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BRANZ FIRE TEST REPORT

FF13923-01

BS 8414-2:2015+A1:2017 TEST OF EQUITONE T50 FAÇADE SYSTEM IN ACCORDANCE WITH BR 135 ANNEX B CRITERIA

CLIENT

The Building Agency
14 Link Drive
Wairau Valley
Auckland, 0627
New Zealand

TEST SUMMARY

Objective

To determine the fire performance of an external facade system when tested in accordance with BS 8414-2:2015+A1:2017 '*Fire performance of external cladding systems' – Part 2: 'Test method for non-loadbearing external cladding systems fixed to and supported by a structural steel frame' (*the test standard) when assessed to the criteria specified in BR 135 '*Fire performance of external thermal insulation for walls of multi-storey buildings' Third* edition Annex B 2013.

Test Sponsor

The Building Agency
14 Link Drive
Wairau Valley
Auckland, 0627
New Zealand

Description of Test Specimen

The test specimen was described by the client as Equitone T50 System, comprising 8 mm thick Equitone fibre cement cladding mechanically fixed to an extruded aluminium rail fixing system on a plasterboard rigid air barrier lightweight timber frame.

Date of Test

17 January 2022

Test Results

Document	Classification
BR 135 Fire performance of external thermal insulation for walls of multi-storey buildings, Third edition Annex B 2013	Pass

LIMITATIONS

The results reported here relate only to the item/s tested.

TERMS AND CONDITIONS

This report is issued in accordance with the Terms and Conditions as detailed and agreed in the BRANZ Services Agreement for this work.

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1. INTRODUCTION

This report provides the fire performance of a non-loadbearing external façade system fixed to and supported by a timber frame when exposed to an external fire under the conditions of the test standard. The fire exposure is representative of a fully developed (post flashover) fire in a room, venting through an opening that exposes the façade system to the effects of external flames.

The extent of damage caused to the external façade system is evaluated, particularly the ability of the external facade system to resist the propagation of the fire upwards or penetration through the system. Any falling debris and fire penetration are recorded.

The tested system was specified by the test sponsor.

All measurements quoted in this report are nominal unless otherwise stated.

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2. EXPERIMENTAL PROCEDURE

2.1 Test Standard

The test was conducted in accordance with the test specifications and procedure described in BS 8414-2: 2015 *'Fire performance of external cladding systems' – Part 2: 'Test method for non-loadbearing external cladding systems fixed to and supported by a structural steel frame'* except as follows:

- The ignition source was constructed from Pinus radiata.
- The external façade system was fixed to and supported by a timber frame.

2.2 Test Date

The test was conducted on 17 January 2022 and supervised by Mr. Lukas Hersche at BRANZ Limited laboratories, Judgeford, New Zealand.

2.3 Test Conditions

The ambient ground level temperature at the beginning of the test was 22 °C.

The wind speed was between 1 m/s and 1.5 m/s measured at Level 2, 1,000 mm forward from the centre line of the combustion chamber. The wind direction was northwest.

2.4 Test Apparatus

The product was installed onto Rig A of the BRANZ fire façade test facility. The test apparatus is a vertical structural steel frame, representative of a structural steel framed building, with a vertical main test wall measuring 9,300 mm high x 3,100 mm wide and a vertical return wall (wing) measuring 9,300 mm high by 1,800 mm wide at a 90° angle to, and at one side of the main test wall. At the base of the main wall is located a combustion chamber measuring nominally 1,000 mm deep x 2,000 mm wide in plan and 2,000 mm high.

2.5 Ignition Source

Alternating layers of 50 mm x 50 mm softwood sticks of Pinus radiata were nailed together to form a timber crib nominally 1,500 mm x 1,000 mm in plane and 1,000 high. The moisture content was 10.8% by mass, at the time of the test.

2.6 Instrumentation and Data Recording

All thermocouples were Type K (Chromel/Alumel) mineral insulated metal sheathed (MIMS) thermocouples of 1.5 mm diameter and insulated junctions and complied with the requirements of BS 8414-2:2015.

Data recording logging at 5 second intervals was commenced at least 5 minutes before ignition of the timber crib and continued at least 30 minutes after extinguishment of the crib.

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3. DESCRIPTION OF TEST SPECIMEN

3.1 General

The test comprised a main and wing wall of an external façade system with aperture at the base of the main wall.

3.2 Specimen Selection

BRANZ was not involved in the selection of the materials, or installation of the specimen submitted for testing. The test materials used for construction of the test specimen were supplied to the laboratory by the client. Copies of the client supplied specifications are given in Section 4. Further details of the tested specimen and components are held on file by BRANZ. Where discrepancies between the details in the report text and those shown in the attached drawings exist, the text takes precedence.

3.3 Specimen Conditioning

After installation of the test specimen to the test apparatus, the specimen was protected from adverse environmental conditions prior to testing.

3.4 Description of Specimen

The test specimen as described by the client as Equitone T50 System, comprising 8 mm thick Equitone fibre cement cladding and extruded aluminium rail fixing system on a plasterboard rigid air barrier and lightweight timber frame.

3.5 Specimen Dimensions

In accordance with the requirements of the test standard, the facade system measured:

Requirement	**Measurement**
≥ 6,000 mm above top of combustion chamber opening	6,778 mm
≥ 2,400 mm across the main wall width	2,2710 mm
≥ 1,200 mm across the wing wall width	1,395 mm
260 mm (± 100 mm) between wing wall and combustion chamber	279 mm
2,000 x 2,000 mm (± 100 mm) combustion chamber opening	2,050 x 2,020 mm

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3.6 Schedule of Components

The following table provides a complete list of the component parts used in the construction of the test specimen, as provided by the client, and verified by BRANZ.

Table 1. Schedule of Components

Test Specimen – Equitone T50 System		
Item		**Description**
1	**Name**	**Interior lining**
	Material	GIB Fyreline® T.E. Plasterboard (1,200 x 3,000 x 13 mm)
	Fixing	41 x 6 g GIB Grabber high thread drywall screws
	Installation	A single layer of GIB Fyreline® was screw fixed to the unexposed face of the test specimen in accordance with manufacturer specifications.
2	**Name**	**Structural wall frame**
	Material	SG8 Radiata Pine treated to Hazard Class H1.2 (90 x 45 mm and 150 x 45 mm)
	Fixing	3.15 x 90 mm smooth bright nails
	Installation	The frame was constructed with 150 x 45 mm top and bottom plates fixed to the concrete slab and steel floor slab beams, 90 x 45 mm studs were spaced between plates at maximum 600 mm centres and 90 x 45 mm nogs at maximum 800 mm spacing.
3	**Name**	**Insulation**
	Material	R2.4 Eco Insulation Glasswool Insulation (1160 x 570 x 90 mm)
	Installation	The timber frame cavity was fully insulated.
4	**Name**	**Rigid wall underlay**
	Material	GIB Weatherline® Rigid Air Barrier (RAB) (3,000 x 1,200 x 13 mm)
	Fixing	41 mm x 6 g GIB Grabber Ceramic Coated High Thread Screw

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	Installation	The RAB was installed over the exposed face of the test wall frame in accordance with manufacturer specifications. All sheet edges were supported by timber framing. A double layer of RAB was returned into the aperture jamb and head to cover the exposed timber frame.
5	**Name**	**Water-proofing membrane**
	Material	ProClima Solitex Extasana Adhero® Self-Adhesive Weather Resistive Barrier
	Installation	The self-adhesive membrane was applied to the entire rigid air barrier surface and returned into the combustion chamber opening and around main and wing wall edges in accordance with manufacturer specifications.
6	**Name**	**Custom aluminium angle**
	Material	Aluminium (135 x 20 x 3 mm thick)
	Fixing	65 mm x 10 g 304 SS pan-head screws
	Installation	The joinery angle was installed to replicate window joinery. The angle was screwed fixed to the RAB along jamb and head of combustion chamber opening.
7	**Name**	**Head flashing**
	Material	Aluminium 40 x 95 x 45 x 10 (1.5 mm thick)
	Fixing	65 mm x 10 g 304 SS pan-head screws
	Installation	The head flashing was installed over the Weatherline RAB at the window head and extended over the 3 mm joinery angle. The flashing was screw fixed at 300 mm centre's the full width of the combustion chamber opening head with a nominally 50 mm return over the joinery angle.
8	**Name**	**Rail bracket (T50_42/60BR) on Thermal Packer**
	Material	Aluminium 40 x 50 mm adhered to 5 mm thick HDPE packer with butyl adhesive pad
	Fixing	Hex washer face T17 SS 75 mm x 14 g 304 screw

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	Installation	Rail brackets were screw fixed against the RAB to the timber frame at maximum 800 mm centres vertically and 480 mm centres horizontally.
9	**Name**	**Vertical rail (T50_VR)**
	Material	Aluminium, black painted (100 x 50 x 2 mm)
	Fixing	Hex washer face SDS SS 22 mm x 14 g T304 screw
	Installation	Vertical fixing rails located at 1,200 vertical centres and screw fixed into rail brackets.
10	**Name**	**Intermediate vertical rail (T50_IR)**
	Material	Aluminium (50 x 50 x 2 mm)
	Fixing	Hex washer face SDS SS 22 mm x 14 g T304 screw
	Installation	Intermediate rails were located at 1,200 centres, intermediate to vertical rails, and screw fixed into corresponding rail brackets.
11	**Name**	**Horizontal rail (T50_HF) with foam tape**
	Material	Aluminium (30 x 1 mm)
	Fixing	1 x 9 mm double sided adhesive closed cell PE foam tape.
	Installation	Mounted to full length of top edge of the Equitone panel with foam tape.
12	**Name**	**Horizontal open state cavity barrier**
	Material	Siderise® RH50 30/30 (1,200 x 75 x 20 mm)
	Fixing	65 x 10 g 304 stainless-steel pan-head screw with 15 mm washer.
	Installation	The Siderise® Horizontal Cavity Barriers were installed to the full width of the main and wing walls between vertical fire barriers above all drainage flashings and inter-storey junctions. The barriers were screw fixed to the wall at maximum 400 mm centres.
13	**Name**	**Vertical cavity barrier**
	Material	Siderise® RV90 90/30 (1,200 x 75 x 80 mm)

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	Fixing	B65 Siderise® 1 mm thick stainless-steel Z-fold brackets RFT 120/45 foil tape
	Installation	The Siderise® Vertical Cavity Barriers were installed along both vertical outer edges of the main wall face and along the single vertical outer edge of the wing wall. The vertical cavity barriers were attached to the wall with Siderise® RV Fixing Brackets to 75% depth of barrier width at nominal 600 mm centres. All barrier abutments and penetrations were sealed with foil tape
14	**Name**	**Horizontal inter-storey flashing**
	Material	Aluminium 40 x 95 x 45 x 10 (1.5 mm thick)
	Fixing	65 mm x 10 g 304 SS pan-head screws
	Installation	Inter-storey flashings were installed across the full width of the test specimen main and wing walls, located 700 and 5,000 mm above the combustion chamber opening. The flashings were screw fixed to the panel fixing rail at nominally 300 mm centres. The top horizontal edge was lapped with a 50 mm wide strip of Extora Flashing Tape.
15	**Name**	**Perforated vermin strip (T50_PVF)**
	Material	Perforated aluminium (20 x 60 x 1.3 mm)
	Fixing	65 mm x 10 g 304 SS pan-head screws
	Installation	Fixed in a horizontal orientation to RAB above all drainage flashings and at ground level cavity opening.
16	**Name**	**Sikaflex AT façade sealant**
	Material	Elastic silane terminated polymer sealant.
	Installation	Sikaflex® AT Façade sealant was applied vertically along the outer edge of main and wing walls between folded aluminium flashing and RAB.
17	**Name**	**Equitone cladding**
	Material	High-density fibre cement sheeting, 8 mm thick, light coloured

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	Fixings	Uni rivet 4 x 18 x 15 mm with red (static point) or green (glide point) bushing sleeve (see Figure 14).
	Installation	A total of 36 individual Equitone panels of varying dimensions comprised the exposed face of the test specimen. All panels were fixed to the T50 rail system with bushing sleeved Uni-rivets.
18	**Name**	**Foam tape**
	Material	3 x 9 mm single-sided adhesive closed-cell PE foam tape
	Installation	Two strips of foam adhered to each edge of all vertical rails and a single strip centrally located to all intermediate rails.
19	**Name**	**High impact plastic packer**
	Material	80% Polyethylene, 20% polystyrene, 10 mm thick
	Installation	Packers were located between GIB Weatherline and Custom Aluminium Angle #1 at combustion chamber head and jamb.
20	**Name**	**Sill tape**
	Material	Tescon Extoseal 150 mm self-adhering butyl rubber-based sill tape
	Installation	Sill tape was installed to the corner interface of the combustion chamber jamb and head in nominal 300 mm lengths.
19	**Name**	**Parapet cap flashing**
	Material	Folded aluminium (100 x 220 x 120 x 1.8 mm)
	Fixing	4.1 mm aluminium rivet (exterior) 65 mm x 10 g 304 SS pan-head screw (internal)
	Installation	Fitted to the top edge of the main and wing wall, screw fixed to internal plasterboard face and riveted against sheet cladding at vertical rail junctions.
20	**Name**	**Flashing clip (T50-FCL)**
	Material	Extruded aluminium (40 x 10 x 20 mm)
	Fixing	10 mm x 10g SS 304 pan-head screw

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	Installation	Screw fixed to outer vertical rail edge at combustion chamber jamb
21	**Name**	**Jamb closer flashing (T50-JC)**
	Material	Aluminium extrusion
	Fixing	65 mm x 10 g 304 SS pan-head screw
	Installation	Screw fixed at 600 mm centres to main wall RAB along combustion chamber jamb edges.
22	**Name**	**Folded aluminium angle #1**
	Material	Aluminium (20 x 70 x 10 x 10 mm)
	Fixing	4 mm Pop rivet
	Installation	Rivet fixed at 600 mm centers to the Vertical Rail at Equitone Wall End
	Name	**Folded aluminium angle #2**
	Material	Aluminium (70 x 30 mm)
	Fixing	4 mm Pop rivet
	Installation	Rivets fixed at 600 mm centers between Vertical Rail main wall and wing wall junction
	Name	**Folded aluminium flashing #3**
	Material	Aluminium (70 x 30 mm)
	Fixing	4 mm Pop rivet
	Installation	Slotted into Jamb Flashing at combustion chamber opening and rivet fixed to Vertical Rail at 600 mm centers.

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4. TEST RESULTS

4.1 Peak Temperatures

The following temperatures were measured during the 60-minute test period.

Table 1. Peak Temperatures

Parameter	Result
Start Temperature (T_s)	22 ^{0}C
Start Time (t_s)	1 minutes 5 seconds after ignition of crib
Peak Temperature/time at Level 2, External	451 ^{0}C (5 minutes 45 seconds after start time)
Peak Temperature/time at Level 2, Cavity	100 ^{0}C (22 minutes 15 seconds after start time)
Peak Temperature/time at Level 2, Insulation	19 ^{0}C (60 minutes 0 seconds after start time)

4.2 Test Observations

Observations related to the performance of the specimen were at the times stated in minutes and seconds. Height measurements are approximate and given relative to a zero at the top of the combustion chamber. Unless otherwise specified, observations refer to the centre line above the combustion chamber on the main wall.

Table 1: Test Observations

Time (Min:Sec)	Observations
00:00	Timber crib ignited.
00:05	Large plume of black smoke billows from chamber as white spirits burn off.
00:55	Flames emitted from chamber approximately 1 m high.
01:05	Start time criteria **t_s** achieved.
01:35	Distortion of head flashing and drainage cavity flashing centrally above chamber.
02:30	Smoke from white spirits has ceased.

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02:45	Spalling of cladding panel 600 mm above chamber opening. Delamination of 0.2 x 0.2 m sections of panel above, and below the drainage cavity flashing.
03:35	There is discolouration of the exposed surface of cladding panels within flame plume, 2.5 m above head.
04:00	The flames from crib combustion extend 2.5 m above the chamber.
04:48	Flaming droplet falls from head flashing, unsustained flaming on contact with ground.
05:07	Explosive spalling of cladding panel above the drainage cavity flashing central to the chamber. Delamination of 0.7 x 0.4 m section of the panel.
05:50	Intermittent flaming eminates from the top 0.2 m section of the chamber jamb junctions to main wall face. There is discolouration of cladding in the immediate area.
07:00	A 0.3 x 0.2 m section of chamber head lining has detached from the left hand side and fallen to the ground in front of the specimen.
07:30	Delamination of small section of cladding panel at the centre of main wall, 2.5 m above chamber head.
08:05	A section of flamming debris fell from the chamber head flashing to the ground, sustained flaming for nominally 2 secs before self extinguishing. Molten aluminium dripping from the sides of the head flashing without signs of flaming.
10:00	Equitone panel on the wing wall adjacent to the combustion chamber head has begun to spall and crack.
11:55	Smoke expelled from the main wall drainage channel, 3 m above the chamber.
13:00	Sustained flaming on the main wall face, 2 m above the combustion chamber.
13:34	Continued spalling of cladding panel directly within the flame plume. A fissure has developed between the central cladding panels junction with sustained flaming 2 m above the drainage cavity.
15:00	Smoke has begun to expell from the parapet capping at the top of the main wall.
17:30	Flaming debris from timber crib burns on ground at the base of the main wall.
21:55	Flaming droplets begin to fall from the vertical rail line, 300 mm right of the main wall center line.

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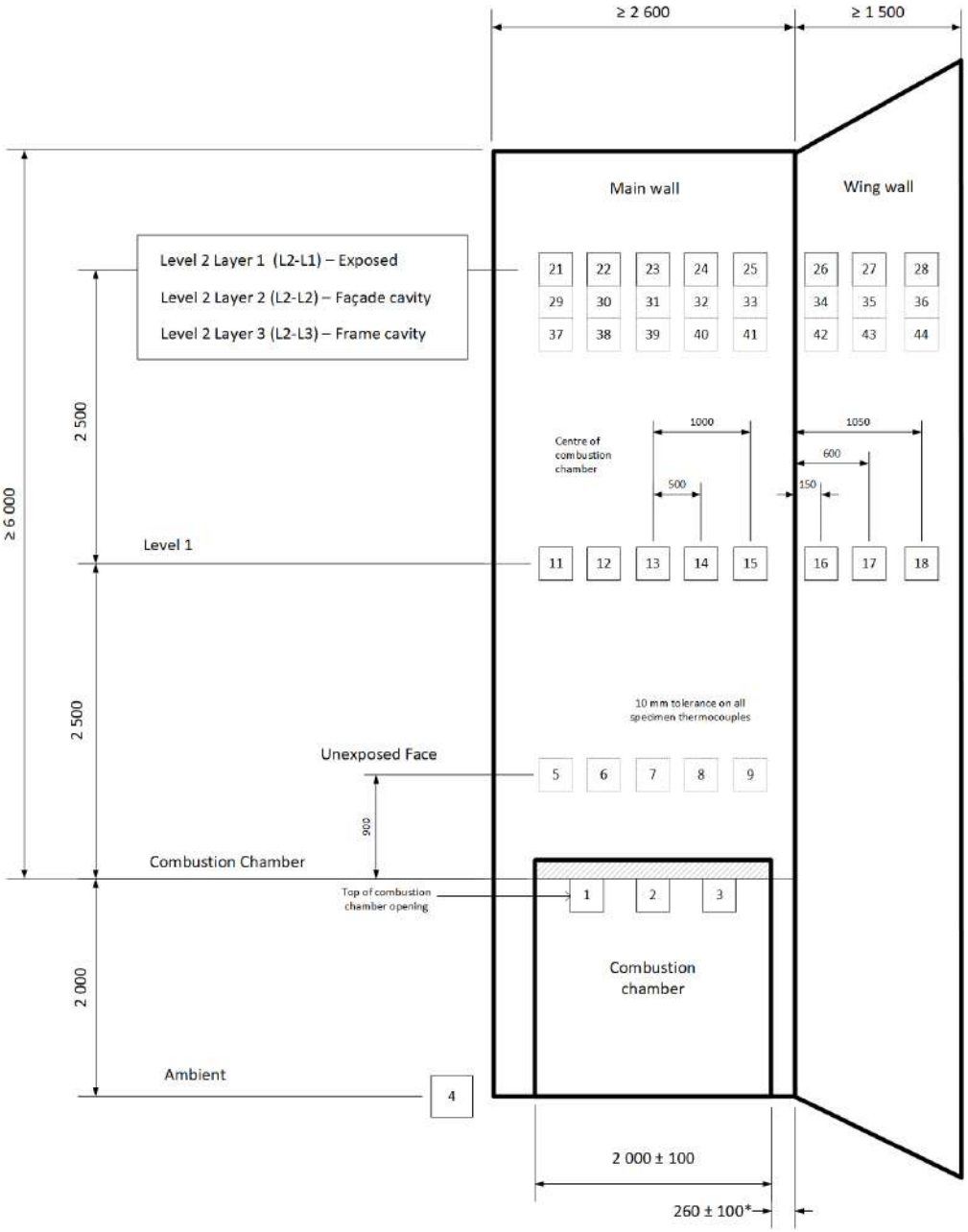
25:30	Small sections of Equitone panel crumble and fall onto the ground in front of the specimen main wall.
30:00	Crib trolley is extracted from the combustion chamber.
30:00 – 60:00	No signs of sustained flaming, additonal delamination, or smoking after the extraction of crib trolley.
60:00	End of test.

Figure 1: Thermocouple Locations



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4.3 Temperature Data

Figure 2: Level 1 External thermocouples

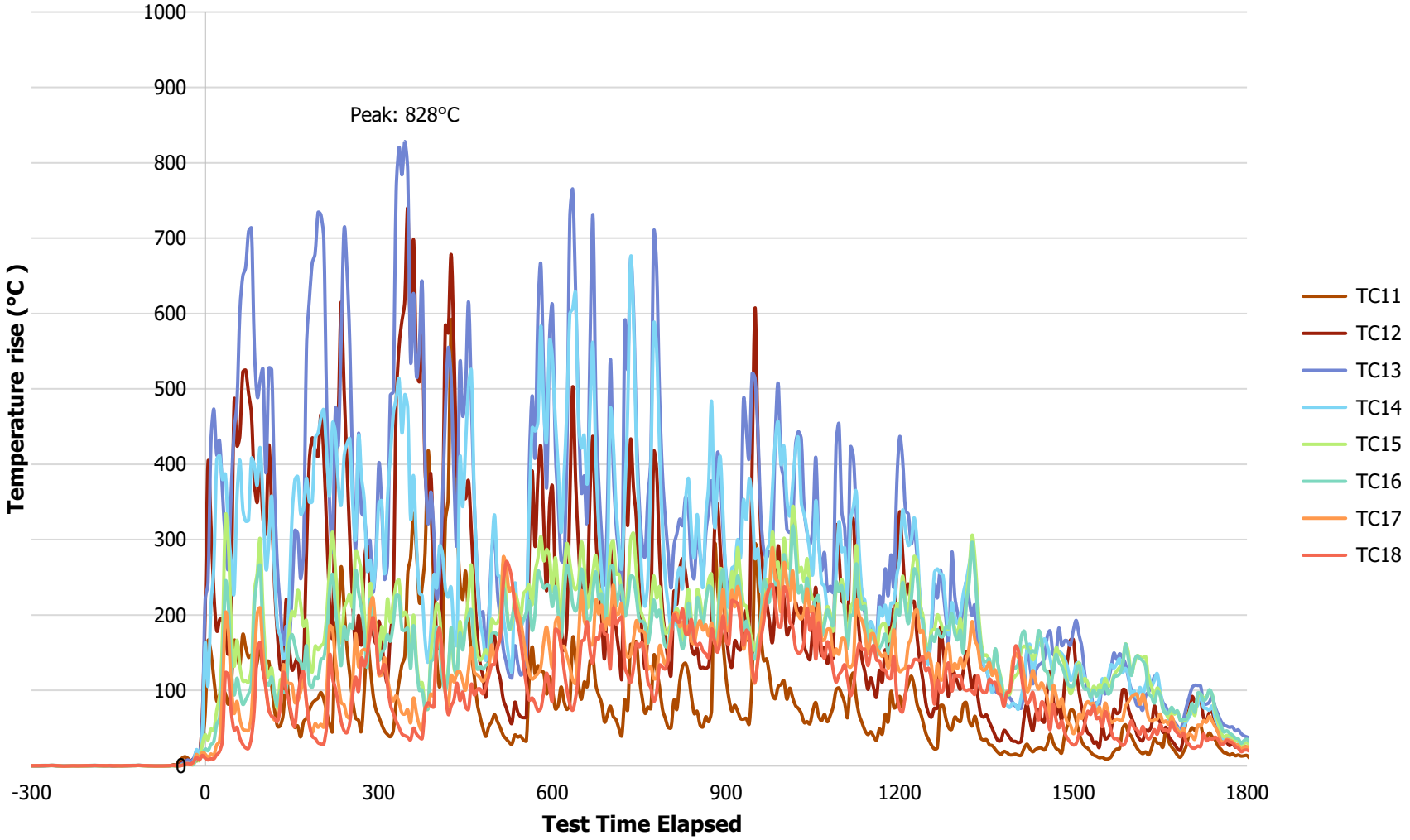

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Figure 3: Level 2 External thermocouples

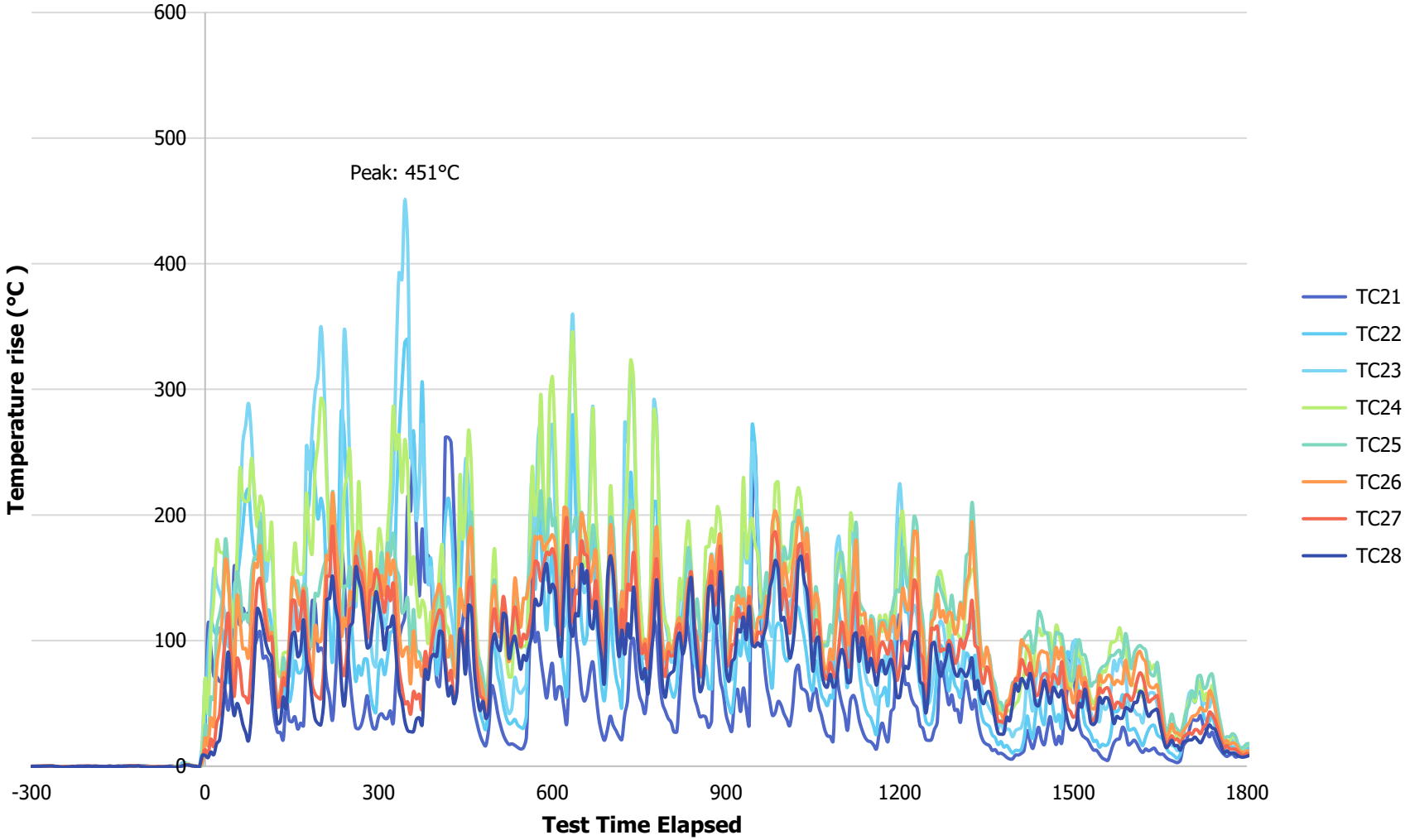

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Figure 4: Level 2 Façade cavity thermocouples

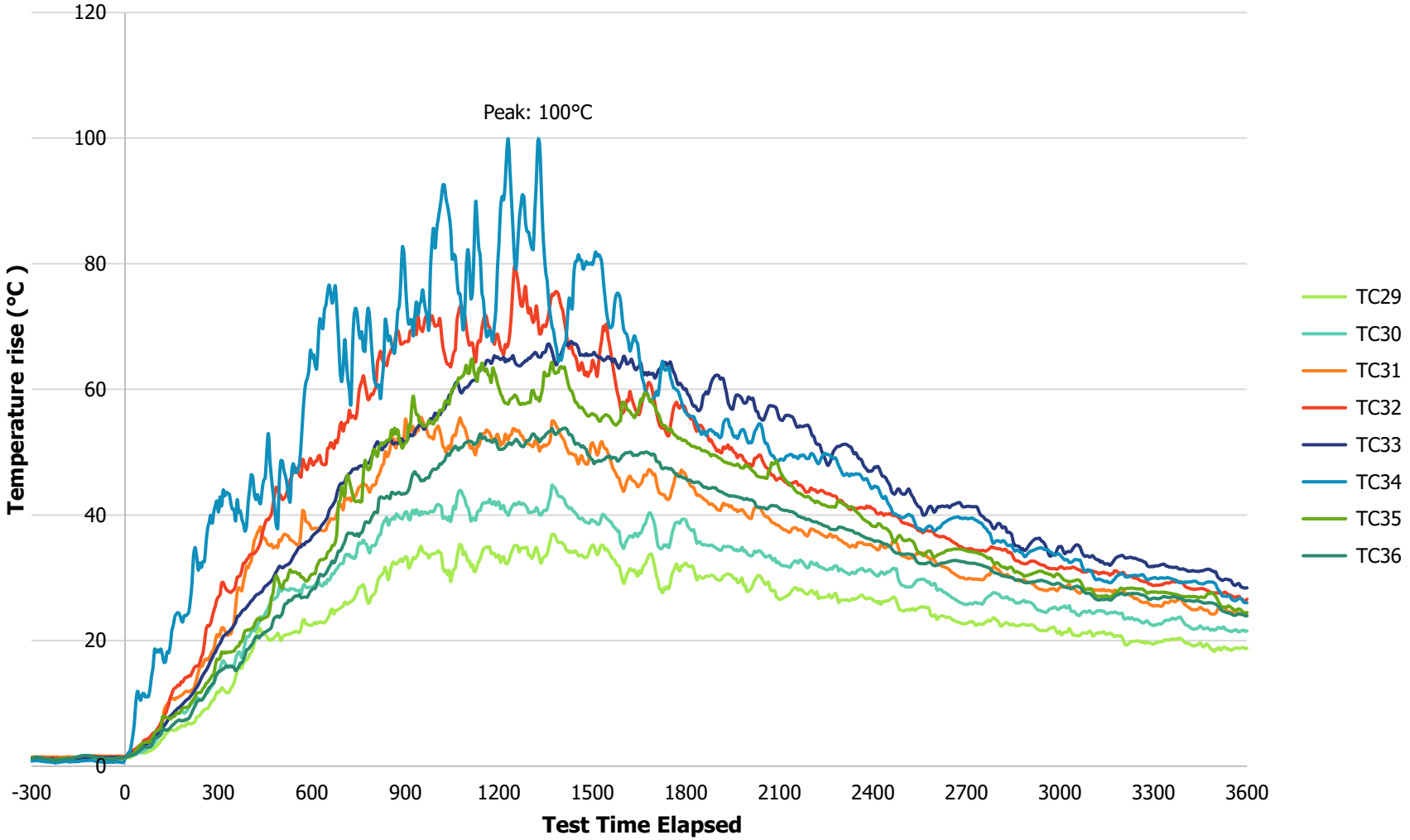

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Figure 5: Level 2 Frame cavity thermocouples

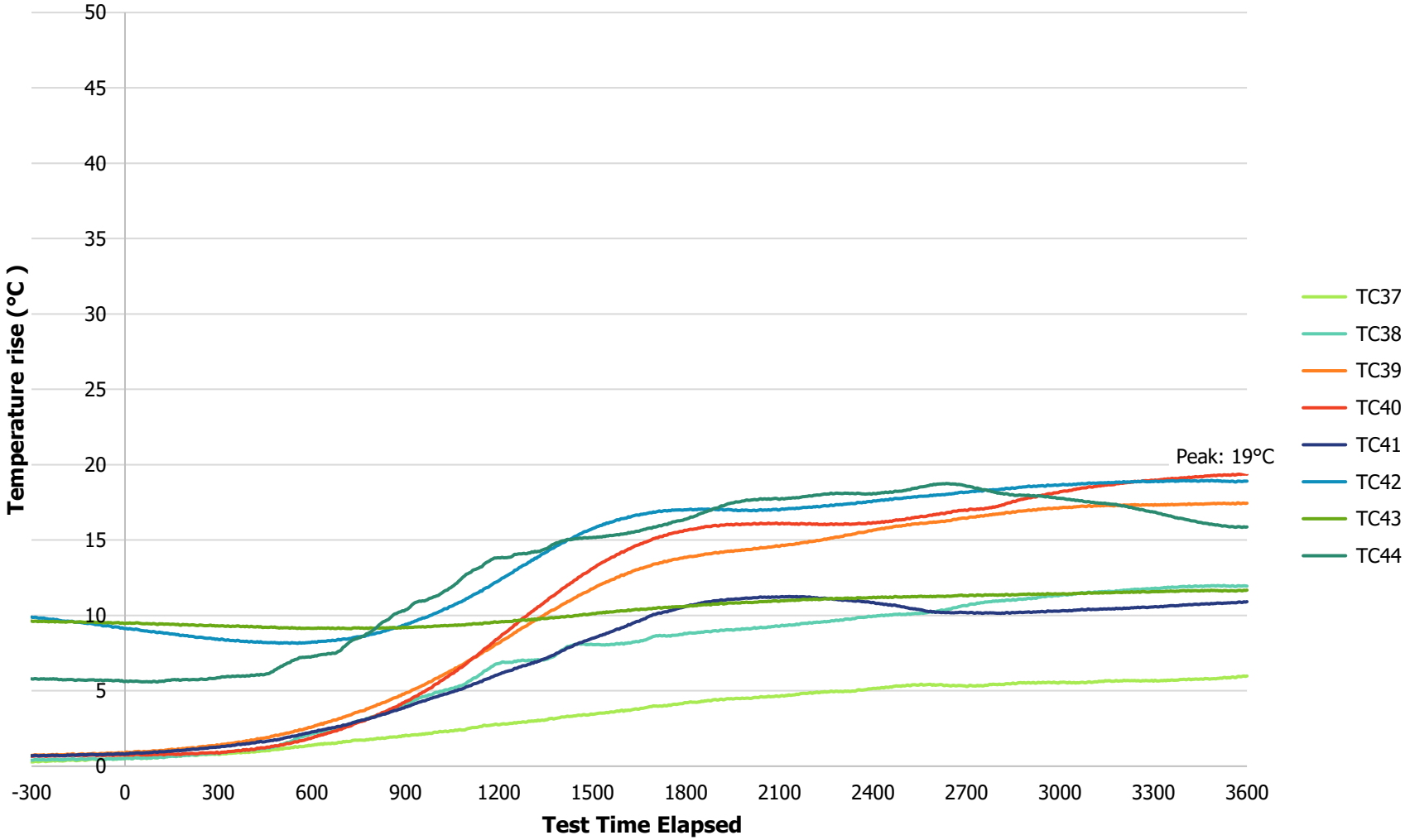

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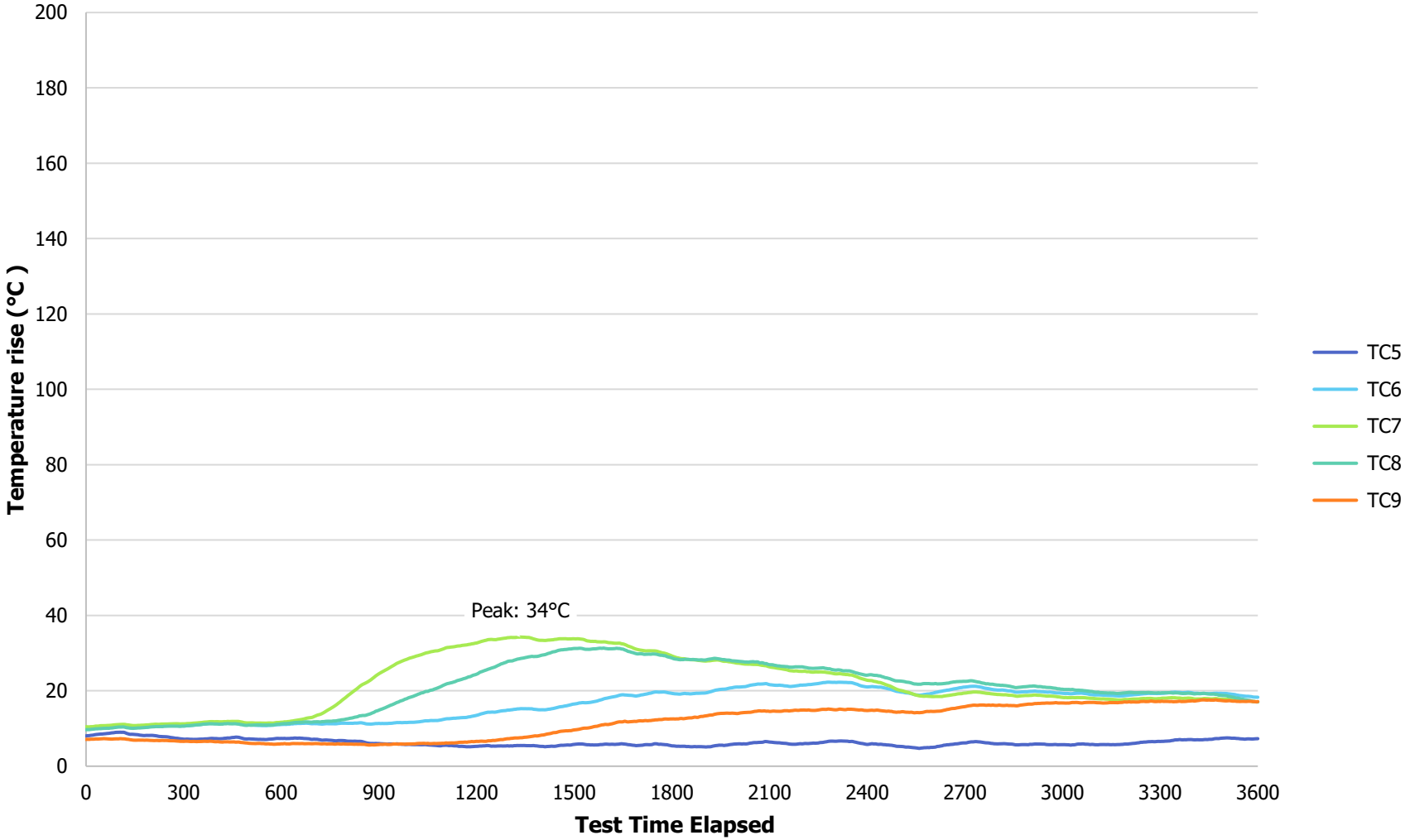
Figure 6: Unexposed face thermocouples, 900 mm above combustion chamber



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4.4 Post-test Examination (within 24 hours of test)

4.4.1 Main Wall

Photo 1: Cladding material
(Located above combustion chamber opening).

Two columns of cladding sheets above the combustion chamber opening delaminated where directly impinged by flame. There was discolouration, fissures and spalling up to 3.2 m above the chamber head (below mid-wall drainage flashing). The surrounding cladding surfaces were discoloured by smoke.

The chamber head drainage flashing melted during the test. Two 100 mm sections of the flashing remained in each corner of chamber head. The chamber jambs melted down 300 mm below the top edge. The exposed plasterboard substrate surface was discoloured and distorted but remained fixed in place. The second story drainage cavity flashing was distorted and discolored by heat, 800 mm either side of the combustion chamber centerline.

The intumescent barriers above the chamber head flashing, and lower-level drainage cavity, activated across the 2 m width of the chamber opening. The barriers located above the mid-wall drainage cavity, and parapet capping, did not activate.

The weatherproof membrane melted back in a triangular shape above the combustion chamber head, up to the underside of the mid wall drainage flashing. The plasterboard substrate below the membrane was exposed directly above the chamber opening 300 mm either side of its center up to 2 m above the chamber head.

Vertical panel rails were distorted above the chamber up to mid-wall height. All rail fixing bracket packers below mid-wall height were melted and dripped down the membrane surface.

Other than a small section of discoloration of the weatherproof membrane, there were no additional signs of fire damage to the facade system above the mid-story drainage flashing.

4.4.2 Wing Wall

Cladding sheets 2.5 m above the chamber head delaminated and fissured. There were no signs of detached debris. Fixing rivet sleeves located 500 mm above and below the chamber head height, melted and dripped down the cladding surface.

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The drainage cavity flashing (600 mm above chamber head) was discoloured by heat but did not distort.

The level one horizontal intumescent barrier activated 800 mm from the internal corner junction. All other cavity barriers did not activate. The outer wall edge vertical cavity fire barrier was discoloured by heat 1.5 m below the drainage cavity.

The weatherproof membrane was discoloured, melted, and had bubbled up in locations 500 mm above ground level to 500 mm above the lower-level drainage flashing.

4.4.3 Timber frame

Photo 2: Timber frame and insulation (Missing sections of insulation removed by BRANZ post-test).

The timber frame lintel edge was charred nominally 20 mm along the back edge and discoloured with slight charring along the right-side half of the front face edge. A 100 mm long section of the timber exposed by the rigid wall barrier expansion gap 700 mm above the combustion chamber opening was discoloured by heat.

4.4.4 Unexposed face and insulation

There was no charring or flame damage on the unexposed plasterboard lining or internal surface of the rigid air barrier (within frame cavity). There was no damage to the insulation or within the timber frame cavity.

4.4.5 Debris

The total mass of collected debris from in front of the specimen was 9 kg. Debris included melded aluminium globules, and sections of delaminated fibre cement cladding panel.

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4.5 Test results in accordance with BR 135

The test results in accordance with BS 8414-2:2015 and complied with the performance criteria detailed in BR135:2013 Annex B.

Table 2: BR 135:2013 results

Classification Criteria	Related classification measure	Result in test	Pass/Fail
B2.1:			
B2.2: External Fire Spread	Temperature rises above T_s of any of external thermocouples at Level 2 exceeds 600ºC for a period of at least 30 s, within 15 mins of the start time t_s.	Maximum 352 °C at 6 minutes 0 seconds after t_s.	Pass
B2.3: Internal Fire Spread (Facade Cavity)	Temperature rises above T_s of any of internal thermocouples at Level 2 exceeds 600ºC for a period of at least 30 s, within 15 mins of the start time t_s.	Maximum 76 °C at 15 minutes 0 seconds after t_s.	Pass
B2.3: Internal Fire Spread (Frame Cavity)	Temperature rises above T_s of any of internal thermocouples at Level 2 exceeds 600ºC for a period of at least 30 s, within 15 mins of the start time t_s.	Maximum 10 °C at 15 minutes 0 seconds after t_s.	Pass
B2.3: Internal Fire Spread	Flaming for more than 60 s on the internal surface above a height of 0.5m above the combustion chamber within 15 mins of t_s.	No Flaming	Pass
B.2.4: Mechanical Performance	No ongoing system combustion following extinguishing of the ignition source. Melting of aluminium components directly impinged by flame. Detachment of cladding directly impinged by flame.		N/A

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5. CLIENT SUPPLIED DRAWINGS

Figure 7: Chamber opening head detail – Section view

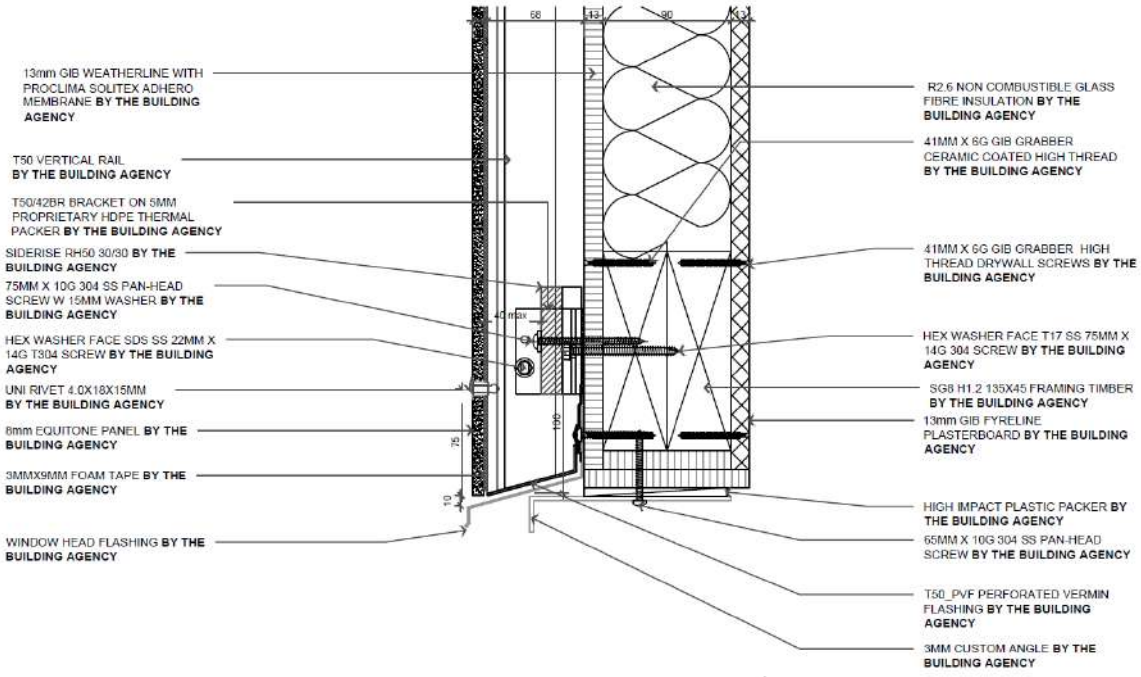

Figure 8: Chamber opening jamb (LHS) – Plan view

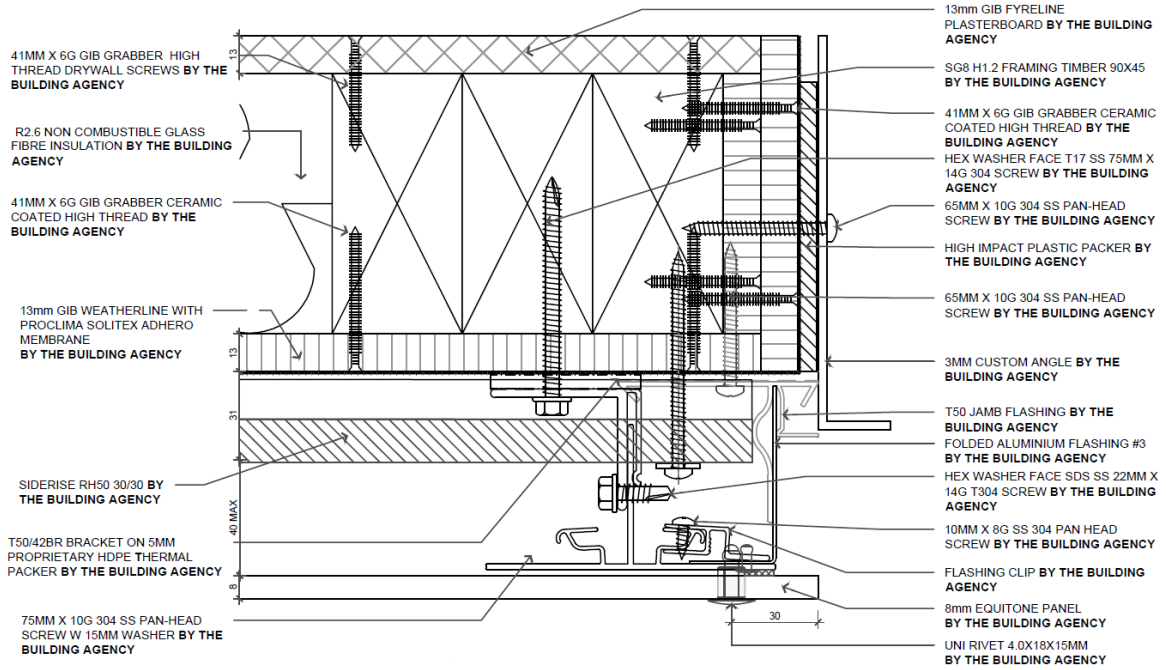

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Figure 9: Horizontal drained joint – Section view

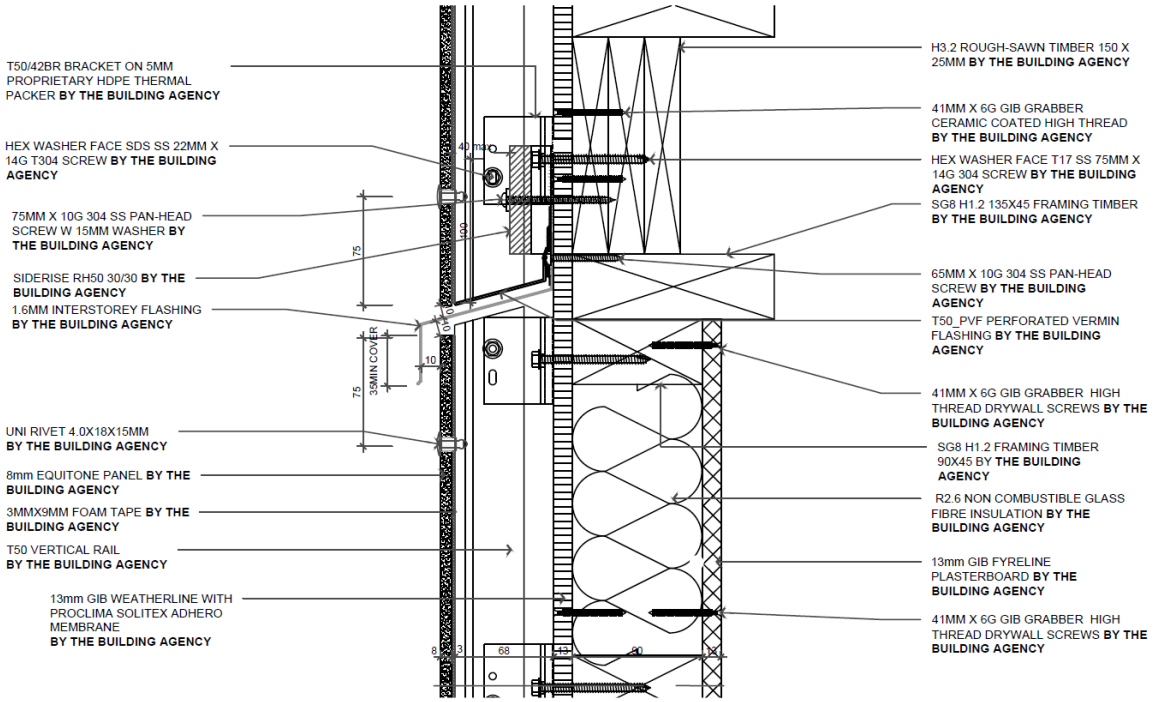

Figure 10: Internal corner – Plan view

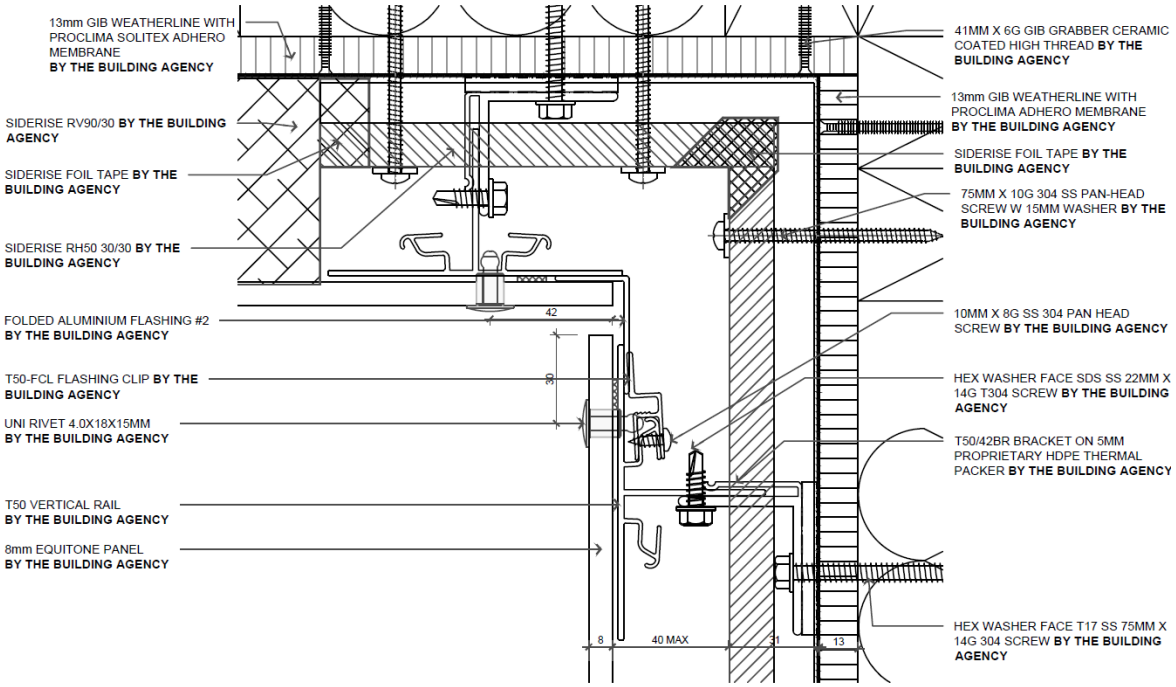

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Figure 11: Main wall edge – Plan view

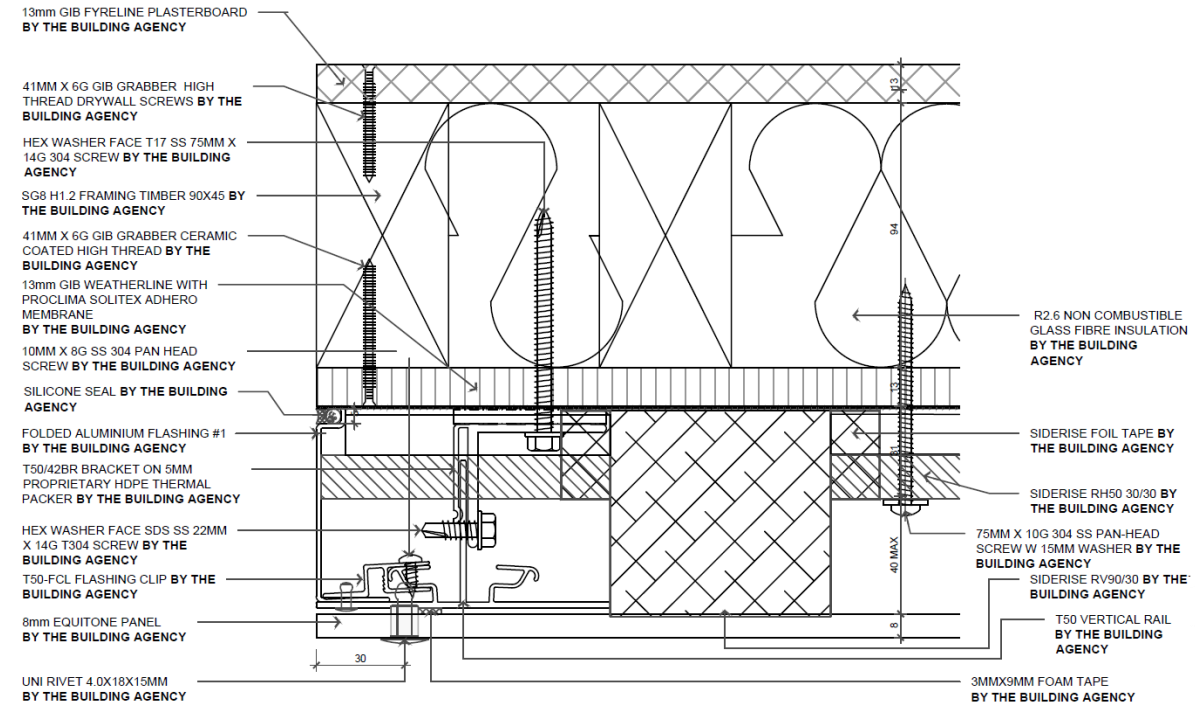

Figure 12: Equitone vertical panel joint – Plan view

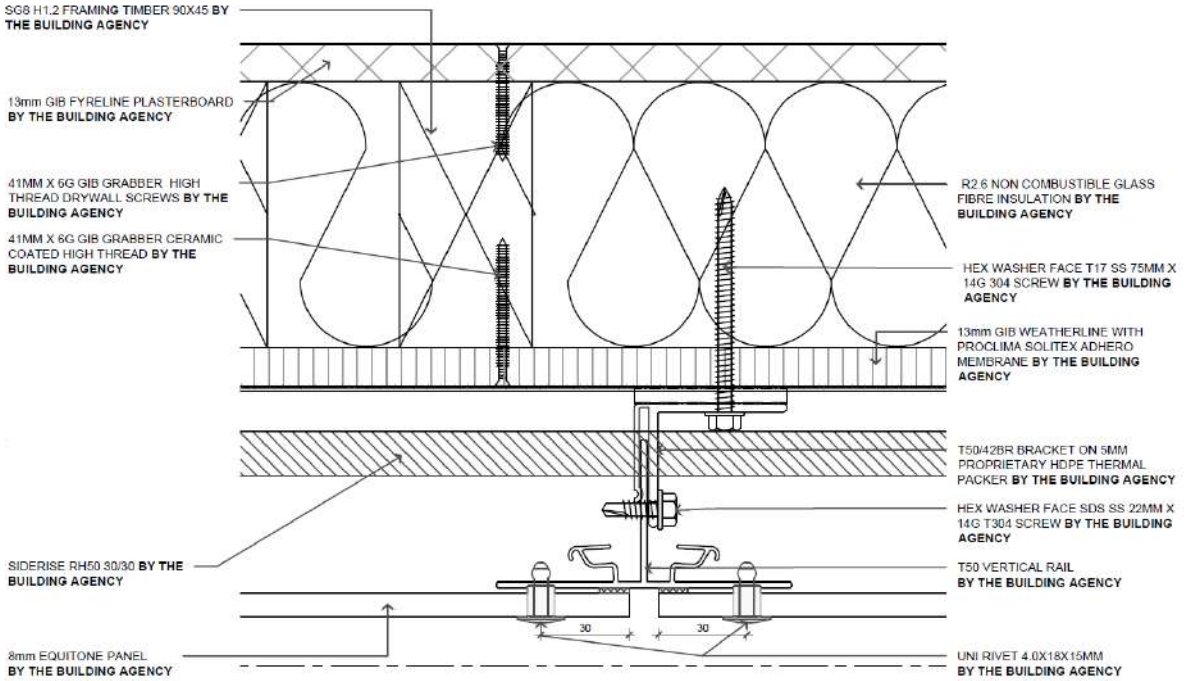

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Figure 13: Equitone T50 IR – Plan view

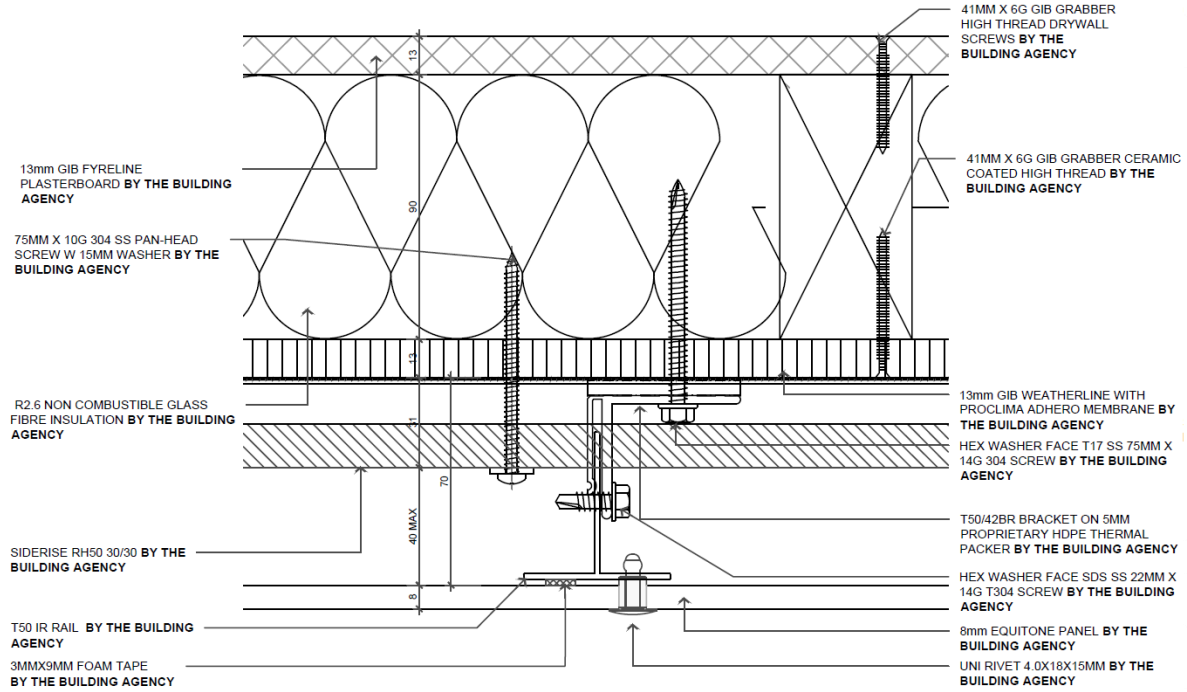

Figure 14: Equitone rivet fixing locations

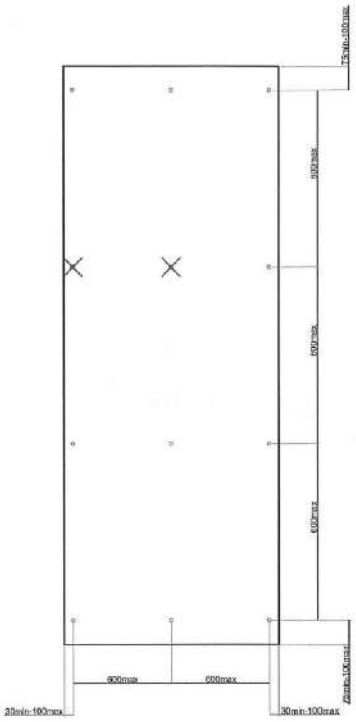

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Figure 15: Framing, RAB, and cavity fire barrier (red) layout – Elevation

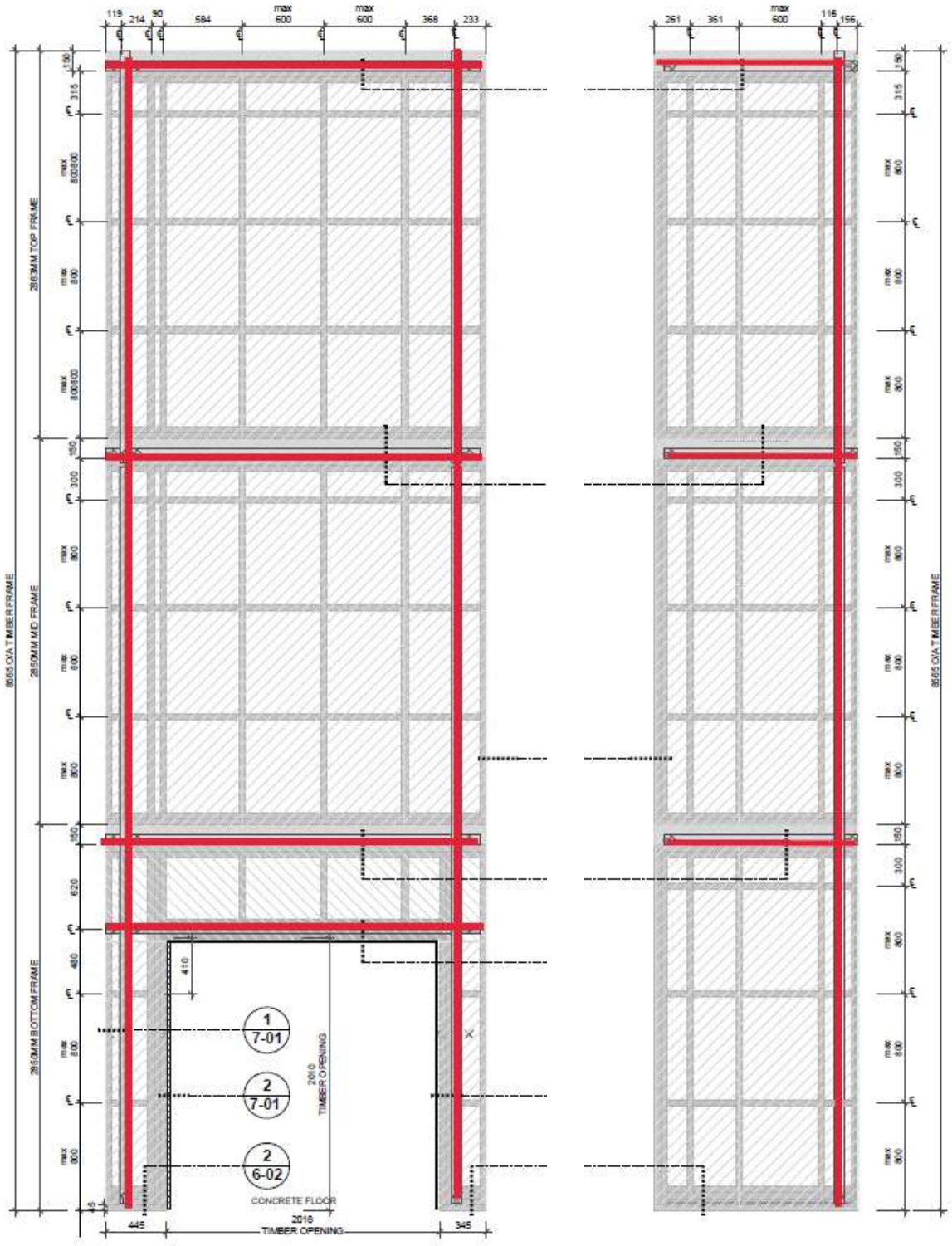

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Figure 16: Panel fixing bracket rail layout – Elevation

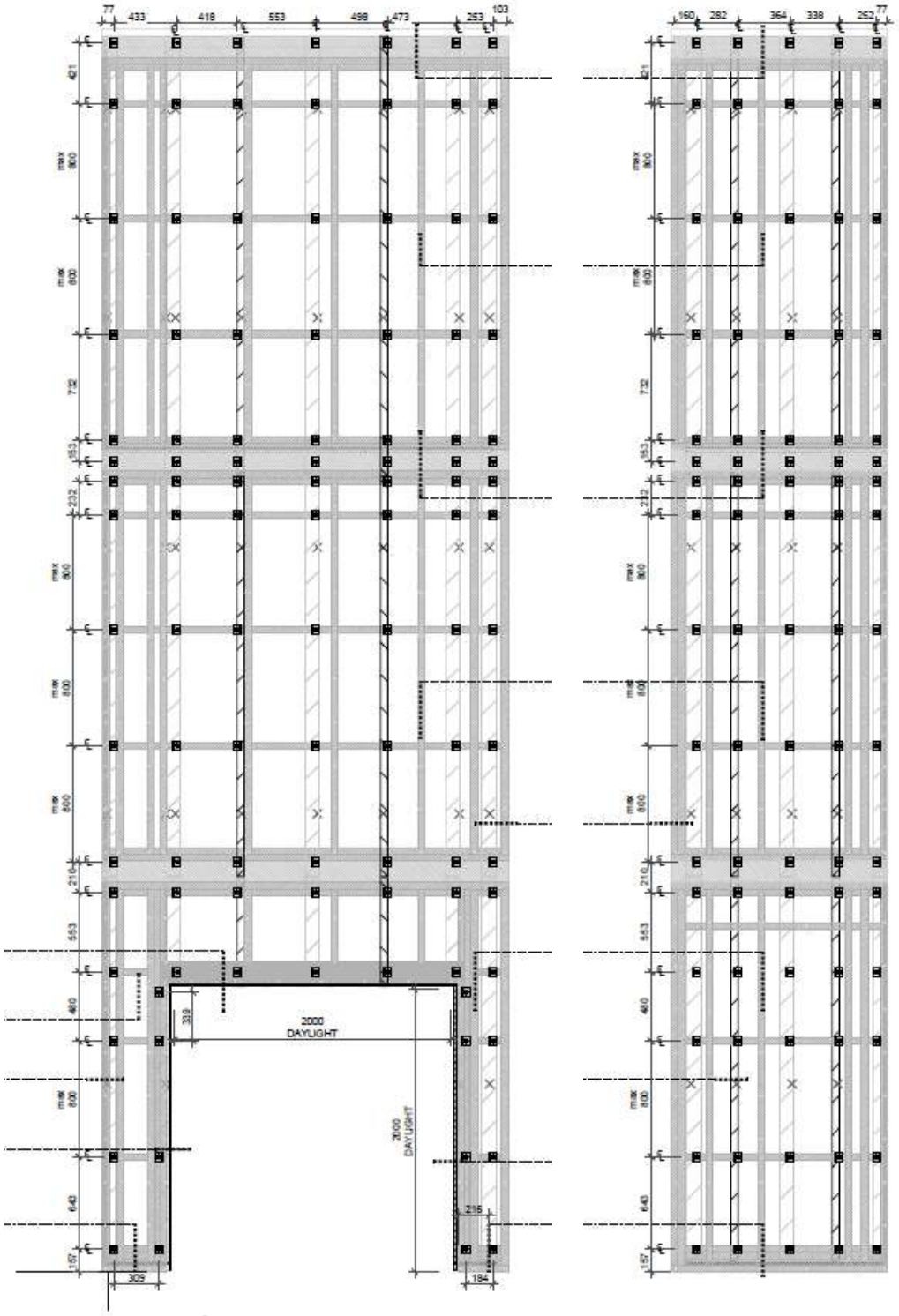

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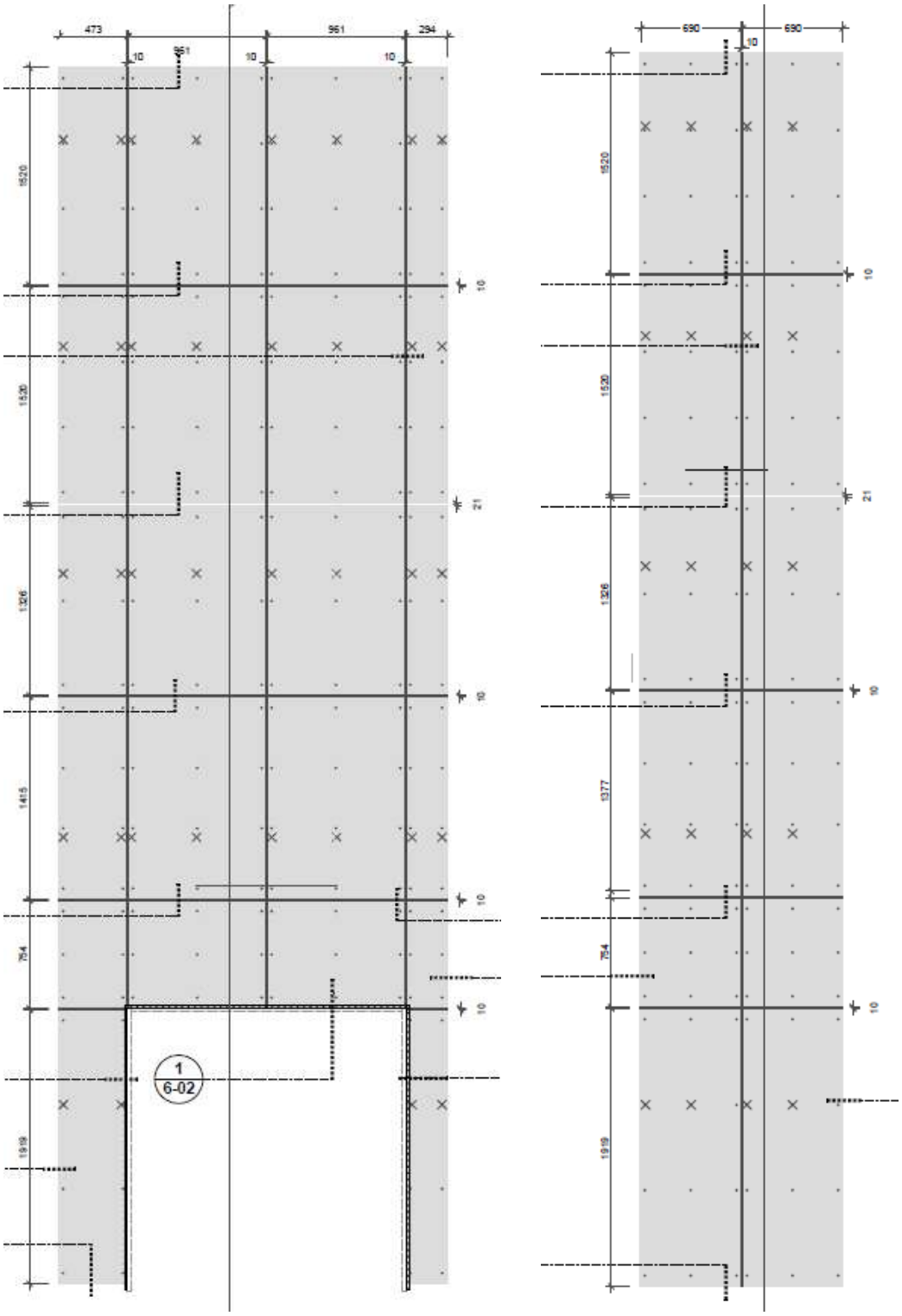
Figure 17: Panel layout - Elevation



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PHOTOS

Photo 3: Structural wall frame

Photo 4: Rigid wall underlay

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Photo 5: Rigid wall underlay expansion gap and fixings

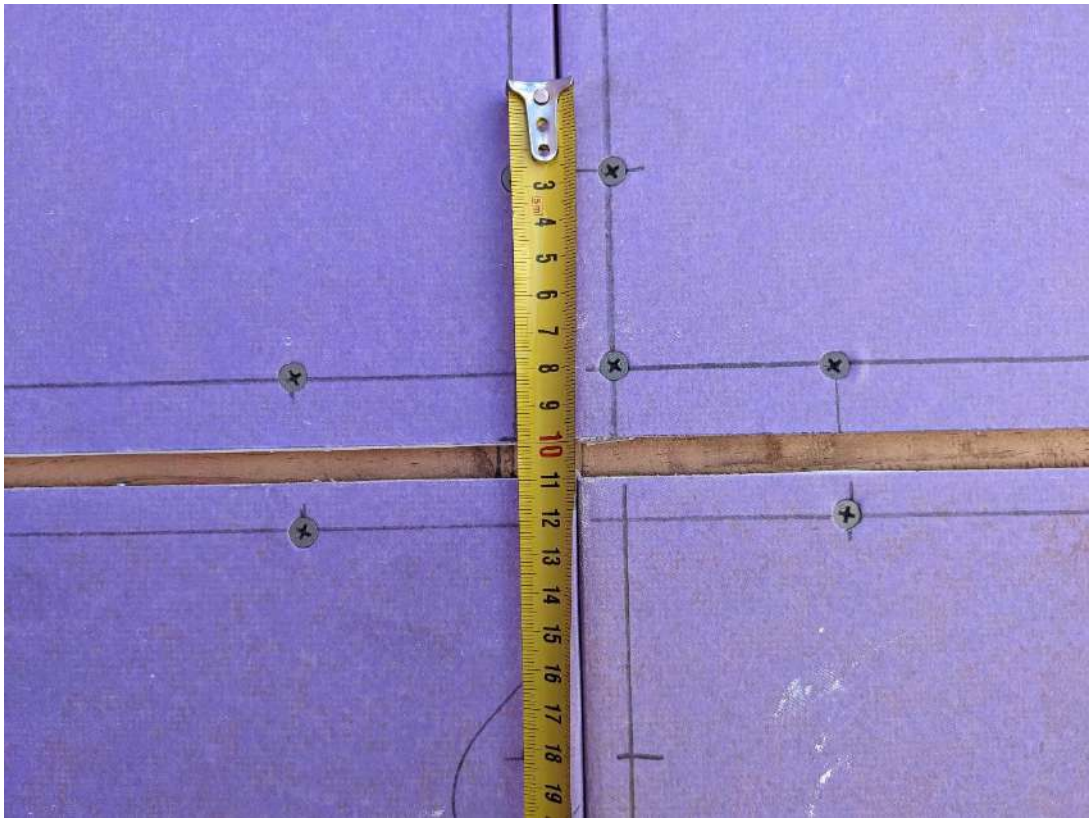

Photo 6: Combustion chamber opening – internal junction

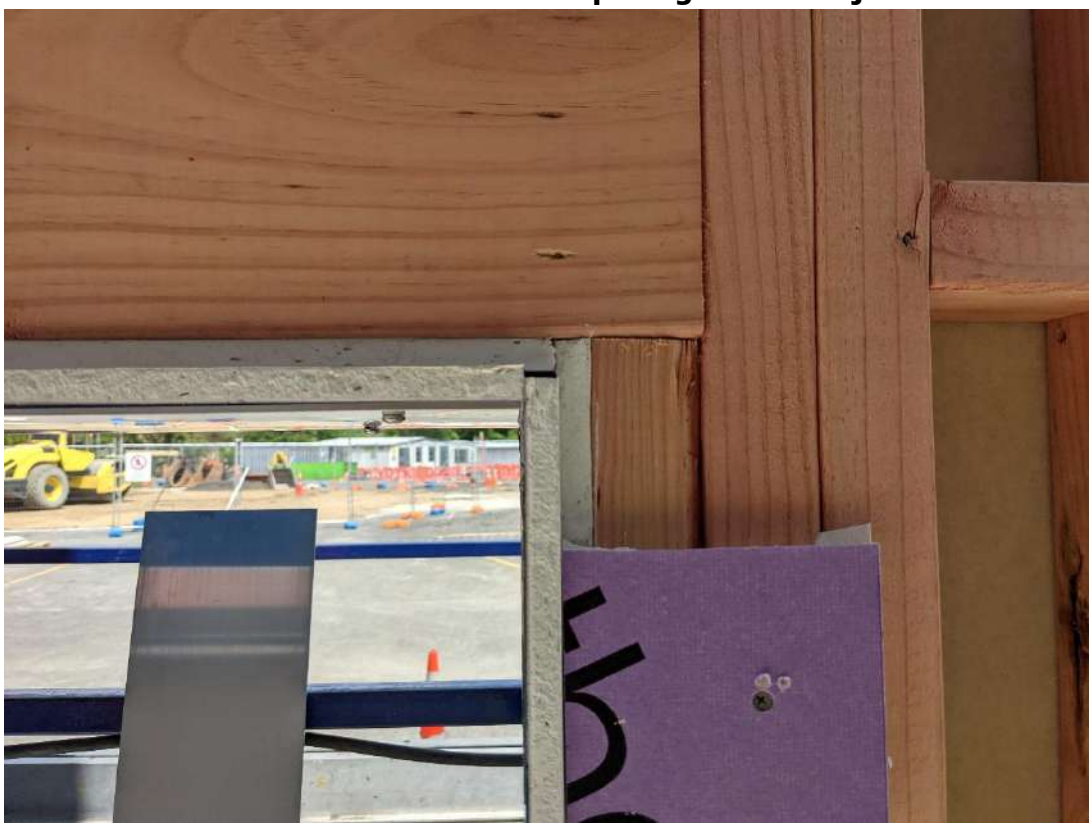

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Photo 7: Waterproofing membrane, rail brackets and inter-storey drainage flashing

Photo 8: Combustion chamber opening sill tape and custom angle

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Photo 9: Combustion chamber opening flashing

Photo 10: Equitone panels and fire cavity barriers

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Photo 11: Equitone panel edge rail

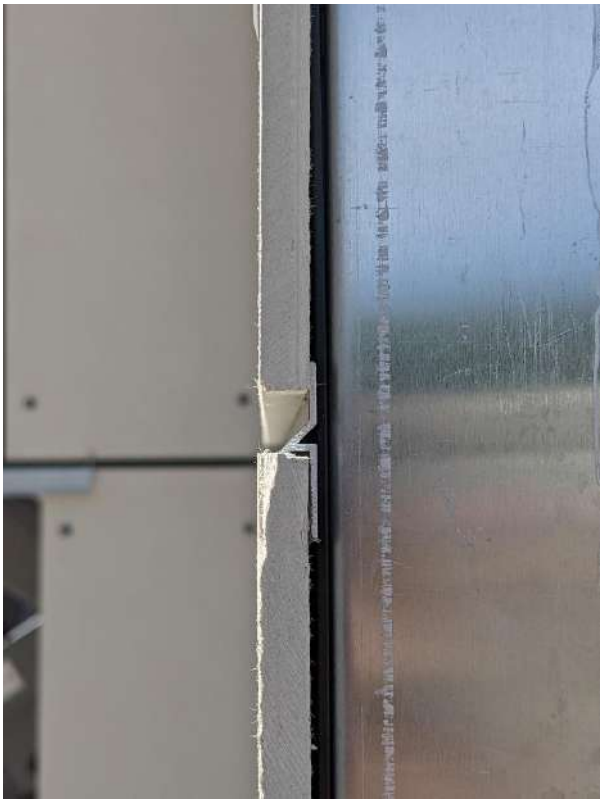

Photo 12: Combustion chamber opening; Equitone panel and aperture head flashing

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Photo 13: Wing wall edge

Photo 14: Parapet capping

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Photo 15: Internal corner panel fixing rails and horizontal fire cavity barrier

Photo 16: Vertical fire cavity barriers and drainage cavity

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Photo 17: Vertical fire cavity barrier fixing bracket

Photo 18: Insulation and internal lining

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Photo 19: Completed installation (excluding parapet capping)

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Photo 20: Ignition of timber crib

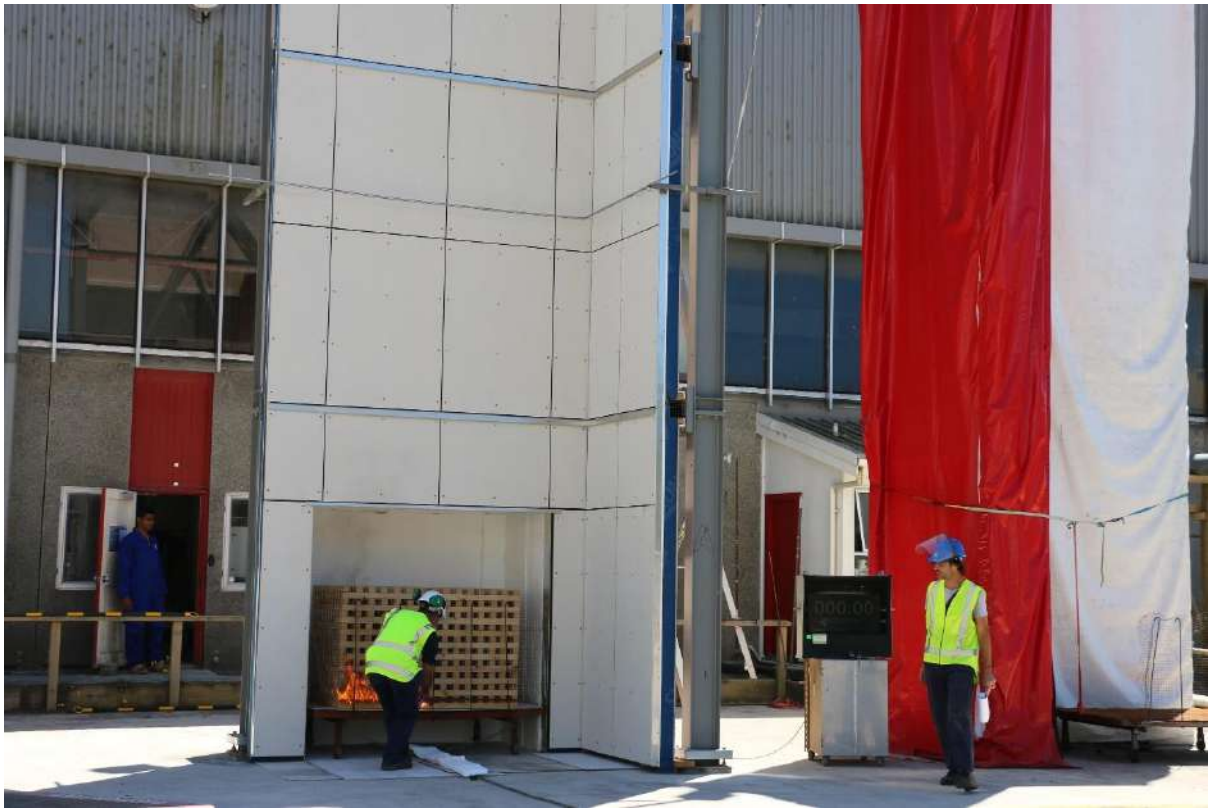

Photo 21: At 2 minutes 0 seconds

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Photo 22: At 3 minutes 0 seconds

Photo 23: At 6 minutes 0 seconds

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Photo 24: At 7 minutes 0 seconds

Photo 25: At 8 minutes 1 seconds

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Photo 26: At 10 minutes 0 seconds

Photo 27: At 13 minutes 38 seconds

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Photo 28: At 15 minutes 0 seconds

Photo 29: At 17 minutes 0 seconds

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Photo 30: At 20 minutes 16 seconds

Photo 31: At 23 minutes 15 seconds

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Photo 32: Post-test main wall: cladding, inset: timber frame

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Photo 33: Post-test wing wall cladding, inset: timber frame

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Photo 34: Post-test unexposed surface

END OF TEST REPORT

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FF12829-01-C1
BR 135 PERFORMANCE

This is to certify that the specimen described below has been tested by BRANZ in accordance with the referenced documents on behalf of the sponsor.

Sponsor: The Building Agency
14 Link Drive
Wairau Valley
Auckland, 0627
New Zealand

Referenced Document: BS 8414-2:2015+A1:2017
BR 135 Third edition Annex B 2013

Specimen Name: Equitone T50 System

Specimen Description: Equitone T50 System, comprising 8 mm thick Equitone fibre cement cladding mechanically fixed to an extruded aluminium rail fixing system on a plasterboard rigid air barrier and lightweight timber frame.

A full description of the test specimen and the test results are given in BRANZ Type Test report: FF13923-01

Date of Test: 17 January 2022

Orientation: Exposure from external face.

The tested results were as follows:

Classification Criteria	**Pass/Fail**
B2.2: External Fire Spread	Pass
B2.3: Internal Fire Spread (Panel Cavity)	Pass
B2.3: Internal Fire Spread (Frame Cavity)	Pass
B2.3: Internal Fire Spread	Pass
B2.4: Mechanical Performance	N/A
Classification	**Pass**

Regulatory authorities are advised to examine FF12829-01 before approving any product.

Issued by Lukas Hersche
Fire Testing Engineer
BRANZ

Reviewed by Ed Soja
Senior Fire Safety Engineer
BRANZ

Issue date 7 April 2022

Expiry date 7 April 2027