Fire Testing Laboratory

# Regulatory Information Report

## RIR2207601

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

| | |
|---|---|
| Issued to: | Firestop Centre Ltd |
| Test method: | AS1530.4-2014 |
| Report Date: | 08/07/2025 |
| Test number: | PF22076 |

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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
ILAC
TESTING LABORATORY

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

## 2. Report Summary

A 64mm steel stud frame, lined with 2 x 13mm FR plasterboard on each side was constructed. Steel studs were installed to accommodate a vertical linear gap, cable trays, copper pipe and a blank seal. Two studs were installed back to back spaced 20mm apart prior to lining the wall. Plasterboard was cut out along the studs to reveal a 20mm linear gap. Additional penetrations for D1 and D2 cable tray configurations, copper pipe and blank seal were cut. All services were protected using FIRESTOP Ultra sealant with or without ceramic fibre blanket.

| Specimen | Joint | Actual Integrity (min) | Actual Insulation (min) | FRL |
|---|---|---|---|---|
| **A** | D2 cable configuration | 123 NF | 123 NF | -/120/120 |
| **B** | D1 cable configuration | 123 NF | 123 NF | -/120/120 |
| **C** | 40mm blank seal | 123 NF | 123 NF | -/120/120 |
| **D** | DN32 Copper pipe | 123 NF | 123 NF | -/120/120 |
| **E** | 20mm Vertical Linear Gap seal | 123 NF | 123 NF | -/120/120 |

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 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.

**Testing date:**

27/02/2023

**Installation completion date:**

22/01/2023

**Termination of The Test:**

The test was discontinued at 123 minutes.

## 3.4 Use of the Report

A regulatory information report was issued in addition to the full test report PF22076. 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 |
| | Measurements | Width / Height (W/H): 1200mm x 1200mm |
| | | Wall Thickness: 116mm |
| | | Cavity: 64mm |

| | | |
|---|---|---|
| 1.2 | Item / Product Name | Steel Stud |
| | Measurements | Width / Height (W/H): 64mm x 35.5mm |
| | | Thickness (T): 0.50BMT |
| | Additional Info | Used to construct separating element |
| 1.3 | Item / Product Name | Steel Deflection Track |
| | Measurements | Width / Height (W/H): 64mm x 50mm |
| | | Thickness (T): 0.75BMT |
| | Additional Info | Used to construct separating element |
| 1.4 | Item / Product Name | 13mm FR Plasterboard |
| | Measurements | Width / Height (W/H): 1200mm x 3000mm |
| | | Thickness (T): 13mm |
| | Additional Info | 2 x layers installed to each side of steel frame |
| 4.1 | Item / Product Name | Self-Tapping Screws |
| | Measurements | 32mm |
| | Installation | Used to fix plasterboard to steel stud |
| 4.2 | Item / Product Name | Self-Tapping Screws |
| | Measurements | 41mm |
| | Installation | Used to fix plasterboard to steel stud |
| 4.3 | Item / Product Name | Metal Screw |
| | Measurements | 8g x 25mm |
| | Installation | Used to fix framing components |

## 4.2 Specimen A

| | | |
|---|---|---|
| 3.1 | Item / Product Name | Formulation F023SDW01 - FIRESTOP Ultra sealant |
| | Dimensions | 600mL |
| | Installation | Installed in annular gap + 50x70mm cone |
| 2.1 | Item / Product Name | Communications Cable 50 Pair |
| | Measurements | Outer Diameter (OD): 16mm (nominal) |
| | Additional Info | 60 x cables installed in cable tray |
| 2.2 | Item / Product Name | Steel Cable Tray |
| | Measurements | Width / Height (W/H): 170mm x 50mm |
| | Additional Info | Installed through aperture |
| 5.1 | Item / Product Name | Ceramic Fibre Blanket |
| | Measurements | Width / Height (W/H): 610mm x 7200mm |
| | | Thickness (T): 25mm |
| | | Density (ρ): 128Kg/$m^3$ |
| | Additional Info | Wrapped around service 2 x times with an additional 150mm overlap, extending 300mm from separating element |
| 4.4 | Item / Product Name | Stainless-Steel Cable Ties |
| | Measurements | 10mm x 1000mm |
| | Installation | Used to fix wrap around services 100mm from ends of wrap |

## 4.3 Specimen B

| | | |
|---|---|---|
| 3.1 | Item / Product Name | Formulation F023SDW01 - FIRESTOP Ultra sealant |
| | Dimensions | 600mL |
| | Installation | Installed in annular gap + 50x70mm cone |
| 2.3 | Item / Product Name | XLPE/PVC 1 x 630$mm^2$ Copper Cable |
| | Measurements | Outer Diameter (OD): 42mm (nominal) |
| | Additional Info | 1 x cable installed in cable tray |
| 2.4 | Item / Product Name | 4 x 185$mm^2$ Aluminium Cable |

| | | |
|---|---|---|
| | Measurements | Outer Diameter (OD): 49mm (nominal) |
| | Additional Info | 1 x cable installed in cable tray |
| 2.5 | Item / Product Name | 3 x 6mm$^2$ + Earth Copper Cable (4G6) |
| | Measurements | Outer Diameter (OD): 16mm (nominal) |
| | Additional Info | 3 x cables installed in cable tray |
| 2.6 | Item / Product Name | 3 x 16mm$^2$ + Earth Copper Cable (4G16) |
| | Measurements | Outer Diameter (OD): 16mm (nominal) |
| | Additional Info | 8 x cables installed in cable tray |
| 2.7 | Item / Product Name | Steel Cable Tray |
| | Measurements | Width / Height (W/H): 325mm x 50mm |
| | Additional Info | Installed through aperture |
| 5.1 | Item / Product Name | Ceramic Fibre Blanket |
| | Measurements | Width / Height (W/H): 610mm x 7200mm |
| | | Thickness (T): 25mm |
| | | Density (ρ): 128Kg/m$^3$ |
| | Additional Info | Wrapped around service 2 x times with additional 150mm overlap, extending 300mm from separating element |
| 4.4 | Item / Product Name | Stainless-Steel Cable Ties |
| | Measurements | 10mm x 1000mm |
| | Installation | Used to fix wrap around services 100mm from ends of wrap |

## 4.4 Specimen C

| | | |
|---|---|---|
| 3.1 | Item / Product Name | Formulation F023SDW01 - FIRESTOP Ultra sealant |
| | Dimensions | 600mL |
| | Installation | Installed in aperture to form 40mm blank seal |

## 4.5 Specimen D

| | | |
|---|---|---|
| 3.1 | Item / Product Name | Formulation F023SDW01 - FIRESTOP Ultra sealant |
| | Dimensions | 600mL |
| | Installation | Installed in annular gap + 50x70mm cone |
| 2.8 | Item / Product Name | DN32 Copper Pipe |
| | Measurements | Outer Diameter (OD): 32mm |
| | | Inner Diameter (ID): 29.5mm |
| | | Thickness (T): 1.25mm |
| | Additional Info | Installed through aperture |
| 5.1 | Item / Product Name | Ceramic Fibre Blanket |
| | Measurements | Width / Height (W/H): 610mm x 7200mm |
| | | Thickness (T): 25mm |
| | | Density (ρ): 128Kg/m$^3$ |
| | Additional Info | Wrapped around service 2 x times with additional 150mm overlap, extending 300mm from separating element |
| 4.4 | Item / Product Name | Stainless-Steel Cable Ties |
| | Measurements | 10mm x 1000mm |
| | Installation | Used to fix wrap around services 100mm from ends of wrap |

## 4.6 Specimen E

| | | |
|---|---|---|
| 3.1 | Item / Product Name | Formulation F023SDW01 - FIRESTOP Ultra sealant |
| | Dimensions | 600mL |
| | Installation | Installed in linear gap to thickness of the plasterboard, resulting in a 26mm (nominal) seal |

# 5. Test Results

## 5.1 Observations during the test

| Time Minutes | Test Face | SP | Observations |
|---|---|---|---|
| 1 | U | A | Smoke from cables and wrap |
| 2 | U | B | Smoke from cables and wrap |
| 5 | U | A, B | Increase in amount of smoke from cables and wrap |
| 15 | E | C, E | Visible charring of sealant |
| 20 | U | B | Visible deforming of cable sheathing near TC20 |
| 20 | E | A, B | Cable sheathing has combusted, and melting away from cable |
| 20 | E | A, B | Visible cracks between separating element and sealant |
| 30 | E/U | ALL | No notable changes |
| 45 | E/U | ALL | No notable changes |
| 60 | E/U | ALL | No notable changes |
| 65 | U | B | Reduced amount of smoke from specimen |
| 65 | U | A, B | Discolouring of wrap above cables |
| 75 | E/U | ALL | No notable changes |
| 90 | E/U | ALL | No notable changes |
| 105 | U | C, E | Visible expansion of sealant |
| 120 | E/U | ALL | No notable changes |
| 123 | | | TEST DISCONTINUED |

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

## 5.2 Specimen A – D2 Cable Configuration

| | |
|---|---|
| Service | D2 cable configuration |
| Service Details | Cables (2.1), Cable Tray (2.2) Sealant (3.1), Ceramic Fibre Blanket (5.1), Cable Ties (4.4) |
| Aperture Size | 179mm x 128mm |
| Annular Spacing | Min: 5mm, Max: 20mm |
| **Local Fire-stopping Protection** | |
| Application | Symmetrical |
| Protection Used | Aperture was cut into the separating element. The 60 x D2 Cables (2.1) were bundled using cable ties and placed on the cable tray (2.2). The Cable tray was placed through the aperture, extending 500mm from the exposed face. Sealant (3.1) was installed between the cable tray and the separating element, flush with the plasterboard, resulting in a 26mm (nominal) seal. An additional 50mm x 70mm cone of sealant was applied between the cable tray and separating element. The cone extended 50mm from the cable bundle onto the separating element, and 70mm along the cables. Once the sealant had cured, the cable tray was wrapped with ceramic blanket (5.1). Two revolutions were applied around the cable tray, with 150mm (nominal) overlap. The wrap extended 300mm from the separating element, and was secured using two cable ties, spaced 100mm from each end of the wrap. |

| | |
|---|---|
| **Structural adequacy** | **Not applicable** |
| **Integrity** | **No failure at 123 min** |
| **Insulation** | **No failure at 123 min** |

## 5.3 Specimen B – D1 Cable Configuration

| | |
|---|---|
| Service | D1 cable configuration with the replacement of cable b) |
| Service Details | Cables (2.3, 2.4, 2.5, 2.6), Cable Tray (2.7) Sealant (3.1), Ceramic Fibre Blanket (5.1), Cable Ties (4.4) |
| Aperture Size | 331mm x 64mm |
| Annular Spacing | Min: 1mm, Max: 63mm |
| **Local Fire-stopping Protection** | |
| Application | Symmetrical |
| Protection Used | Aperture was cut into the separating element. The 60 x D2 Cables (2.3, 2.4, 2.5, 2.6), were bundled into like groups using cable ties and evenly spaced on the cable tray (2.7). The Cable tray was placed through the aperture, extending 500mm from the exposed face. Sealant (3.1) was installed between the cable tray and the separating element, flush with the plasterboard, resulting in a 26mm (nominal) seal. An additional 50mm x 70mm cone of sealant was applied between the cable tray and separating element. The cone extended 50mm from the cable bundle onto the separating element, and 70mm along the cables. Once the sealant had cured, the cable tray was wrapped with ceramic blanket (5.1). Two revolutions were applied around the cable tray, with 150mm (nominal) overlap. The wrap extended 300mm from the separating element, and was secured using two cable ties, spaced 100mm from each end of the wrap. |

| | |
|---|---|
| **Structural adequacy** | **Not applicable** |
| **Integrity** | **No failure at 123 min** |
| **Insulation** | **No failure at 123 min** |

## 5.4 Specimen C – 40mm Blank Seal

| | |
|---|---|
| Service | 40mm blank seal |
| Service Details | Sealant (3.1) |
| **Local Fire-stopping Protection** | |
| Application | Symmetrical |
| Protection Used | Aperture was cut into the separating element. Sealant (3.1) was installed in the aperture, flush with the plasterboard, resulting in a 26mm (nominal) seal. |

| | |
|---|---|
| **Structural adequacy** | **Not applicable** |
| **Integrity** | **No failure at 123 min** |
| **Insulation** | **No failure at 123 min** |

## 5.5 Specimen D – 32DN Copper Pipe

| | |
|---|---|
| Service | DN32 Copper pipe |
| Service Details | Pipe (2.8), Sealant (3.1), Ceramic Fibre Blanket (5.1), Cable Ties (4.4) |
| Aperture Size | 32mm |
| Annular Spacing | Min: 0mm, Max: 1mm |
| **Local Fire-stopping Protection** | |
| Application | Symmetrical |
| Protection Used | Aperture was cut into the separating element. The pipe (2.8) was placed through the aperture, extending 500mm from the exposed face. A 50mm x 70mm cone of sealant was applied between the pipe and separating element. The cone extended 50mm from the pipe onto the separating element, and 70mm along the pipe. Once the sealant had cured, the cable tray was wrapped with ceramic blanket (5.1). Two revolutions were applied around the pipe, with 150mm (nominal) overlap. The wrap extended 300mm from the separating element, and was secured using two cable ties, spaced 100mm from each end of the wrap. |

| | |
|---|---|
| **Structural adequacy** | **Not applicable** |
| **Integrity** | **No failure at 123 min** |
| **Insulation** | **No failure at 123 min** |

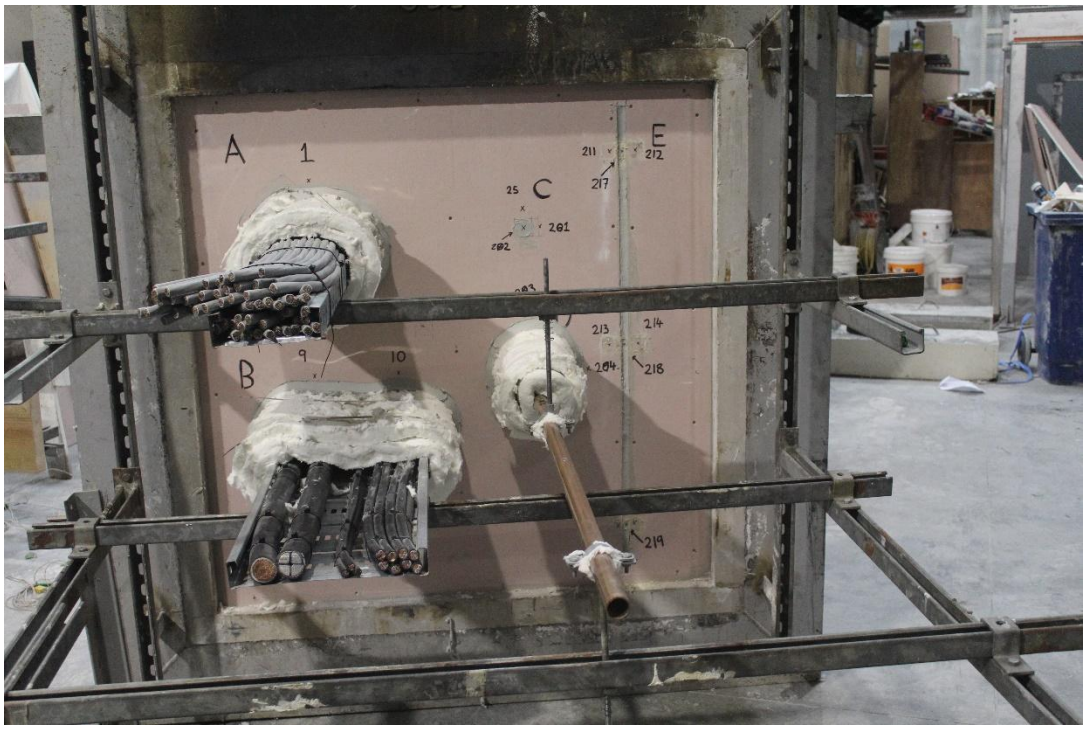
## 5.6 Specimen E – 20mm Vertical Linear Gap

| | |
|---|---|
| Service | 20mm wide Vertical Linear Gap seal |
| Joint Details | Sealant (3.1) |
| **Local Fire-stopping Protection** | |
| Application | Symmetrical |
| Protection Used | Aperture was cut into the separating element. Sealant (3.1) was installed in the aperture, flush with the plasterboard, resulting in a 26mm (nominal) seal. |

| | |
|---|---|
| **Structural adequacy** | **Not applicable** |
| **Integrity** | **No failure at 123 min** |
| **Insulation** | **No failure at 123 min** |

# 6. Photos

Unexpoesd faced:




Exposed face: