

Regulatory Information Report

RIRF24016

Fire resistance test for penetrations through the vertical separating element

Client:	Agnitek Pty Ltd
Test method:	AS1530.4-2014
Report Date:	29/06/2024
Test number:	PF24016





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1.1 Document Revision Schedule

Revision #	Date	Description
1	29/06/2024	Issued to Client

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		29/06/2024
Authorised by:	Andrew Bain (Authorized signatory)		29/06/2024



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

2. Report Summary

Service penetration was tested passing through 64mm Steel Stud wall with two layers of 13mm FR plasterboard each side.

Specimen #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
1	DN 50 PVC-U DWV Pipe	123 NF	123 NF	-/120/120
3	50mm uPVC conduit(empty)	123 NF	123 NF	-/120/120
4	50mm uPVC conduit (filled)	123 NF	123 NF	-/120/120
5	16mm polybutylene	123 NF	123 NF	-/120/120
6	30mm Cable Bundle – 8 x PVC TPS Cables	123 NF	101	-/120/90
7	25mm Cable Bundle – 13 x Cat5e Blue UTP SOLID Cable	123 NF	123 NF	-/120/120
8	30mm Cable Bundle – 8 x 2C+E TPS Cables	123 NF	123 NF	-/120/120
9	25mm Cable Bundle – 13 x Cat5e Blue UTP SOLID Cable	123 NF	123 NF	-/120/120

NF – No failure during the test

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:

There were 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 Client. The Laboratory was not involved in sampling of the materials. The Laboratory checked materials during construction of the specimen.

Testing date:

12/02/2024

Installation completion date:

23/01/2024

Termination of The Test:

The test was discontinued at 123 minutes.

3.4 Use of Reports

A regulatory information report was issued in addition to the full test report PF24016. This provides the minimum information required for regulatory compliance.

This report shall not be reproduced, except in full.

The specimen was a symmetrical construction.

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 Steel Stud with two layers of 13mm FR plasterboard each side
	Dimensions	Width / Height (W/H): 1200mm x 1200mm
		Wall Thickness (T): 116mm
		Cavity: 64mm

Materials		
1.2	Item	Steel Track
	Dimensions	Width / Height (W/H): 64mm x 30mm
		Thickness (T): 0.55 BMT
	Additional Info	Installed to top and bottom of refractory frame
1.3	Item	Steel Stud
	Dimensions	Width / Height (W/H): 64mm x 34mm
		Thickness (T): 050 BMT
	Additional Info	Fixed to steel tracks, used to construct steel stud frame
1.5	Item / Product Name	Fire Rated Plasterboard
	Dimensions	Width / Height (W/H): 1200mm x 1200mm
		Thickness (T): 13mm
	Additional Info	2 x layers installed to each face of steel stud frame
1.6	Item / Product Name	Screw
	Dimensions	6.5 x 32mm
	Installation	Used to fix steel track to refractory frame
1.7	Item / Product Name	Screw
	Dimensions	10 x 16mm
	Installation	Used to fix steel stud frame

1.8	Item	Self Tapping Screw
	Dimensions	6g x 41mm
	Installation	Used to fix plasterboard to steel stud frame

4.2 Specimens

Services		
2.1	Item / Product Name	DN50 PVC-U DWV Pipe
	Dimensions	Inner Diameter (ID): 50.5mm
		Outer Diameter (OD): 56mm
Thickness (T): 2.5mm		
2.3	Item / Product Name	DN50 uPVC Electrical Conduit
	Dimensions	Inner Diameter (ID): 43.5mm
		Outer Diameter (OD): 50mm
Thickness (T): 3mm		
2.4	Item / Product Name	Flat PVC TPS 2C+E Cable
	Dimensions	Width / Height (W/H): 12mm x 5mm
2.5	Item / Product Name	16mm Polybutylene Pipe
	Dimensions	Inner Diameter (ID): 12.5mm
		Outer Diameter (OD): 16mm
Thickness (T): 1.5mm		
2.6	Item / Product Name	Cat5e UTP SOLID Cable
		Outer Diameter (OD): 5mm

Sealants		
3.1	Item / Product Name	AGNI-Seal
	Dimensions	310mL sausage
	Installation	Installed to all specimens

Fixings		
4.1	Item	AGNI-Strap Stainless Steel Ties
	Dimensions	Width / Height (W/H): 4.6mm x 200mm
	Installation	Used to fix AGNI-Wrap around service
4.2	Item	AGNI-Clip Stainless Steel Clips
	Installation	Used to fix AGNI-Wrap to separating element
4.3	Item	Self Tapping Screw
	Dimensions	6g x 25mm
	Installation	Used to fix AGNI-Wrap to separating element

Intumescent		
5.1	Item	AGNI-Wrap
	Dimensions	Width (W): 25mm
		Thickness (T): 3mm
Installation	Installed around service, against separating element	

5. Specimens

5.1 Specimen 1

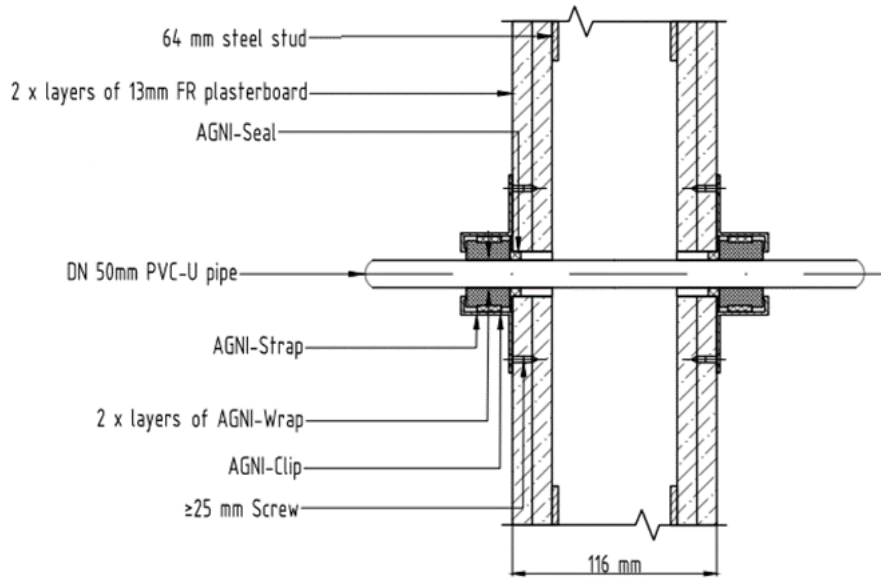


Figure 3 – Specimen 1

Service penetration details	
Service	DN50 PVC-U DWV Pipe
Aperture Diameter	75mm
Annular Spacing	Min: 8mm, Max: 11mm

Local Fire-stopping system	
Application	Symmetrical – installed on both faces of separating element
System description	26mm (nominal) deep sealant was installed in the annular space. 2 revolutions of intumescent strip with 10mm overlap were wrapped around the pipe. The intumescent was secured using a cable tie then fixed to the separating element with 3 screw and clip fixings.

Test results

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

5.2 Specimen 3

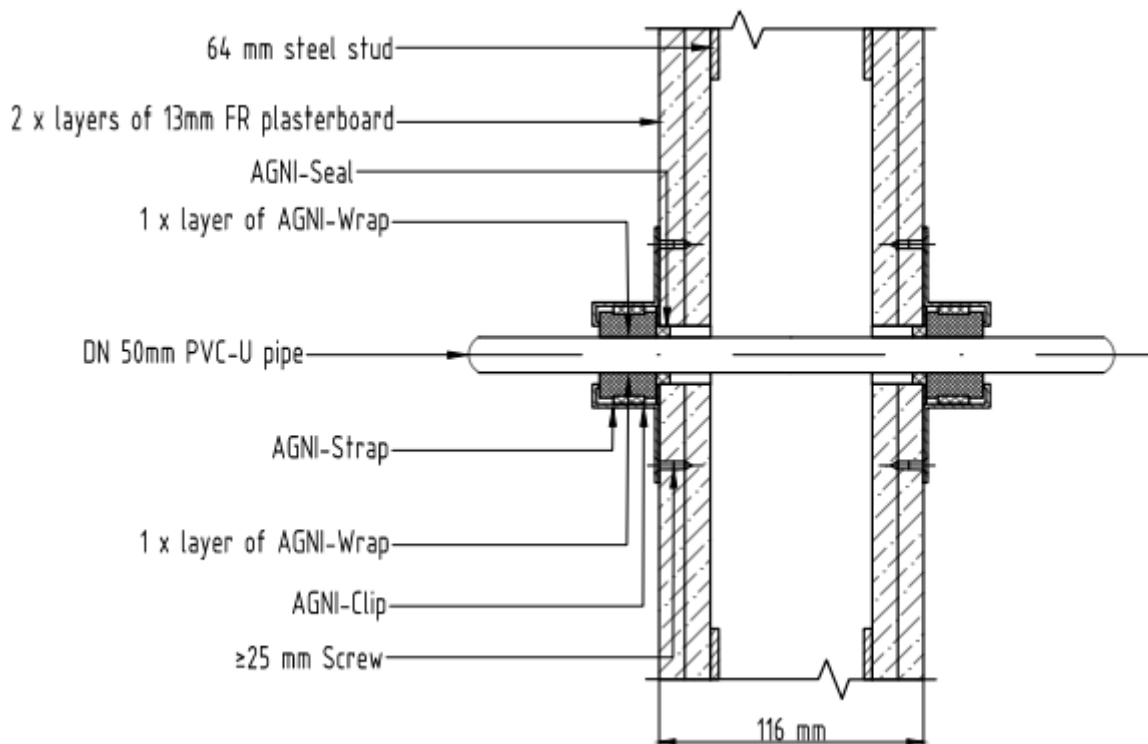


Figure 7 – Specimen 3

Service penetration details	
Service	DN50 uPVC Electrical Conduit
Aperture Diameter	68.5mm
Annular Spacing	Min: 9mm, Max: 9.5mm

Local Fire-stopping system	
Application	Symmetrical – installed on both faces of separating element
System description	26mm (nominal) deep sealant was installed in the annular space. 1 revolution of intumescent strip with 13mm overlap was wrapped around the pipe. The intumescent was secured using a cable tie then fixed to the separating element with 2 screw and clip fixings.

Test results

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

5.3 Specimen 4

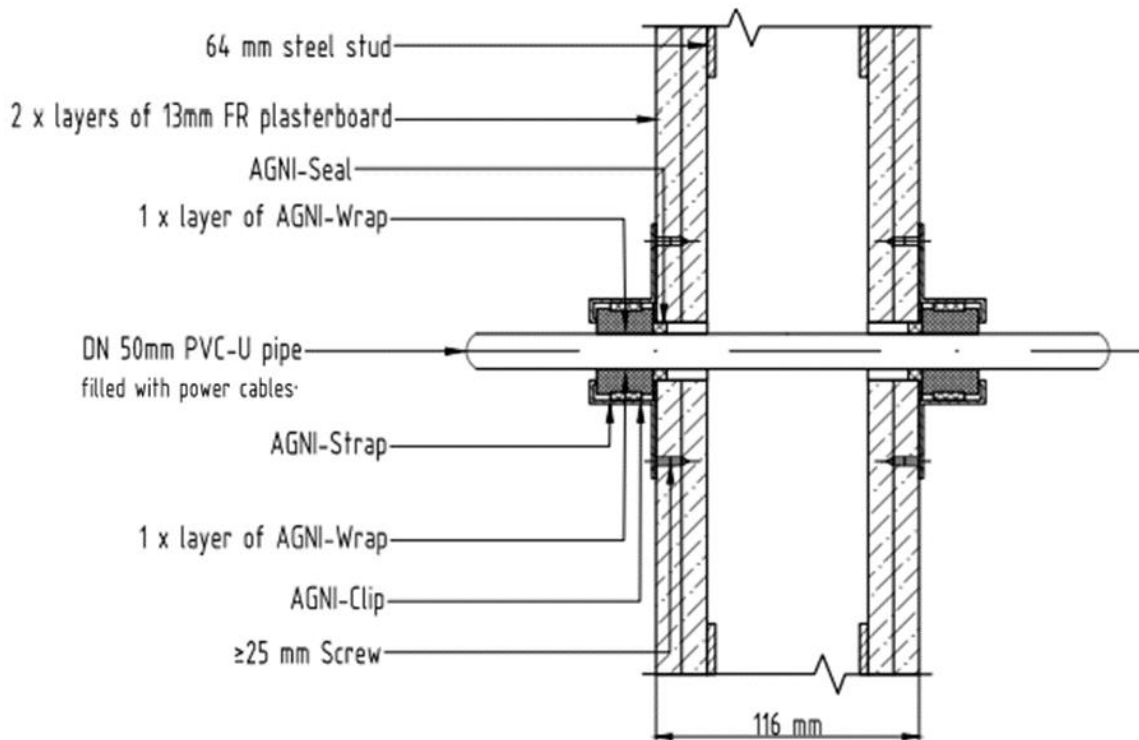


Figure 9 – Specimen 4

Service penetration details	
Service	DN50 uPVC Electrical Conduit filled with 14 TPS cables
Aperture Diameter	67.5mm
Annular Spacing	Min: 5mm, Max: 12.5mm

Local Fire-stopping system	
Application	Symmetrical – installed on both faces of separating element
System description	26mm (nominal) deep sealant was installed in the annular space. 1 revolution of intumescent strip with 12.5mm overlap was wrapped around the pipe. The intumescent was secured using a cable tie then fixed to the separating element with 2 screw and clip fixings.

Test results

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

5.4 Specimen 5

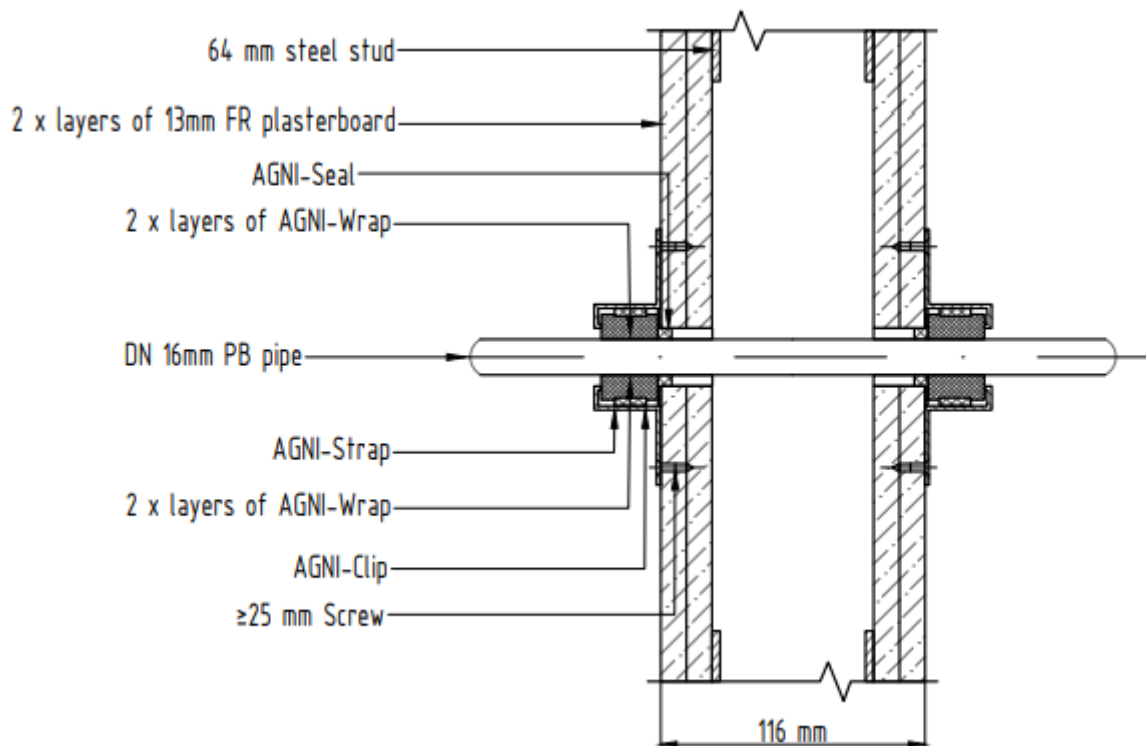


Figure 11 – Specimen 5

Service penetration details	
Service	16mm Polybutylene Pipe
Aperture Diameter	35mm
Annular Spacing	Min: 4.5mm, Max: 14.5mm

Local Fire-stopping system	
Application	Symmetrical – installed on both faces of separating element
System description	26mm (nominal) deep sealant was installed in the annular space. 2 revolutions of intumescent strip with 10mm overlap were wrapped around the pipe. The intumescent was secured using a cable tie then fixed to the separating element with 2 screw and clip fixings.

Test results

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

5.5 Specimen 6

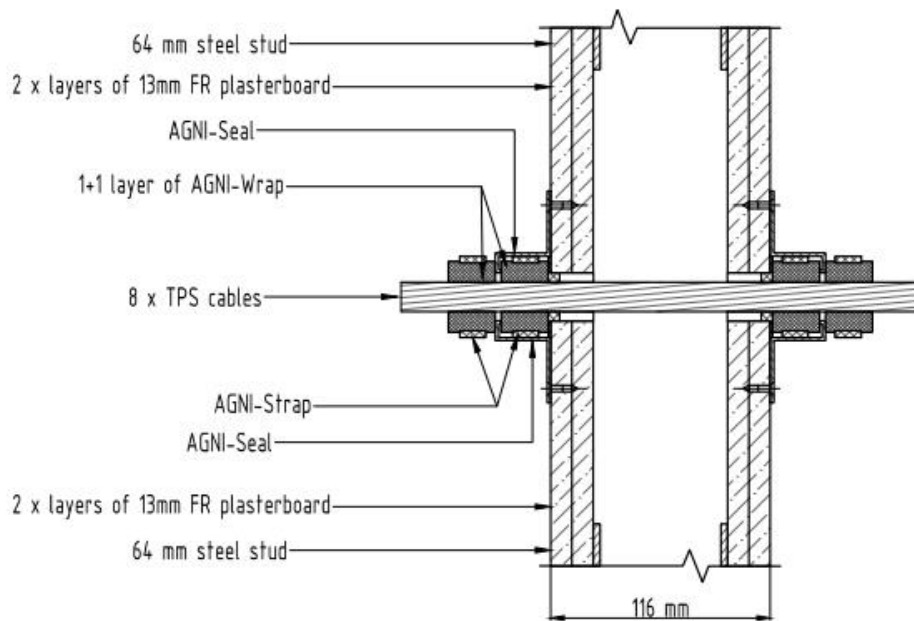


Figure 13 – Specimen 6

Service penetration details	
Service	30mm (measured) Cable Bundle – 8 x PVC TPS Cables
Aperture Diameter	36mm
Annular Spacing	Min: 0mm, Max: 8mm

Local Fire-stopping system	
Application	Symmetrical – installed on both faces of separating element
System description	26mm (nominal) deep sealant was installed in the annular space. A 120mm long intumescent strip was wrapped around the cable bundle with 13mm overlap. The intumescent was secured using a cable tie then fixed to the separating element with 2 clips and screws fixings. Another 120mm long intumescent strip was wrapped around the cable bundle with 13mm overlap and secured using a cable tie. A bead of sealant was applied to the exposed end of each intumescent strip.

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	101 minutes

5.6 Specimen 7

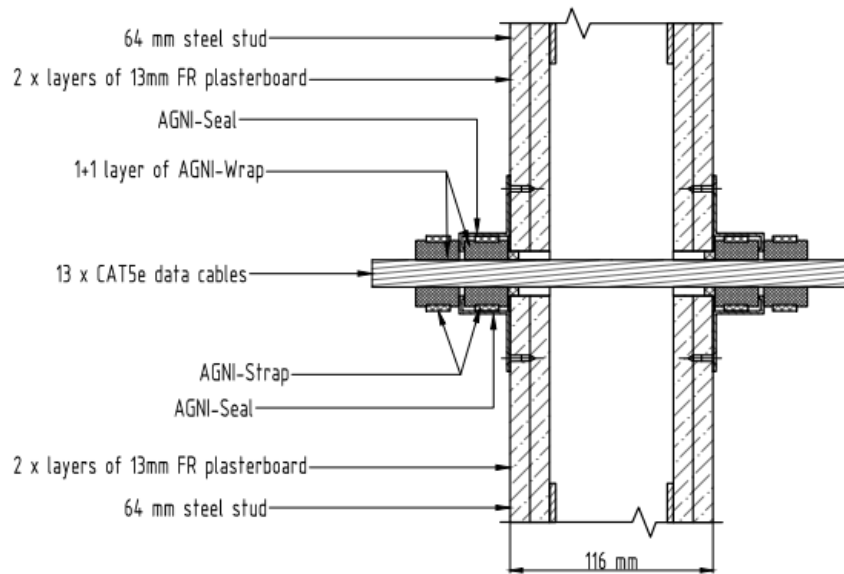


Figure 15 – Specimen 7

Service penetration details	
Service	25mm (measured) Cable Bundle – 13 x Cat5e UTP SOLID Cable
Aperture Diameter	36.5mm
Annular Spacing	Min: 0mm, Max: 13mm

Local Fire-stopping system	
Application	Symmetrical – installed on both faces of separating element
System description	26mm (nominal) deep sealant was installed in the annular space. A 124mm long intumescent strip was wrapped around the cable bundle with 13mm overlap. The intumescent was secured using a cable tie then fixed to the separating element with 2 clips and screw fixings. Another 124mm long intumescent strip was wrapped around the cable bundle with 13mm overlap and secured using a cable tie. A bead of sealant was applied to the exposed end of each intumescent strip.

Test results

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

5.7 Specimen 8

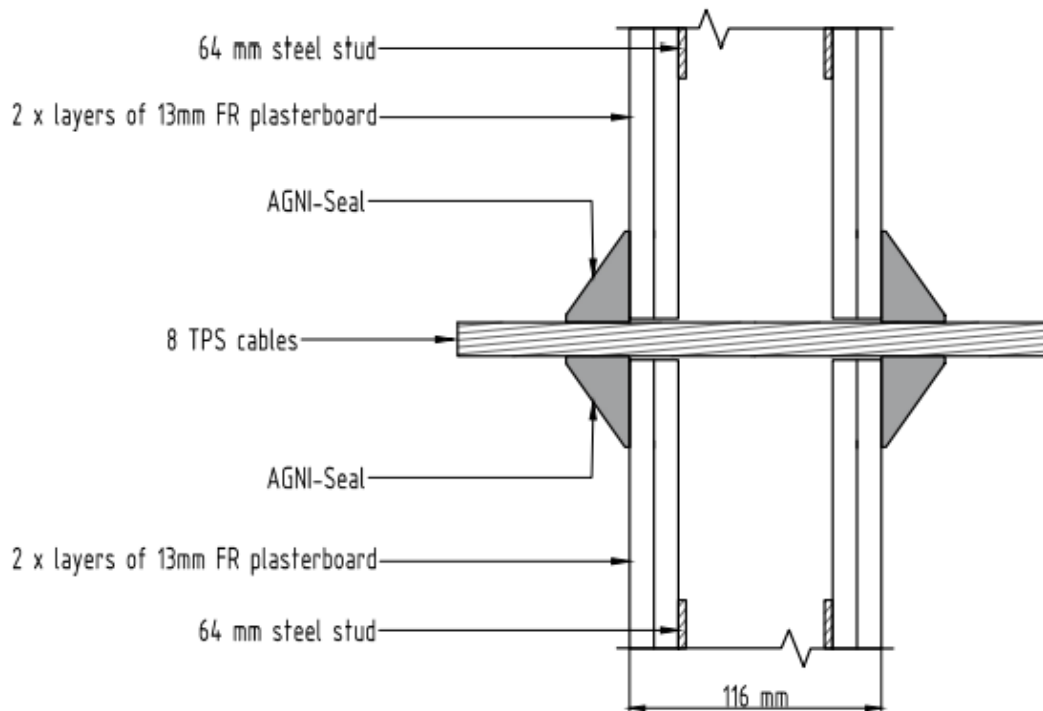


Figure 17 – Specimen 8

Service penetration details	
Service	30mm (measured) Cable Bundle – 8 × PVC sheath TPS Cables
Aperture Diameter	38mm
Annular Spacing	Min: 0mm, Max: 11.5mm

Local Fire-stopping system	
Application	Symmetrical – installed on both faces of separating element
System description	26mm (nominal) deep sealant in annular space and a 30mm × 30mm cone of sealant between cable bundle and separating element.

Test results

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

5.8 Specimen 9

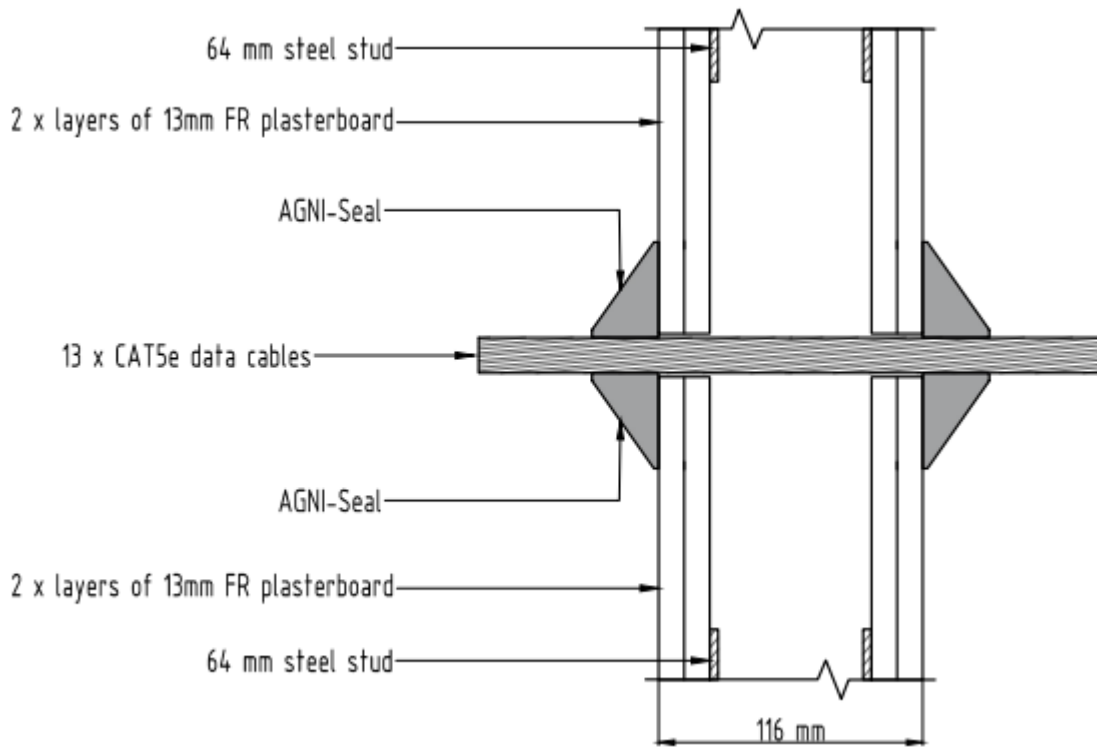


Figure 19 – Specimen 9

Service penetration details	
Service	25mm (measured) Cable Bundle – 13 x Cat5e UTP SOLID Cable
Aperture Diameter	36.5mm
Annular Spacing	Min: 3.5mm, Max: 13mm

Local Fire-stopping system	
Application	Symmetrical – installed on both faces of separating element
System description	26mm (nominal) deep sealant in annular space and a 30mm x 30mm cone of sealant between cable bundle and separating element.

Test results

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

6. Observations during the test

Time min	Test face	SP#	OBSERVATIONS/REMARKS
70	U	1	Pipe detached from SE, cotton pad test applied over the red glow in aperture for 30 seconds – PASS
123			Test Discontinued

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