Certificate of Testing

Certificate Number:	2021/109
Date:	25 February 2021
System:	**Rockpanel Premium A2 Concealed Fix Rainscreen**
System supplier:	ROCKWOOL B.V. / Rockpanel Konstrukieweg 2 NL-6045 JD Roermond Netherlands

Tests performed:		
	Air permeability	✓
	Watertightness – static	✓
	Watertightness – dynamic	✓
	Wind resistance – serviceability	✓
	Wind resistance – safety	✓
	Soft body impact	✓
	Hard body impact	✓

In accordance with 'Standard for Systemised building envelopes' CWCT, 2006

Due to Covid-19 this test was not witnessed in person by CWCT

Test Witness

Director

CWCT Services Ltd, The Studio, Entry Hill, Bath, BA2 5LY
Tel: 01225 330945, email: cwct@cwct.ac.uk www.cwct.co.uk

Description of system tested

(Certain items shown below may be changed without affecting the validity of this test certificate, subject to analytical or other evidence being provided to demonstrate that the alternative system is no worse than that described here, in terms of structural strength, stiffness, water- and air-tightness)

Rainscreen: ROCKWOOL B.V. / Rockpanel (Konstrukieweg 2, NL-6045 JD Roermond, Netherlands):

Elevation (see Figure 1), vertical section (see Figure 2) and horizontal section (see Figure 3) of test sample as shown.

Rockpanel Premium A2 compressed mineral fibre panels, 11 thick, in various sizes as follows (width first):

2410x550 (A) 1200x1200 (B) 1200x3050 (C) 3050x1200 (D)
2580x1200 (E) 2580x540 (F) 2580x350 (G) 2580x300 (H)
2580x250 (I) 1940x595 (J)

NVELOPE NV3-TU-S-ADJP (adjustable) or NV3-TU-S-STAT (fixed) hook-on fixing clips secured to reverse of panels using two SFS TU-S-6x13-A4 stainless steel fixings per clip, clip locations as shown in Figures 4 and 5.

Panel fixing clips hooked onto NVELOPE CP-NV3 horizontal cladding rails as per Figures 6, 7 & 8. Horizontal cladding rails fixed to vertical 60x40x2.2 aluminium cladding L-rails using SFS SDA5-5.5x22 stainless steel fixings at nominal 600 centres horizontally (see Figures 3, 9 & 10).

Vertical cladding L-rails are fixed to extruded aluminium 40 deep NVELOPE NV3 helping hand brackets using two (restraint only) or four (deadload plus restraint) SFS SDA5-5.5x22 stainless steel fixings, with brackets at nominal 1200 centres vertically (see Figures 2, 6, 7 & 8).

Helping hand brackets are fixed through sheathing board and into studs using two or three SFS SX3/28-S16-6.0x48 stainless steel self-drilling fixings (see Figure 6).

Flashings: Flashings are 2 thick pressed aluminium or angle profiles (Figures 8 & 10).

Insulation: 50 mm Rockwool Rainscreen Duo Slab.

Cavity barriers: AIM OSCB 60/25 open state mineral wool cavity barrier (horizontal) or AIM Wall Cavity Fire Barrier 75 thick mineral wool (vertical) as Figures 1, 6 & 9.

Backing wall: Stoneguard Protec SFS system using 142x1.2 steel stud at nominal 600 mm centres, fixed using Ejot SAPHIR HS 5.5 fixings into identical head and base track, direct fixed to supporting steelwork, set-out as Figure 11.

Head and base track each direct fixed to supporting steelwork using Ejot Saphir 5.5 dia self-tapping fixings.

External sheathing 12.5 thick Siniat Weather Defence board fixed onto studs using GTEC Wet Area Self Drilling Screws. All joints sealed with GTEC Fire Rated Silicone Sealant.

Dry lining omitted for purpose of test.

Drainage and ventilation: Drainage from, and ventilation of, rainscreen cavity achieved by 10 wide gap along head and base of rainscreen layer.

Test arrangements

Dates of test:	12, 14 & 19 December 2020
Testing laboratory:	VINCI Technology Centre UK Limited Stanbridge Road Leighton Buzzard Bedfordshire LU7 4QH
Registration No:	UKAS No 0057
Independent testing authority:	VINCI Technology Centre UK Limited Stanbridge Road Leighton Buzzard Bedfordshire LU7 4QH
Report Number:	N950-20-17997rev2
Fabricator:	Stoneguard Projects Limited Unit 46 Hallmark Trading Centre Fourth Way Wembley HA9 0LB
Installer:	Stoneguard Projects Limited

Summary of results

Air permeability:	PASS (CWCT) Equivalent to Class A4 of BS EN 12152
Pressure:	+600 Pa (infiltration) -600 Pa (exfiltration)
Leakage rate (max):	0.25 m^3/hour/m^2 (infiltration) 0.16 m^3/hour/m^2 (exfiltration)

Note: The air permeability of this system is entirely dependent upon the construction of the backing wall. Airtightness testing was only carried out in order to show that the measured air leakage was within acceptable limits and so not likely to adversely influence the watertightness of the sample.

Watertightness – static:	PASS (CWCT) Equivalent to Class R7 of BS EN 12154
Test pressure:	+600 Pa

Note: No water penetration was noted during either static watertightness test.

Watertightness – dynamic:	PASS
Aero engine:	Equivalent static pressure +600 Pa

Note: No water penetration was noted during the dynamic watertightness test.

Wind resistance:	PASS
Serviceability test pressure:	+/-2100 Pa
Safety test pressure:	+/-3150 Pa

Note: The internal dry lining was not fitted to the test specimen, to permit the back of the sheathing board to be observed during the watertightness tests. It is likely that addition of the dry lining would stiffen the construction and reduce deflections below those reported below.

Soft body impact test to CWCT Technical Note 76:	Twelve locations were tested using the glass-bead-filled soft bag defined in CWCT TN76. No visible damage occurred at any location when impacted three times in succession at a serviceability impact of 120 Nm. This achieves ‘Class 1 – No damage’. At two locations (location 2 on panel type D and location 3 on panel type J) a crack occurred when a single safety impact energy of 500 Nm was applied, but no material was dislodged from either panel, neither did the impactor penetrate either panel, neither were any sharp edges formed, nor were any pieces of material formed that might fall later. This is classified as ‘Negligible risk’. At one location (location 6 on panel type H) a permanent out-of-plane deformation of approximately 1 mm occurred when a single safety impact energy of 500 Nm was applied, but no material was dislodged from the panel, neither did the impactor penetrate the panel, neither were any sharp edges formed, nor were any pieces of material formed that might fall later. This is classified as ‘Negligible risk’.

	For all other impacts at 500 Nm, no visible damage occurred. This is classified as ‘Negligible risk’.
Hard body impact test to CWCT Technical Note 76:	Five locations were each hit with a single impact at an energy of 10 Nm, using the 62.5 mm steel ball impactor. No visible damage occurred at any location. This is therefore considered to be ‘Class 1’ in terms of serviceability, and ‘Negligible Risk’ in terms of safety.

Wind resistance test results – SFS backing wall – deflection – serviceability @ 2100 Pa

SFS studs		Deflection limit L/360 (mm)	Measured deflection at serviceability wind load		Serviceability wind load (Pa)
	Span (mm)		Positive (mm)	Negative (mm)	
Stud, relative to ends	2,909	8.1	7.6	-7.9	±2100

Note: Upon removal of the test pressure, the residual deflection was less than 1.0 mm in all cases.

Wind resistance test results – Cladding rails – deflection – serviceability @ 2100 Pa

The deflection of the cladding rails was not assessed due to the close spacing of the fixing brackets, which means that deflection of the rails between points of fixing is insignificant relative to the deflection of the SFS studs and rainscreen panels.

Wind resistance test results – Rainscreen panels – deflection – serviceability @ 2100 Pa

Rainscreen panels		Deflection limit L/90 (mm)	Measured deflection at serviceability wind load		Serviceability wind load (Pa)
	Span (mm)		Positive (mm)	Negative (mm)	
Type B, span between fixings	600	6.7	2.2	-2.3	±2100
Type B, diagonal	1697	18.9			
Type C, span between fixings	600	6.7	1.1	-5.6	±2100
Type C, diagonal	3278	36.4			
Type D, span between fixings	600	6.7	1.4	-1.8	±2100
Type D, diagonal	3278	36.4			
Type E, span between fixings	600	6.7	4.7	-4.7	±2100
Type E, diagonal	2845	31.6			
Type J, span between fixings	595	6.6	0.4	-0.5	±2100
Type J, diagonal	2029	22.5			

Note: Upon removal of the test pressure, the residual deflection was less than 1.0 mm in all cases

Drawings

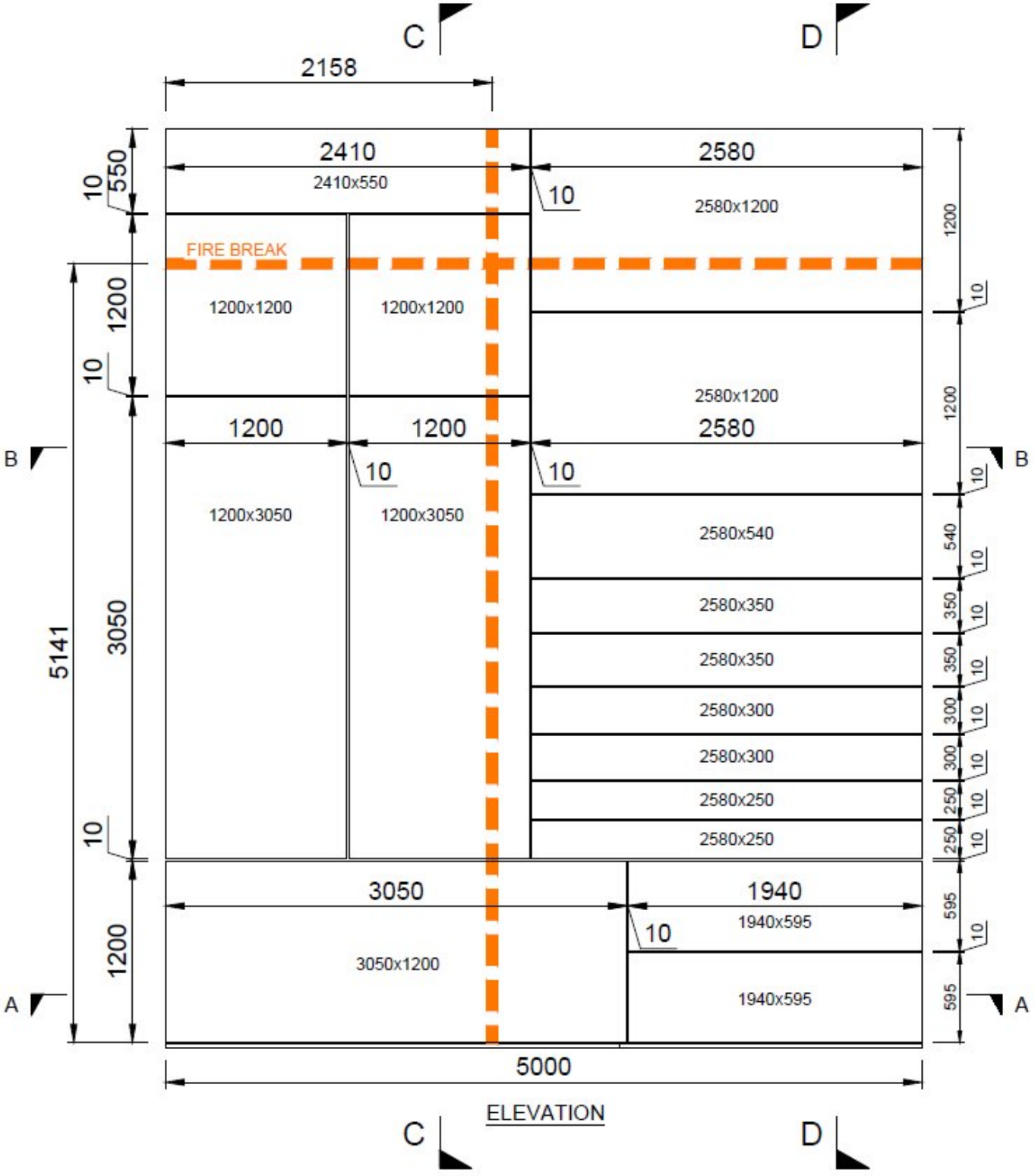


Figure 1 Elevation of cladding test sample showing location of cavity barriers

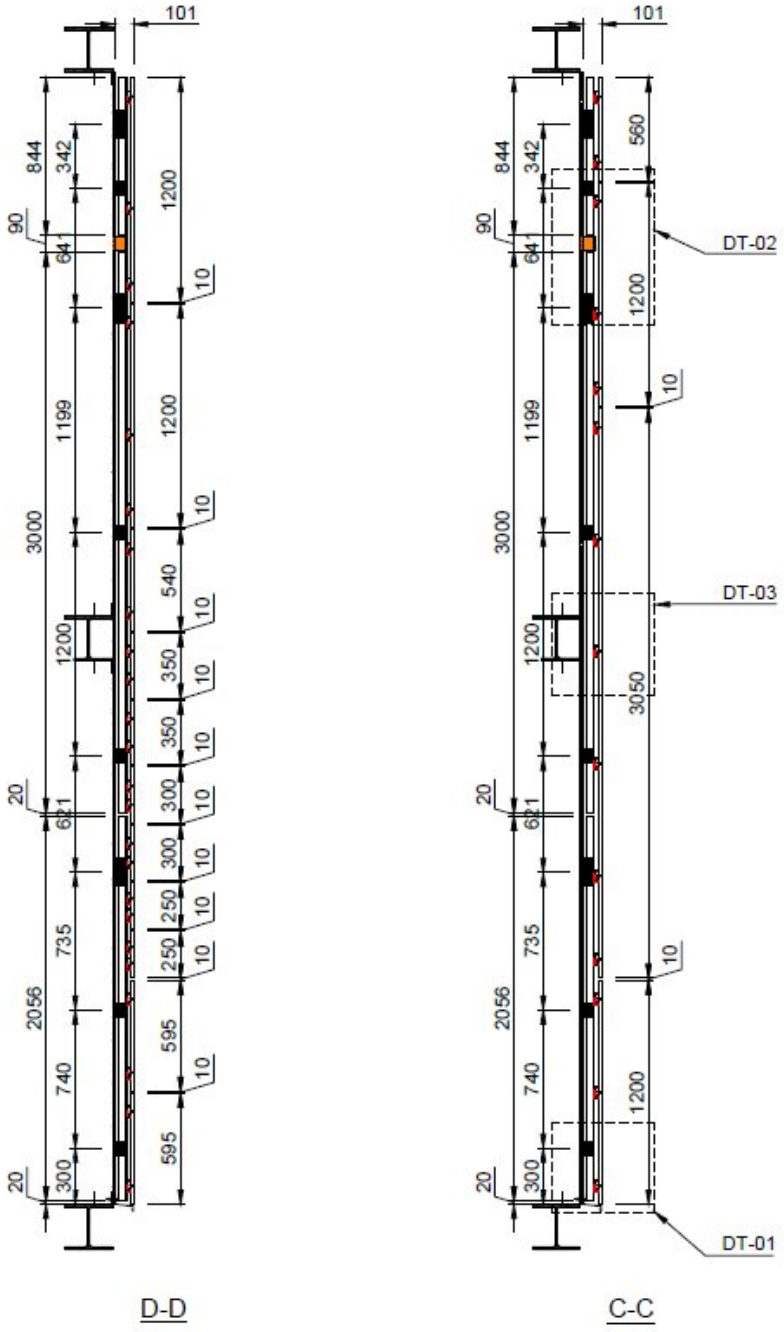


Figure 2 Vertical sections through test sample

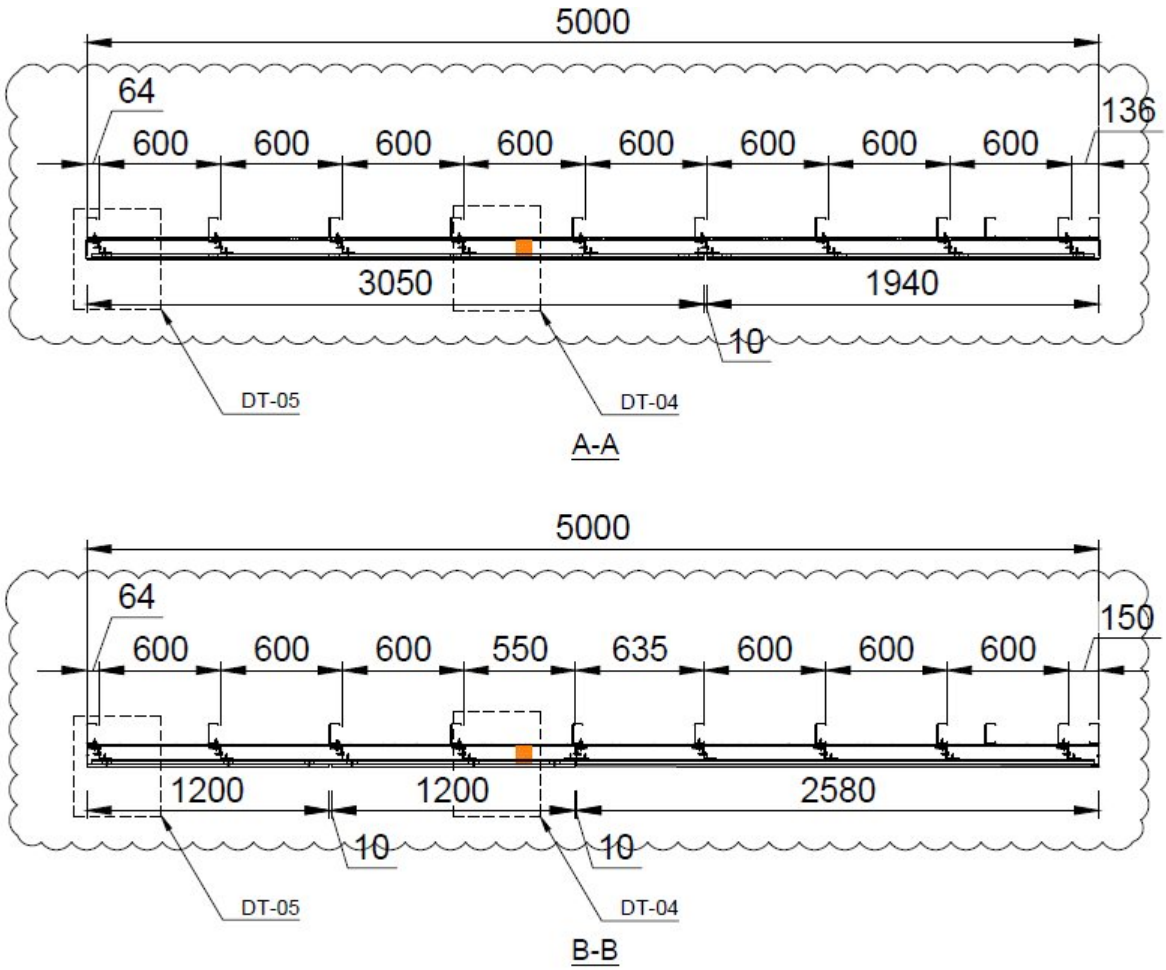


Figure 3 Horizontal sections through test sample

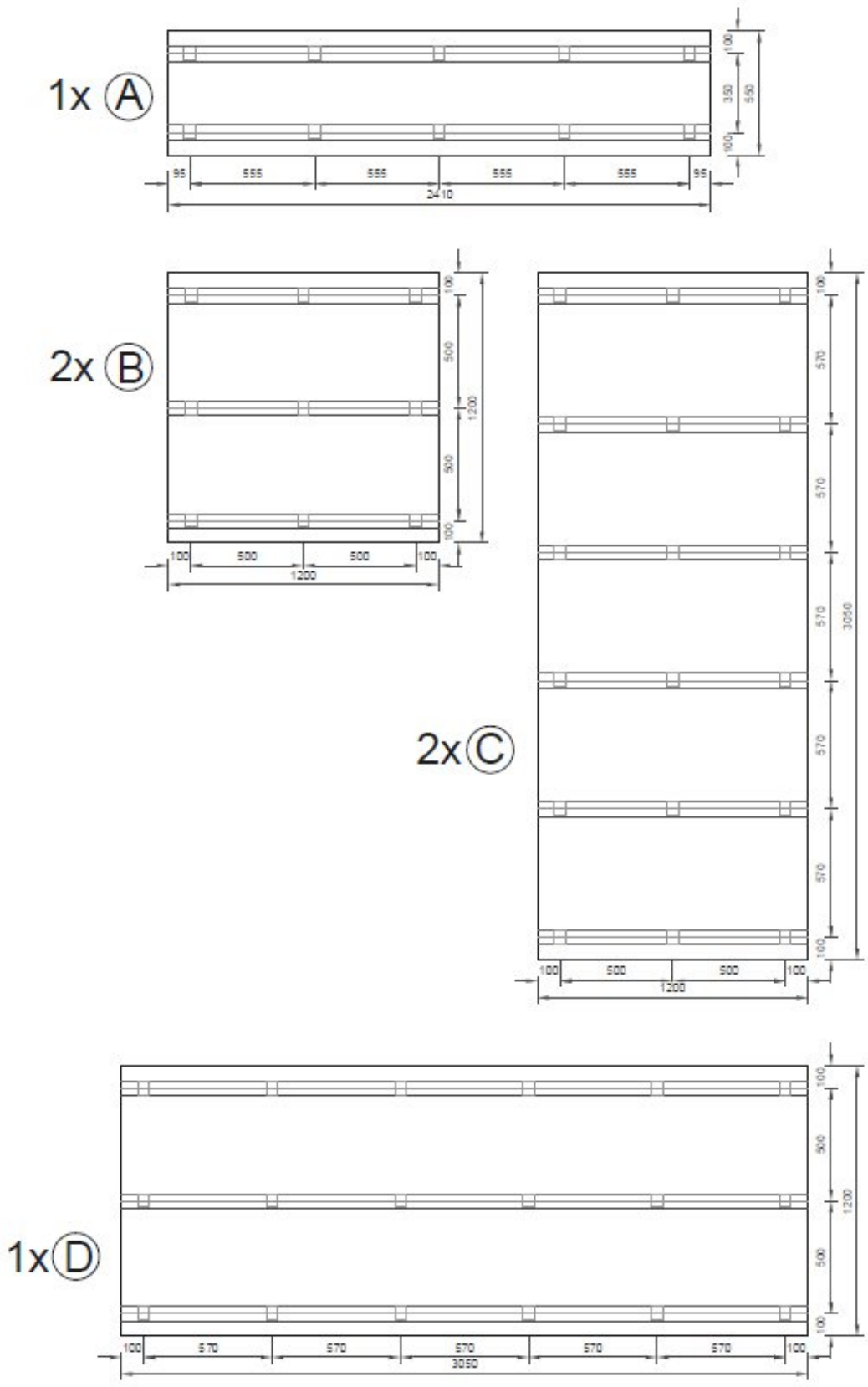


Figure 4 Panel types A through D, with fixing clip locations

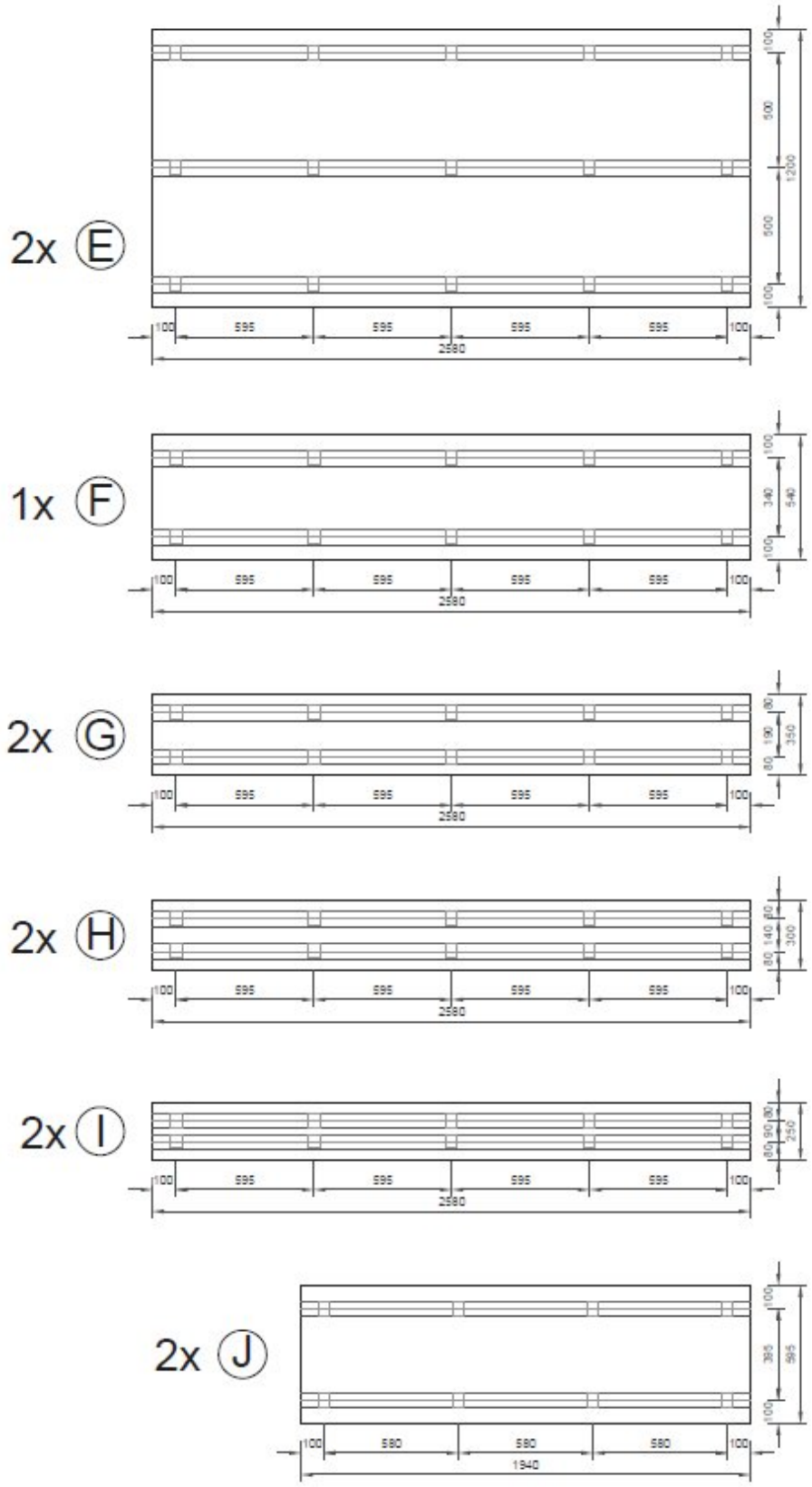


Figure 5 Panel types E through J, with fixing clip locations

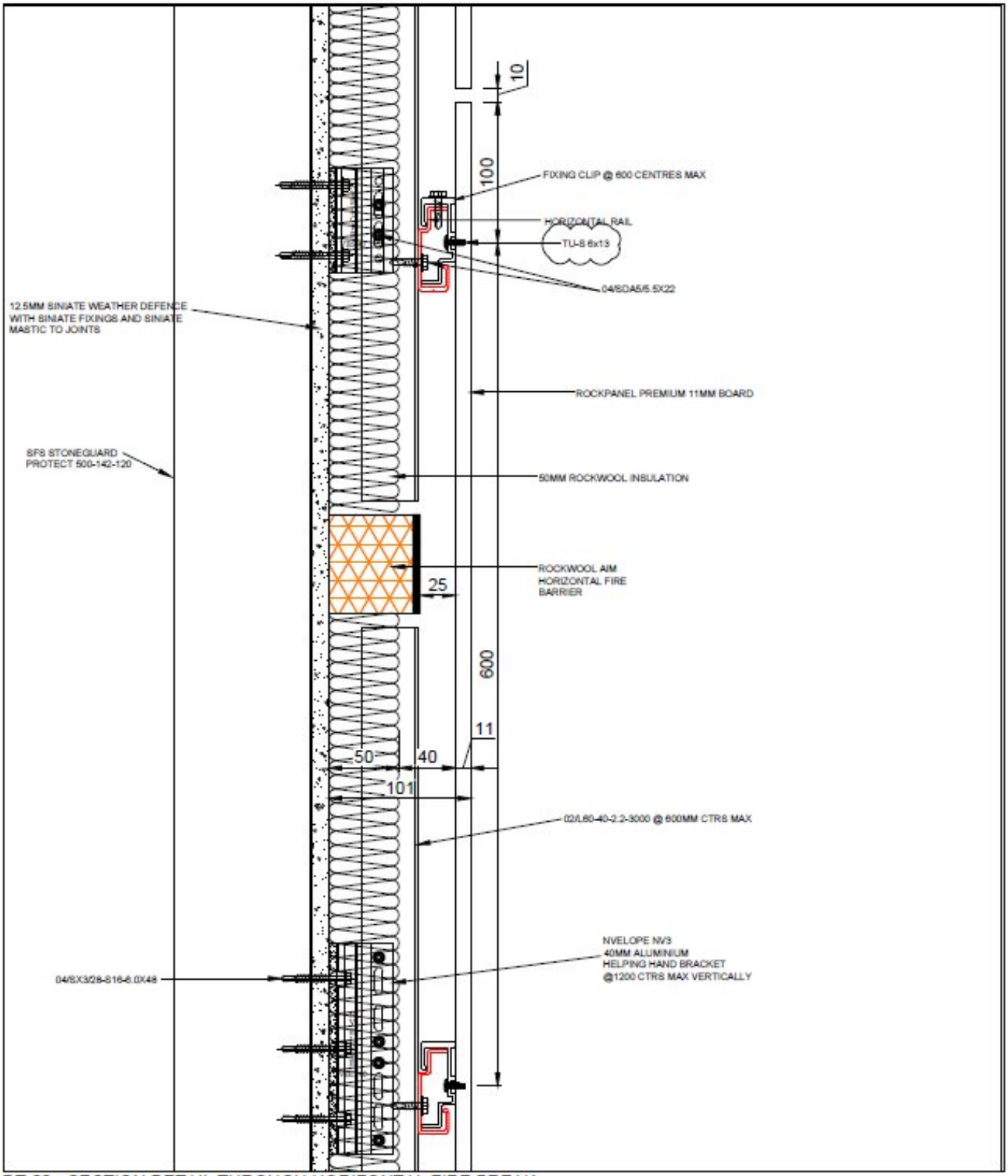


Figure 6 Typical vertical section

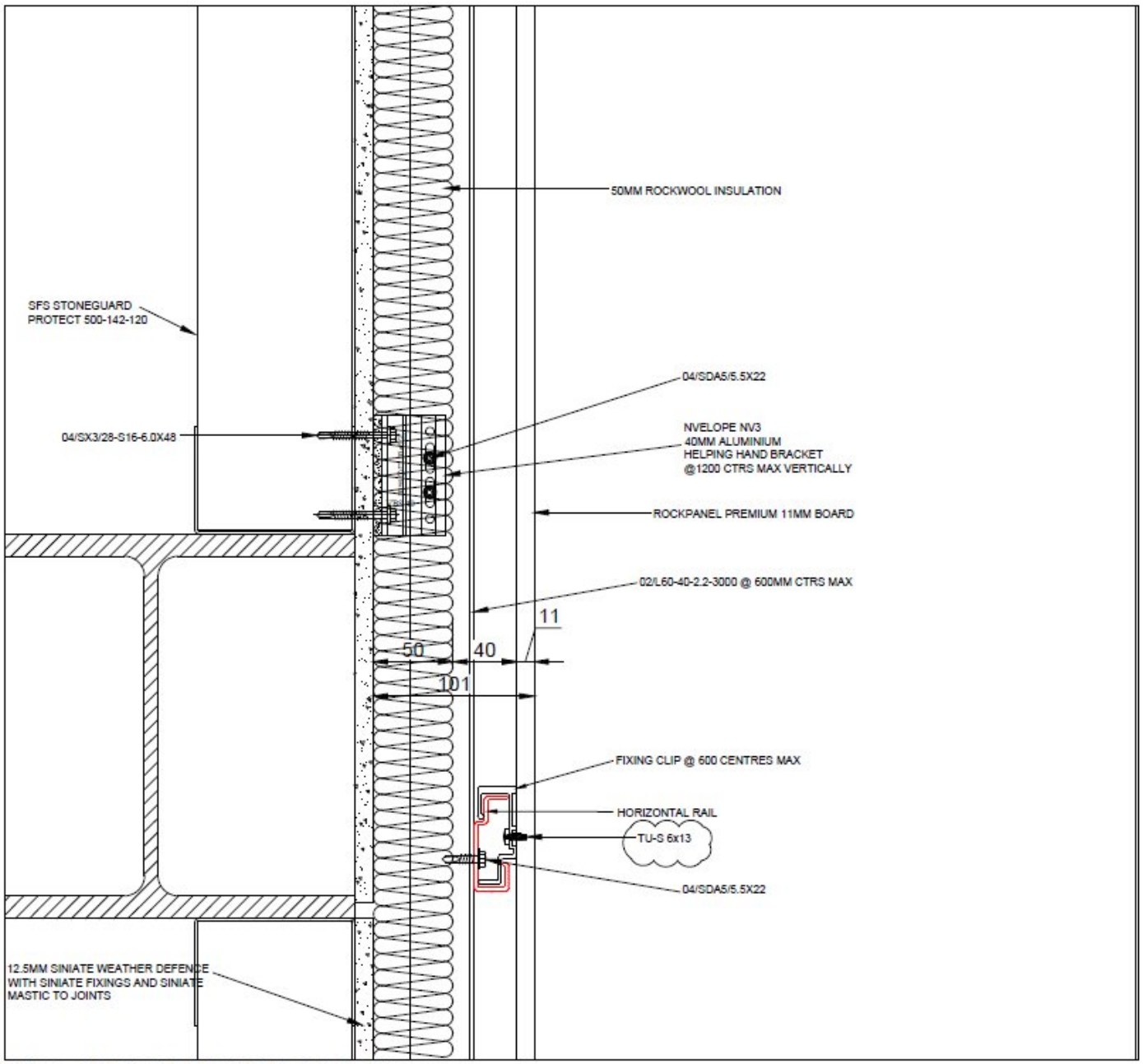
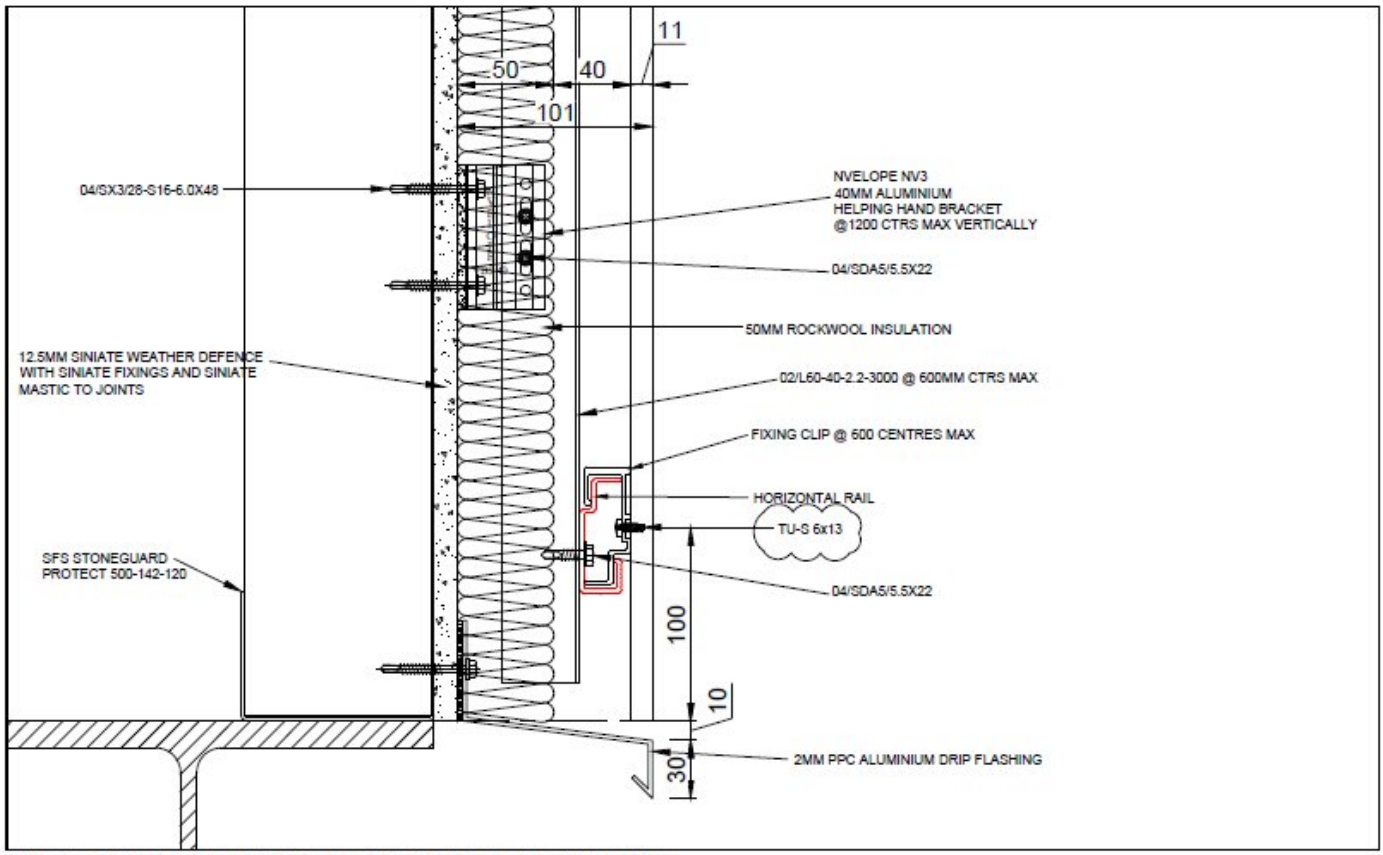


Figure 7 Typical vertical section



DT-01 - SECTION DETAIL THROUGH BASE OF CLADDING
SCALE 1:3 @ A1

Figure 8 Vertical section through sill detail

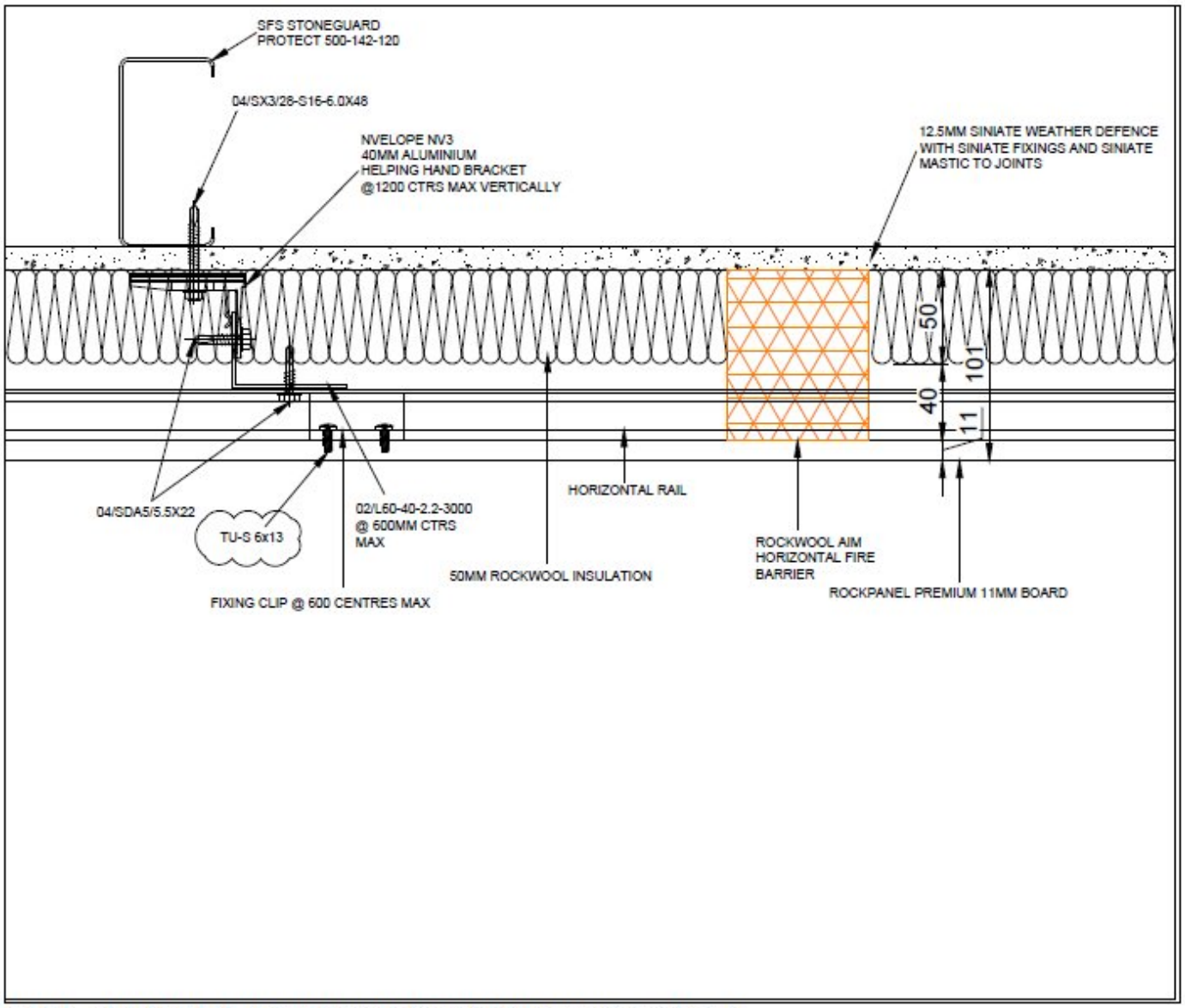


Figure 9 Typical horizontal section

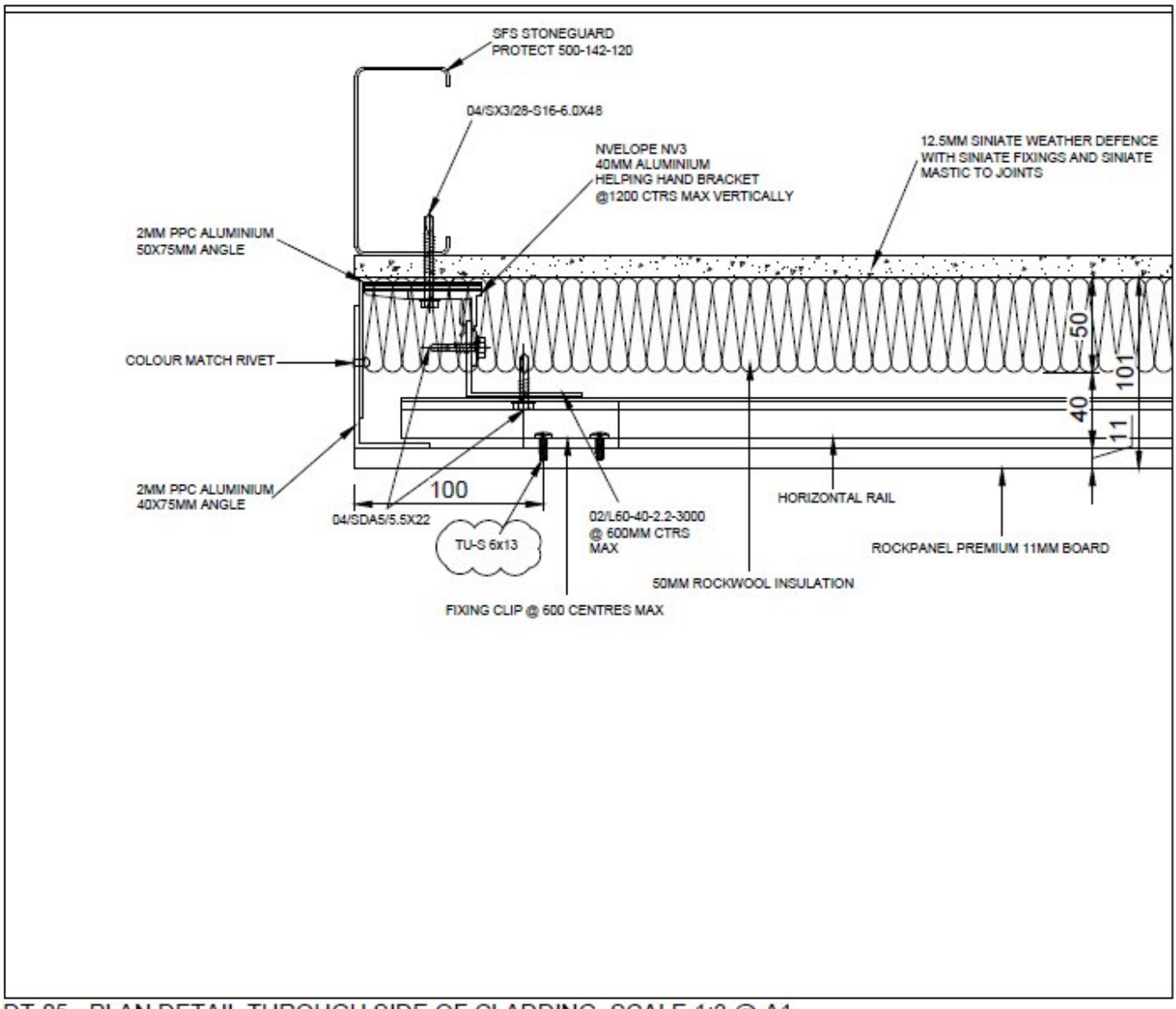


Figure 10 Horizontal section through jamb detail

Figure 11 Stud layout