

Regulatory Information Report

RIRF25050

**Fire resistance test for penetration through a
vertical separating element**

Client:	Agnitek Pty Ltd
Test method:	AS1530.4-2014
Report Date:	02/07/2025
Test number:	PF25050

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1.1 Document revision schedule

Revision #	Date	Description
1	02/07/2025	Issued to Client

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		02/07/2025
Authorised by:	Andrew Bain (Authorized signatory)		02/07/2025



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 frame lined with two layers of 13mm FR plasterboard. A 100mm concrete soffit was installed above the steel stud frame wall.

Specimen #	Service	Actual Integrity (min)	Actual Insulation (min)	FRL
2	AGNI-Box 350	123NF	122	-/120/120
3	20mm Pex Pipe	123NF	123NF	-/120/120
4	65mm PVC Pipe	123NF	123NF	-/120/120
5	100mm Copper Pipe	123NF	15	-/120/15
6	20mm Pex Pipe	123NF	123NF	-/120/120
7	65mm PVC Pipe	123NF	123NF	-/120/120
8	150mm PVC 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:

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:

13/06/2025

Installation completion date:

04/06/2025

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 PF25050. 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 x 1200mm

Materials		
1.2	Item	Concrete Pin Anchors
	Dimensions	6.5mm x 32mm
	Installation	Fixing top and bottom plates to refractory frame
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
	Dimensions	600mL sausage
	Installation	Used to seal around edge of separating element

4.2 Specimens

Services		
2.1	Item	DN20 SDR9 PE-X Pipe
	Dimensions	Diameter (OD): 20.4mm
		Diameter (ID): 14.3mm
		Wall Thickness (T): 3.05mm
Specimen #	3, 6	
2.2	Item	DN65 PVC-U DWV Pipe
	Dimensions	Diameter (OD): 69.0mm
		Diameter (ID): 63.0mm
		Wall Thickness (T): 3.0mm
Specimen #	4, 7	
2.3	Item	100x1.63 B 100mm Copper Pipe
	Dimensions	Diameter (OD): 104.8mm
		Diameter (ID): 101.5mm
		Wall Thickness (T): 1.65mm
Specimen #	5	
2.4	Item	DN150 PVC-U DWV Pipe
	Dimensions	Diameter (OD): 160.2mm
		Diameter (ID): 152.1mm
		Wall Thickness (T): 4.05mm
Specimen #	8	

Intumescent Box		
3.1	Item	AGNI-Box 350
	Dimensions	Width x Height: 350mm x 150mm

	Construction	The AGNI-Box is constructed using 0.9bmt steel measuring 350mm (width) x 150mm (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, 2

Sealants

4.1	Item	AGNI-Seal
	Dimensions	600mL sausage
	Specimen #	1, 2, 4, 5, 7, 8
4.2	Item	AGNI-Black
	Dimensions	310mL Cartridge
	Specimen #	3, 6

Intumescent

5.1	Item	AGNI-Wrap 50
	Dimensions	Width: 50mm Thickness: 3.5mm
	Specimen #	3
5.2	Item	AGNI-Collar 65 (50)
	Steel Frame	Height: 50mm Steel: 0.90bmt
	Intumescent	Height x Thickness: 48mm x 3.5mm Layers: 2
	Fixing Points	3
	Specimen #	4

Insulation

6.1	Item	AGNI-Shield
	Dimensions	Width: 300mm

		Thickness: 13mm
	Specimen #	2

Fixings		
7.1	Item	Concrete screws
	Dimensions	6.4mm x 44.4mm
	Installation	Used to secure straps to concrete soffit
	Specimen #	2
7.2	Item	Hollow wall anchors
	Dimensions	M4 x 8mm
	Installation	Used to secure collars to the separating element
	Specimen #	7
7.3	Item	Self Tapping Screw
	Dimensions	41mm
	Installation	Used to secure collars to the separating element
	Specimen #	4, 8

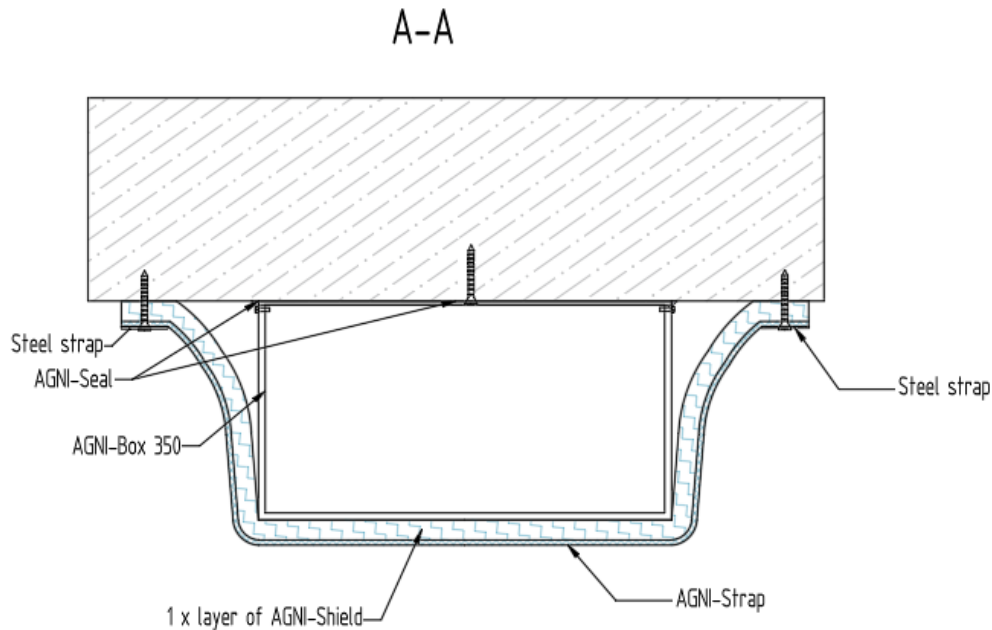
5. Test Results

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 2



Fixings to the walls are not shown, refer to description below

Service penetration details	
Service	AGNI-Box 350 (empty) with AGNI-Shield
Service Support	NA
Aperture Size	360mm x 165mm
Annular Spacing	Min: 0.0mm, Max: 6.5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Seal, AGNI-Shield, Builders Strap
Procedure	<ol style="list-style-type: none"> 1. A 10mm bead of AGNI-Seal was applied around the perimeter of the AGNI-Box removable lid. 2. The lid was attached to the concrete soffit and fixed to the concrete with masonry screw through pre-punched hole. 3. Other three sides of the AGNI-Box were fixed to the lid with four bolts through designated holes 4. AGNI-Box was fixed to the framing on all three sides with dry wall screws through pre-punched holes.

- 5. 10mm (nominal) bead of AGNI-Seal was applied in the concrete soffit/AGNI-Box junction.
- 6. 300mm wide AGNI-Shield wrapped around three sides of the AGNI-Box and secured to the concrete soffit using steel builders strap and masonry screw at 50mm from the edges and at 100mm centres.

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	122 minutes

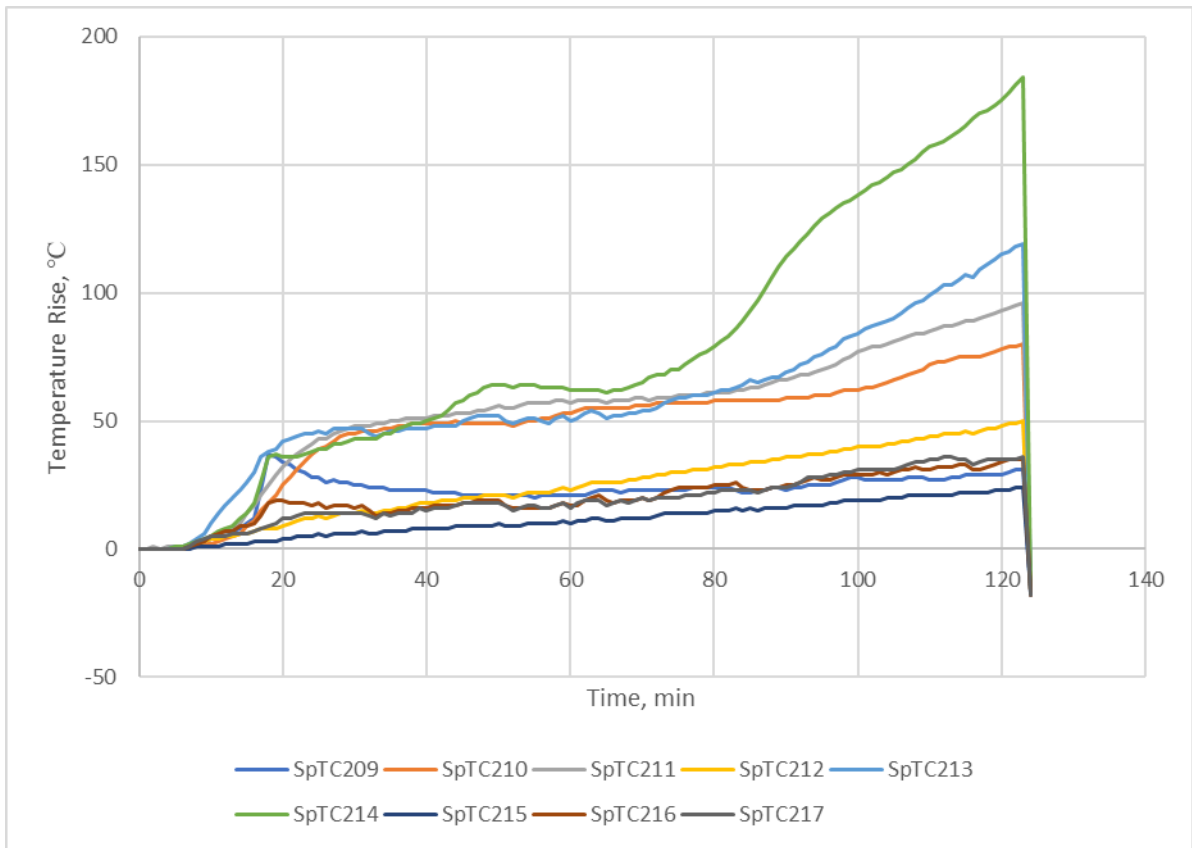
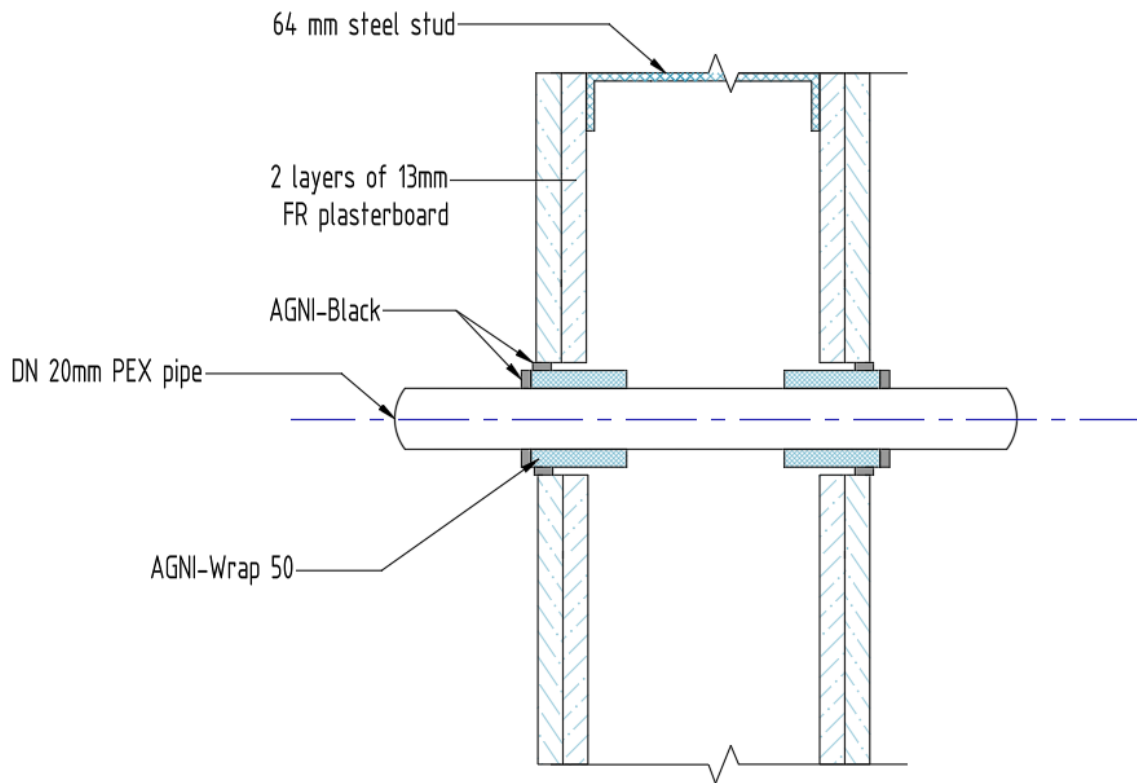


Figure 1 - Specimen 2 thermocouple temperature rise readings

5.3 Specimen 3



Service penetration details	
Service	20mm Pex Pipe
Service Support	Exposed Side: 275mm Unexposed Side: 375mm and 1675mm
Aperture Size	31.8mm
Annular Spacing	Min: 4.5mm, Max: 13.0mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Wrap, AGNI-Black
Procedure	<ol style="list-style-type: none"> 1. 50mm AGNI-Wrap inserted 40mm into the aperture and finished 10mm past the face of the separating element. 2. AGNI-Black applied into the gap between the pipe and the AGNI-Wrap 10mm (nominal) deep. 3. 5mm (nominal) AGNI-Black applied to seal between the AGNI-Wrap and the separating element.

Test results

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

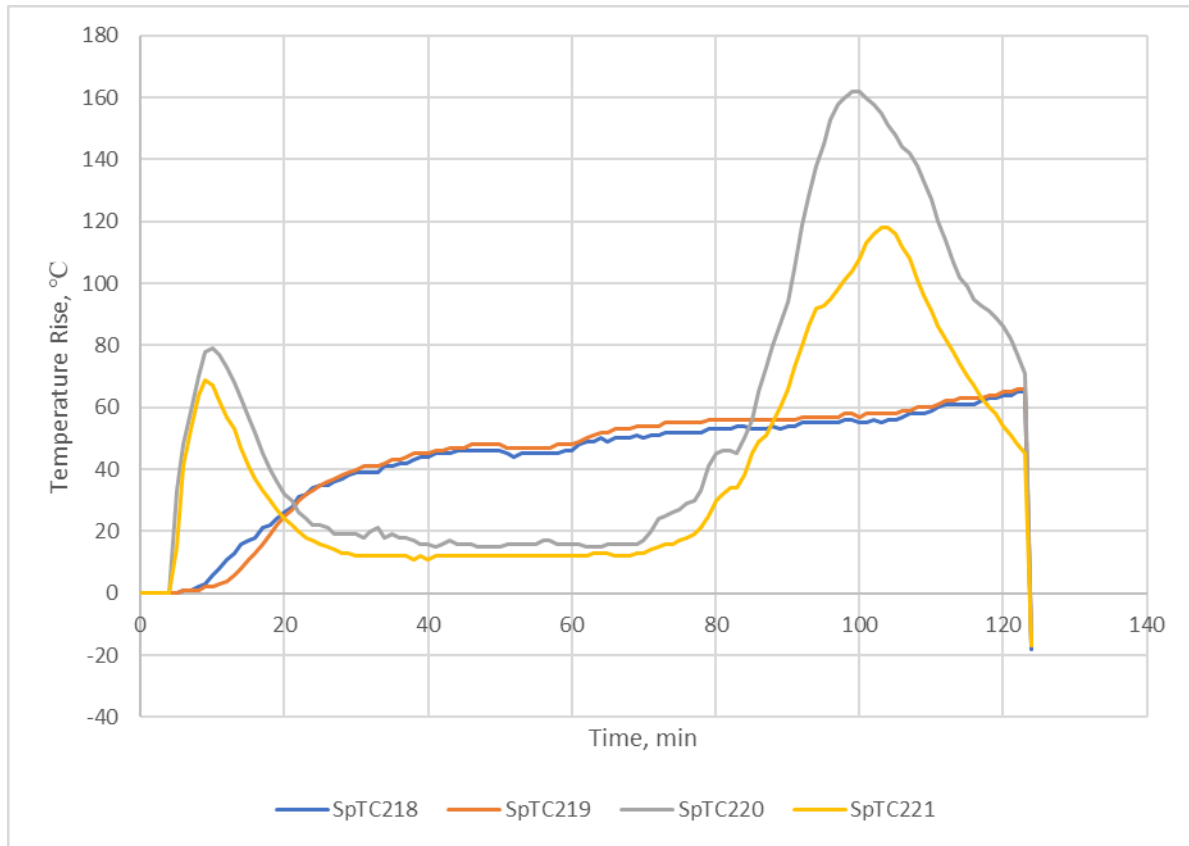
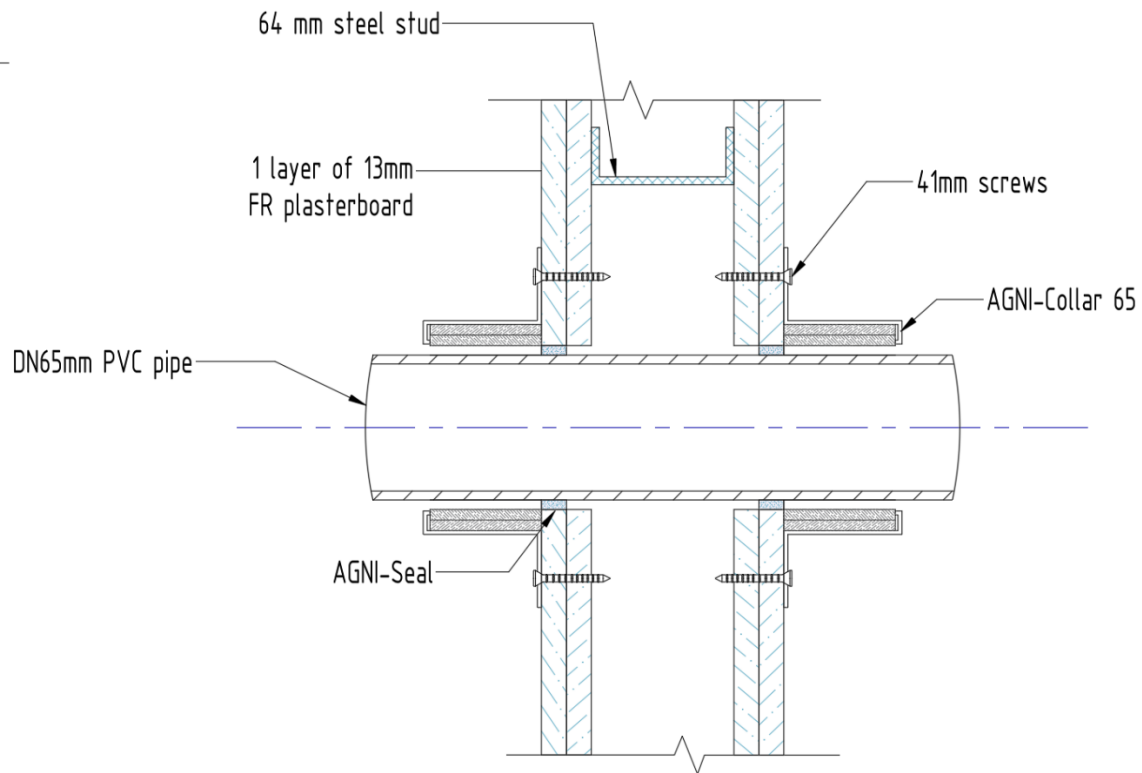


Figure 2 - Specimen 3 thermocouple temperature rise readings

5.4 Specimen 4



Service penetration details	
Service	65mm PVC Pipe
Service Support	Exposed Side: 275mm Unexposed Side: 375mm and 1675mm
Aperture Size	78.9mm
Annular Spacing	Min: 4.3mm, Max: 11.6mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Collar 65, AGNI-Seal
Procedure	<ol style="list-style-type: none"> 13mm (nominal) deep AGNI-Seal applied into the annular gap and finished flush with the face of the separating element. AGNI-Collar wrapped around the pipe and secured with screws.

Test results

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

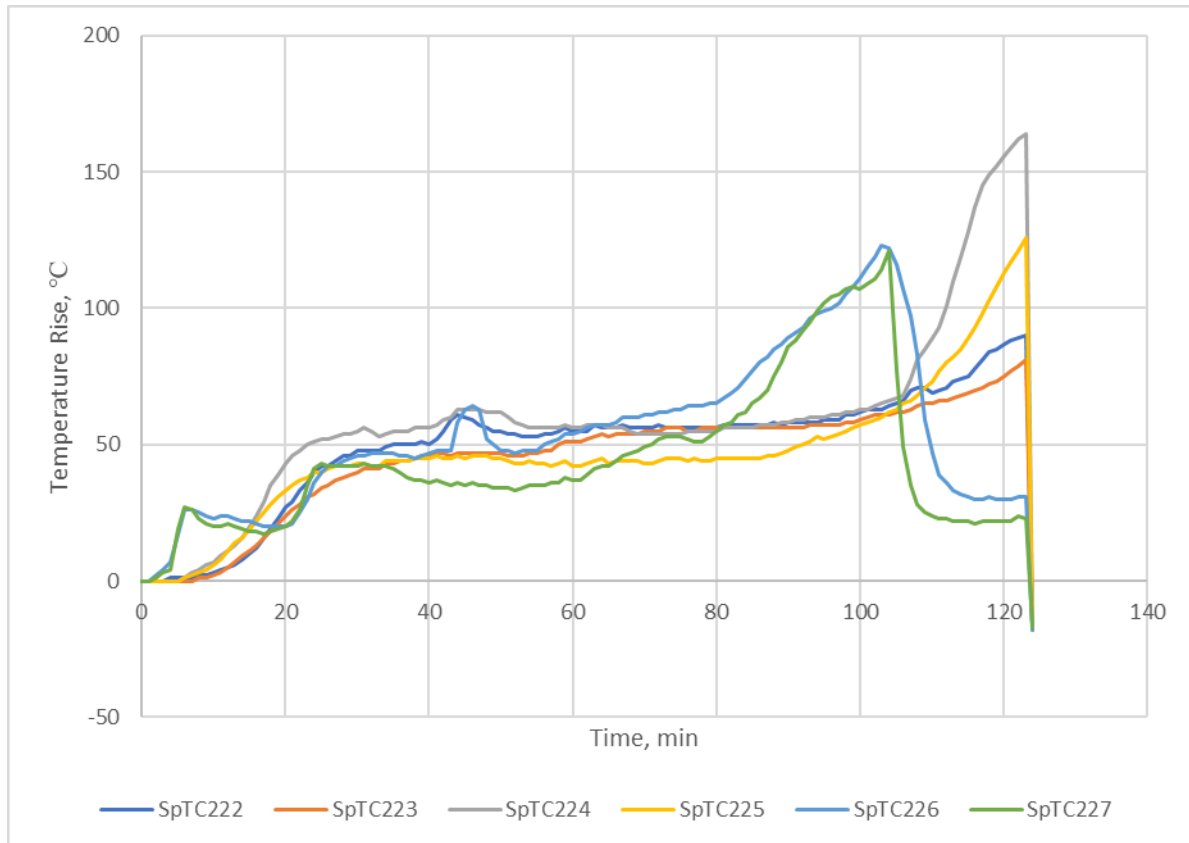
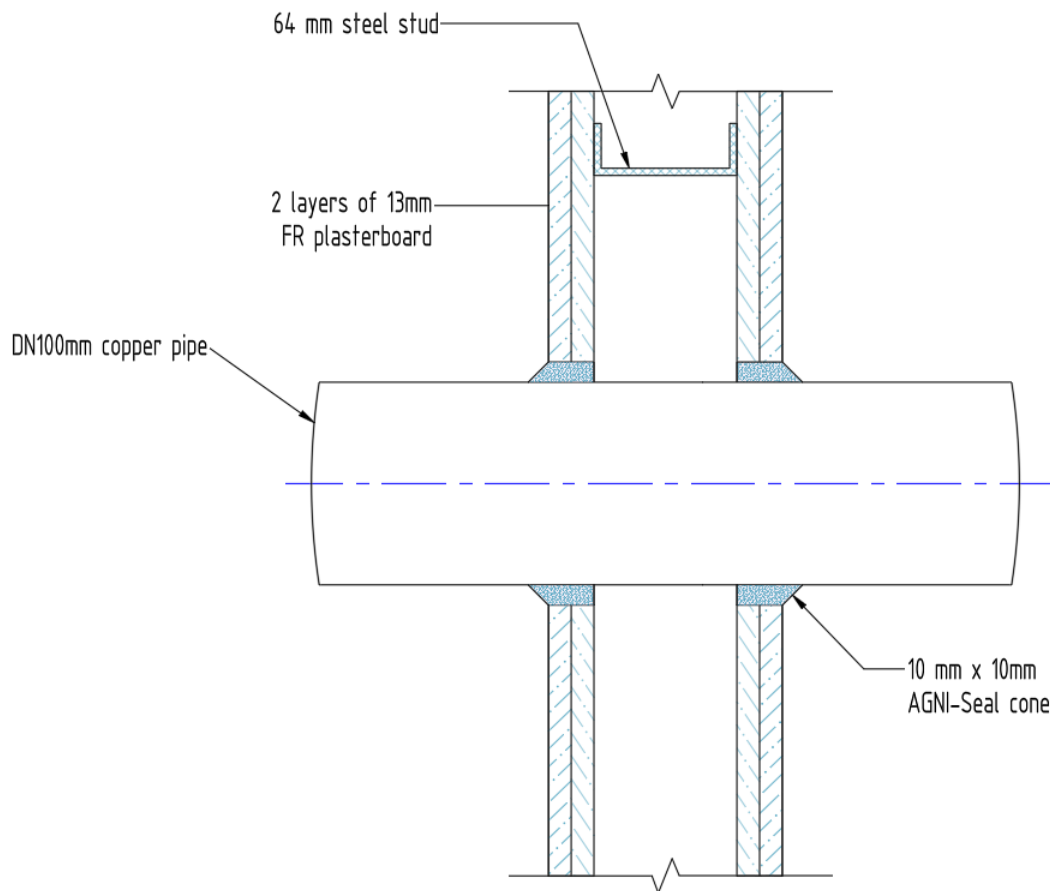


Figure 3 - Specimen 4 thermocouple temperature rise readings

5.5 Specimen 5



Service penetration details	
Service	100mm Copper Pipe
Service Support	Exposed Side: 275mm Unexposed Side: 375mm
Aperture Size	115.6mm
Annular Spacing	Min: 3.9mm, Max: 10.2mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Seal
Procedure	<ol style="list-style-type: none"> 1. 13mm (nominal) deep AGNI-Seal applied into the annular gap and finished flush with the face of the separating element. 2. 10mm (nominal) AGNI-Seal sealant cone applied around the pipe.

Test results

Structural adequacy	Not applicable
Integrity	No failure at 123 minutes
Insulation	15 minutes

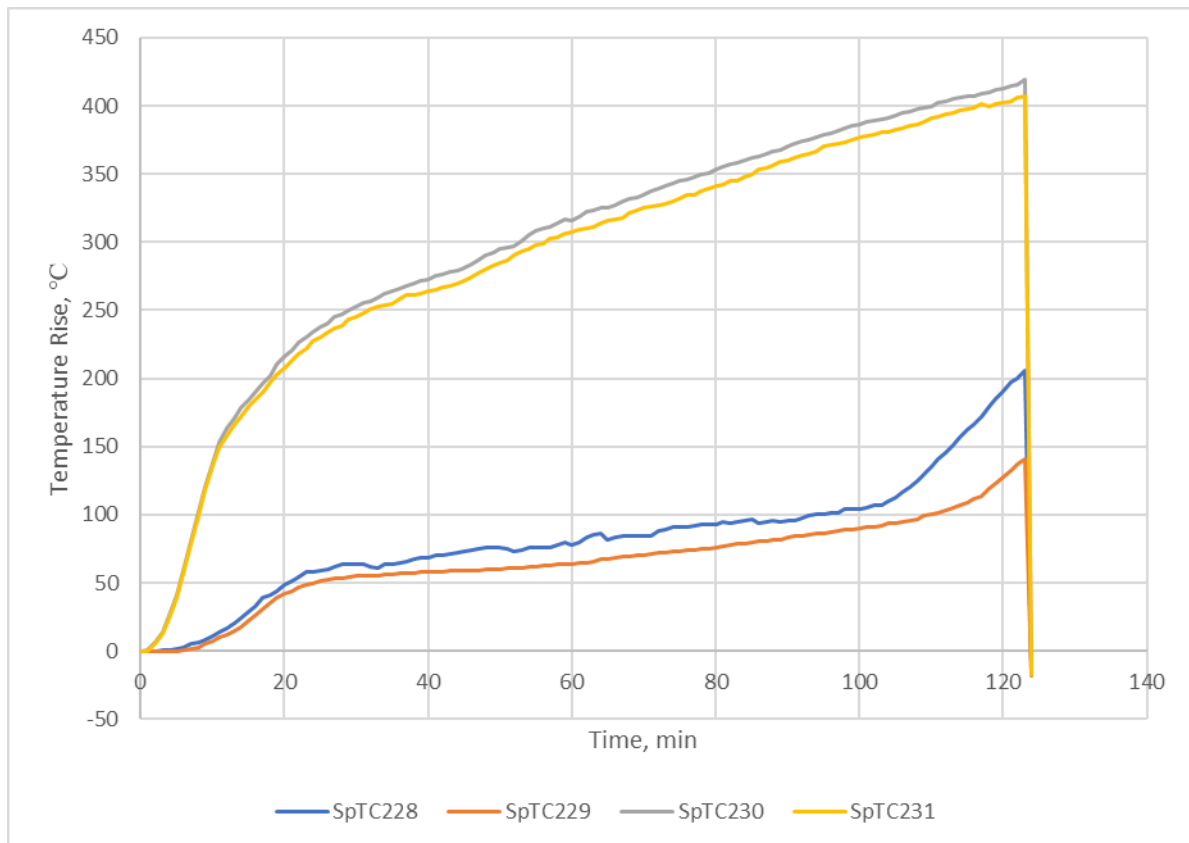
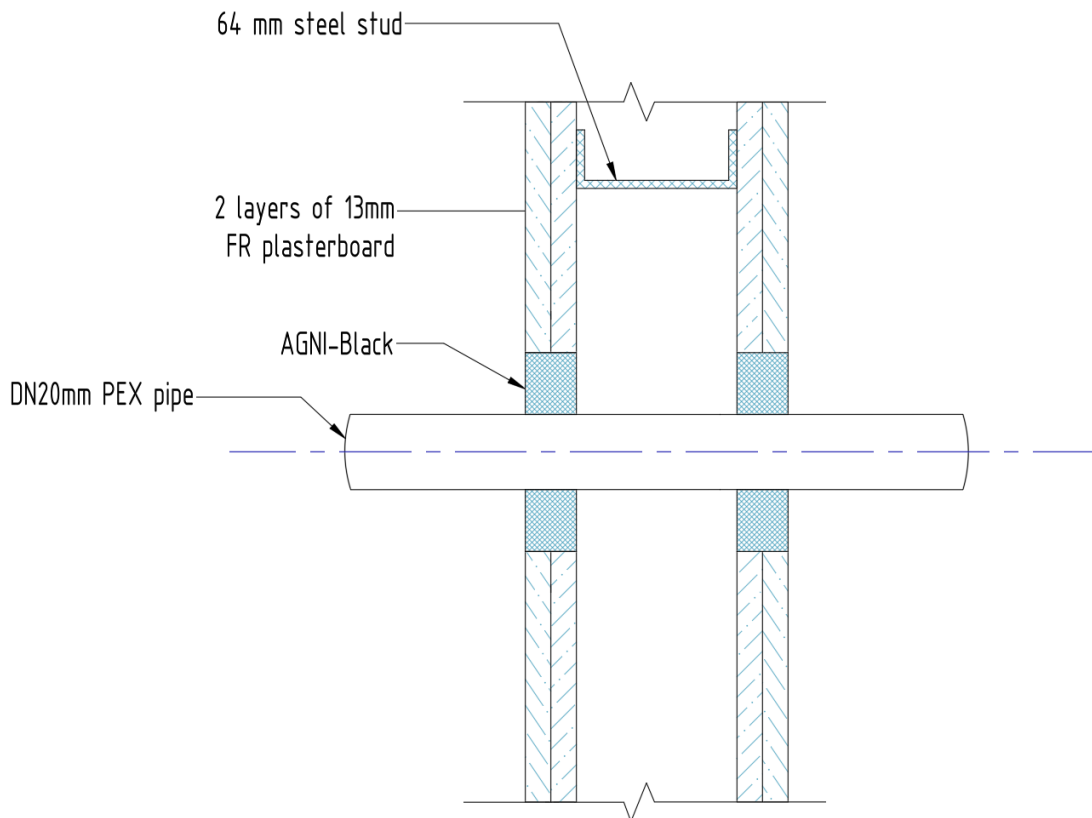


Figure 4 - Specimen 5 thermocouple temperature rise readings

5.6 Specimen 6



Service penetration details	
Service	20mm Pex Pipe
Service Support	Exposed Side: 285mm Unexposed Side: 375mm and 1675mm
Aperture Size	31.9mm
Annular Spacing	Min: 3.1mm, Max: 14.5mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Black
Procedure	1. 26mm (nominal) deep AGNI-Black applied into the annular gap and finished 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

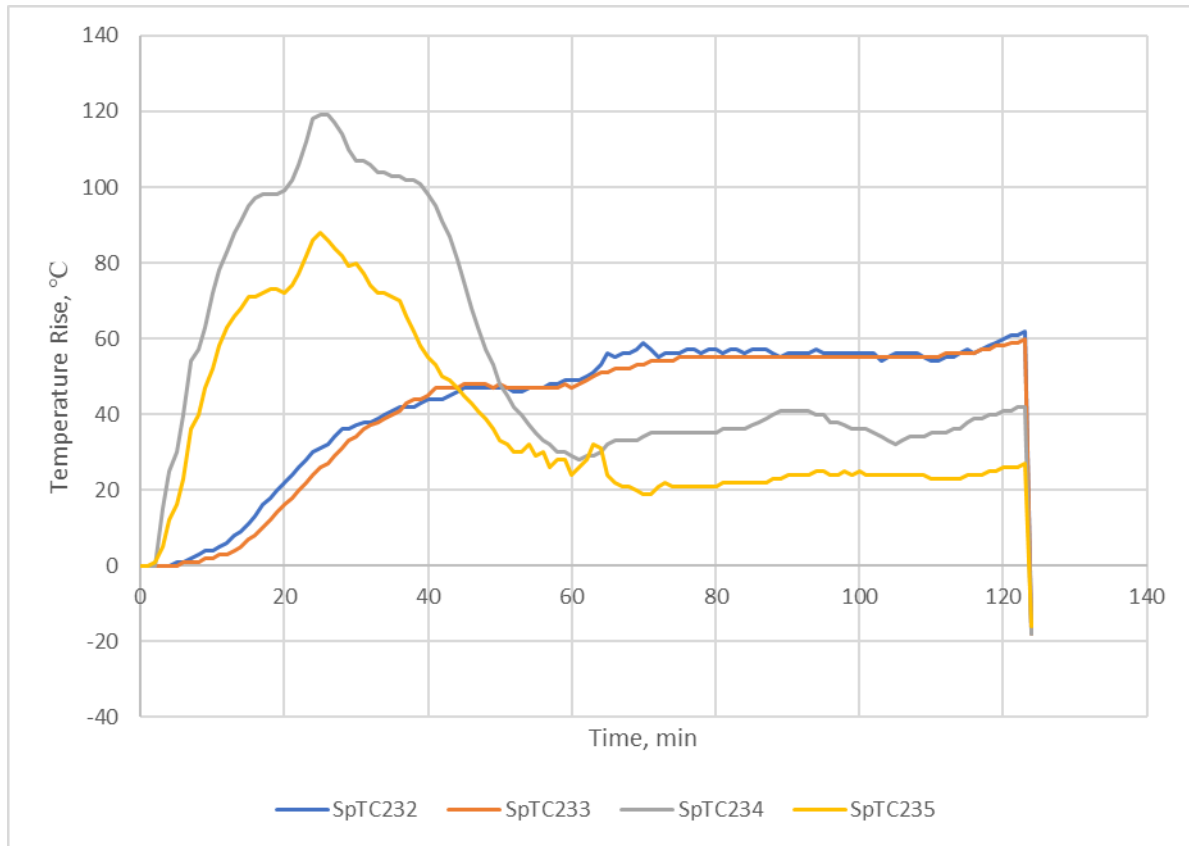
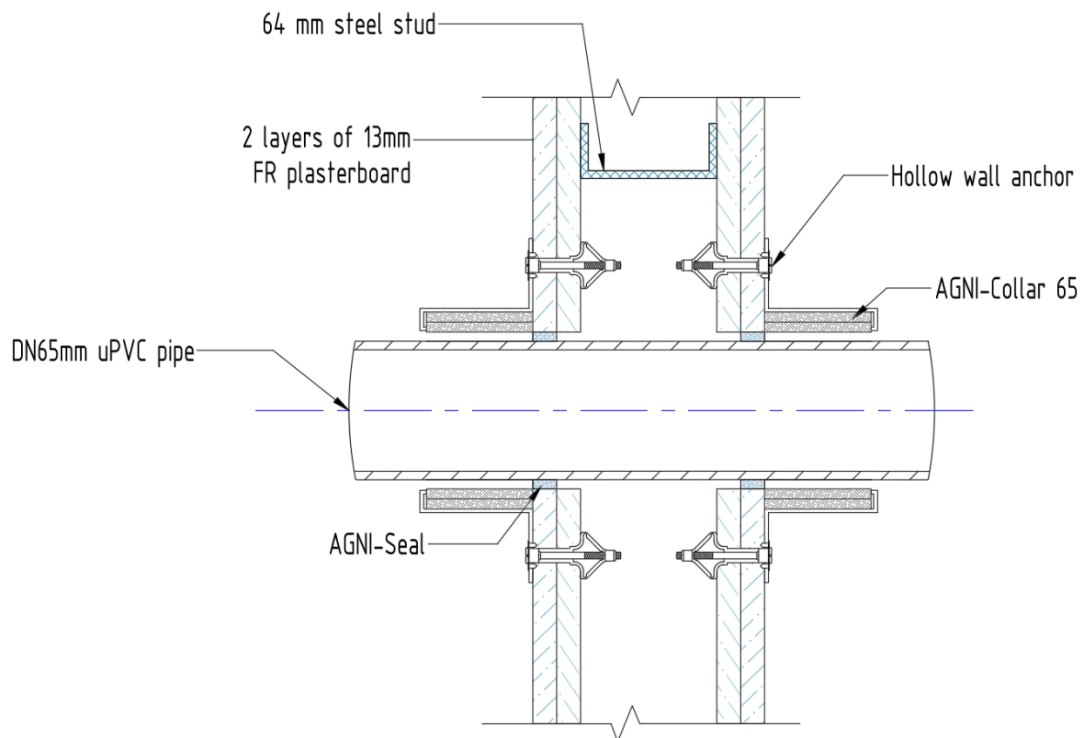


Figure 5 - Specimen 6 thermocouple temperature rise readings

5.7 Specimen 7



Service penetration details	
Service	65mm PVC Pipe
Service Support	Exposed Side: 285mm Unexposed Side: 375mm and 1675mm
Aperture Size	78.7mm
Annular Spacing	Min: 2.5mm, Max: 13.2mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Collar 65, AGNI-Seal
Procedure	<ol style="list-style-type: none"> 1. 13mm (nominal) deep AGNI-Seal applied into the annular gap and finished flush with the face of the separating element. 2. AGNI-Collar wrapped around the pipe and secured with hollow wall anchors.

Test results

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

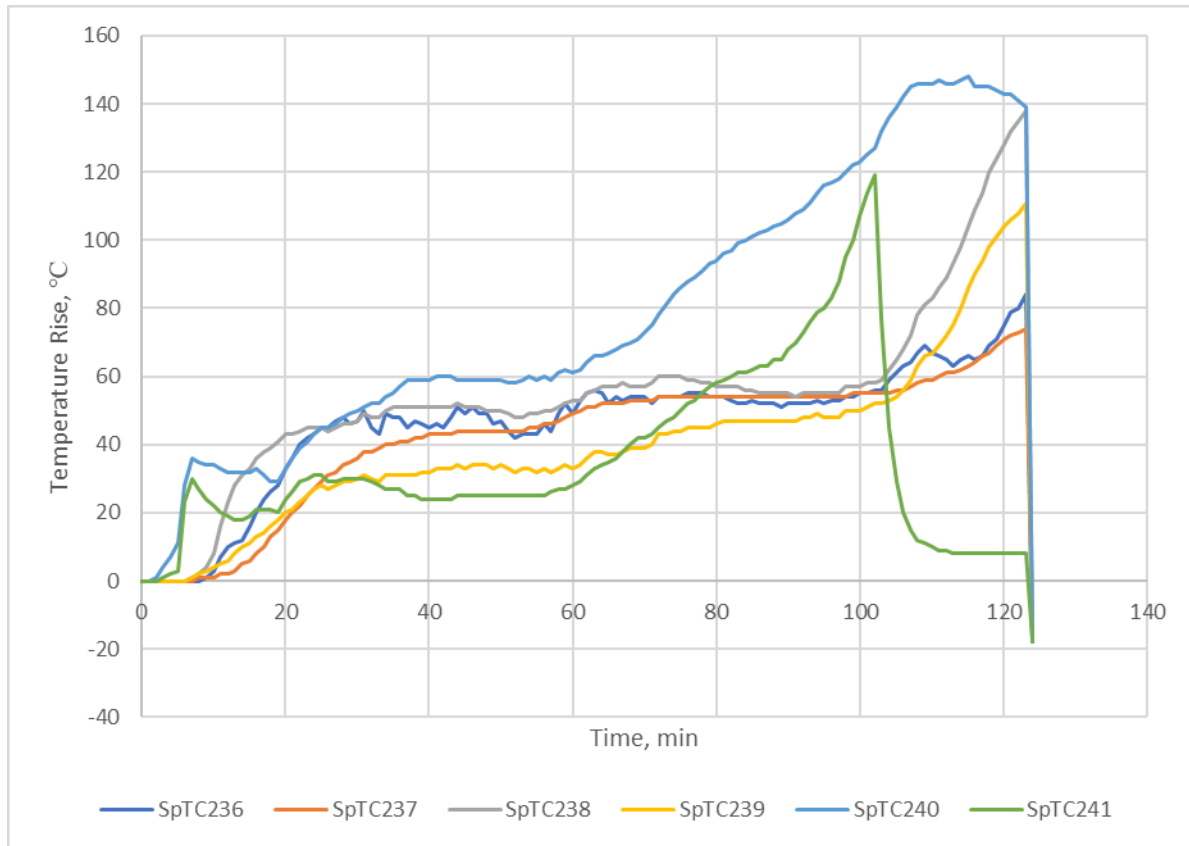
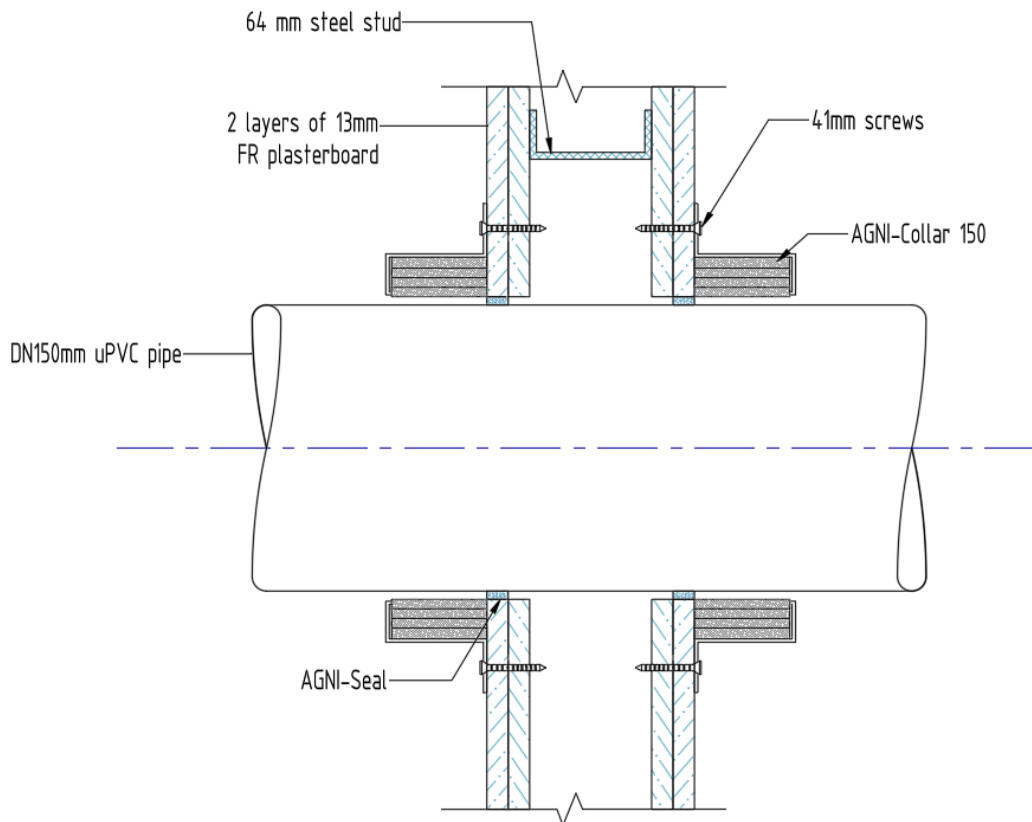


Figure 6 - Specimen 7 thermocouple temperature rise readings

5.8 Specimen 8



Service penetration details	
Service	150mm PVC Pipe
Service Support	Exposed Side: 285mm Unexposed Side: 375mm and 1675mm
Aperture Size	171.4mm
Annular Spacing	Min: 7.1mm, Max: 12.2mm

Local Fire-stopping system	
Application	Symmetrical – applied to both faces of the separating element
Products	AGNI-Collar 150, AGNI-Seal
Procedure	<ol style="list-style-type: none"> 13mm (nominal) deep AGNI-Seal applied into the annular gap and finished flush with the face of the separating element. AGNI-Collar wrapped around the pipe and secured with screws.

Test results

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

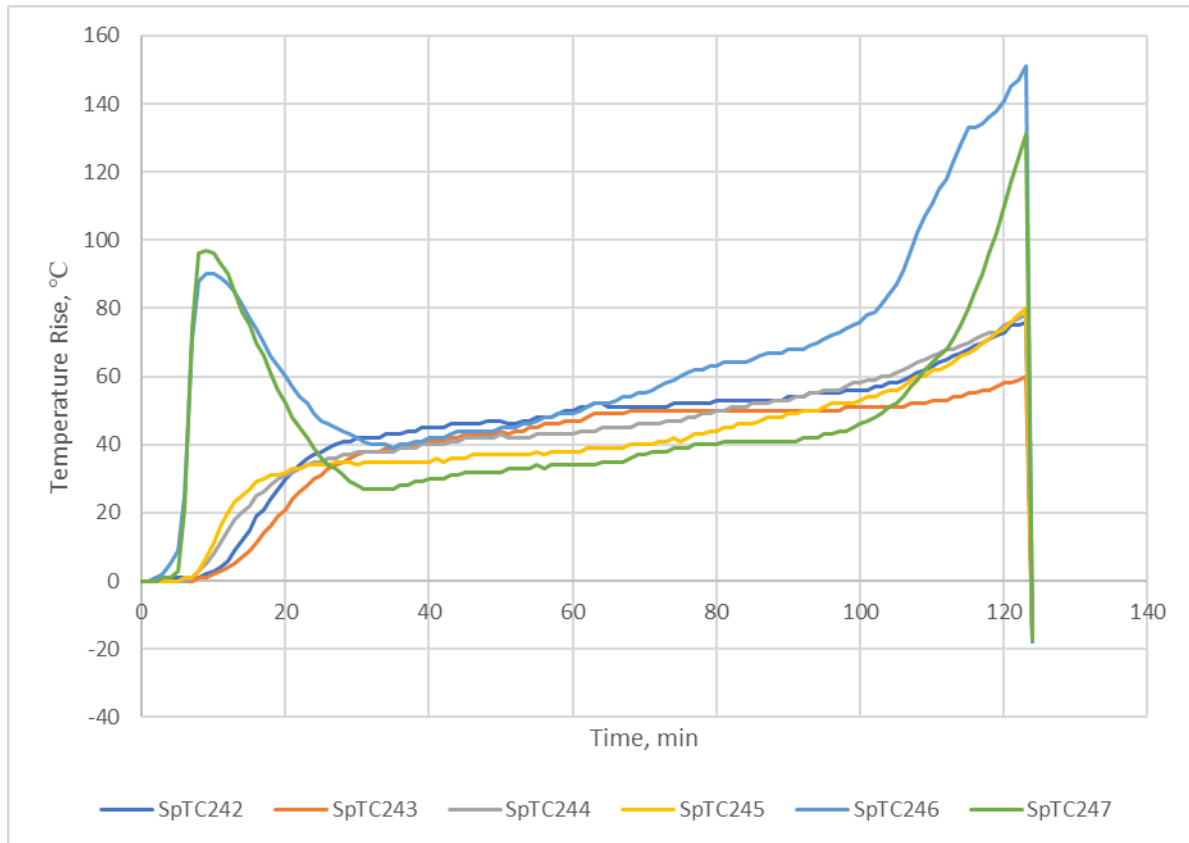


Figure 7 - Specimen 8 thermocouple temperature rise readings