RF50-FR

Rear Fixed 50mm Fire Rated Rainscreen System

Fire Performance Classification BS8414-2:2020

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FIRE PERFORMANCE CLASSIFICATION IN ACCORDANCE WITH BR135:2013 ANNEX B

CLASSIFICATION REPORT EUI-20-000374- Revision 1

This report cancels and replaces the Classification report Nr.EUI-20-000374.

FIRE PERFORMANCE CLASSIFICATION IN ACCORDANCE WITH BR 135 (3rd edition): 2013, as tested according to BS 8414-2:2020.

Sponsor:	EDM SPANWALL FACADES Ltd. Comber Road, Carryduff UK – BT8 8AN, BELFAST
Manufacturer:	EDM SPANWALL FACADES Ltd.
Prepared by:	EFECTIS UK/IRELAND, Unit 15F, Kilroot Business Park, Larne Road, UK – BT38 7PR, CARRICKFERGUS
System name:	SPANWALL RF50 FR
Classification report No.:	EUI-20-000374-Revision 1
Issue number:	2
Date of issue:	29th of March 2023

1. DOCUMENT TRACKING

Revision Index.	*Modification*	*Comments*	*Date*		
0	Original document	/	3rd of March 2021	*Writer*	Konstantinos CHOTZOGLOU
				Approver	Damien FLAMMIER
1	On the section 4.2.3.2, the 3rd horizontal cavity barrier was updated to 6 887.5 mm instead of 4 377.5 mm On the section 3.1.4, the Figure 1 was modified with the horizontal cavity barrier installed during the test, reference RH50 30/30 (SIDERISE)	Requested by client. The information was already in the report but consistency mistakes have been noticed.	29th of March 2023	*Writer*	Guillaume REMY
				Approver	Damien FLAMMIER

2. INTRODUCTION

This classification report defines the classification assigned to system name SPANWALL RF50 FR in accordance with the procedures given in BR 135 (3rd edition): 2013 and BS 8414-2:2020.

This classification report should be read in conjunction with the test reports referenced in §4.

3. DETAILS OF CLASSIFIED SYSTEM

Technical data in this chapter and drawings from page 17 to page 32 concerning the sample and its composition have been supplied by the sponsor who attests their accuracy.

All test materials were supplied and installed by the sponsor's construction crew.

EFECTIS UK/IRELAND was not involved in the design and specimen selection process and therefore cannot take any responsibility for the relationship between specimen supplied for testing and product placed on the market.

3.1. GENERAL

The system, SPANWALL RF50 FR, is described below.

3.1.1. Substrate

The external cladding system was fixed to, and supported by, a structural steel frame. The structural steel frame utilized a vertical structural steel test frame, representative of a structural steel-framed building, with a vertical main test apparatus wall and a vertical return wall (wing) at a 90° angle to, and at one side of, the main test wall.

3.1.2. Description of system

The list of component parts used in the construction of the system are shown on the table below.

Material	Reference	Composition	Characteristics	Supplier
Steel Formed Sections - studs	C-shaped folded vertical studs	Galvanised steel	153 mm × 55 mm × 13 mm of thickness 1.5 mm	SPANWALL
Steel Formed Sections – Head and Base Track	U-shape folded horizontal sections	Galvanised steel	155 mm × 75 mm of thickness 1.5 mm	SPANWALL
Sheathing Board	Y-Wall	Calcium Silicate Board	2400 mm x 1200 mm x 12 mm thick Reaction to fire: A1	RCM
Vapour/Air control membrane	Procheck FR200	Fire retardant layer	0.15 mm thickness Reaction to fire: B-s1, d0 Colour: Black	PROCTOR GROUP
Aluminium foil tape	Reflectafoil Tape	Aluminium foil tape coated with a cold weather water based acrylic adhesive	Roll size: 100 mm x 45m. Thickness: 70µm Reation to fire : Class 0	PROCTOR GROUP
Single Helping hand bracket	Spanwall 240mm Single Wall Bracket	Aluminium	240 mm x 75 mm x 5 mm (thickness)	SPANWALL
Double Helping hand bracket	Spanwall 240mm Double Wall Bracket	Aluminium	240 mm x 150 mm x 5 mm (thickness)	SPANWALL
Rockwool insulation (no. 2 layer)	Rockwool Rainscreen Duo Slab	Soft and rigid stone mineral wool slab	110 mm thickness Reaction to fire: A1	ROCKWOOL
Horizontal fire barriers (no.4)	Siderise RH50G 30/30	Non-combustible stone-wool lamella core, with reinforced aluminium foil face	1200 x 75 x 225 mm Density: 75 Kg/m^3 Thermal conductivity: 0.038 W/m.K Reaction to fire: A1	SIDERISE
Vertical fire barriers (no.3)	Siderise RV 90/30	Non-combustible stone-wool lamella core, with reinforced aluminium foil face	1200 x 75 x 285 mm Density: 75 Kg/m^3 Thermal conductivity: 0.038 W/m.K Reaction to fire: A1	SIDERISE
OSCI inside the RF50 cassette panels	OSCI/1220-100-47	High density non-combustible stonewool with a foil-facings on two sides	1200 x 100 x 47 mm Thermal Conductivity: 0.034 W/m.K. Reaction to fire: A1	SIDERISE
Brackets for fixing horizontal fire barriers	RS350	Galvanised	400 mm centres	SIDERISE
Brackets for fixing vertical fire barriers	B195	Galvanised	400 mm centres	SIDERISE
Tape for sealing fire barrier joints	RFT 120/45	Foil tape	120 mm width	SIDERISE
Mullion rails	504 FR	Aluminium	70.5 mm x 71.85 mm	SPANWALL
EPDM Gasket	Top Hat Gasket 250	EPDM	Continuous Gasket	SPANWALL
External façade cladding	RF50 RAINSCREEN SYSTEMS	Aluminium alloy 3013 H14	3 mm thickness flat sheets folded in appropriate size	SPANWALL
Side flashing of the surrounding opening	Jamb closer	Aluminium alloy 3013 H14	3 mm thickness flat sheets folded in appropriate size	SPANWALL

Top flashing of the surrounding opening	Head closer	Aluminium alloy 3013 H14	3 mm thickness flat sheets folded in appropriate size	SPANWALL
Double sided tape bonded to the stiffener	4611F VHB Tape	-	19 mm x 1.5 mm	3M
Paint finish coating of cladding panels	827-2R716C-2478 RAL 7016 MATT ANTHRACITE GREY	Polyester powder	Film thickness: 70+/-10µm Reaction to fire: A2	HMG POWDER COATINGS
Screws used for installation of the frame	Wafer Head Self Drilling Screw	Material: Bright zinc plated	Ø 4.8 mm x 16 mm	OLYMPIC FIXINGS
Screws for fixing the frame on the concrete slabs and lintels	MSHHW6.3-32-516	Material: SAE C1022 Carbon steel Coating: EvoShield 500Hr NSST resistant	Ø 6.3 mm x 32 mm	EVOLUTION
Screws for fixing sheathing boards on the frame	GWDLR038	Material Grade: AISI C1022 Coating: 500hr Evoshield	Ø 4.8 mm x 38 mm	ROOFINGS & CLADDING FIXINGS
Screws for fixing the Air/Vapour membrane	Olympic Wafer Head Self Drillers	Material: Bright zinc plated	Ø 5.5 mm x 20 mm	OLYMPIC FIXINGS
Screws for fixing the single and double hand brackets on the sheathing board	SX5-5.5xL	austenitic stainless steel, material grade A2	Ø 5.5 mm x 60 mm	SFS INTEC
Screws for the insulation panels	ERS250	Material: Carbon steel, AISI C1022 Coating: 500hr Evoshield	Ø 6.3 mm x 250 mm	EVOLUTION
Metal washers for the insulation	SPR70	Material: Carbon steel Coating: Galvalume	Ø 70 mm	EVOLUTION
Polypropylene washers for the insulation	ECW60	Material: Polycaprolactam Colour : White	Ø 70 mm	EVOLUTION
Screws for fixing the fire barriers brackets	SDA5-H13-S4	stainless steel S4 = A4, Material number 1.4401, AISI 316	Ø 5.5mm x 22 mm	SFS INTEC
Screws for fixing the mullion rails to the helping hands brackets	M5 Tek Screw 507	A2 S/S	Ø 5.5 mm x 28 mm	SPANWALL
Screws for fixing the cassette panels to the mullion rails	Anti-Lift Screw 509R	A2 S/S	Ø 4.8 mm x 22mm	SPANWALL

3.1.3. Installation sequence

All test materials were installed by sponsor's installation crew.

3.1.3.1. Frame

The steel frame was constructed using galvanised steel sections of 1.5 mm thickness folded to 'C' section channels of appropriate size forming the vertical and horizontal sections.

The vertical studs reference C-shaped folded vertical studs (SPANWALL) were folded resulting dimensions 153 mm x 55 mm x 13 mm. The vertical stud sections were fixed to the head and the base track channels of 'U' type horizontal sections using screws reference Wafer Head Self Drilling Screw (Olympic Fixings) of Ø 4.8 mm x 16 mm dimensions.

The head track and the base track reference U-shape folded horizontal sections (SPANWALL) were made by folding the same galvanised steel sections into resulted dimensions 155 mm x 75 mm.

The steel frame was fixed to the concrete slabs using fixings reference MSHHW6.3-32-516 (EVOLUTION) of Ø 6.3 mm x 32 mm dimensions.

3.1.3.2. Exposed face of the facade

3.1.3.2.1. Sheating boards

One layer of sheathing boards reference Y-wall (RCM) of dimensions 2400 mm x 1200 mm and thickness 12 mm were clad on the exposed face of the frame using fixings reference GWDLR038 (ROOFINGS & CLADDING FIXINGS) of Ø 4.8 mm x 38 mm dimensions. Screws were evenly spaced and fixed at 300 mm centres.

3.1.3.2.2. Air/vapour tight membrane

An underlay air/vapour tight membrane reference Procheck FR200 (PROCTOR GROUP) of thickness 0.16 mm was installed on top of the sheathing board layer. The membrane was fixed on the sheathing board layer using screws reference Olympic Wafer Head Self Drillers (OLYMPIC FIXINGS) of Ø 5.5 mm x 20 mm dimensions, at 600 mm centres.
The overlaps were covered by aluminium foil tape reference Reflectafoil Tape (PROCTOR GROUP).

3.1.3.2.3. Helping hand bracket

Two type of helping hand brackets were used, as follow:

- Single Helping hand bracket reference Spanwall 240mm Single Wall Bracket (SPANWALL), of dimension 240 mm x 75 mm x 5 mm.
- Double Helping hand bracket reference Spanwall 240mm Double Wall Bracket (SPANWALL), of dimension 240 mm x 150 mm x 5 mm.

The helping hand brackets were installed on the sheathing board, through the air/vapour membrane, using screws reference SX5-5.5xL (SFS INTEC), of Ø 5.5 mm x 60 mm dimensions.

The fixing pattern of the helping hand bracket was: 5no. Singles Helping hand brackets followed by 2no. Double Helping hand bracket.

The vertical spacings were:

- 440 mm between two Singles Helping hand brackets.
- 150 mm between two Double Helping hand brackets.
- 250 mm between Single and Double Helping hand brackets.

The horizontal spacing between brackets was 975 mm on the main face and 513.5 mm on the wing face.
The horizontal spacing from the bracket to the internal corner was 575 mm on the main face and 542 mm on the wing face.

3.1.3.2.4. Insulation

Two layers of insulation, 110 mm each, reference Rockwool Rainscreen Duo Slab (ROCKWOOL) were installed. The 1st layer which was attached to the air/vapour membrane was of thickness 110 mm and the 2nd layer attached to the first layer of 110 mm was of 110 mm thickness, giving in total 220 mm thickness of insulation. The installation of the slabs on the two faces of the cladding was performed according to manufacturer's recommendations.
Two different fixings were used for securing the slabs on their position per manufacturer's recommendation: combining either metal, reference SPR70 (EVOLUTION) or polypropylene washers, reference ECW60 (EVOLUTION) with screws reference ERS250 (EVOLUTION), of dimension Ø 6.3 mm x 250 mm. Three fixings were installed for every square meter of insulation.

3.1.3.2.5. Fire stop barrier

In parallel with insulation, horizontal and vertical fire stop barriers were installed on the membrane.

The fire barriers reference RH50 30/30 (SIDERISE) of dimension 1200 mm x 75 mm x 225 mm were installed on galvanised brackets reference RS350 (SIDERISE). The brackets were fixed on the sheathing board layer using screws reference SDA5-H13-S4 (SFS INTEC) of Ø 5.5 mm x 22 mm dimensions.

A set of 4no. horizontal fire barriers were installed on the entire width of both main and wing face, at height of:

2 047.5 mm above the floor level
4 377.5 mm above the floor level
6 877.5 mm above the floor level
9 377.5 mm above the floor level

A set of no. 3 vertical fire barriers reference RV 90/30 (SIDERISE) of dimension 1200 mm x 75 mm x 285 mm were installed on the sheathing board layer using galvanised brackets reference B195 (SIDERISE). The brackets were fixed on the sheathing board layer using screws reference SDA5-H13-S4 (SFS INTEC) of Ø 5.5 mm x 22 mm dimensions. Two of the fire barriers were placed next to combustion chamber opening vertical sides and the third one on the wing face of the façade system at 1 419.3 mm from the internal corner.

All joints between the cavity barriers were sealed using Siderise jointing tape reference RFT 120/45 (SIDERISE).

3.1.3.2.6. Rail system

For supporting the outer face cassette cladding panels, aluminium mullion rails reference 504 FR (SPANWALL) of dimension 70.5 mm x 71.85 mm were inserted on the helping hand brackets, running vertically along the full height of the system. The aluminium mullions were fixed to the helping hand bracket with screws reference M5 Tek Screw 507 (SPANWALL) of dimensions Ø 5.5 mm x 28 mm. Four screws were used for each double helping hand brackets and 2no. screws were used for each single helping hand brackets.

3.1.3.2.7. EPDM Gasket

On top of the aluminium mullion an EPDM Gasket, reference Top Hat Gasket 250 (SPANWALL) was applied. The outer face cassette cladding panels were applied on top of it.

3.1.3.2.8. Outer face

The outer face cassette cladding panels, reference RF50 RAINSCREEN SYSTEMS (SPANWALL) were made by folding 3 mm thick aluminium alloy 3013 H14 flat sheets into cassette profiles.
Those cassette profiles were hooked on the aluminium mullion rails and also fixed using anti-lift screws reference Anti-Lift Screw 509R (SPANWALL) of Ø 4.8 mm x 22 mm dimensions. The panels on the wing face also were hooked on by a mid-span stiffener bonded with double sided tape reference 4611F VHB Tape (3M) and tack welded top and bottom.
The cassette profiles were finished with anthracite grey colour polyester powder coating reference 827-2R716C-2478 RAL 7016 MATT ANTHRACITE GREY (HMG POWDER COATINGS) as specified by the manufacturer.
The sides of the façade were not closed by the cassette panels.
In the internal surface of the cassette panels Open State Cassette Inserts were used, reference OSCI/1220-100-47 (SIDERISE), of dimension 1200 x 100 x 47 mm. They were adjacent to the vertical and horizontal Fire stop barrier.

3.1.3.2.9. Surrounding of opening and side edges of specimen

The surrounding of opening of the combustion chamber was cover with 3 mm thick panels flashings reference Head closer (SPANWALL) for the top flashing and reference Jamb closer (SPANWALL) for the side flashing, hooked on the aluminium mullion rails and also fixed using anti-lift screws reference Anti-Lift Screw 509R (SPANWALL) of Ø 4.8 mm x 22 mm dimensions.

The top and side edges of the specimen were left open.

3.1.3.2.10. Air gap

An air gap of 103 mm was left between the insulation and the cassette panels. At the cavity barrier level, an air gap of 50mm was left between the cavity barrier and the cassette panel.

3.1.3.3. Joints

The horizontal joints were open baffle joints, and the vertical joints were closed joints.

The cassette panels were installed so that there was a vertical joint along the centreline of the combustion chamber running the full height of the system. The width of the vertical joints were 20 mm.
Horizontal joints of 20 mm width were resulted by the way the cassettes were clad, with one of them being at 2300 mm above the combustion chamber.

3.1.4. System's specifications

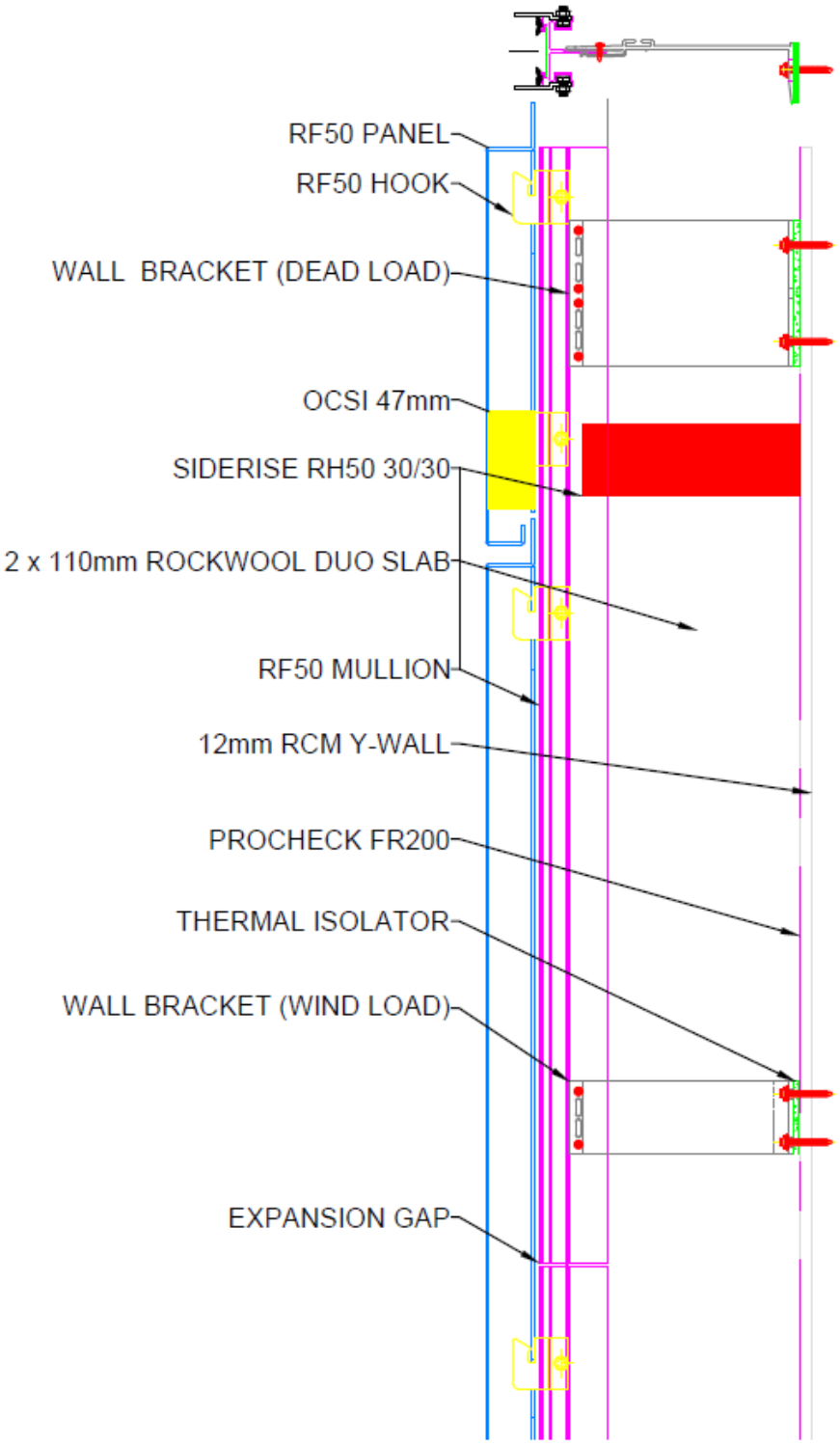


Figure 1. Sketch of the tested facade layers.

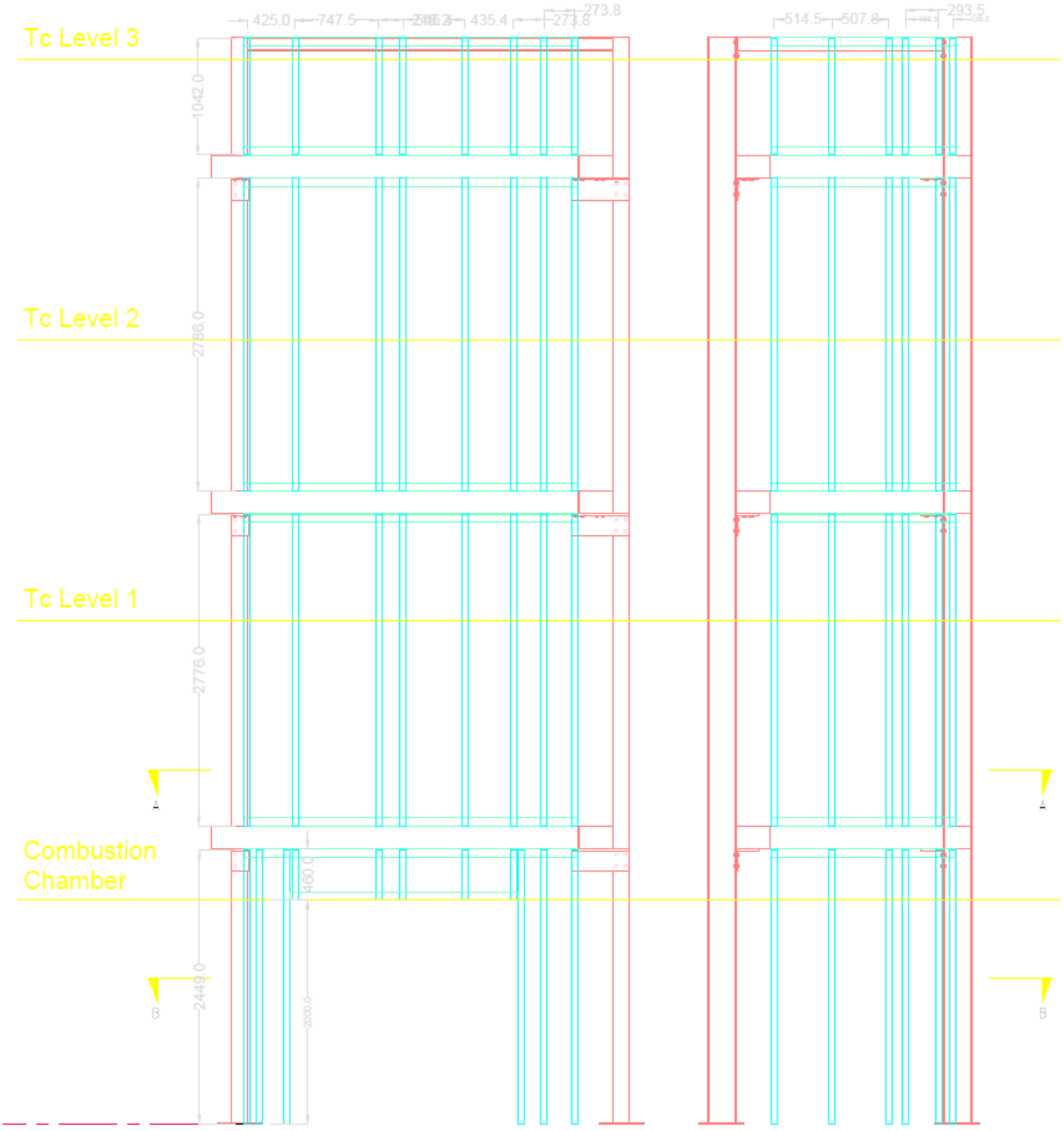


Figure 2. Elevation view of the SFS Layout of the main and wing face

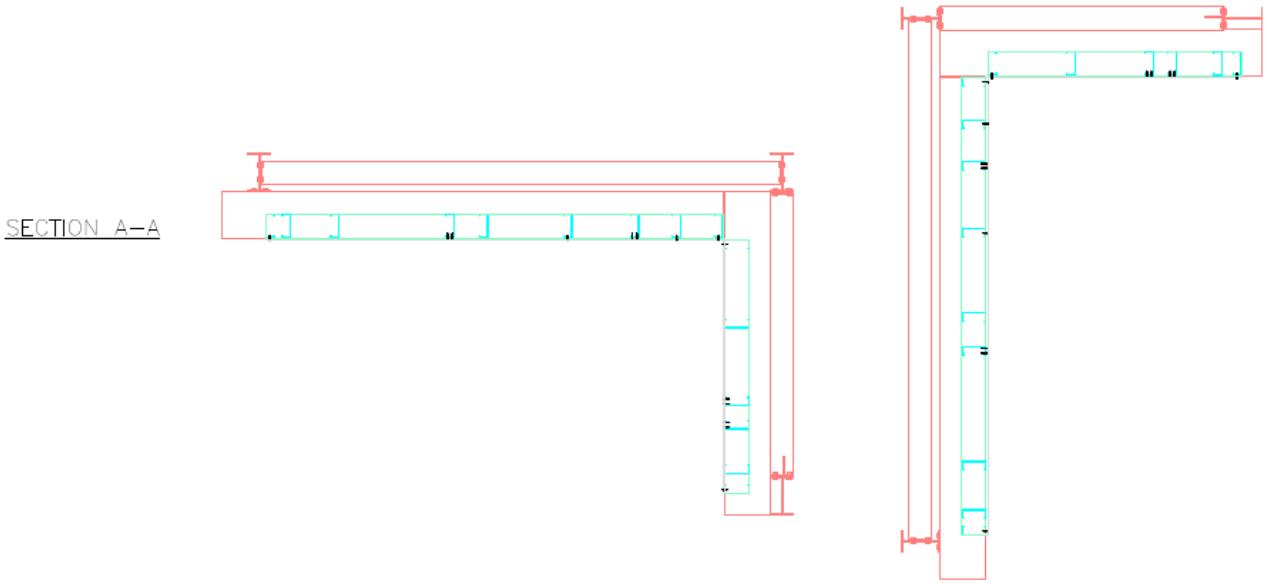


Figure 3. Track Channel and Stud Plan section A-A

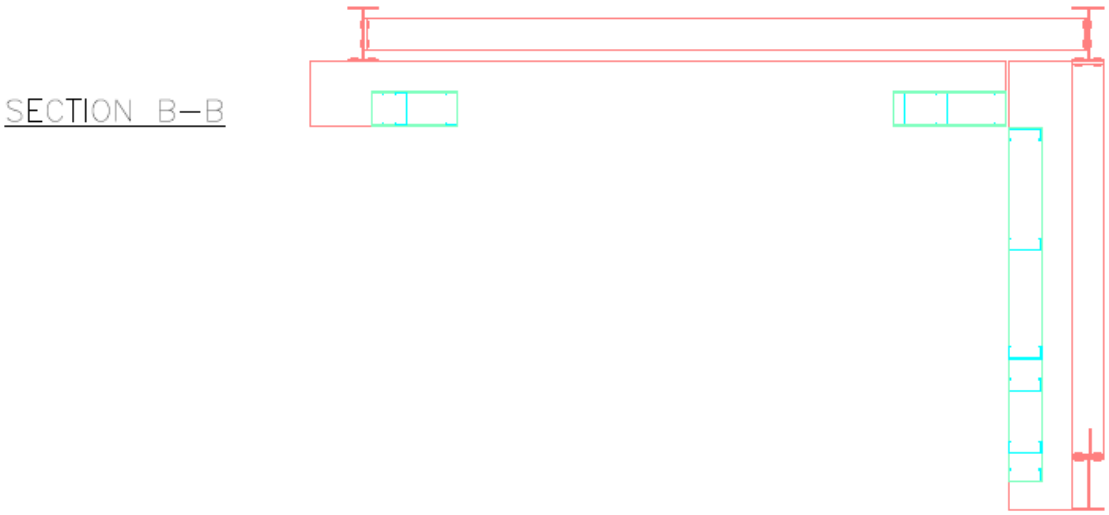


Figure 4. Track Channel and Stud Plan section B-B

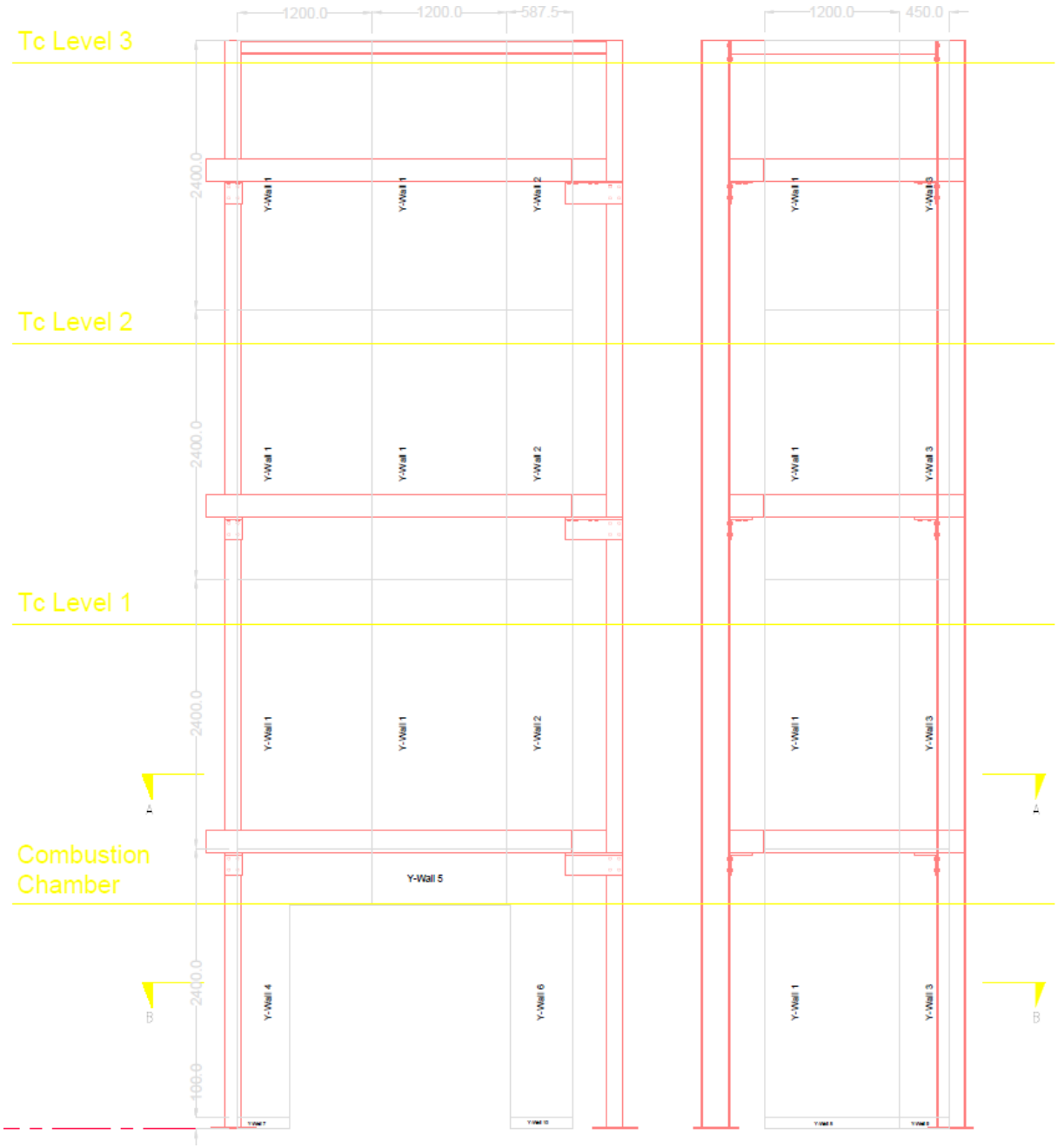


Figure 5. Elevation view of Y-Wall Layout of the main and wing face

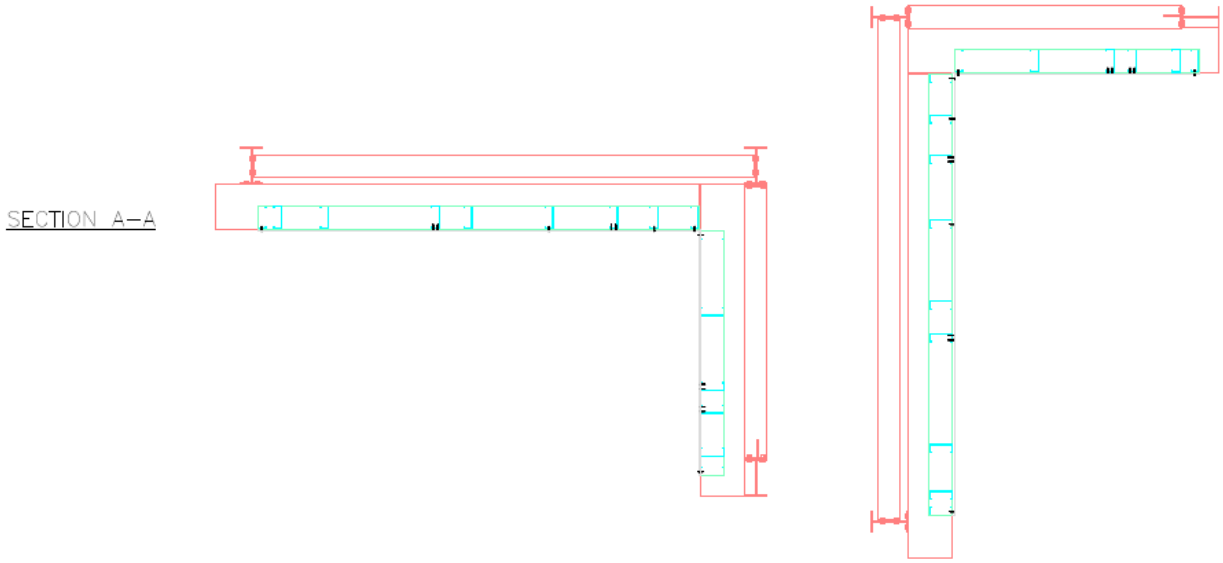


Figure 6. Y-Wall Layout Plan section A-A

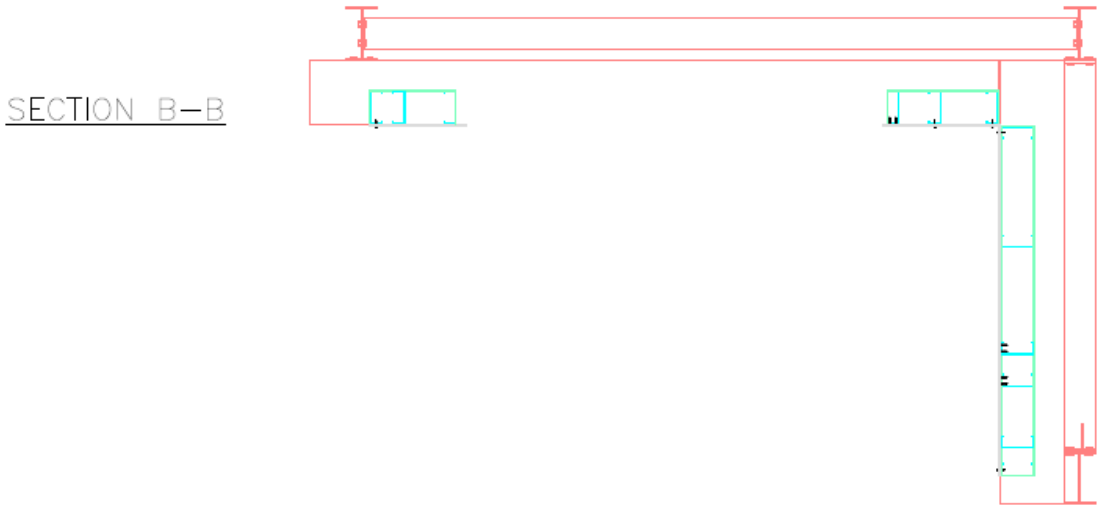


Figure 7. Y-Wall Layout Plan section B-B

Figure 8. Elevation view of the Wall bracket Layout

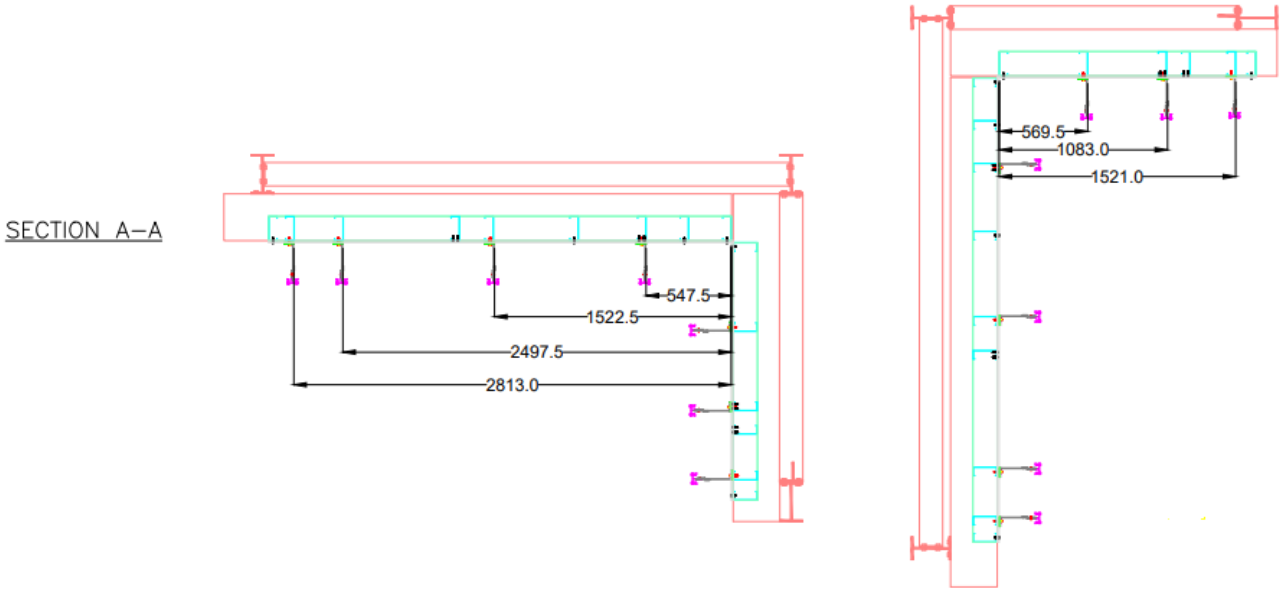


Figure 9. Wall Bracket Location Plan section A-A

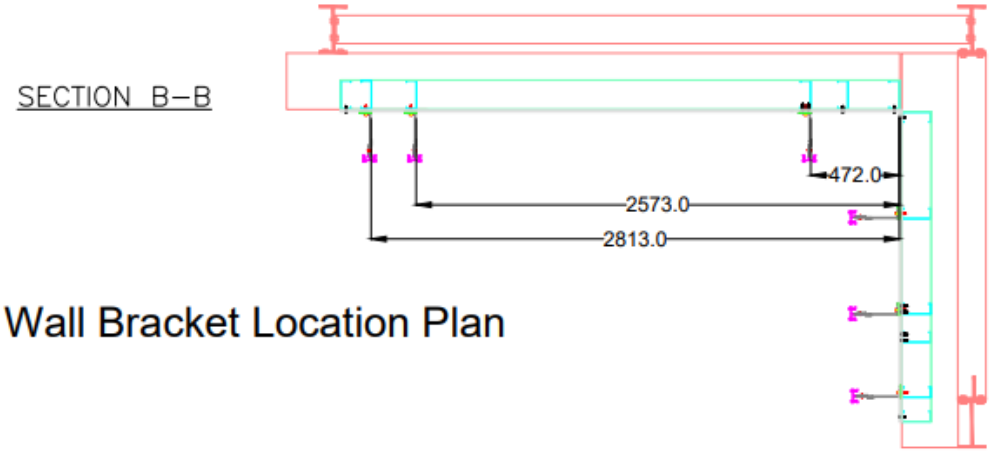
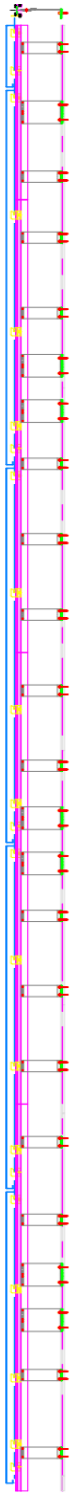


Figure 10. Wall bracket Location Plan section B-B

SECTION C–C

Figure 11. Wall Bracket Location Plan section C-C



SECTION D–D

Figure 12. Wall Bracket Location Plan section D-D

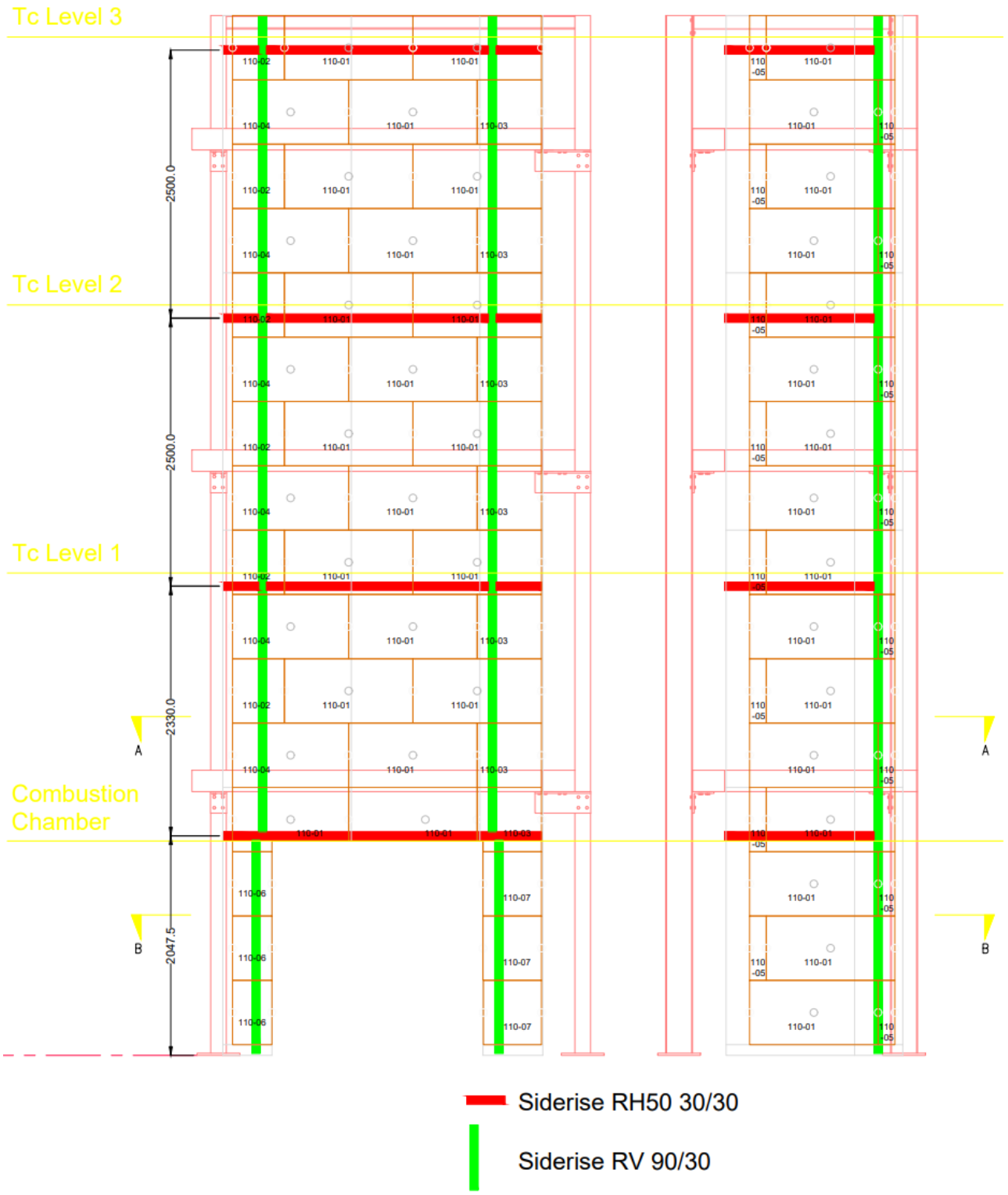


Figure 13. Elevation view of the Cavity Barrier Layout

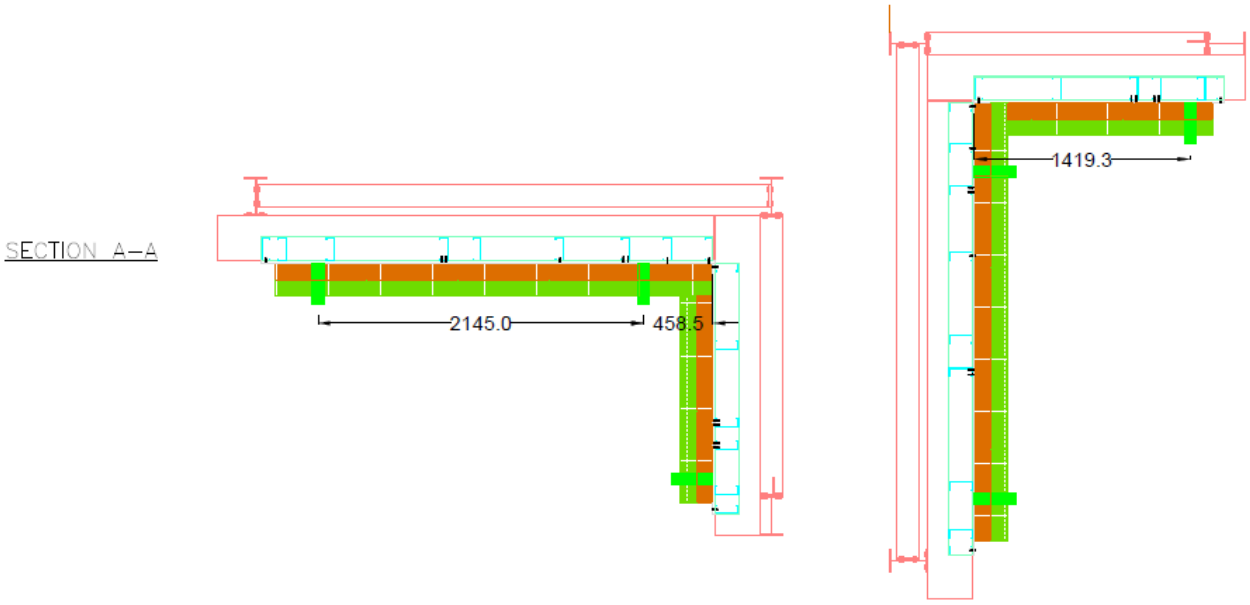


Figure 14. Cavity Barrier Layout Section A-A

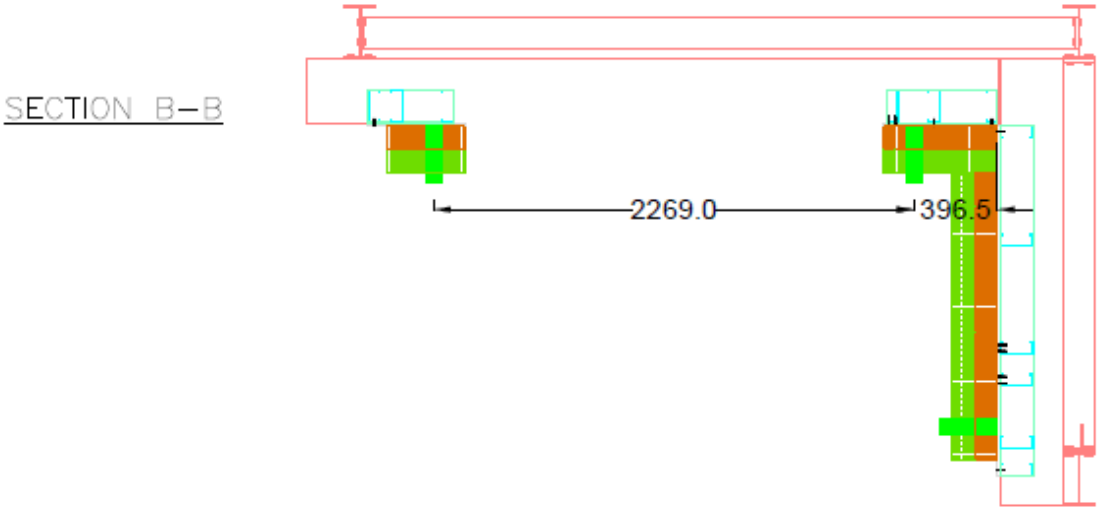


Figure 15. Cavity Barrier Layout section B-B

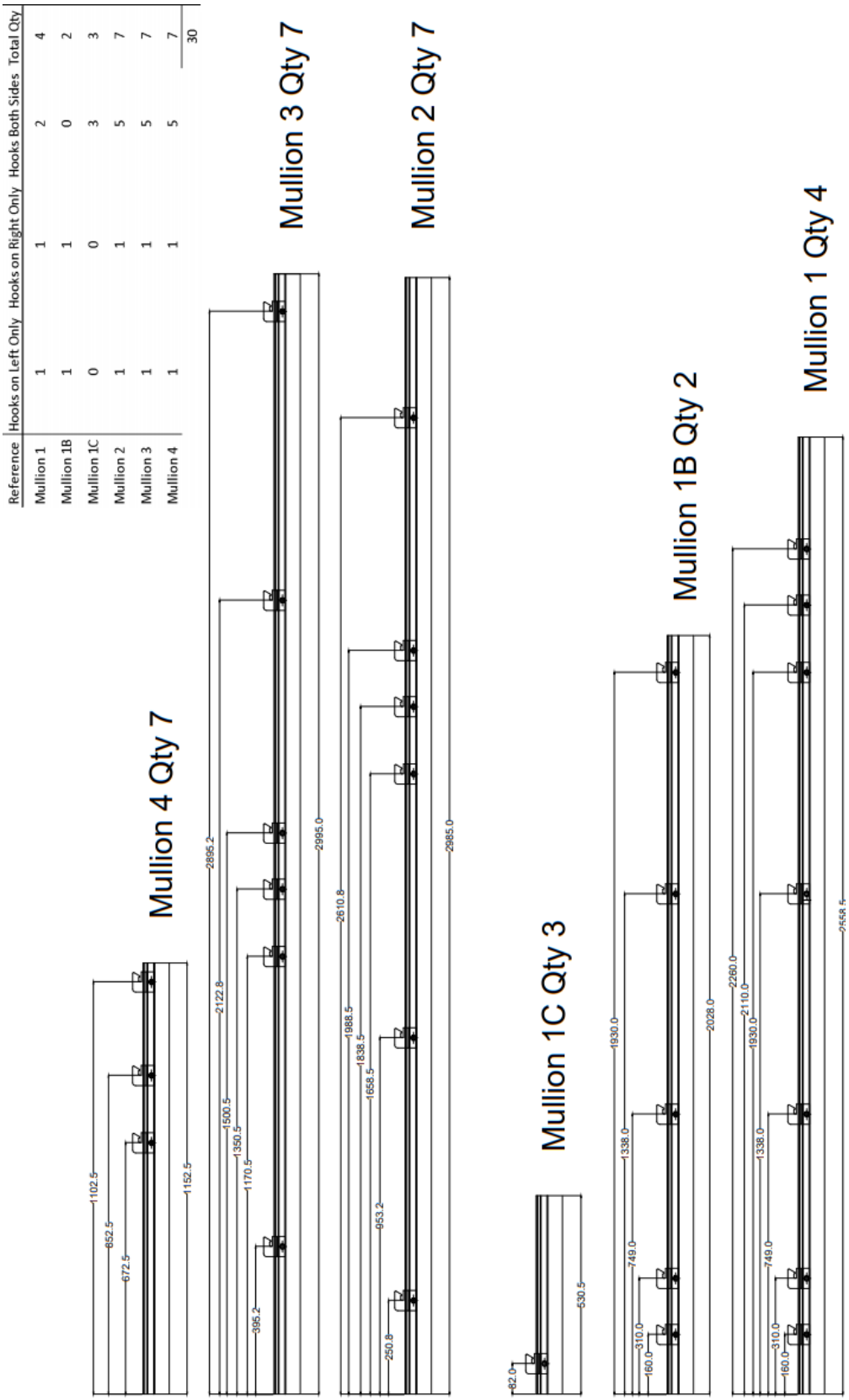


Figure 16. Mullion Hook Set Out

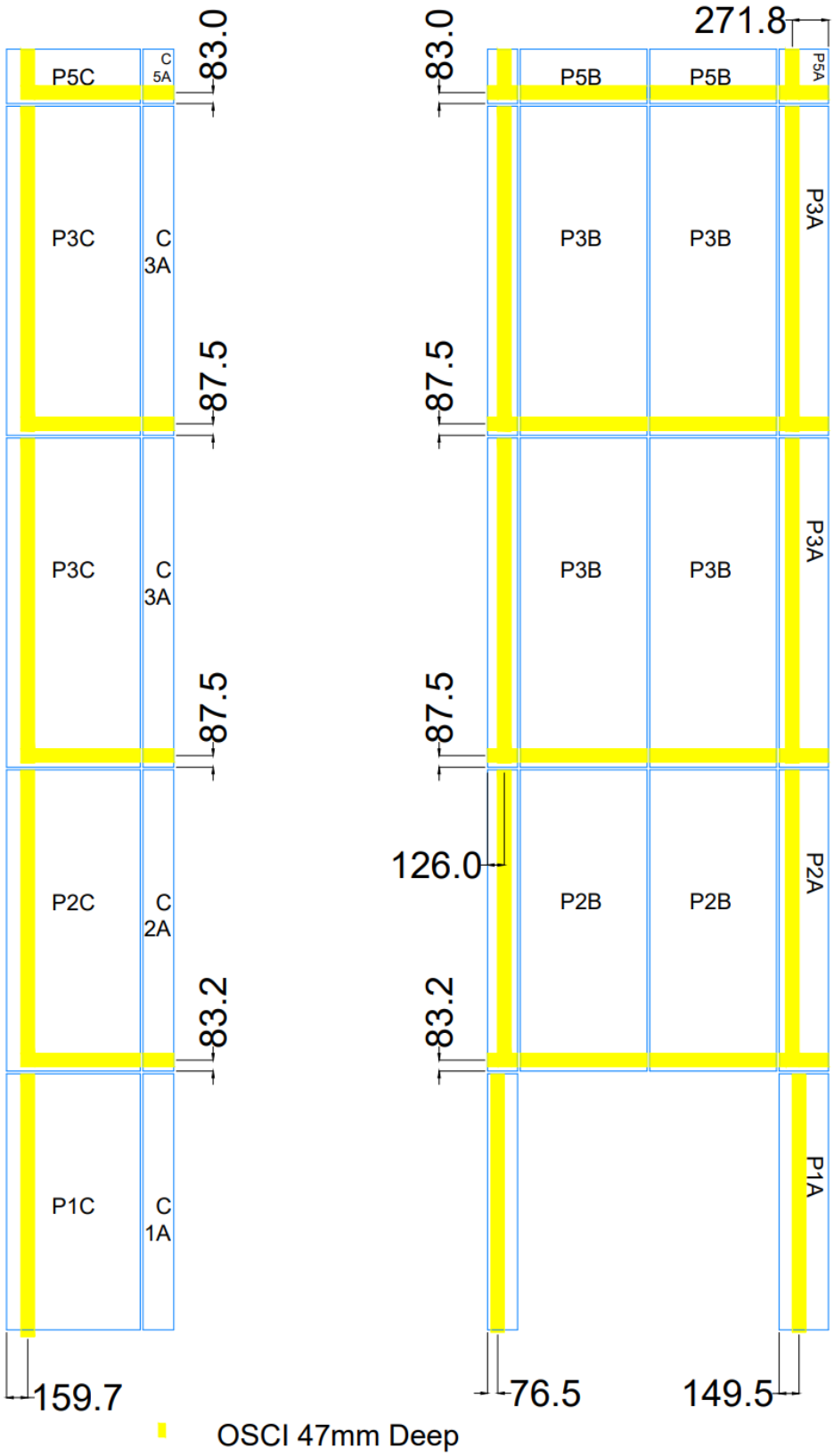


Figure 17. Elevation view of the panel OSCI Layout (Back face of panel)

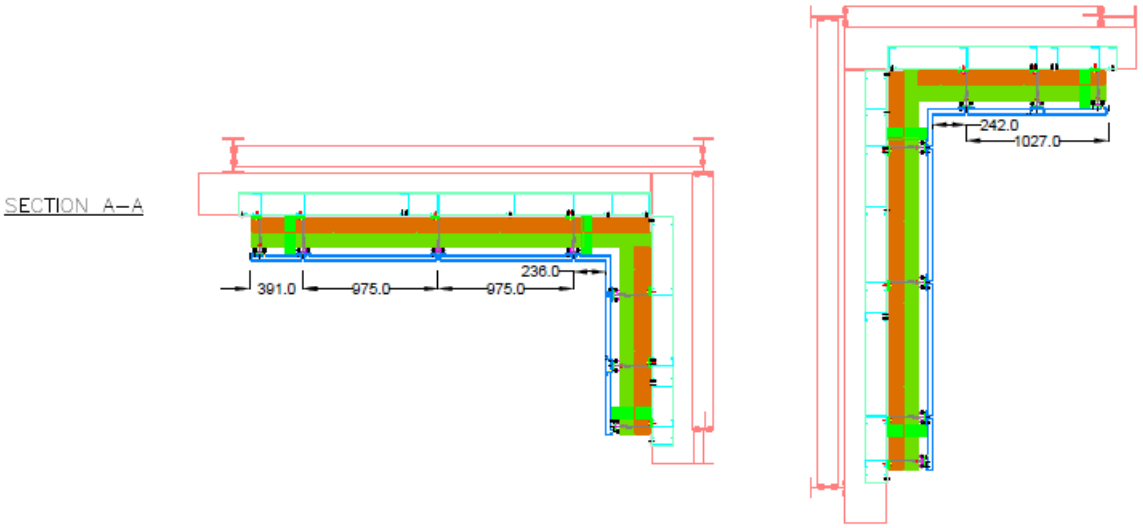


Figure 18. RF50 Panel Layout section A-A

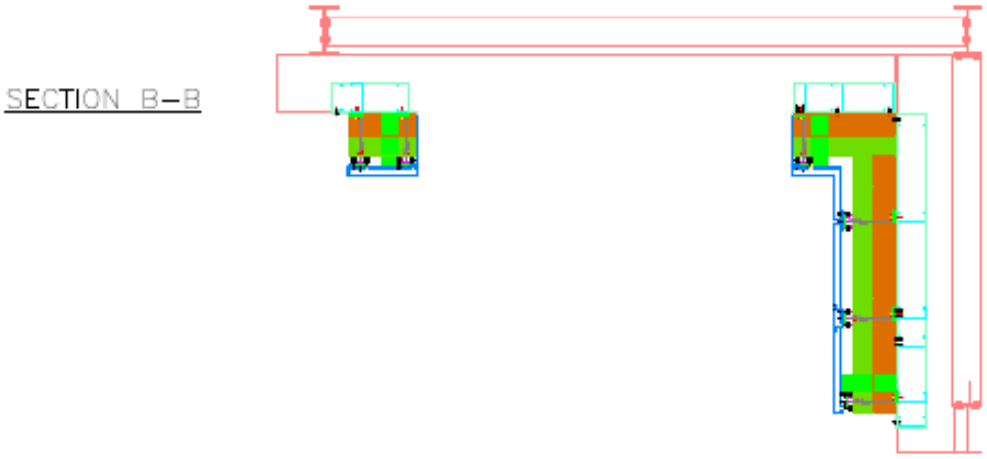


Figure 19. RF50 Panel Layout section B-B

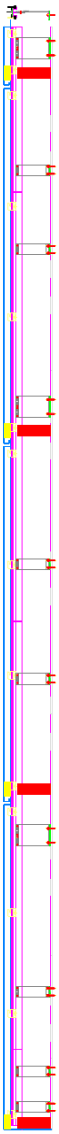


Figure 20. RF50 Panel Layout section C-C

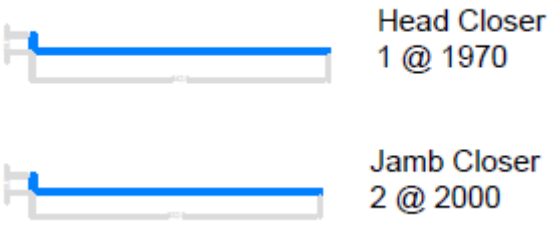


Figure 21. RF50 Panel around combustion chamber

Figure 22. Zoom in the section C-C

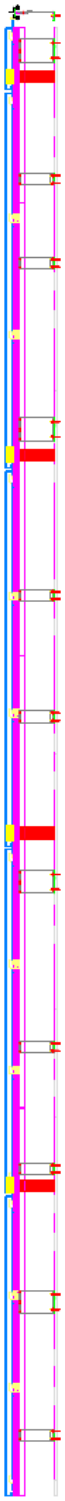


Figure 23. RF50 Panel Layout section D-D

Figure 24. RF50 Panel Layout section E-E

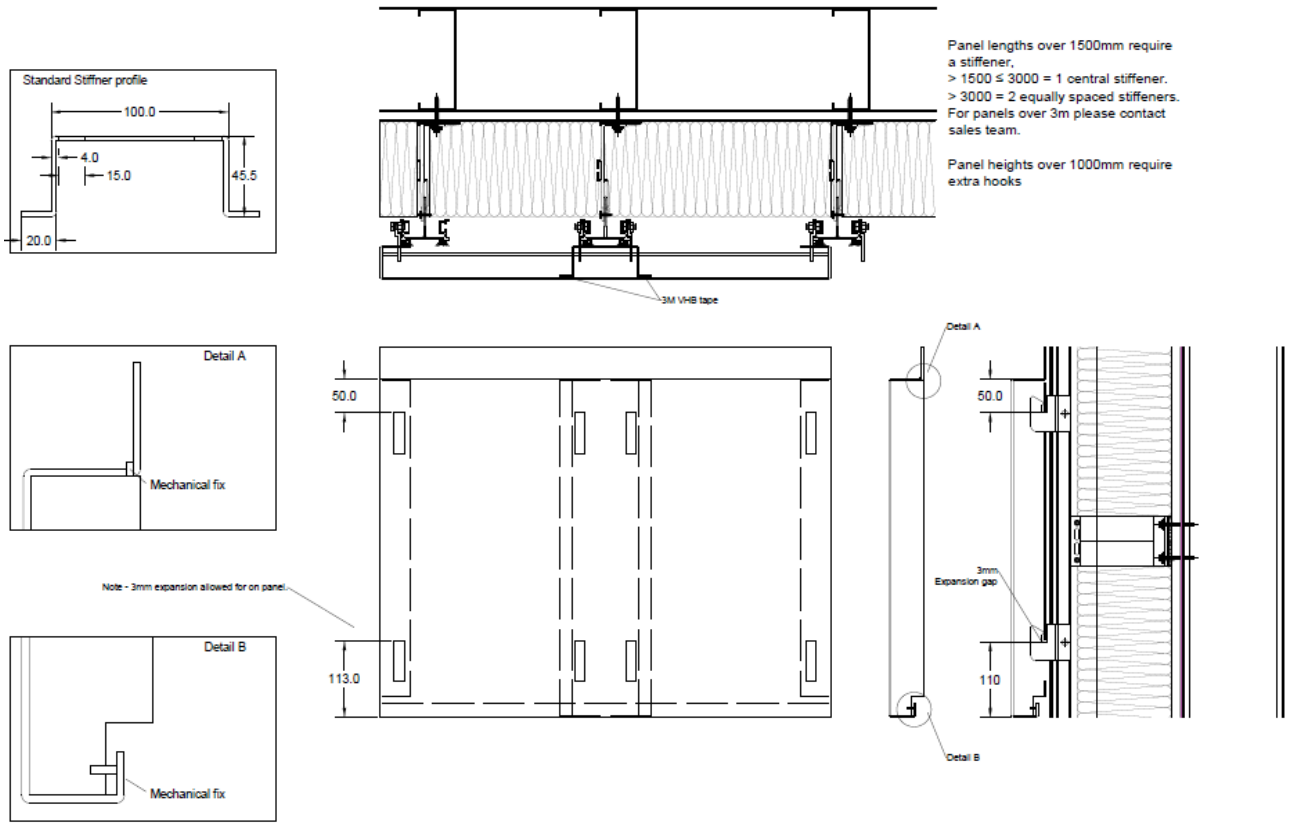


Figure 25. RF50 Stiffer layout

Figure 26. Cladding system before the test.

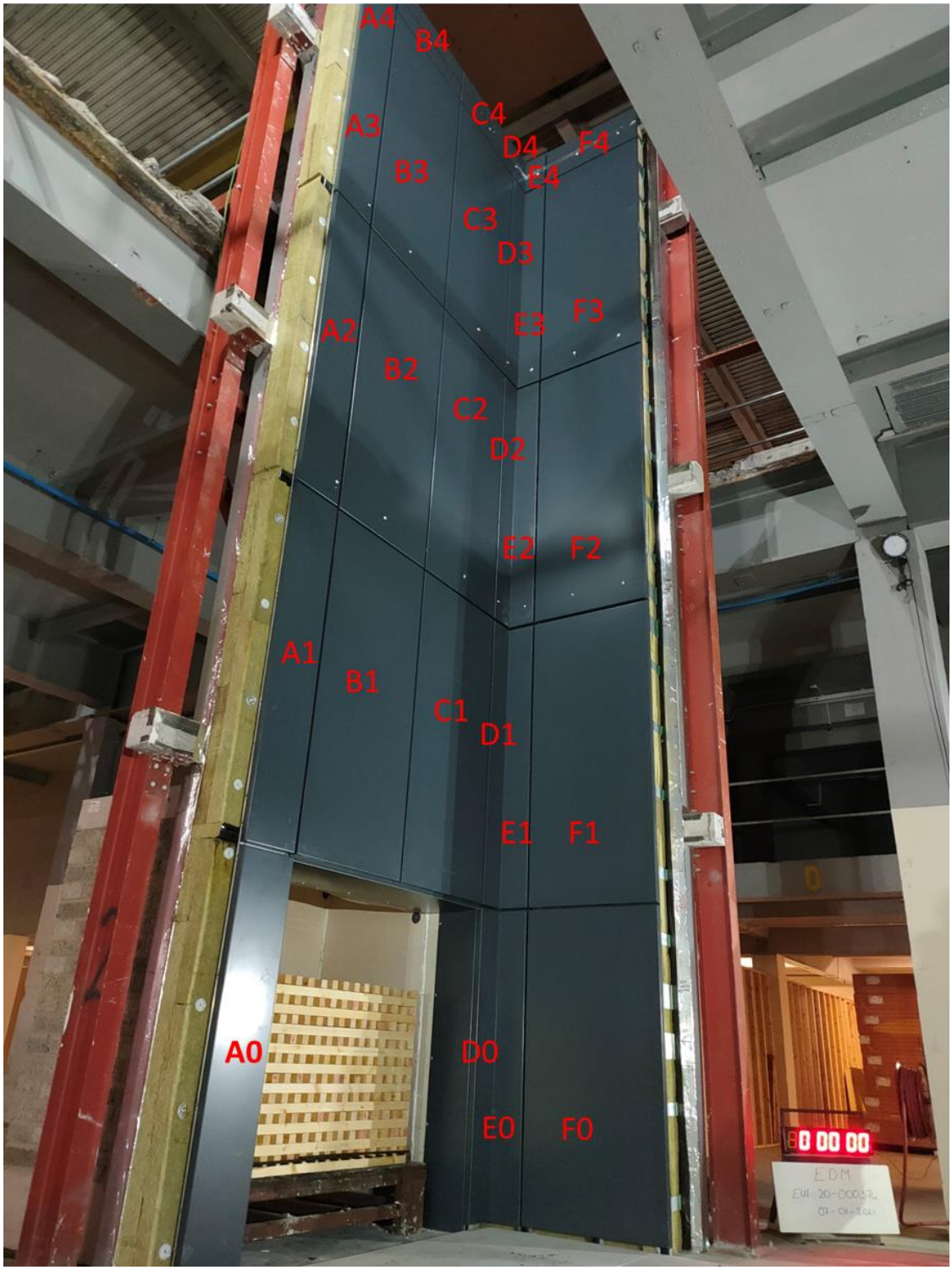


Figure 27. Panel numbering added by the testing laboratory.

4. REPORTS AND RESULTS IN SUPPORT OF THIS CLASSIFICATION

4.1. REPORTS

Name of Laboratory	*Name of sponsor*	*Report ref. no*	*Test method and date*
EFECTIS UK/IRELAND	EDM SPANWALL FACADES Ltd.	EUI-20-FFK2-000374- revision 1	BS 8414-2:2020

4.2. RESULTS

4.2.1. Fire spread

Fire-spread start time, t_s = 1 min 30s

Test method and test number	*Parameter(s)*	*No. Tests*	*Results*	
			Fire spread test result time, ts (min)	*Compliance with parameters in Annex B of BR135: 2013*
BS 8414-2: 2020 EUI-20-FFK2-000374-Revision 1	**External fire spread.**	**1**	**> 15 minutes**	**Compliant**
	Internal fire spread. (Air gap)		**> 15 minutes**	**Compliant**
	Internal fire spread. (Insulation)		**> 15 minutes**	**Compliant**
	Internal fire spread. (Sheathing board)		**> 15 minutes**	**Compliant**
	System burn-through		**> 15 minutes**	**Compliant**

4.2.2. Mechanical performance

For panels numbering refer to Figure 27.

4.2.2.1. Ongoing system combustion following extinguishment of the ignition source

After extinguishment of the fire source, no flames were visible on the specimen.

4.2.2.2. System collapse

Panels A0, A1, A2, A3, A4, B3, B4, C3, C4, D0, D1, D2, D3, D4, E0, E1, E2, E3, E4, F0, F1, F2, F3 and F4 remain intact and in-place after testing.

Panels B1 and C1 melted and collapse by about 60% on the left-hand and right-hand side, respectively.
Panels B2, C2 melted and collapse by about 5% on the bottom middle corner.

The system collapse started at 4 min 20 s after ignition
The rail system and the helping hand brackets holding the rail system had also melted.
The combustion chamber panels fall after 04 min 36s after ignition.
The cavity barrier just above the combustion chamber collapse after 05 min 34 s after ignition.

4.2.2.3. Spalling

No spalling of any element of the specimen was recorded during the test.

4.2.2.4. Delamination

Delamination was observed on cladding panels after the test:

Panels A2, D2, E2, F2, A3, B3, C3, D3, F3, E3, A4, B4, C4, D4, E4 and F4: no delamination was observed after the test. Minor discoloration and smoke staining were noted on the panels E2, F2, B3 and C3.

Panels A0, A1, D0, D1, E0, E1: Some discolorations/delamination were noticed on the side exposed to the opening of the combustion chamber.

Panels F0 and F1: These 2 panels show some minor deformations. Also, discoloration and delamination were noticed on the panels, approximately 30% of the panels.

Panels B1 and C1: Melted by about 60% on the left-hand and right-hand side, respectively. The rest was deformed and discoloured/delaminated.

Panels B2, C2: Most of the panels remain in place after testing. Approximately 5% of the panels melted on the bottom middle corner. 50% of the panels were discoloured and out of this 50%, 20% was delaminated. This panels also show some deformation.

The panels used at the side of opening of the combustion chamber show some deformations, there were also discoloured and delaminated and approximately 10% melted down. The panel on the top of the combustion chamber was not in place after testing.

4.2.2.5. Flaming debris

Burning droplets were recorded during the test, started at 02 min 50 sec after ignition.

4.2.2.6. Pool fires

No pool fires were recorded during the test.

4.2.3. System damage

4.2.3.1. Outer face of the cladding panels

Panels A2, D2, E2, F2, A3, B3, C3, D3, F3, E3, A4, B4, C4, D4, E4 and F4: Intact and in-place after testing. Minor discoloration and smoke staining were noted on the panels E2, F2, B3 and C3.

Panels A0, A1, D0, D1, E0, E1: In place after testing. Some discolorations/delamination were noticed on the side exposed to the opening of the combustion chamber.

Panels F0 and F1: remain in place after testing. These 2 panels show some minor deformations. Also, discoloration and delamination were noticed on the panels, approximately 30% of the panels.

Panels B2 and C2: Melted by about 60% on the left-hand and right-hand side, respectively. The rest was deformed and discoloured/delaminated.
Panels B3, C3: Most of the panels remain in place after testing. Approximately 5% of the panels melted on the bottom middle corner. 50% of the panels were discoloured and out of this 50%, 20% was delaminated. This panels also show some deformation.

The panels used at the side of opening of the combustion chamber show some deformations, there were also discoloured and delaminated and approximately 10% melted down. The panel on the top of the combustion chamber was not in place after testing.

4.2.3.2. Cavity barriers

Horizontal cavity barriers
The bottom one, located just above the opening was partly detached during the test, about 500mm. The intumescent strip was detached during the test and only the core material was left on.

The 2nd horizontal cavity barrier located at 4 377.5 mm above the floor level was fully activated during the test for the main face and partially activated for the wing face. There was also detachment of the intumescent material in line with the opening of the combustion chamber in-between the vertical cavity barriers.

The 3rd horizontal cavity barrier located at 6 877.5 mm above the floor level was activated during the test and it remained in full on the main face. On the wing face the cavity barrier the weather-resistant polymer film melted but the cavity barrier was not activated.

Finally, the top cavity barrier located at 9 377.5 mm above the floor level was partially activated on the main face during the test, but it remained in full on both faces. On the main face, it was activated at about 1/2 of its full width with the non-activated part being close to the left-hand side edge of the specimen. On the wing face, the weather-resistant polymer film melted but the cavity barrier was not activated.

Vertical cavity barriers
The vertical barriers located on either side of the opening were in-place after testing having suffered some discolouration starting at approx. 1500 mm to the 2nd horizontal cavity barrier. Some smoke staining was noticed on the full length of the vertical cavity barriers.

The vertical barrier located close to the side edge of the wing face was in-place and intact after testing.

4.2.3.3. Insulation

All Rockwool Rainscreen Duo Slab (ROCKWOOL) remained intact and in-place after testing, with heat damage and discolouration visible on the main face of the specimen.

On the main face, above the opening and up to about 4 377.5 mm (up to the 2nd cavity barrier) white discolouration covering about 3.8 m^2 surface area between the 2 vertical cavity barriers. On the same area, some of the insulation slabs were of rough texture with visible signs of damage. Above the 2nd cavity barrier and up to the 3rd one, insulation slab suffered some white discoloration, approximately 2 m^2 and some black stain discoloration, approximately 2 m^2. Finally, from the 3rd cavity barrier to the top of the specimen, insulation slabs suffered black discolouration covering about 1.6 m^2. Above that the insulation remains intact.

The slabs closest to the side edges, outside the vertical barriers had no discolouration observed.

On the wing face, up to the top of the specimen, the insulation slabs remain in place and intact with no discolouration or smoke stain.

4.2.3.4. Fire membrane

The Fire membrane of the facade system was intact and in-place after the test. We could only notice some discoloration around the combustion chamber opening.

4.2.3.5. Sheathing board

The sheathing board of the facade system was intact and in-place after the test. We could only notice some discoloration around the combustion chamber opening.

4.2.3.6. The steel frame

The steel frame of the facade system was intact and in-place after the test. No damage was noticed on it.

4.2.4. System damage illustration

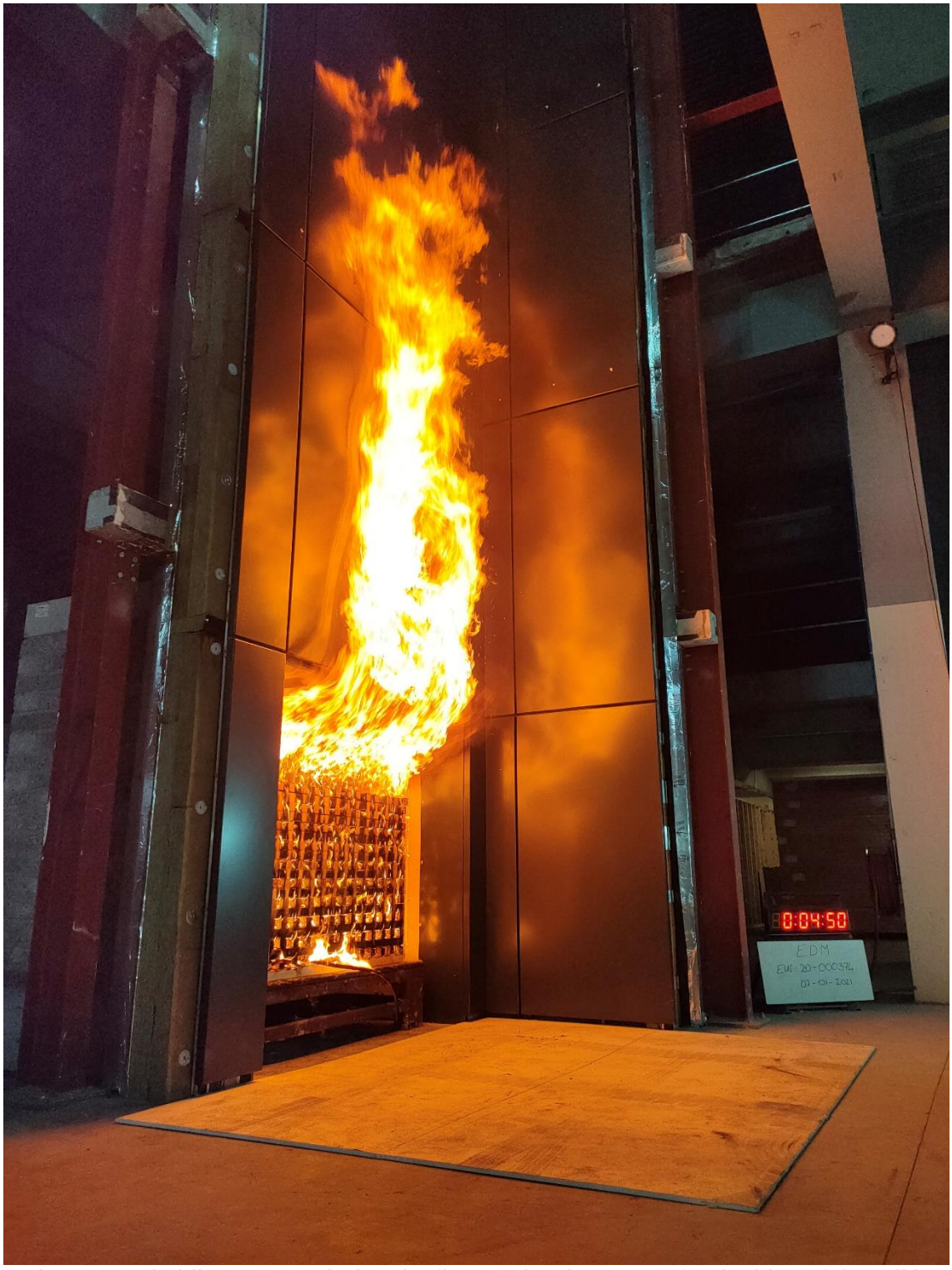


Figure 28. Cladding system during the fire test (4 min 50 sec after ignition of the crib).

Figure 29. Cladding system during the fire test (29 min 50 s after ignition of the crib).

Figure 30. Cladding system just after the fire test (front view).

Figure 31. Cladding system after the test (back side view)

Figure 32. Damage investigation – Insulation and fire cavity barrier after the test.

Figure 33. Damage investigation – Air/Vapour membrane after the test.

5. CLASSIFICATION AND FIELD OF APPLICATION

5.1. REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with BS 8414-2: 2020 and BR 135 (3rd edition): 2013.

5.2. CLASSIFICATION

The element, SPANWALL RF50 FR, described in this classification report and in the test report referenced in section 3.1 has been tested and met the performance criteria set in Annex B of BR135: 2013.

5.3. FIELD OF APPLICATION

This classification is valid only for the system as installed and detailed in this classification report and in the test report referenced in section 4.1.

6. LIMITATIONS

This classification document does not represent type approval or certification of the system.

The classification applies only to the system as tested and detailed in the classification report. The classification report can only cover the details of the system as tested and should be read in conjunction with the test reports referenced in §4.

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons, it is recommended that the relevance of test and classification reports over five years old should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test or classification to ensure that they are consistent with current practices, and if required may endorse the report.

SIGNED

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