Fire Testing Laboratory

Regulatory Information Report

RIRF25041

Fire resistance test for penetration through a horizontal separating element

Client:	Agnitek Pty Ltd
Test method:	AS1530.4-2014
Report Date:	03/07/2025
Test number:	PF25041

Passive Fire Inspection and Test Services Limited
1/113 Pavilion Drive, Mangere, Auckland 2022, New Zealand
w: firelab.co.nz
e: tests@firelab.co.nz

Table of Contents

1.1 Document revision schedule

Revision #	Date	Description
1	03/07/2025	Issued to Client

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		03/07/2025
Authorised by:	Andrew Bain (Authorized signatory)		03/07/2025

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 slab.

SP #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
1	AGNI-Box – finished flush with unexposed side	123NF	123NF	-/120/120
2	AGNI-Board	123NF	123NF	-/120/120
2a	Cable Bundle – 26 x Data Cables	123NF	123NF	-/120/120
2c	FR Pair Coil	123NF	123NF	-/120/120
2d	Cable Bundle – 13 x TPS Cables	123NF	123NF	-/120/120
3	AGNI-Box – finished flush with exposed side	123NF	123NF	-/120/120
4	Cable Bundle – 10 x Data Cables	123NF	123NF	-/120/120
5	16mm Pex Pipe	123NF	123NF	-/120/120
6	20mm Pex Pipe	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:

26/05/2025

Installation completion date:

13/05/2025

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 PF25041. 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

1.1	Item	Concrete Slab
	Dimensions	Width x Height: 1400mm × 1400mm
		Slab Thickness: 120mm

4.2 Specimens

Services		
2.1	Item	AGNI-Box
	Dimensions	Width x Height: 300mm x 151mm
	Construction	The AGNI-Box is constructed using 0.9bmt steel measuring 300mm (width) x 151mm (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 was fitted with 50mm thick foam to the both faces of the AGNI-Box.
	Specimen #	1, 3
2.2	Item	Dynamix UTP 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
	Specimen #	2a, 4
2.4	Item	Pair FR Rubber Insulated Fire Retardant Pair Coil
	Copper Tube 1	Diameter (OD): 15.88mm
		Diameter (ID): 13.84mm

		Wall Thickness (T): 1.02mm
	Copper Tube 2	Diameter (OD): 9.52mm
		Diameter (ID): 7.9mm
		Wall Thickness (T): 0.81mm
	Insulation	Thickness (T): 19mm
		Material: Fire rated closed cell rubber
	Specimen #	2c
2.5	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
	Specimen #	2d
2.6	Item	Cable Tray
	Dimensions	Height: 1500mm
		Width: 300mm
		Depth: 50mm
	Specimen #	2e
2.11	Item	Auspex DN16 PN20 SDR9 PE-Xb Pipe
	Dimensions	Diameter (OD): 16.15mm
		Diameter (ID): 11.75mm
		Wall Thickness (T): 2.2mm
	Specimen #	5
	Item	Auspex DN20 PN20 SDR9 PE-Xb Pipe

2.12	Dimensions	Diameter (OD): 20.4mm
		Diameter (ID): 14.3mm
		Wall Thickness (T): 3.05mm
	Specimen #	6

Sealants		
3.1	Item	AGNI-Seal
	Dimensions	600mL sausage
	Specimen #	1, 3
3.2	Item	AGNI-Black
	Dimensions	310mL Cartridge
	Specimen #	2, 4, 5, 6

Insulation		
4.1	Item	AGNI-Board
	Dimensions	Width x Length: 400mm x 600mm
		Thickness: 50mm
	Specimen #	2

Fixings		
5.1	Item	90° Angle 2.25bmt
	Dimensions	Size: 70mm x 30mm Length: 200mm
	Installation	Used to secure AGNI-Box to separating element
	Specimen #	1, 3
	Item	Ramset AnkaScrew
	Dimensions	6mm x 75mm
	Installation	Used to secure 90° angle to the separating element
	Specimen #	1, 3
	Item	Self Tapping Screw
	Dimensions	10g x 16mm

	Installation	Used to secure 90° angle to AGNI-Box
	Specimen #	1, 3

5. Test Results

5.1 Observations during the test

Time min	Test face	SP#	OBSERVATIONS/REMARKS
			No major observation for the reported specimens
123			**TEST DISCONTINUED**

NOTE: E – Exposed Face (inside furnace)

U – Unexposed Face (outside furnace)

SE – Separating element

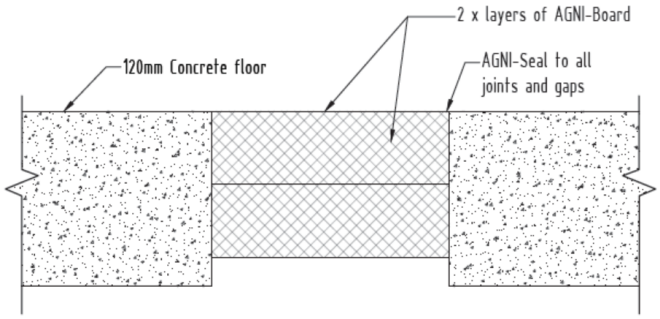
5.2 Specimen 1

Service penetration details	
Service	AGNI-Box (empty) – finished flush with unexposed face
Service Support	NA
Aperture Size	315mm x 165mm
Annular Spacing	Min: 7.9mm, Max: 13.5mm

Local Fire-stopping system	
Application	Asymmetrical – applied to unexposed face of the separating element
Products	90° Angle, AGNI-Seal
Procedure	1. The AGNI-Box was secured to the concrete slab using two 30x70mm 90° angles. The angles were fixed in the centre of the long edges of the AGNI-Box (30mm to the AGNI-Box and 70mm to Concrete) and positioned so the box finished flush with the face of the unexposed face. The AGNI-Box was secured using screws to the AGNI-Box and masonry screws to concrete. 2. Annular gap on exposed and unexposed face were filled 20mm deep with AGNI-Seal. No sealant was applied behind the angles.

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

5.3 Specimen 2

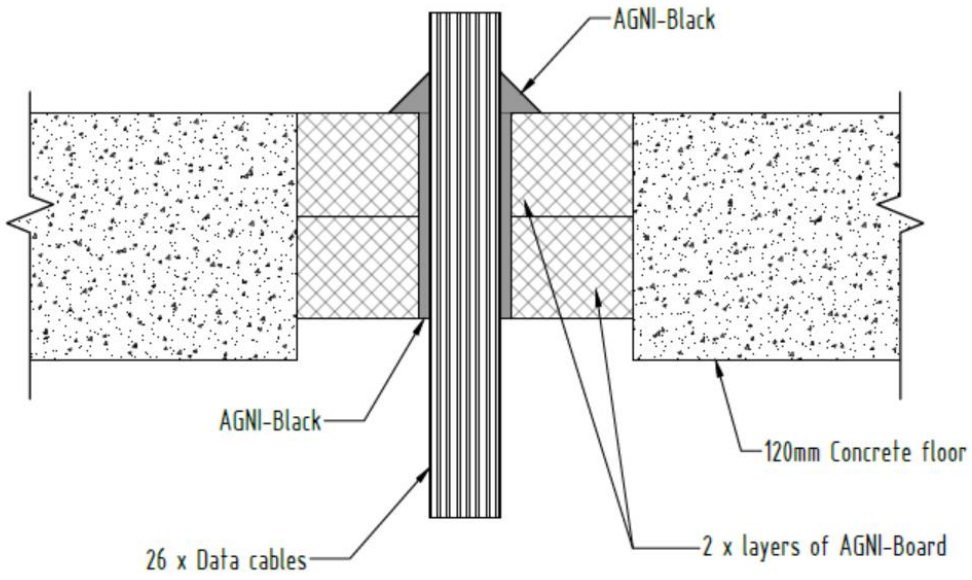


Service penetration details	
Service	AGNI-Board
Aperture Size	400mm x 600mm
Annular Spacing	Min: 0.0mm, Max: 0.0mm

Local Fire-stopping system	
Application	Asymmetrical – applied to unexposed face of the separating element
Products	AGNI-Board, AGNI-Seal
Procedure	1. The first layer of AGNI-Board was cut to fit around the existing services and installed into the aperture. The AGNI-Board was inserted to allow a flush finish on the unexposed surface once the second layer was installed. 2. All edges and joints were coated with AGNI-Seal before installation of the AGNI-Board. 3. The second layer of AGNI-Board was cut to fit around the existing services (staggered joints to the first layer) and installed on top of the first layer of AGNI-Board. The AGNI-Board was finished flush with the top of the unexposed face of the separating element. 4. All edges and joints were coated with AGNI-Seal before installation of the AGNI-Board.

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

5.4 Specimen 2a

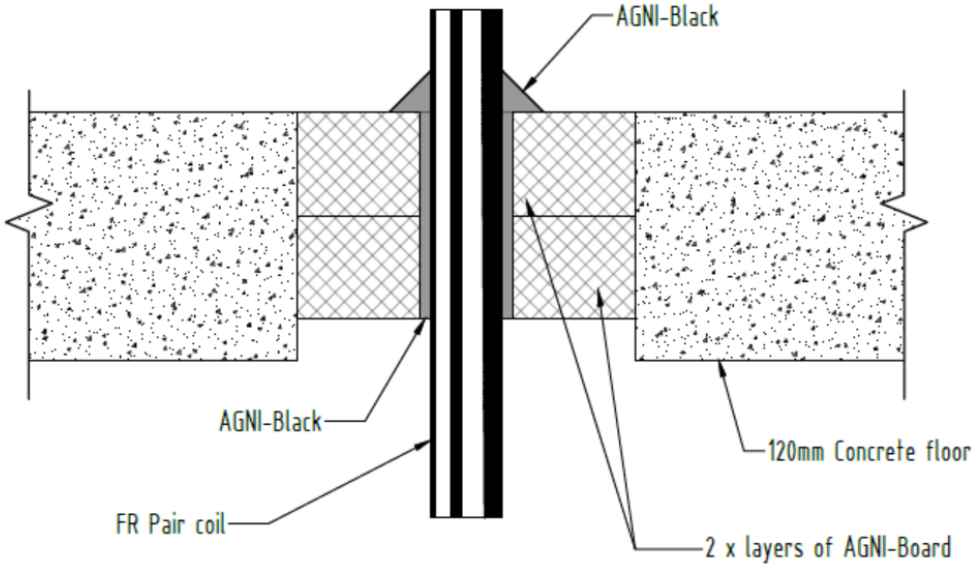


Service penetration details	
Service	Cable Bundle – Data Cables (26 cables)
Aperture Size	47.6mm
Annular Spacing	Min: 6.1mm, Max: 16.3mm

Local Fire-stopping system	
Application	Symmetrical
Products	AGNI-Black
Procedure	1. AGNI-Black was applied in the annular space to the depth of the AGNI-Board, 100mm (nominal) deep and finished flush with both faces of the AGNI-Board. 2. 20x20mm cone of AGNI-Black applied on the unexposed face.

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

5.5 Specimen 2c

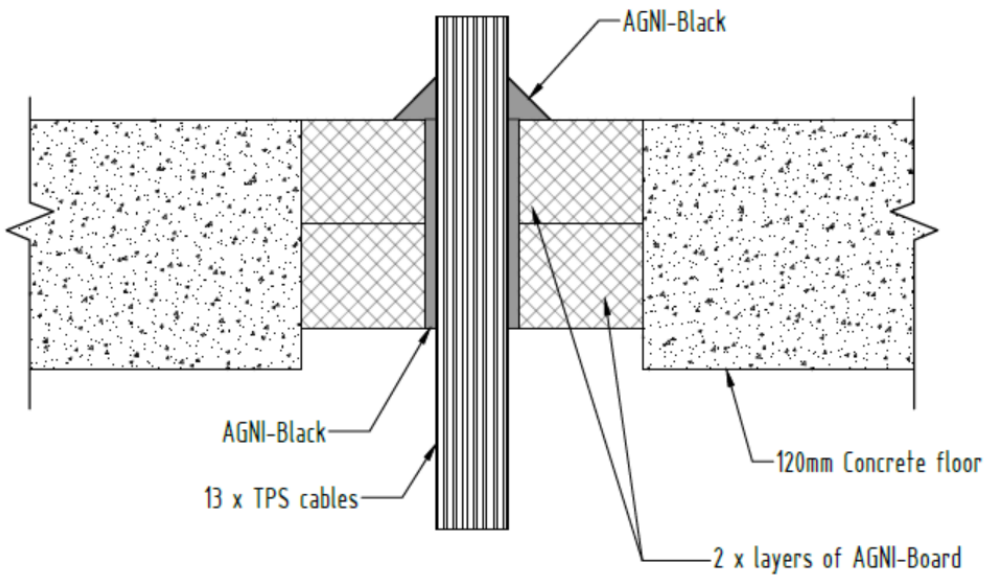


Service penetration details	
Service	FR Pair Coil – two copper tubes with fire retardant insulation
Aperture Size	61mm x 103mm
Annular Spacing	Min: 4.7mm, Max: 12.6mm

Local Fire-stopping system	
Application	Symmetrical
Products	AGNI-Black
Procedure	1. AGNI-Black was applied in the annular space to the depth of the AGNI-Board, 100mm (nominal) deep and finished flush with both faces of the AGNI-Board. 2. 20x20mm cone of AGNI-Black applied on the unexposed face.

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

5.6 Specimen 2d



Service penetration details	
Service	Cable Bundle – TPS Cables (13 cables)
Aperture Size	47.9mm
Annular Spacing	Min: 10.8mm, Max: 17.2mm

Local Fire-stopping system	
Application	Asymmetrical – applied to unexposed face of the separating element
Products	AGNI-Black
Procedure	1. AGNI-Black was applied in the annular space to the depth of the AGNI-Board, 100mm (nominal) deep and finished flush with both faces of the AGNI-Board. 2. 20x20mm cone of AGNI-Black applied on the unexposed face.

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

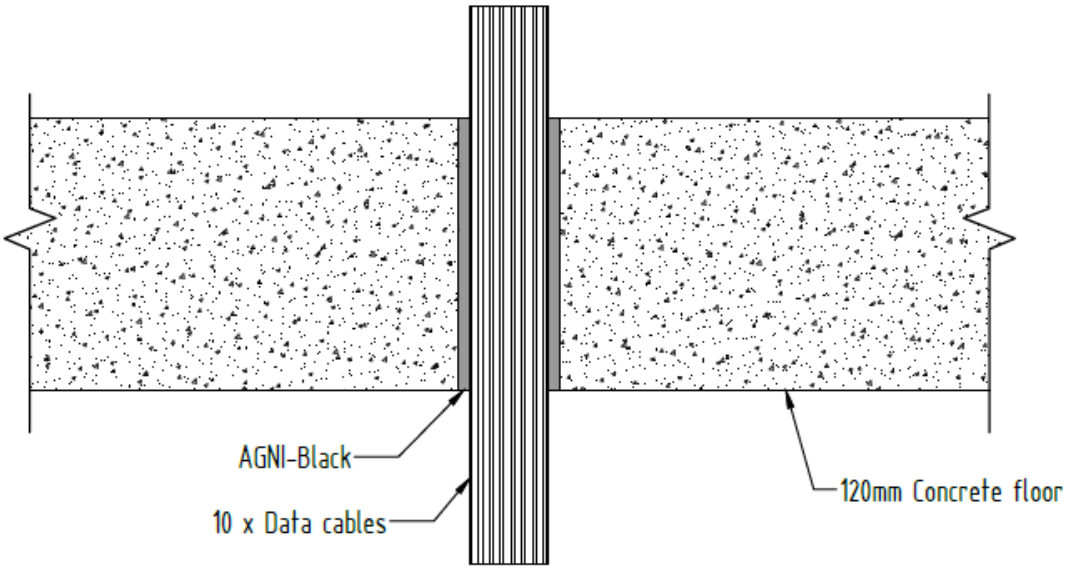
5.7 Specimen 3

Service penetration details	
Service	AGNI-Box (empty) – finished flush with exposed face
Aperture Size	312mm x 164mm
Annular Spacing	Min: 6.2mm, Max: 14.3mm

Local Fire-stopping system	
Application	Asymmetrical – applied to exposed face of the separating element
Products	90° Angle, AGNI-Seal
Procedure	1. The AGNI-Box was secured to the concrete slab using two 30x70mm 90° angles. The angles were fixed in the centre of the long edges of the AGNI-Box (30mm to the AGNI-Box and 70mm to Concrete) and positioned so the box finished flush with the face of the exposed face. The AGNI-Box was secured using screws to the AGNI-Box and masonry screws to concrete. 2. Annular gap on exposed and unexposed face were filled 20mm deep with AGNI-Seal. No sealant was applied behind the angles 3. 50x75 cone of AGNI-Seal was applied on the unexposed face of the steel angle.

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

5.8 Specimen 4

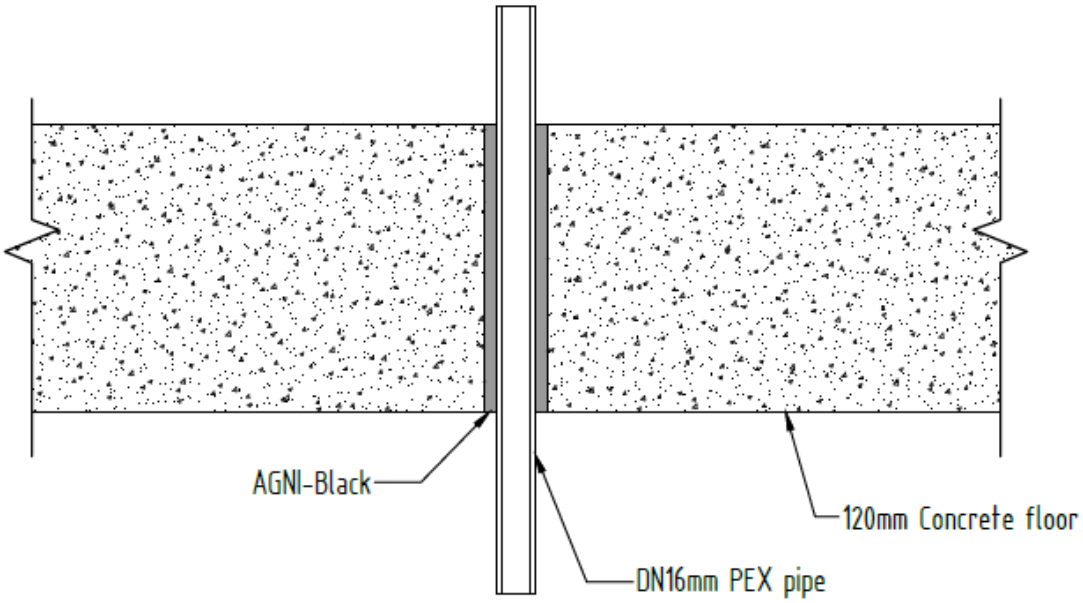


Service penetration details	
Service	Cable Bundle – 10x Data Cables
Aperture Size	47.8mm
Annular Spacing	Min: 5.1mm, Max: 13.5mm

Local Fire-stopping system	
Application	Asymmetrical – applied to unexposed face of the separating element
Products	AGNI-Black
Procedure	1. AGNI-Black was applied to the annular space and finished flush with the exposed and unexposed faces of the separating element.

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

5.9 Specimen 5

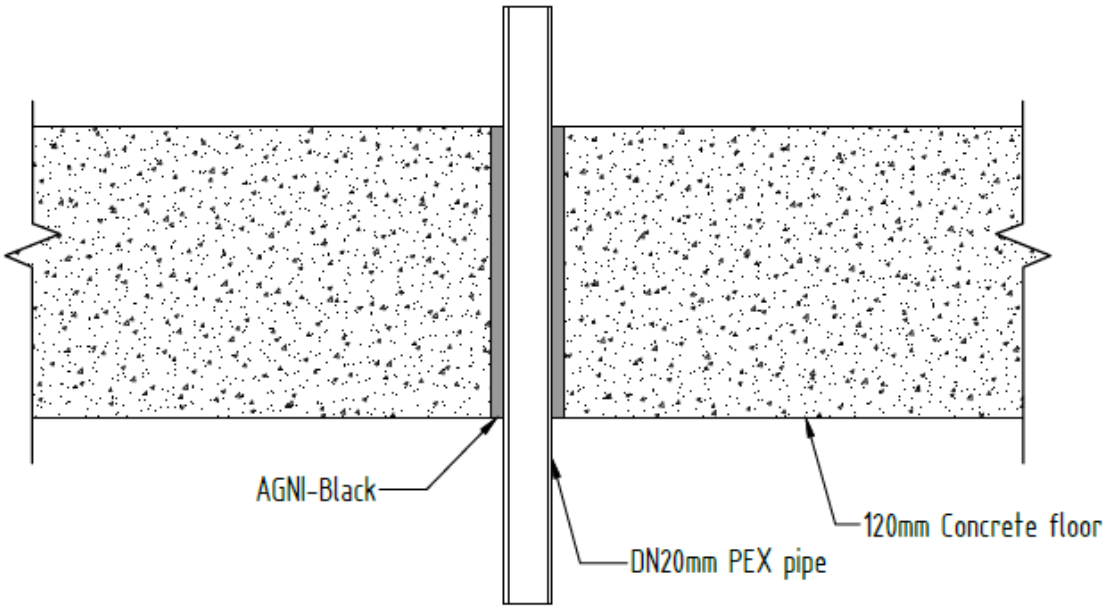


Service penetration details	
Service	16mm Pex Pipe
Aperture Size	44.6mm
Annular Spacing	Min: 6.3mm, Max: 22.2mm

Local Fire-stopping system	
Application	Asymmetrical – applied to unexposed face of the separating element
Products	AGNI-Black
Procedure	1. AGNI-Black was applied to the annular space and finished flush with the exposed and unexposed faces of the separating element.

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

5.10Specimen 6



Service penetration details	
Service	20mm Pex Pipe
Aperture Size	46.5mm
Annular Spacing	Min: 7.6mmmm, Max: 18.5mm

Local Fire-stopping system	
Application	Asymmetrical – applied to unexposed face of the separating element
Products	AGNI-Black
Procedure	1. AGNI-Black was applied to the annular space and finished flush with the exposed and unexposed faces of 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

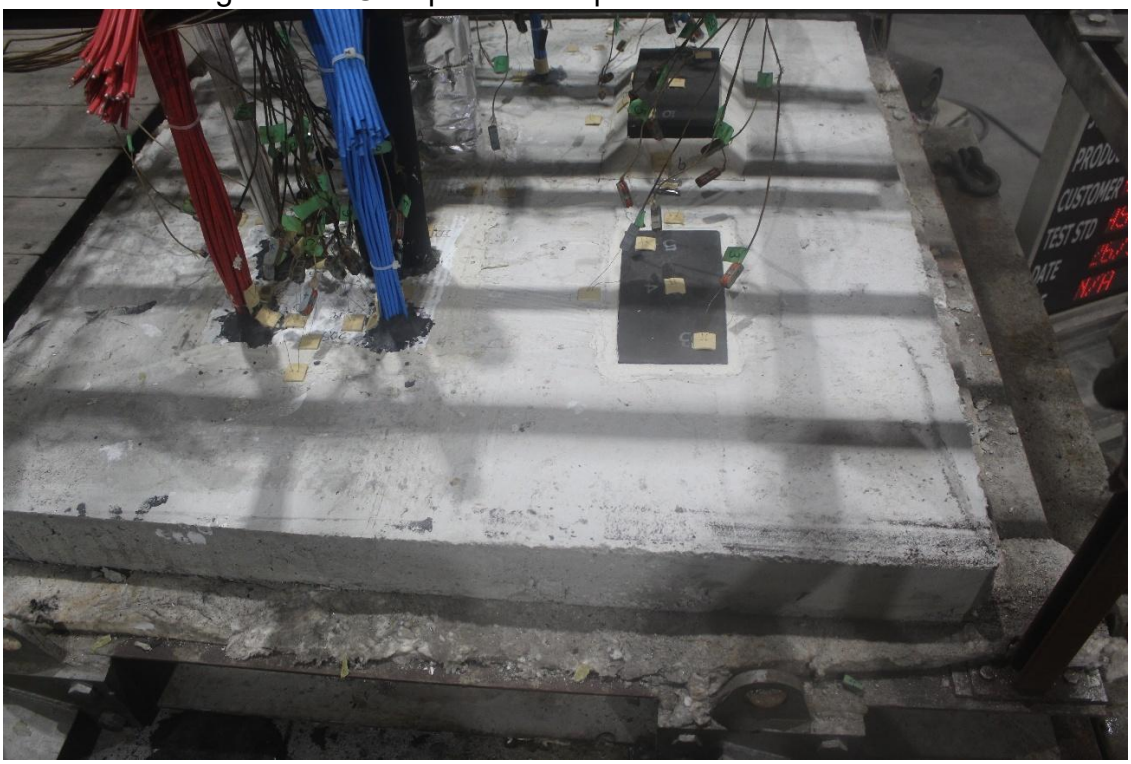


Figure 2 - Unexposed face prior to test commencement