Fire Testing Laboratory

# Regulatory Information Report

# RIRF25005

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

| | |
|---|---|
| Client: | **Agnitek Pty Ltd** |
| Test method: | AS1530.4-2014 |
| Report Date: | 23/04/2025 |
| Test number: | PF25005 |

**Passive Fire Inspection and Test Services Limited**
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# Table of Contents

## 1.1 Document revision schedule

| Revision # | Date | Description |
|---|---|---|
| **1** | 23/04/2025 | Issued to Client |

## 1.2 Signatories

| Report | Name | Signature | Date |
|---|---|---|---|
| **Prepared by:** | Alexey Kokorin |  | 23/04/2025 |
| **Authorised by:** | Andrew Bain<br>(Authorized signatory) |  | 23/04/2025 |

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 64mm steel stud wall lined with two layers of 13mm fire rated plasterboard on each side.

| Specimen # | Service | Actual Integrity (min) | Actual Insulation (min) | FRL |
|---|---|---|---|---|
| 1 | 3 x AGNI-Boxes (horizontally joined) | 123NF | 123NF | -/120/120 |
| 2 | 2 x AGNI-Boxes (vertically joined) | 123NF | 123NF | -/120/120 |
| 3 | 25mm Conduit Pipe | 123NF | 123NF | -/120/120 |
| 4 | 25mm Conduit Pipe + 8 x 4.8mm Optic Cables | 123NF | 123NF | -/120/120 |
| 5 | 25mm Flexible Conduit + 6 x 4.8mm Optic Cables | 123NF | 123NF | -/120/120 |
| 6 | 9.6mm Optic Cable | 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

**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 fire side only.

**Testing date:**

07/03/2025

**Installation completion date:**

11/02/2025

**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 PF25005. 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 × 1200mm |

| **Materials** | | |
|---|---|---|
| 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 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 |
| | Installation | Used to seal around edge of separating element |

## 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. |
| 2.2 | Item | uPVC Electrical Conduit 25mm |
| | Dimensions | Diameter (OD): 26.9mm |
| | | Diameter (ID): 23.0mm |
| | | Wall Thickness (T): 1.95mm |
| 2.3 | Item | Optical Cable |
| | Cable | Overall Diameter: 4.8mm |
| | | Sheath Thickness: 1.3mm |
| | Core | Overall Diameter: 2.15mm |
| | | Conductor Diameter: 0.94mm |
| | | Conductor Material: Optic Fibre |
| | | Insulation Thickness: 0.5mm |
| 2.4 | Item | Flexible Conduit – 25mm |
| | Dimensions | Diameter (OD): 25.0mm |
| | | Diameter (ID): 19.5mm |
| | | Wall Thickness (T): 2.75mm |
| 2.5 | Item | Optic cable |
| | Cable | Overall Diameter: 9.64mm |
| | | Sheath Material: LSZH |
| | | Sheath Thickness: 1.66mm |
| | Core | Overall Diameter: 1.9mm |
| | | Conductor Diameter: 0.2mm |

| | | |
|---|---|---|
| | | Conductor Material: Optic Fibre |
| | | Insulation Material: PBT |
| | | Insulation Thickness: 0.4mm |

| **Sealants** | | |
|---|---|---|
| 3.1 | Item / Product Name | AGNI-Seal |
| | Dimensions | 600mL sausage |
| 3.2 | Item / Product Name | AGNI-Black |
| | Dimensions | 310mL Cartridge |

| **Intumescent** | | |
|---|---|---|
| 4.1 | Item | AGNI-Wrap 50 |
| | Dimensions | Width: 50mm<br>Thickness: 3.5mm |

| **Other** | | |
|---|---|---|
| 5.1 | Item | Steel Stud 0.50bmt |
| | Dimensions | Width x Height: 64mm x 1200mm |
| | Installation | Used to construct steel support frame for AGNI-Boxes |
| 5.2 | Item | Self-Tapping Screw |
| | Dimensions | 10g x 16mm |
| | Installation | Used to construct steel support frame |

# 5. Test Results

## 5.1 Observations during the test

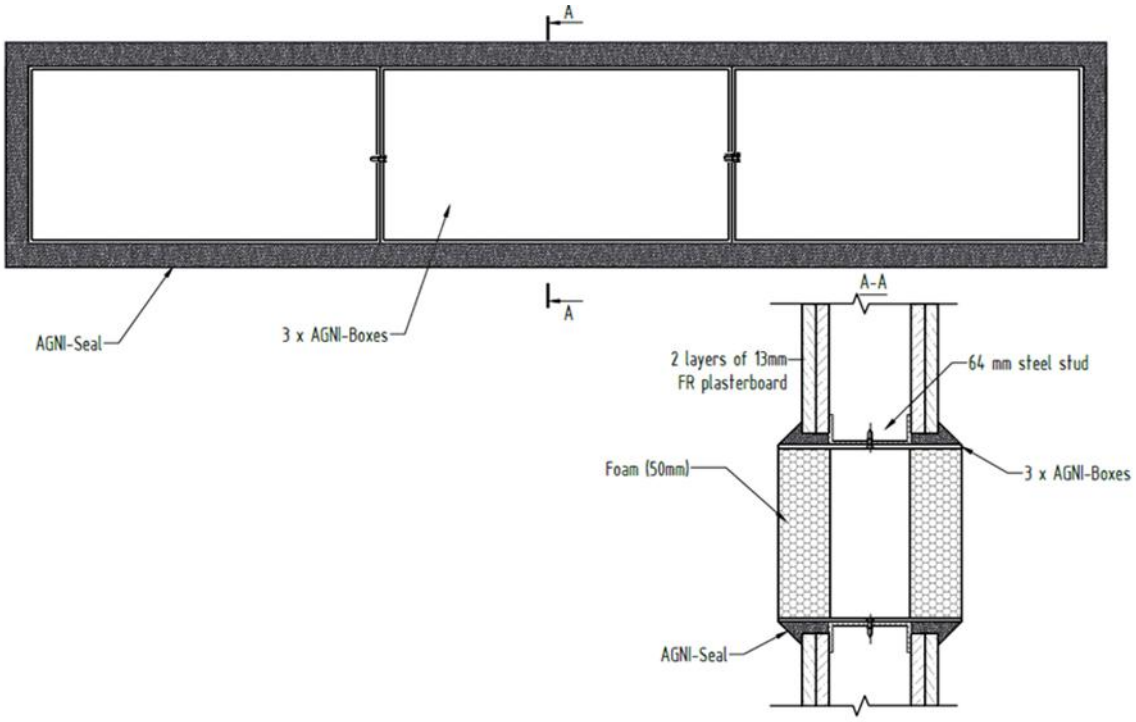
| Time min | Test face | SP# | OBSERVATIONS/REMARKS |
|---|---|---|---|
| 61 | U | 1 | Box A (left most box) intumescent pushed foam face out of specimen |
| 69 | U | 1 | Box B (centre box) intumescent pushed foam face out of specimen |
| 70 | U | 1 | Box C (right most box) intumescent pushed foam face out of specimen |
| 76 | U | 2 | Box A (top box) intumescent pushed foam face out of specimen |
| 81 | U | 2 | Box B (bottom box) intumescent pushed foam face out of specimen |
| **123** | | | **TEST DISCONTINUED** |

**NOTE: E – Exposed Face (inside furnace)**

**U – Unexposed Face (outside furnace)**

**SE – Separating element**

## 5.2 Specimen 1

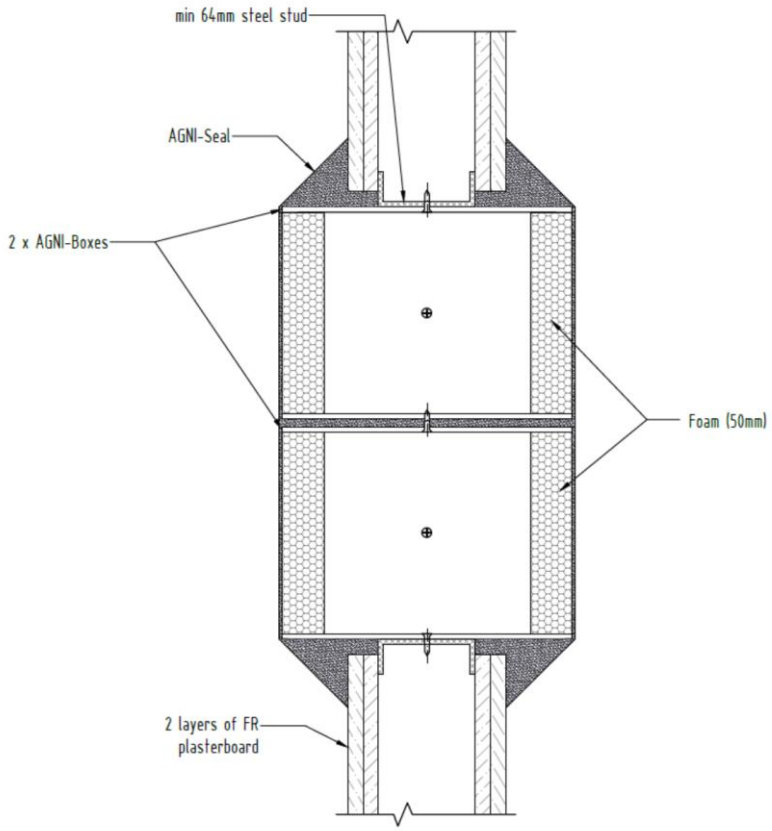



| **Service penetration details** | |
|---|---|
| Service | 3 x AGNI-Boxes (horizontally joined) |
| Aperture Size | Width x Height: 910mm x 155mm |
| Annular Spacing | Min: 1.0mm, Max: 7.0mm |

| **Local Fire-stopping system** | |
|---|---|
| Application | Symmetrical – applied to both faces of the separating element |
| Products | AGNI-Seal, bolts, nuts, screws |
| Procedure | 1. 10mm bead of AGNI-Seal applied to joining surfaces around the perimeter to seal any gaps between the AGNI-Boxes.<br>2. AGNI-Boxes secured together horizontally using bolts and nuts through pre-punched holes in the centre of adjoining faces.<br>3. AGNI-Boxes module inserted into the steel stud frame and secured using screws at the top and bottom of each box and sides of outer AGNI-Boxes. Screws were fixed through existing holes in the centre of each surface.<br>4. 50mm x 50mm AGNI-Seal sealant cone applied around the perimeter of the three AGNI-Boxes. |

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

## 5.3 Specimen 2



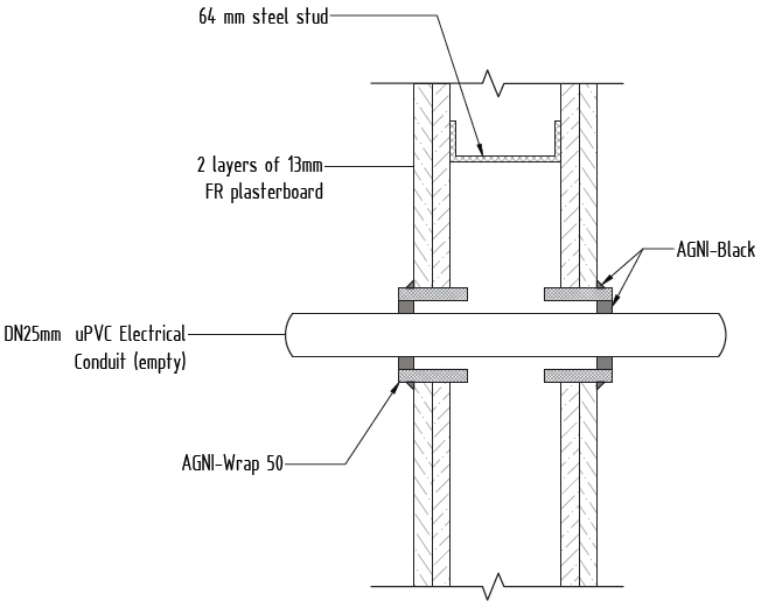

| **Service penetration details** | |
|---|---|
| Service | 2 x AGNI-Boxes (vertically joined) |
| Aperture Size | Width x Height: 310mm x 310mm |
| Annular Spacing | Min: 1.0mm, Max: 9.0mm |

| **Local Fire-stopping system** | |
|---|---|
| Application | Symmetrical – applied to both faces of the separating element |
| Products | AGNI-Seal, bolts, nuts, screws |
| Procedure | 1. 10mm bead of AGNI-Seal was applied to joining surfaces around the perimeter to seal any gaps between the AGNI-Boxes.<br>2. AGNI-Boxes secured together vertically using bolt and nut through pre-punched holes in the centre of adjoining faces.<br>3. AGNI-Boxes module inserted into the steel stud frame and secured using screws at the top and bottom of each box and sides of outer AGNI-Boxes. Screws were fixed through existing holes in the centre of each surface. |

| | |
|---|---|
| | 4. 50mm x 50mm AGNI-Seal sealant cone applied around the perimeter of the three AGNI-Boxes. |

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

## 5.4 Specimen 3

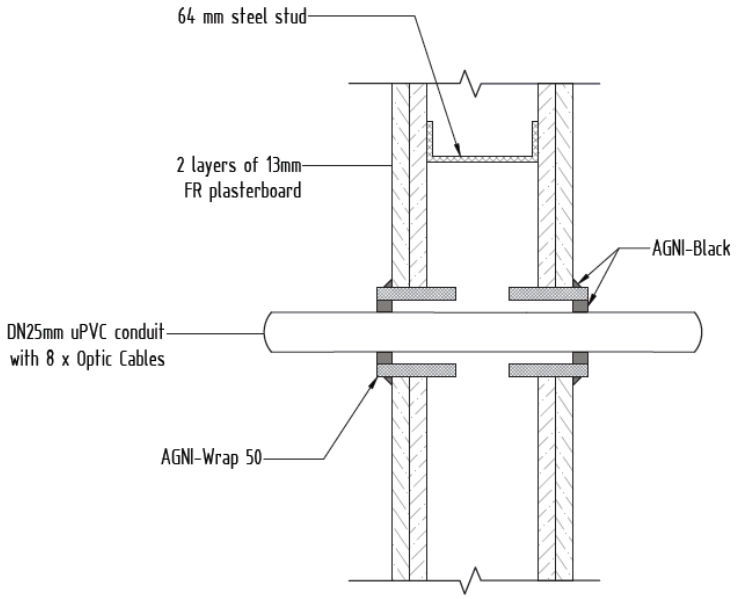



| **Service penetration details** | |
|---|---|
| Service | uPVC Electrical Conduit 25mm (empty) |
| Aperture Size | 45.8mm |
| Annular Spacing | Min: 9.0mm, Max: 11.8mm |

| **Local Fire-stopping system** | |
|---|---|
| Application | Symmetrical – applied to both faces of the separating element |
| Products | AGNI-Wrap 50, AGNI-Black |
| Procedure | 1. AGNI-Wrap 50 cut to fit one revolution of the aperture.<br>2. AGNI-Wrap wrapped around the service and inserted into the aperture, finishing 10mm past the separating element.<br>3. AGNI-Black applied into the gap between the AGNI-Wrap and the pipe 10mm (nominal) deep.<br>4. 5mm (nominal) AGNI-Black applied to seal between the separating element and the AGNI-Wrap. |

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

## 5.5 Specimen 4

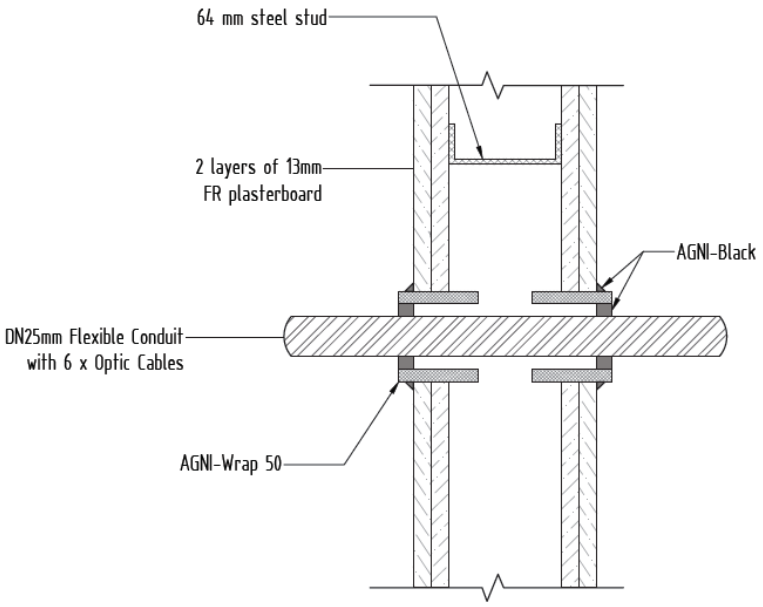



| **Service penetration details** | |
|---|---|
| Service | uPVC Electrical Conduit 25mm with 8 x 4.8mm Optic Cables |
| Aperture Size | 45.7mm |
| Annular Spacing | Min: 7.4mm, Max: 13.3mm |

| **Local Fire-stopping system** | |
|---|---|
| Application | Symmetrical – applied to both faces of the separating element |
| Products | AGNI-Wrap 50, AGNI-Black |
| Procedure | 1. AGNI-Wrap 50 cut to fit one revolution of the aperture.<br>2. AGNI-Wrap wrapped around the service and inserted into the aperture, finishing 10mm past the separating element.<br>3. AGNI-Black applied into the gap between the AGNI-Wrap and the pipe 10mm (nominal) deep.<br>4. 5mm (nominal) AGNI-Black applied to seal between the separating element and the AGNI-Wrap. |

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

## 5.6 Specimen 5

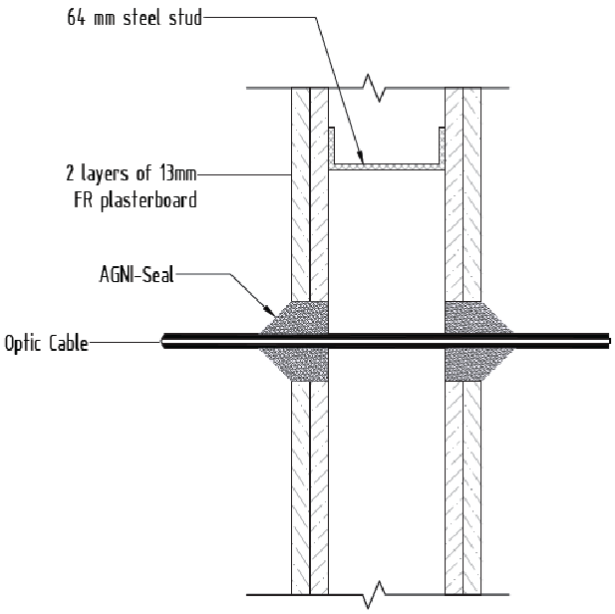



| **Service penetration details** | |
|---|---|
| Service | uPVC Flexible Conduit – 25mm with 6 x 4.8mm Optic Cables |
| Aperture Size | 45.8mm |
| Annular Spacing | Min: 6.7mm, Max: 19.1mm |

| **Local Fire-stopping system** | |
|---|---|
| Application | Symmetrical – applied to both faces of the separating element |
| Products | AGNI-Wrap 50, AGNI-Black |
| Procedure | 1. AGNI-Wrap 50 cut to fit one revolution of the aperture.<br>2. AGNI-Wrap wrapped around the service and inserted into the aperture, finishing 10mm past the separating element.<br>3. AGNI-Black applied into the gap between the AGNI-Wrap and the pipe 10mm (nominal) deep.<br>4. 5mm (nominal) AGNI-Black applied to seal between the separating element and the AGNI-Wrap. |

| **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 | 9.6mm Optic Cable |
| Service Support | Exposed Face: 250mm<br>Unexposed Face: 520mm and 1610mm |
| Aperture Size | 16.7mm |
| Annular Spacing | Min: 2.8mm, Max: 4.2mm |

| Local Fire-stopping system | |
|---|---|
| Application | Symmetrical – applied to both faces of the separating element |
| Products | AGNI-Seal |
| Procedure | 1. AGNI-Seal applied into the annular gap to depth of the lining, 26mm (nominal) deep.<br>2. 20mm x 20mm AGNI-Seal sealant cone applied around the cable. |

| 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

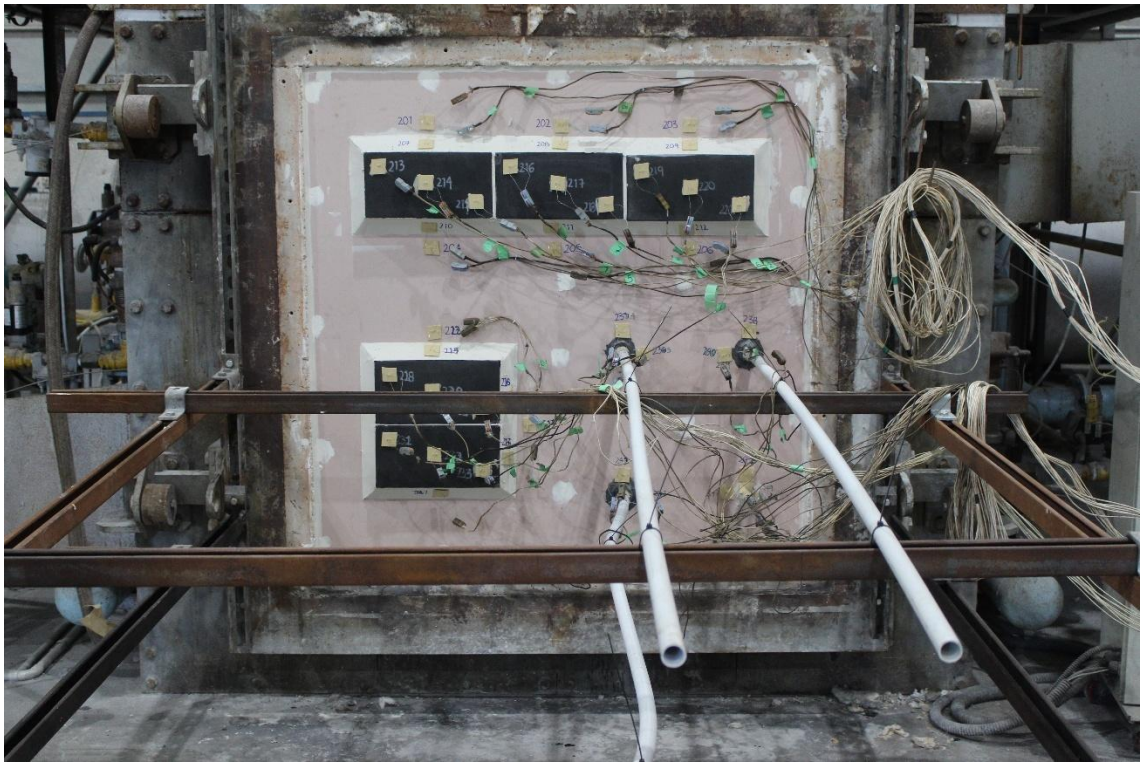


Figure 1 - Unexposed face prior to test commencement

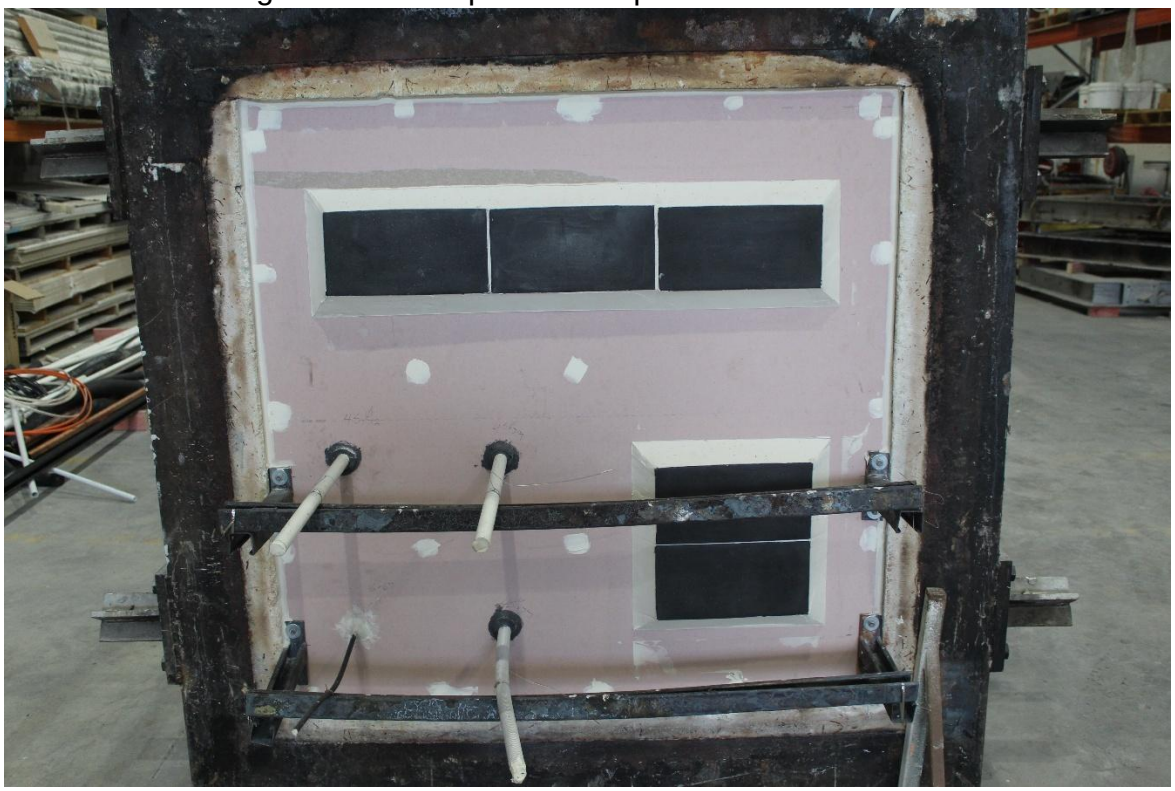


Figure 2 - Exposed face prior to test commencement