONTINUED**

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

6.2 Specimen 1

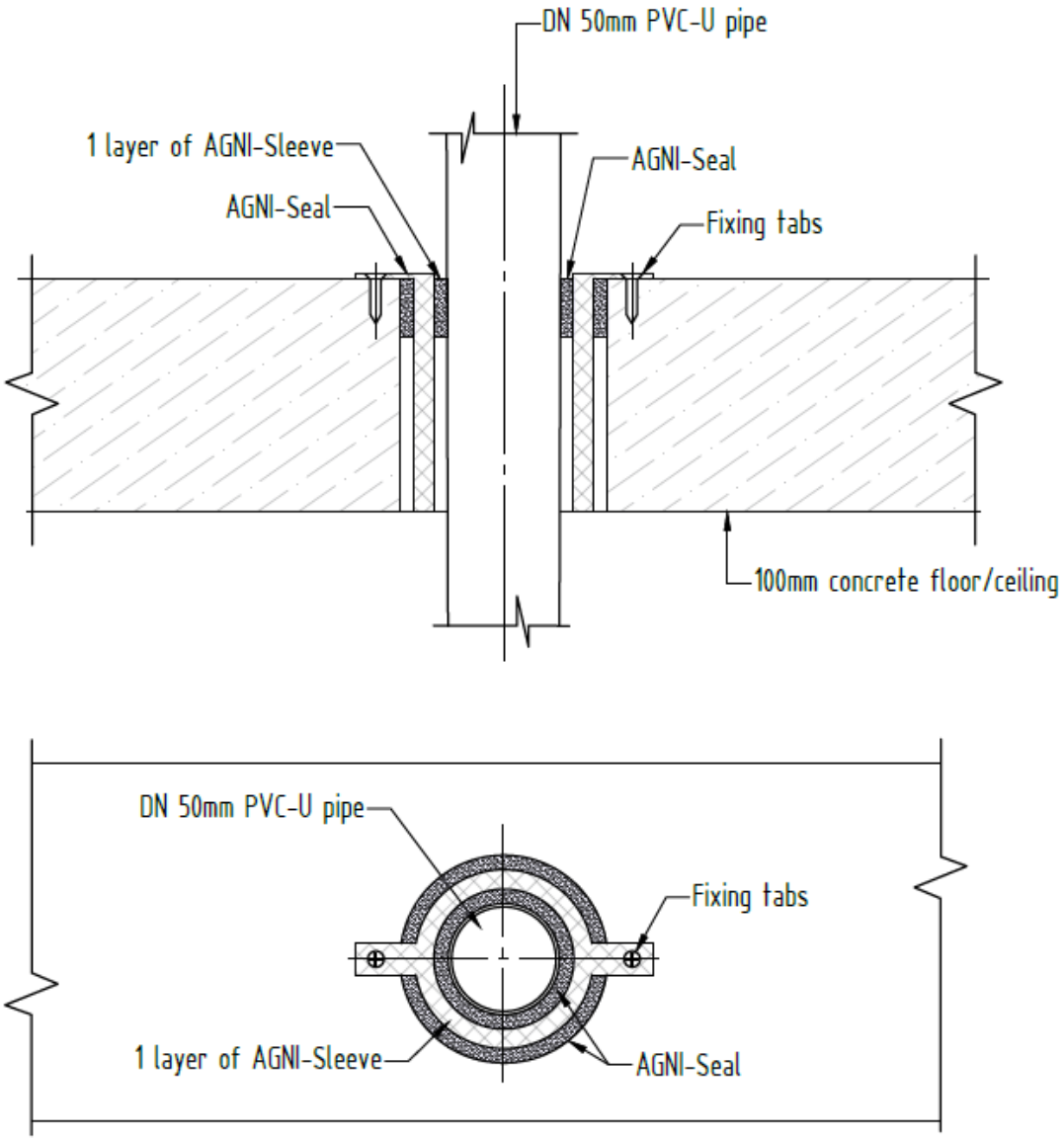


Service penetration details	
Service	DN32 PVC-U DWV PIPE
Aperture Diameter	45mm
Annular Spacing	Min: 3.5mm Max: 4.9mm

Local Fire-stopping system	
Application	Asymmetrical – installed from the unexposed side
System description	1. 150mm wide AGNI-Sleeve was cut to fit one revolution of the aperture. 2. The AGNI-Sleeve was then cut down to include two 50mm high x 25mm wide tabs. 3. The cut AGNI-Sleeve was inserted into the aperture through the unexposed surface, tabs remained past the face of the unexposed surface. 4. The tabs were bent over onto the surface of the separating element and secured using concrete anchors. 5. AGNI-Seal was applied 10mm (nominal) deep between the separating element and the pipe, finishing flush with the face of the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 122 minutes
Insulation	No failure at 122 minutes

6.3 Specimen 2

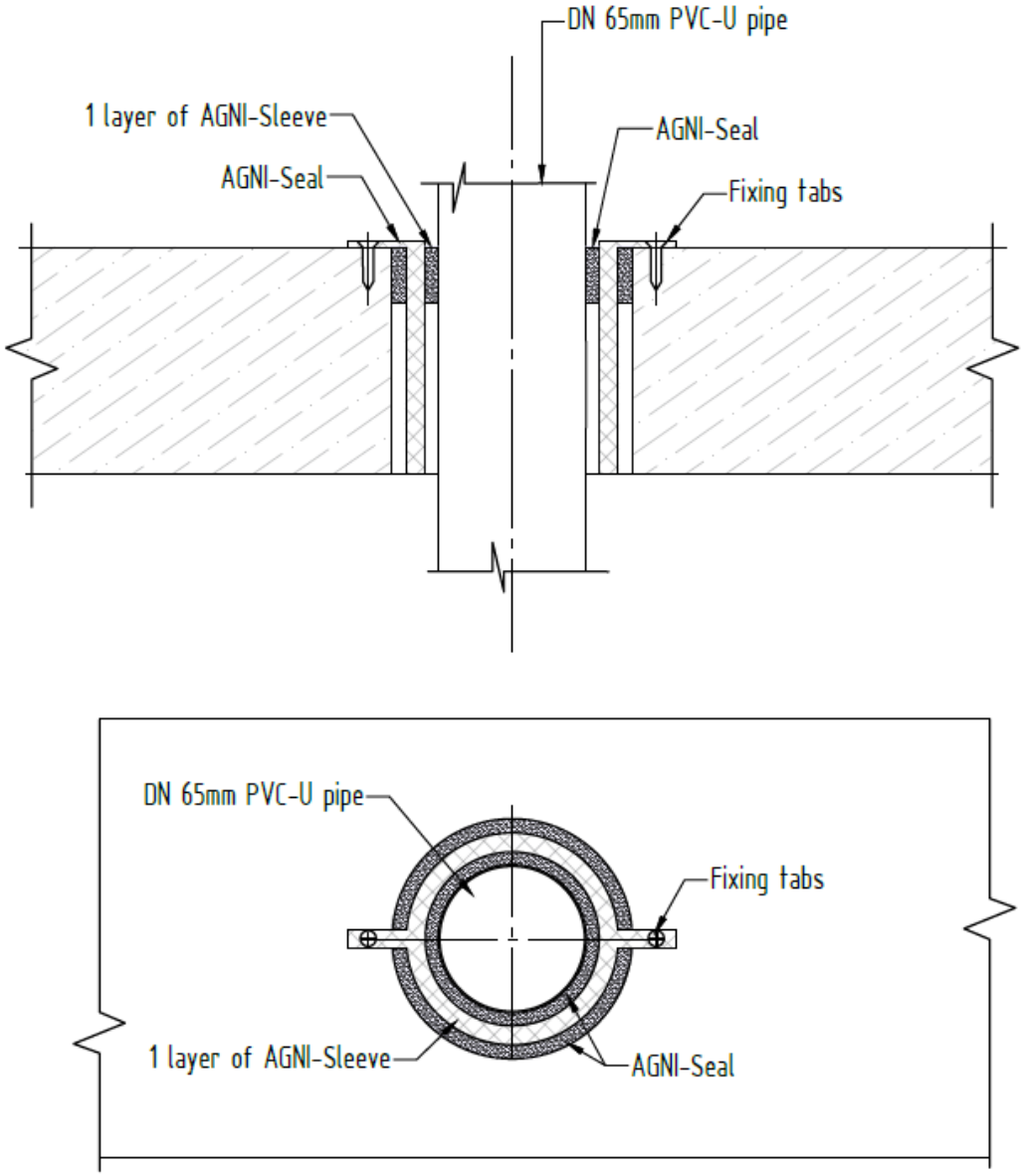


Service penetration details	
Service	DN50 PVC-U DWV PIPE
Aperture Diameter	66mm
Annular Spacing	Min: 4.0mm Max: 5.7mm

Local Fire-stopping system	
Application	Asymmetrical – installed from the unexposed side
System description	1. 150mm wide AGNI-Sleeve was cut to fit one revolution of the aperture. 2. The AGNI-Sleeve was then cut down to include two 50mm high x 25mm wide tabs. 3. The cut AGNI-Sleeve was inserted into the aperture through the unexposed surface, tabs remained past the face of the unexposed surface. 4. The tabs were bent over onto the surface of the separating element and secured using concrete anchors. 5. AGNI-Seal was applied 10mm (nominal) deep between the separating element and the pipe, finishing flush with the face of the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 122 minutes
Insulation	No failure at 122 minutes

6.4 Specimen 3

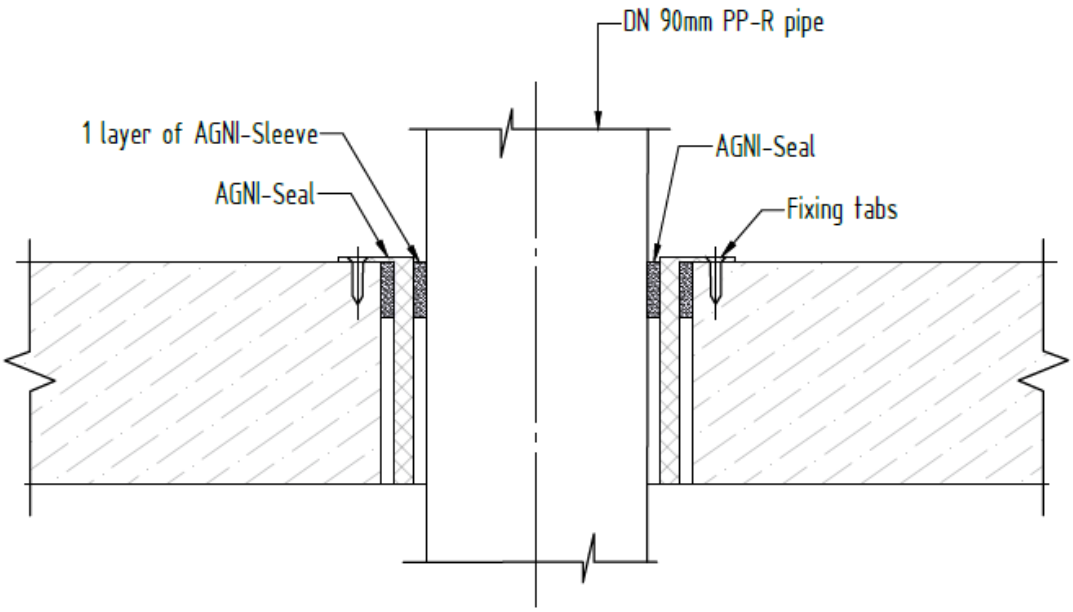


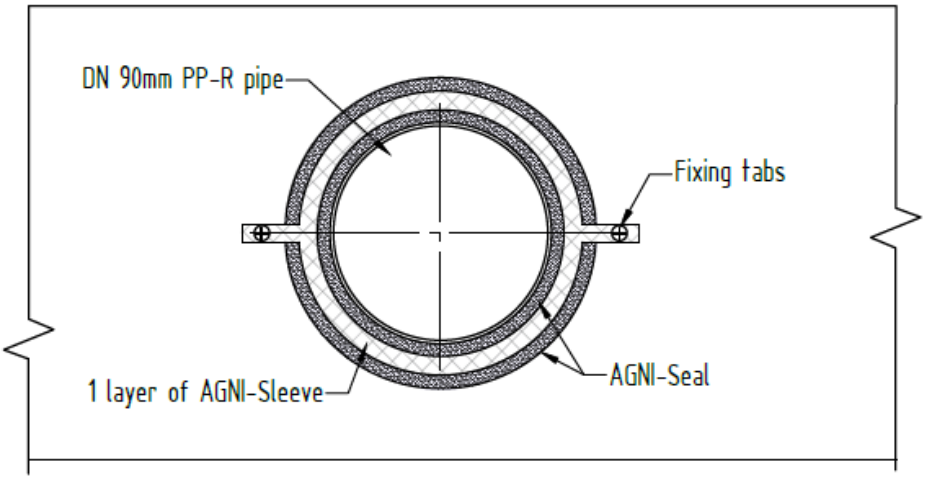
Service penetration details	
Service	DN65 PVC-U DWV PIPE
Service Support	Unexposed Side - Multistrut at 600mm and 1650mm
Aperture Diameter	77.5mm
Annular Spacing	Min: 3.5mm Max: 5.0mm

Local Fire-stopping system	
Application	Asymmetrical – installed from the unexposed side
System description	1. 150mm wide AGNI-Sleeve was cut to fit one revolution of the aperture. 2. The AGNI-Sleeve was then cut down to include two 50mm high x 25mm wide tabs. 3. The cut AGNI-Sleeve was inserted into the aperture through the unexposed surface, tabs remained past the face of the unexposed surface. 4. The tabs were bent over onto the surface of the separating element and secured using concrete anchors. 5. AGNI-Seal was applied 10mm (nominal) deep between the separating element and the pipe, finishing flush with the face of the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 122 minutes
Insulation	No failure at 122 minutes

6.5 Specimen 4



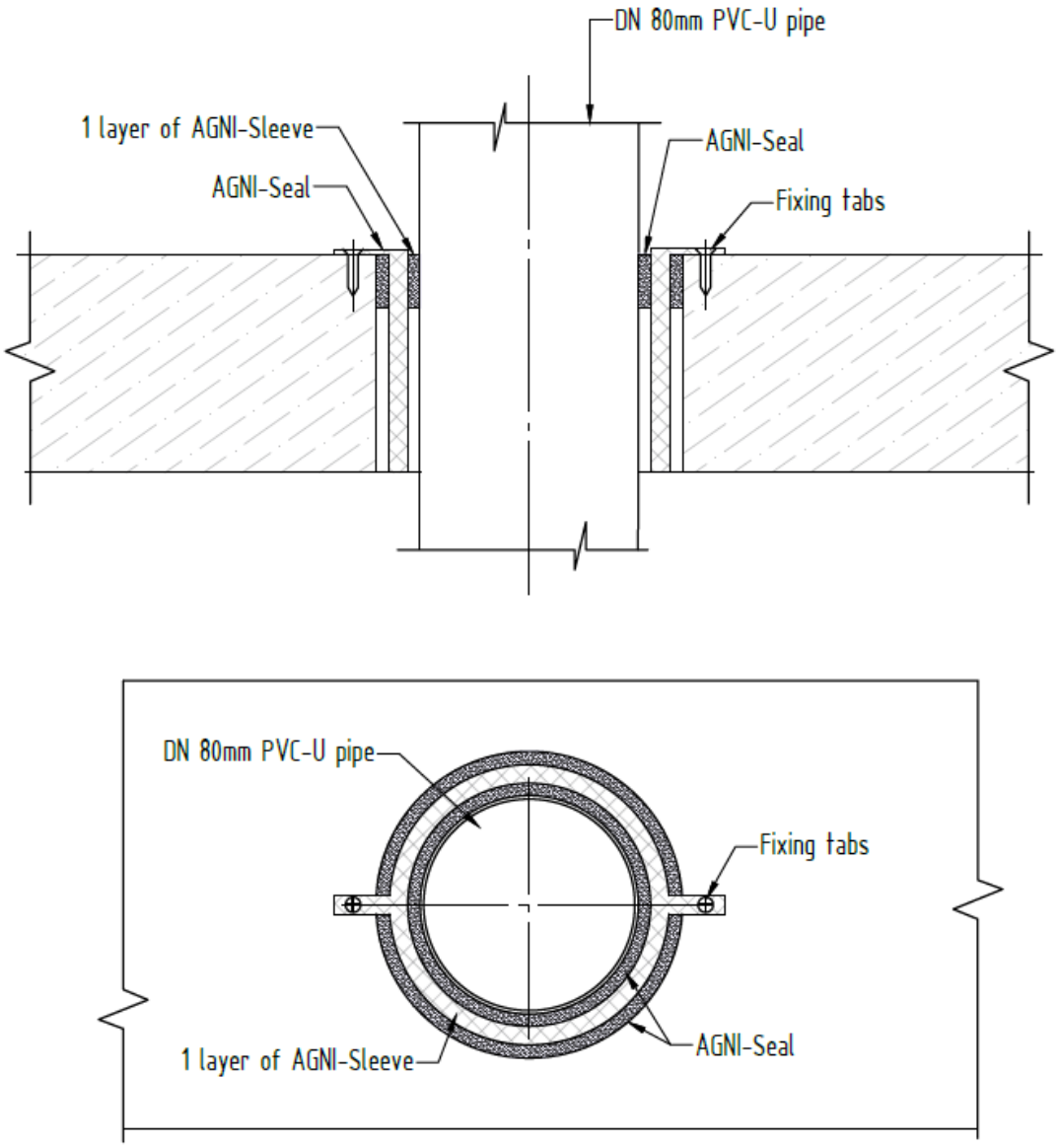


Service penetration details	
Service	SDR11 S 90mm PPR PIPE
Aperture Diameter	100.9mm
Annular Spacing	Min: 4.5mm Max: 6.2mm

Local Fire-stopping system	
Application	Asymmetrical – installed from the unexposed side
System description	1. 150mm wide AGNI-Sleeve was cut to fit one revolution of the aperture. 2. The AGNI-Sleeve was then cut down to include two 50mm high x 25mm wide tabs. 3. The cut AGNI-Sleeve was inserted into the aperture through the unexposed surface, tabs remained past the face of the unexposed surface. 4. The tabs were bent over onto the surface of the separating element and secured using concrete anchors. 5. AGNI-Seal was applied 10mm (nominal) deep between the separating element and the pipe, finishing flush with the face of the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 122 minutes
Insulation	No failure at 122 minutes

6.6 Specimen 6

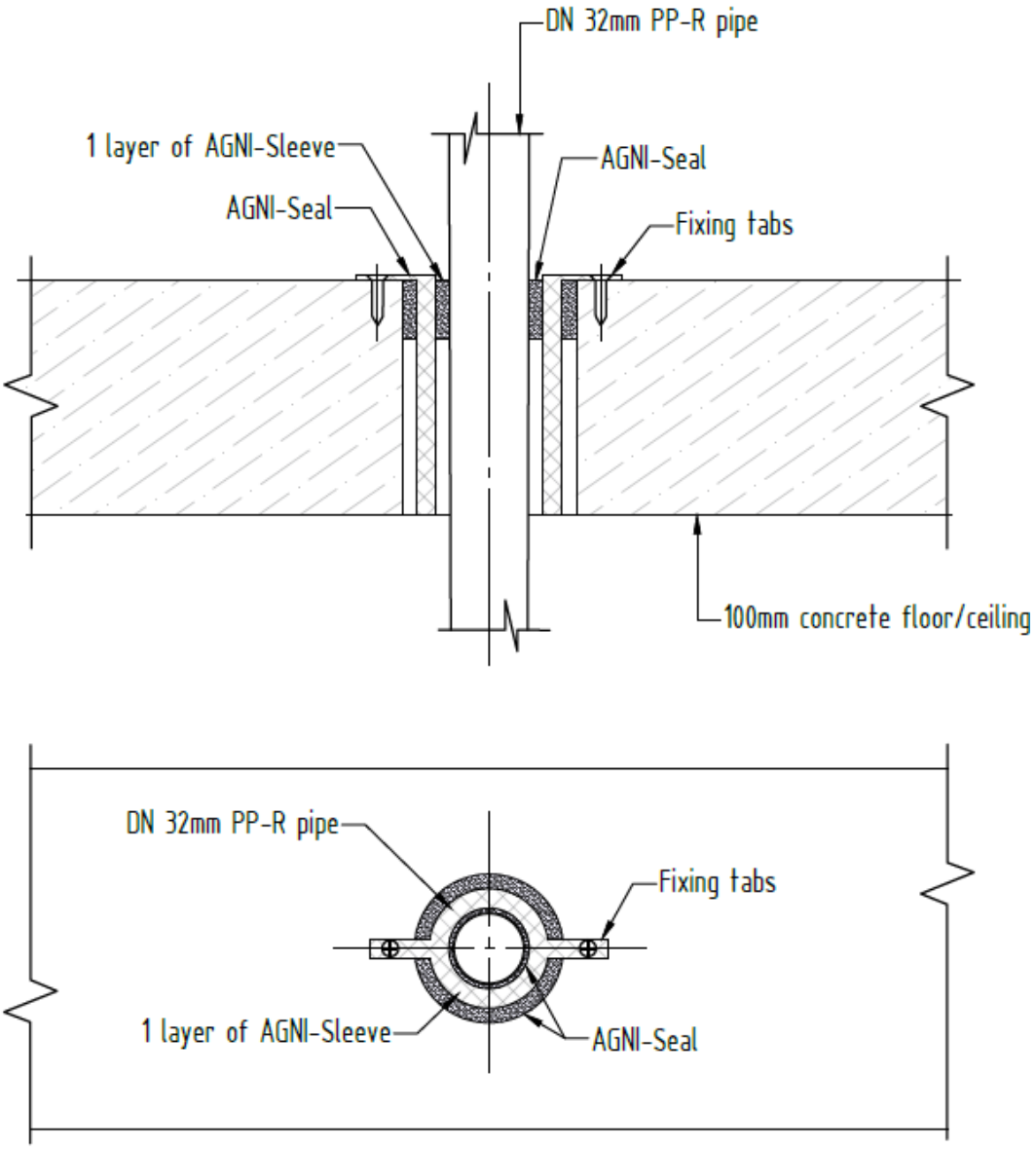


Service penetration details	
Service	DN80 PVC-U DWV PIPE
Aperture Diameter	100.9mm
Annular Spacing	Min: 6.0mm Max: 12.7mm

Local Fire-stopping system	
Application	Asymmetrical – installed from the unexposed side
System description	1. 150mm wide AGNI-Sleeve was cut to fit one revolution of the aperture. 2. The AGNI-Sleeve was then cut down to include two 50mm high x 25mm wide tabs. 3. The cut AGNI-Sleeve was inserted into the aperture through the unexposed surface, tabs remained past the face of the unexposed surface. 4. The tabs were bent over onto the surface of the separating element and secured using concrete anchors. 5. AGNI-Seal was applied 10mm (nominal) deep between the separating element and the pipe, finishing flush with the face of the separating element.

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

6.7 Specimen 7

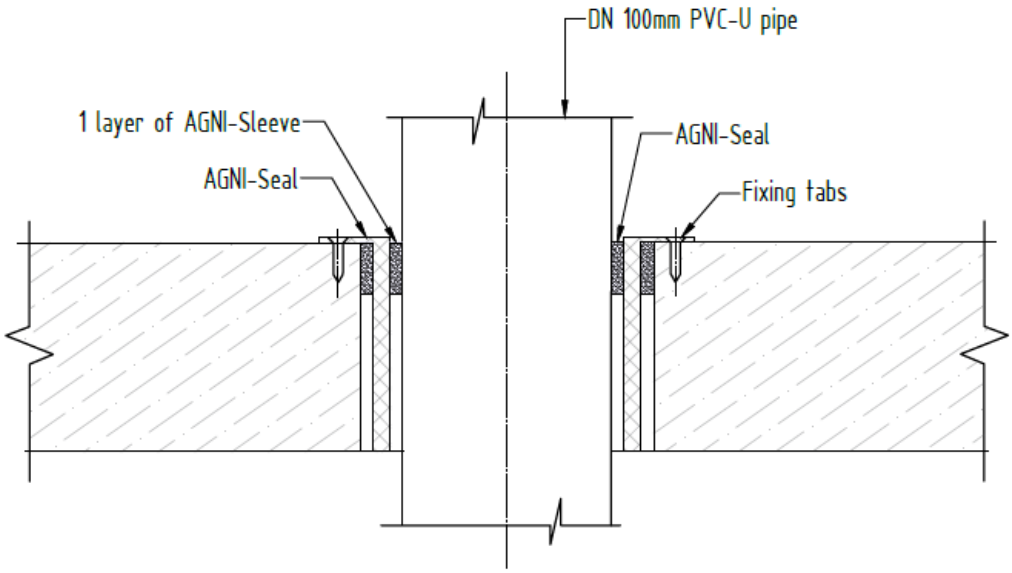


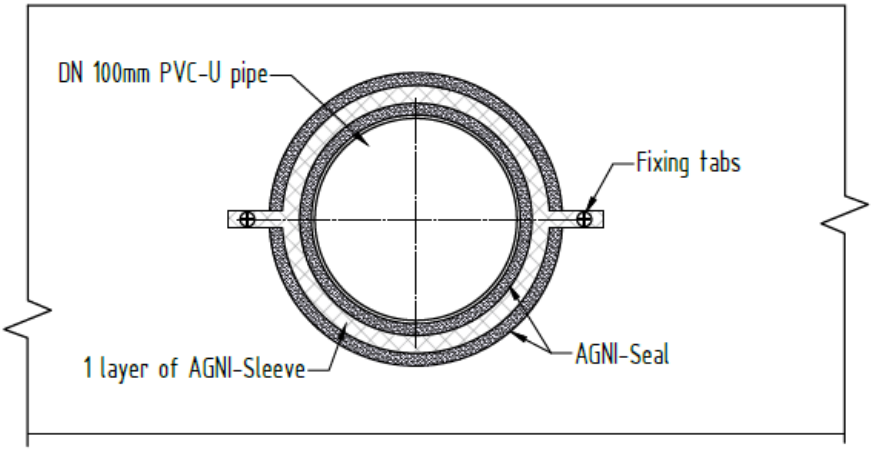
Service penetration details	
Service	SDR11 S 32mm PPR PIPE
Aperture Diameter	45.8mm
Annular Spacing	Min: 5.5mm Max: 8.3mm

Local Fire-stopping system	
Application	Asymmetrical – installed from the unexposed side
System description	1. 150mm wide AGNI-Sleeve was cut to fit one revolution of the aperture. 2. The AGNI-Sleeve was then cut down to include two 50mm high x 25mm wide tabs. 3. The cut AGNI-Sleeve was inserted into the aperture through the unexposed surface, tabs remained past the face of the unexposed surface. 4. The tabs were bent over onto the surface of the separating element and secured using concrete anchors. 5. AGNI-Seal was applied 10mm (nominal) deep between the separating element and the pipe, finishing flush with the face of the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 122 minutes
Insulation	No failure at 122 minutes

6.8 Specimen 8



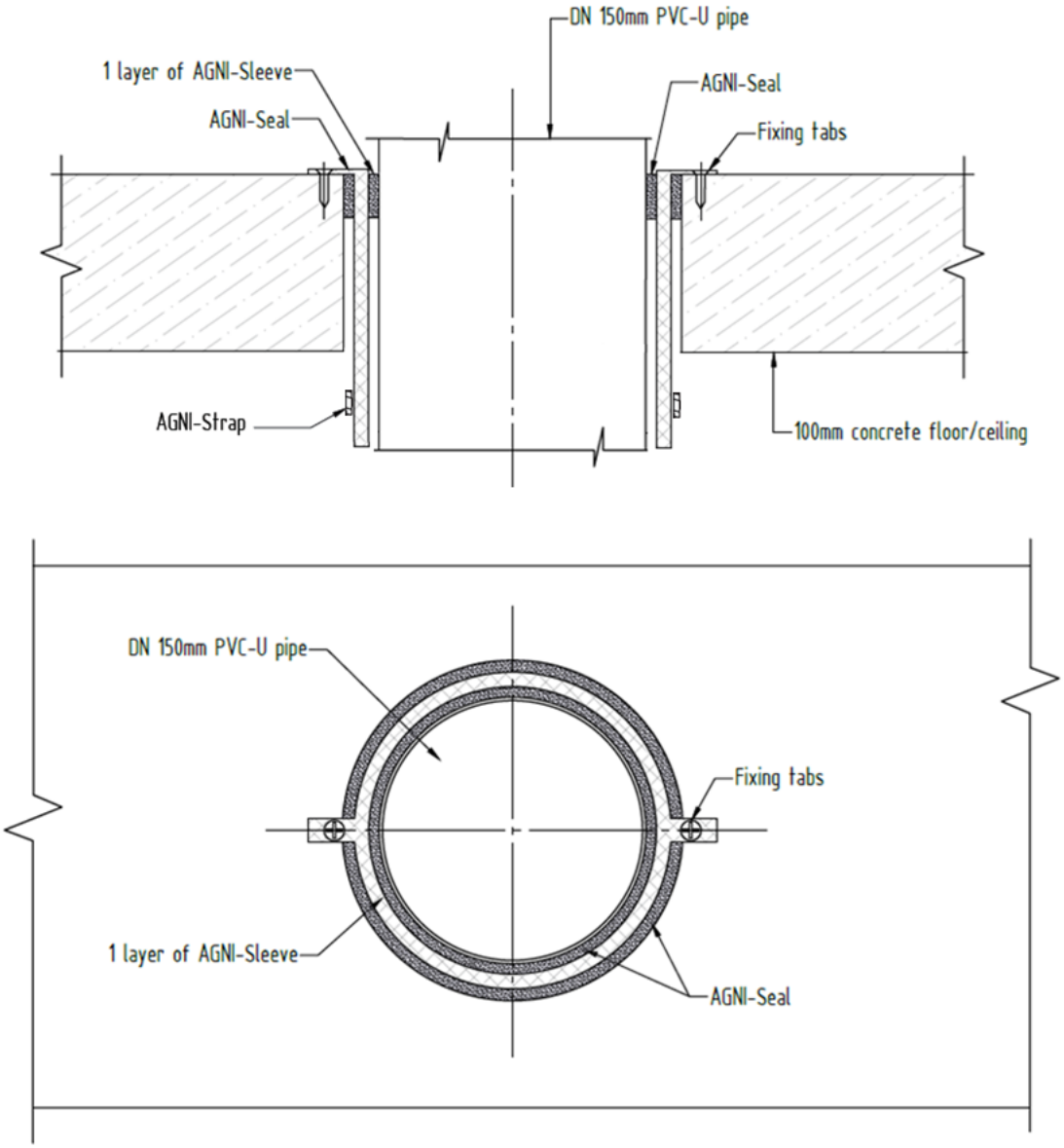


Service penetration details	
Service	DN100 PVC-U DWV PIPE
Aperture Diameter	129.8mm
Annular Spacing	Min: 8.0mm Max: 11.3mm

Local Fire-stopping system	
Application	Asymmetrical – installed from the unexposed side
System description	1. 150mm wide AGNI-Sleeve was cut to fit one revolution of the aperture. 2. The AGNI-Sleeve was then cut down to include two 50mm high x 25mm wide tabs. 3. The cut AGNI-Sleeve was inserted into the aperture through the unexposed surface, tabs remained past the face of the unexposed surface. 4. The tabs were bent over onto the surface of the separating element and secured using concrete anchors. 5. AGNI-Seal was applied 10mm (nominal) deep between the separating element and the pipe, finishing flush with the face of the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	No failure at 122 minutes
Insulation	121 minutes

6.9 Specimen 9



Service penetration details	
Service	DN150 PVC-U DWV PIPE
Aperture Diameter	170.8mm
Annular Spacing	Min: 4.5mm Max: 6.1mm

Local Fire-stopping system	
Application	Asymmetrical – installed from the unexposed side
System description	1. 250mm wide AGNI-Sleeve was cut to fit one revolution of the aperture (100mm past the face of the exposed side).

	2. The AGNI-Sleeve was then cut down to include two 50mm high x 25mm wide tabs. 3. The cut AGNI-Sleeve secured with stainless stee cable tie 50mm from the side opposed to the fixing tabs and was inserted into the aperture through the unexposed surface, tabs remained past the face of the unexposed surface. 4. The tabs were bent over onto the surface of the separating element and secured using concrete anchors. 5. AGNI-Seal was applied 10mm (nominal) deep between the separating element and the pipe, finishing flush with the face of the separating element.

Test results	
Structural adequacy	Not applicable
Integrity	94 minutes
Insulation	94 minutes