Fire Testing Laboratory

# Regulatory Information Report

## RIR2206401

## Fire Resistance Test for Linear Joints in FR Plasterboard Wall

| | |
|---|---|
| Issued to: | Firestop Centre Ltd |
| Test method: | AS1530.4-2014 |
| Report Date: | 08/07/2025 |
| Test number: | PF22064 |

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## 1.1 Document revision schedule

| Revision # | Date | Description |
|---|---|---|
| **1** | 08/07/2025 | Issued |

## 1.2 Signatories

| Report | Name | Signature | Date |
|---|---|---|---|
| **Prepared by:** | Alexey Kokorin |  | 08/07/2025 |
| **Authorised by:** | Andrew Bain<br>(Authorized signatory) |  | 08/07/2025 |

ACCREDITED
IANZ
TESTING LABORATORY

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

## 2. Report Summary

A concrete lintel and two separate 64mm steel stud/track wall, lined with 1 x 16mm FR plasterboard on each side was constructed. To construct each steel stud wall, 2 x studs faced back to back were installed at 250mm centres, with 5mm, 10mm, 15mm and 20mm linear gaps within the steel frame. This was repeated for both steel stud frames. Insulation was installed in each cavity, and the spacing between the two steel stud frames was 20mm. Plasterboard was installed short of the lintel, resulting in a 40mm gap between the top of the plasterboard and lintel. Plasterboard was trimmed to reveal 5mm, 10mm, 15mm and 20mm linear gaps. PEF Rod was recessed 16mm from both sides, then filled with a bead of FIRESTOP Ultra sealant, flush with the surface of the plasterboard.

| Specimen | Joint | Actual Integrity (min) | Actual Insulation (min) | FRL |
|---|---|---|---|---|
| **A** | 5mm Vertical Linear Gap seal | 93 NF | 93 NF | -/90/90 |
| **B** | 10mm Vertical Linear Gap seal | 93 NF | 93 NF | -/90/90 |
| **C** | 15mm Vertical Linear Gap seal | 93 NF | 93 NF | -/90/90 |
| **D** | 20mm Vertical Linear Gap seal | 93 NF | 91 | -/90/90 |
| **E** | 40mm Horizontal Linear Gap seal | 93 NF | 93 NF | -/90/90 |

NF indicates no failures observed during test

# 3. General Information

## 3.1 Testing Scope

**Applicable Standards:**

AS 1530-2014 Part 4: Section 10 Service penetrations and control joints.

AS 4072.1-2005 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

**Issued to:**

Firestop Centre Ltd.

657 Great South Rd, Penrose, Auckland, 1061

New Zealand

Contact e-mail: info@firestopcentre.co.nz

## 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:**

11/11/2022

**Installation completion date:**

17/10/2022

**Termination of The Test:**

The test was discontinued at 93 minutes.

## 3.4 Use of the Report

A regulatory information report was issued in addition to the full test report PF22064. This provides the minimum information required for regulatory compliance

This report shall not be reproduced, except in full. The specimen was a symmetrical construction. The results of the test apply if exposed to fire from either side.

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 / Product Name | Steel Stud and Plasterboard Separating Element |
| | Dimensions | Width / Height (W/H): 1200mm x 1200mm |
| | | Thickness (T): 292mm |
| 1.2 | Item / Product Name | 64mm Steel Stud |
| | Dimensions | Width / Height (W/H): 64mm x 35.5mm |
| | | Thickness (T): 0.75 bmt |
| | Additional Info | Used to create steel stud frame |
| 1.3 | Item / Product Name | Wall Track |
| | Dimensions | Width / Height (W/H): 64mm x 28mm |
| | | Thickness (T): 0.70 bmt |
| | Additional Info | Installed to bottom of steel frame |
| 1.4 | Item / Product Name | Deflection Head Track |
| | Dimensions | Width / Height (W/H): 64mm x 50mm |
| | | Thickness (T): 0.70 bmt |
| | Additional Info | Installed to lintel |
| 1.5 | Item / Product Name | 16mm FR Plasterboard |
| | Dimensions | Width / Height (W/H): 1200mm x 1200mm |
| | | Thickness (T): 16mm |
| | Additional Info | Used to line steel stud frame |
| 1.6 | Item / Product Name | Concrete Slab Head |
| | Dimensions | Width / Height (W/H): 1200mm x 150mm |
| | | Depth (T): 600mm |
| | Additional Info | Attached to top of refractory frame |
| 1.7 | Item / Product Name | Wall Insulation |

| | | |
|---|---|---|
| | Dimensions | Width / Height (W/H): 1140mm x 560mm |
| | | Thickness (T): 75mm |
| | | Insulation Rating: R1.8 |
| | Additional Info | Installed within steel stud frame |
| 4.1 | Item / Product Name | Self-drilling Screws |
| | Dimensions | 25mm |
| | Installation | Used to fix steel stud frame together |
| 4.2 | Item / Product Name | Self-Tapping Screws |
| | Dimensions | 32mm |
| | Installation | Used to fix the first layer of plasterboard to the steel studs and tracks |

## 4.2 Specimen A

| | | |
|---|---|---|
| 3.1 | Item / Product Name | Formulation F023SDW01 - FIRESTOP Ultra sealant |
| | Dimensions | 600mL |
| | Installation | Used to seal linear gaps within frame |
| 5.1 | Item / Product Name | 10mm PEF Rod |
| | Dimensions | Length (L): 1000mm |
| | | Outer Diameter (OD): 10mm |
| | Installation | Installed in linear gaps |

## 4.3 Specimen B

| | | |
|---|---|---|
| 3.1 | Item / Product Name | Formulation F023SDW01 - FIRESTOP Ultra sealant |
| | Dimensions | 600mL |
| | Installation | Used to seal linear gaps within frame |
| 5.1 | Item / Product Name | 10mm PEF Rod |
| | Dimensions | Length (L): 1000mm |
| | | Outer Diameter (OD): 10mm |
| | Installation | Installed in linear gaps |

## 4.4 Specimen C

| | | |
|---|---|---|
| 3.1 | Item / Product Name | Formulation F023SDW01 - FIRESTOP Ultra sealant |
| | Dimensions | 600mL |
| | Installation | Used to seal linear gaps within frame |
| 5.2 | Item / Product Name | 20mm PEF Rod |
| | Dimensions | Length (L): 1000mm |
| | | Outer Diameter (OD): 20mm |
| | Installation | Installed in linear gaps |

## 4.5 Specimen D

| | | |
|---|---|---|
| 3.1 | Item / Product Name | Formulation F023SDW01 - FIRESTOP Ultra sealant |
| | Dimensions | 600mL |
| | Installation | Used to seal linear gaps within frame |
| 5.2 | Item / Product Name | 20mm PEF Rod |
| | Dimensions | Length (L): 1000mm |
| | | Outer Diameter (OD): 20mm |
| | Installation | Installed in linear gaps |

## 4.6 Specimen E

| | | |
|---|---|---|
| 3.1 | Item / Product Name | Formulation F023SDW01 - FIRESTOP Ultra sealant |
| | Dimensions | 600mL |
| | Installation | Used to seal linear gap within frame |

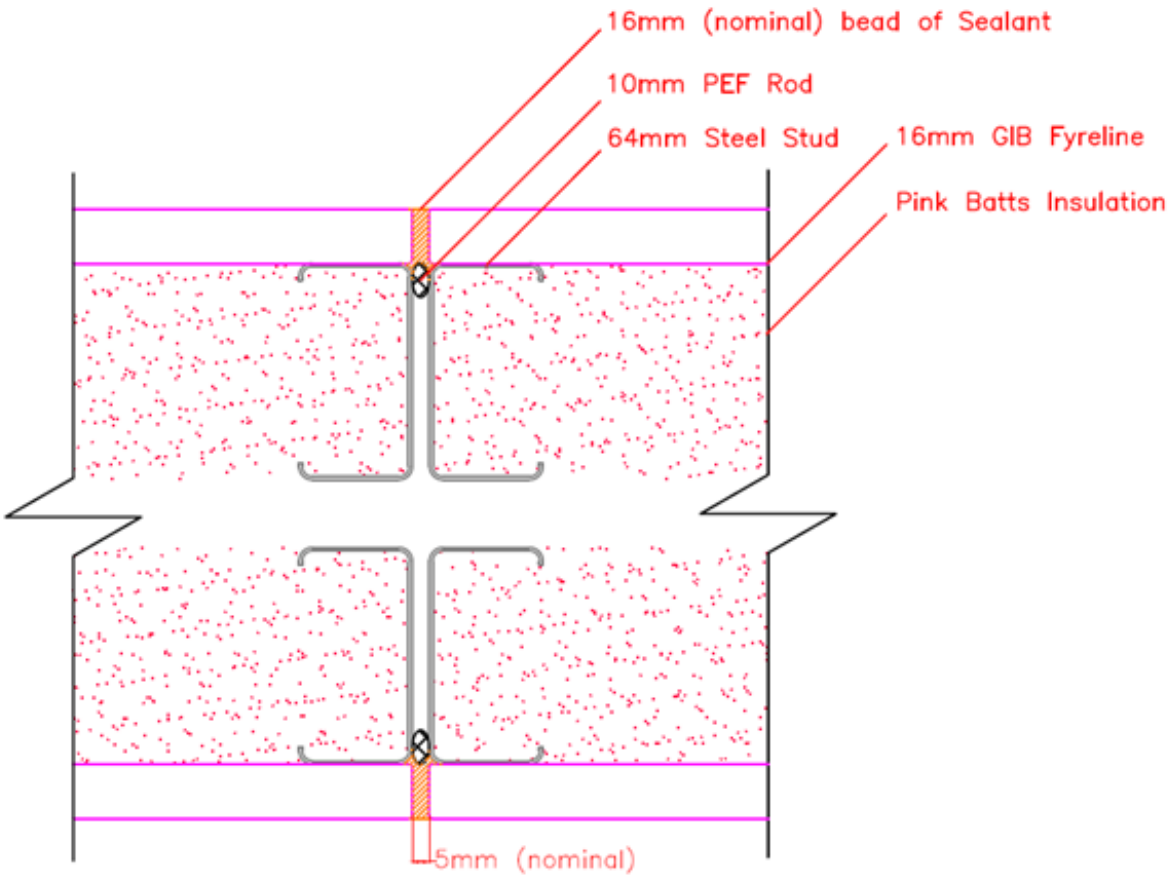
# 5. Test Results

## 5.1 Observations during the test

| Time Minutes | Test Face | SP | Observations |
|---|---|---|---|
| 5 | E | SE | Exposed face of plasterboard has combusted |
| 5 | E | A, B, C, D, E | Sealant glowing red, with cracks/lines in sealant |
| 10 | E | A, B, C, D, E | Further visible cracks through seal |
| 10 | E | A, B, C, D, E | Visible expansion of sealant |
| 20 | E | D, E | Sections of expanded sealant has fallen from specimen |
| 30 | E | A, B, C, D, E | Further expansion of sealant |
| 44 | U | E | Visible smoke from seal on junction with concrete slab, near TC39 |
| 45 | E | A, B, C, D, E | Further expansion of sealant |
| 45 | E | A, B, C | Sections of expanded sealant has fallen from specimen |
| 60 | E | A, D | Majority of sealant has separated from the plasterboard |
| 74 | U | D, E | Visible expansion of seal |
| 77 | U | E | Visible bulges in sealant |
| 80 | U | B, C | Visible expansion of seal |
| 90 | E | B, C | Majority of sealant has separated from the plasterboard |
| 93 | | | TEST DISCONTINUED |

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

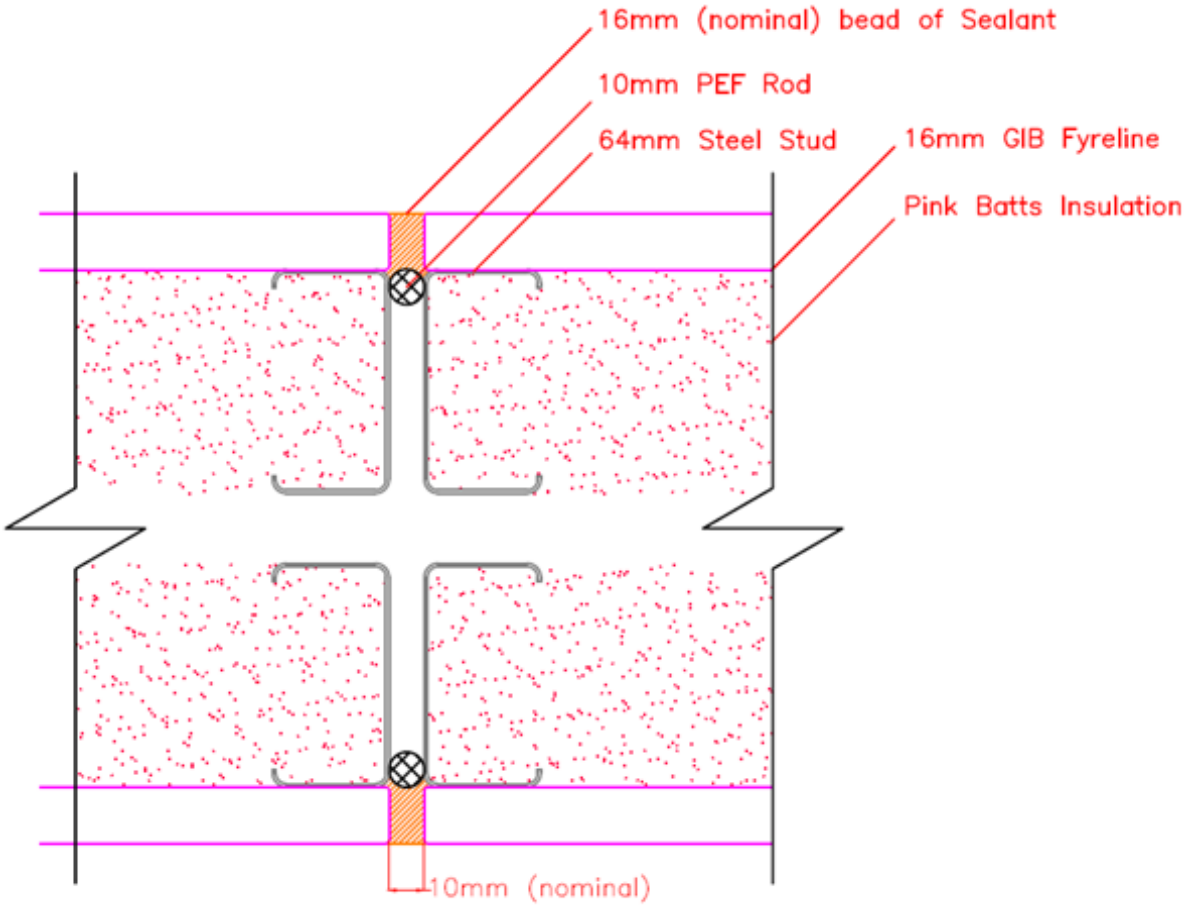
## 5.2 Specimen A – 5mm Vertical Linear Gap




| | |
|---|---|
| Service | 5mm wide Vertical Linear Gap seal |
| Joint Details | Sealant (3.1), PEF Rod (5.1) |
| **Local Fire-stopping Protection** | |
| Application | Symmetrical |
| Protection Used | A PEF rod (5.1) was inserted into the linear gap aperture, recessed 16mm. A bead of sealant was applied on top of the PEF rod, flush with the surface of the plasterboard, resulting in a sealant depth of 16mm |

| | |
|---|---|
| **Structural adequacy** | **Not applicable** |
| **Integrity** | **No failure at 93 min** |
| **Insulation** | **No failure at 93 min** |

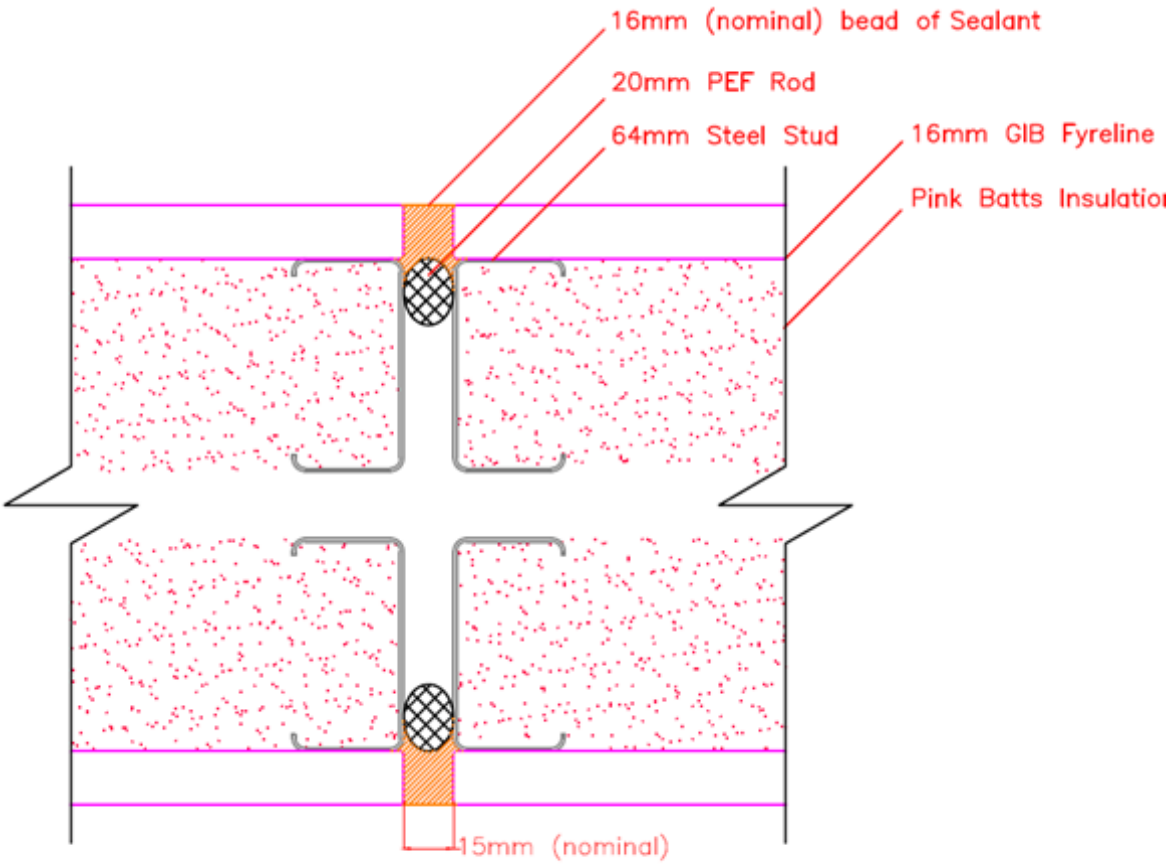
## 5.3 Specimen B – 10mm Vertical Linear Gap




| | |
|---|---|
| Service | 10mm wide Vertical Linear Gap seal |
| Joint Details | Sealant (3.1), PEF Rod (5.1) |
| **Local Fire-stopping Protection** | |
| Application | Symmetrical |
| Protection Used | A PEF rod (5.1) was inserted into the linear gap aperture, recessed 16mm. A bead of sealant was applied on top of the PEF rod, flush with the surface of the plasterboard, resulting in a sealant depth of 16mm |

| | |
|---|---|
| **Structural adequacy** | **Not applicable** |
| **Integrity** | **No failure at 93 min** |
| **Insulation** | **No failure at 93 min** |

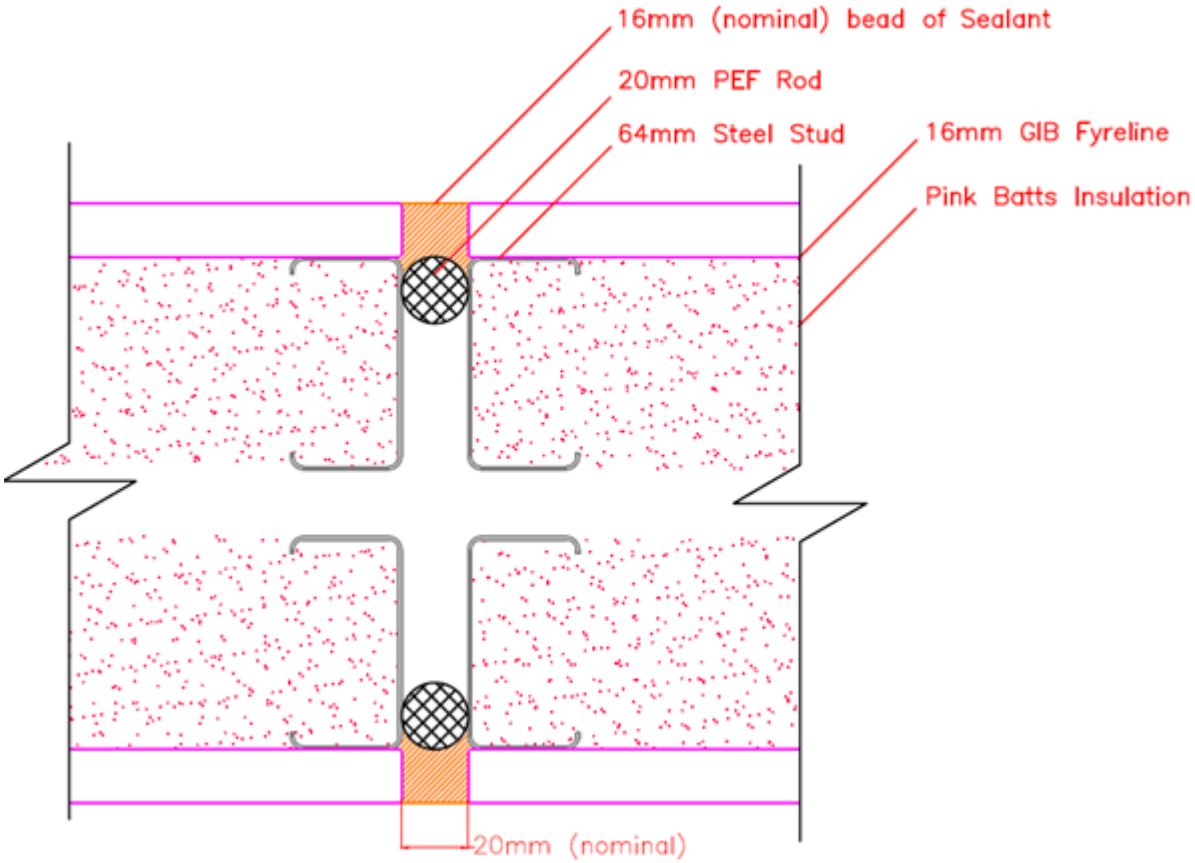
## 5.4 Specimen C – 15mm Vertical Linear Gap




| | |
|---|---|
| Service | 15mm wide Vertical Linear Gap seal |
| Joint Details | Sealant (3.1), PEF Rod (5.2) |
| **Local Fire-stopping Protection** | |
| Application | Symmetrical |
| Protection Used | A PEF rod (5.1) was inserted into the linear gap aperture, recessed 16mm. A bead of sealant was applied on top of the PEF rod, flush with the surface of the plasterboard, resulting in a sealant depth of 16mm |

| | |
|---|---|
| **Structural adequacy** | **Not applicable** |
| **Integrity** | **No failure at 93 min** |
| **Insulation** | **No failure at 93 min** |

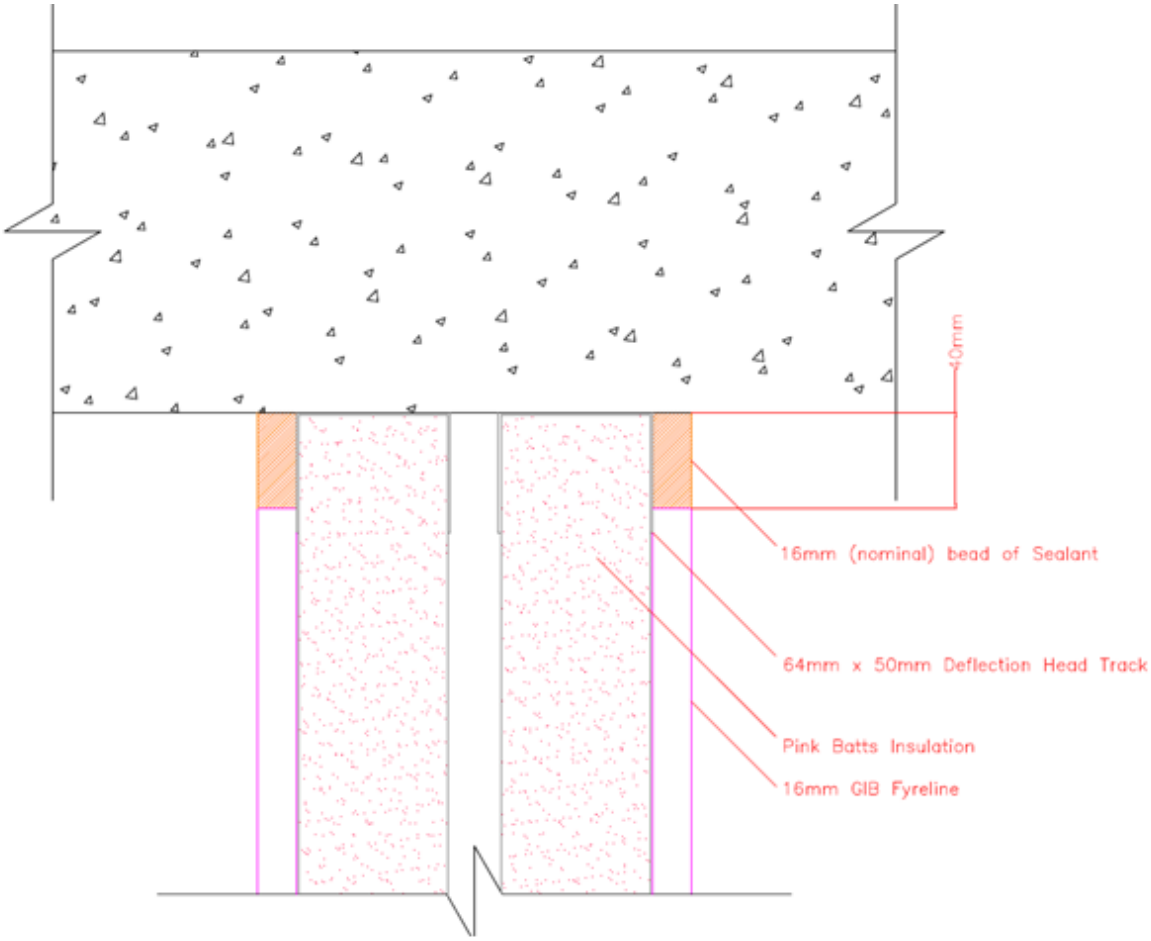
## 5.5 Specimen D – 20mm Vertical Linear Gap




| | |
|---|---|
| Service | 20mm wide Vertical Linear Gap seal |
| Joint Details | Sealant (3.1), PEF Rod (5.2) |
| **Local Fire-stopping Protection** | |
| Application | Symmetrical |
| Protection Used | A PEF rod (5.1) was inserted into the linear gap aperture, recessed 16mm. A bead of sealant was applied on top of the PEF rod, flush with the surface of the plasterboard, resulting in a sealant depth of 16mm |

| | |
|---|---|
| **Structural adequacy** | **Not applicable** |
| **Integrity** | **No failure at 93 min** |
| **Insulation** | **91 min** |

## 5.6 Specimen E – 40mm Horizontal Linear Gap

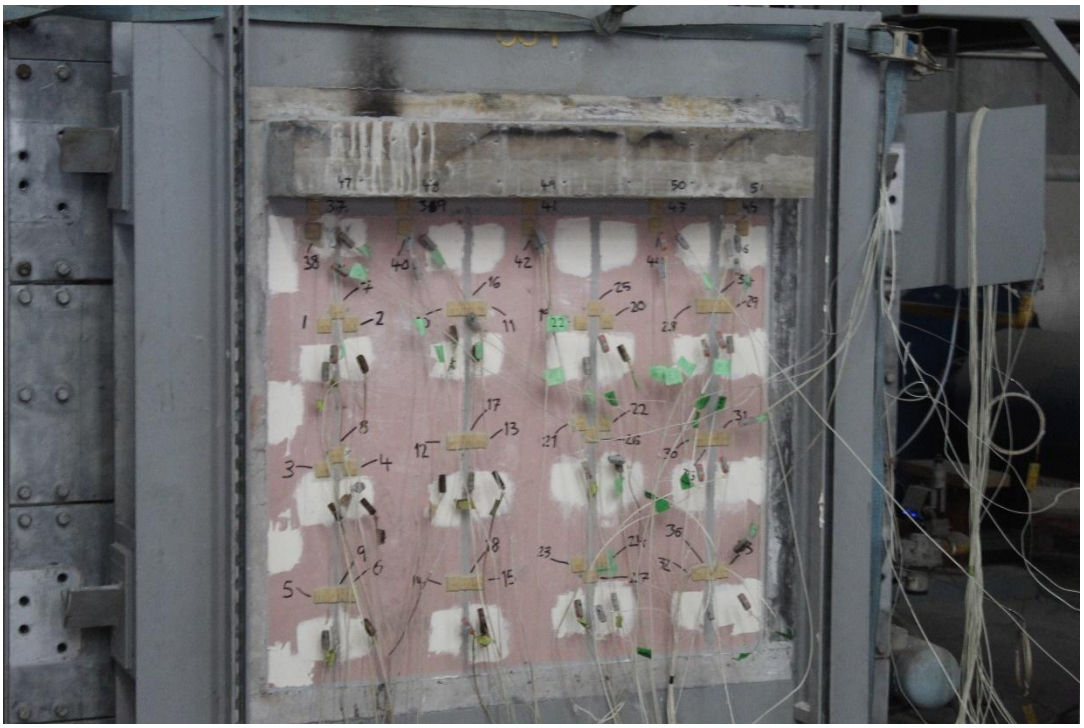



| | |
|---|---|
| Service | 40mm wide Horizontal Linear Gap seal |
| Joint Details | Sealant (3.1) |
| **Local Fire-stopping Protection** | |
| Application | Symmetrical |
| Protection Used | Sealant was applied between the top of the plasterboard and the concrete slab. The sealant was applied directly to the deflection head track, flush with the surface of the plasterboard, resulting in a sealant depth of 16mm |

| | |
|---|---|
| **Structural adequacy** | **Not applicable** |
| **Integrity** | **No failure at 93 min** |
| **Insulation** | **No failure at 93 min** |

# 6. Photos

Unexpoesd faced:



Exposed face: