Certificate of Testing

CENTRE FOR WINDOW AND CLADDING TECHNOLOGY

Certificate Number: 2010/41

Date: September 2010

System: **Sotech Optima Pressed metal plank rainscreen**

Manufacturer: Sotech Limited
2 Traynor Way
Whitehouse Business Park
Peterlee
County Durham
SR8 2RU

Tests performed:

Watertightness – dynamic . . . . . ✓

Wind resistance – serviceability . . . . . ✓

Wind resistance – safety . . . . . ✓

Soft body impact . . . . . ✓

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

Signed: . . . . . Test Witness

Signed: . . . . . Director

Description of components tested

Rainscreen system:	**Sotech Optima pressed metal plank rainscreen**
Panel material:	Zinc: 0.8 and 1.0 mm sheet Steel: 0.7mm sheet Stainless steel: 0.8mm sheet Copper: 1.0mm sheet Aluminium; 0.9 and 1.5mm sheet
Panel size:	290 to 580mm face width in lengths up to 4m Panels tested laid both vertically and horizontally with spans up to 1000mm between support rails Details of panel size, span and material combinations given on drawings and wind resistance results Table
Side joint:	Closed interlocking joint
End Joint:	Vertical planks; labyrinth joint Horizontal planks; joint baffled by support rail
Support rail:	Aluminium Tee rails Rails fixed to back wall with Eurofox aluminium brackets Span of rails between brackets up to 720mm
Fixings:	Planks screwed to support rails
Drainage and ventilation:	Drained and ventilated rainscreen cavity
Backing wall:	Vertical steel studs with plywood sheathing. Cladding rail brackets fixed to horizontal steel top hat sections on cavity side of backing wall to transfer load to studs.

Testing laboratory	Technology Centre Vinci Construction UK Ltd Stanbridge Road Leighton Buzzard Bedfordshire LU7 4QH
Registration No:	UKAS No 0057
Independent testing authority:	Technology Centre Vinci Construction UK Ltd Stanbridge Road Leighton Buzzard Bedfordshire LU7 4QH
Witness:	Alan Keiller Centre for Window & Cladding Technology University of Bath Claverton Down Bath BA2 7AY
Date of test:	July 2009

Summary of results

Watertightness – dynamic:	PASS
Note:	Wetting of back of panels due to water penetration through joints at ends of panels; water did not wet back wall for horizontal planks but some water blown onto back wall causing rundown with vertical planks. For vertical planks back wall needs to be resistant to water rundown.
Wind resistance:	PASS
Serviceability test pressure:	Acceptable pressure depends on panel material and size as detailed in Table of results
Safety test pressure:	Acceptable pressure depends on panel material and size. Panels tested to safety pressure 1.5 times maximum acceptable serviceability pressure
Soft body impact test to BS 8200: 1985 Appendix G	Acceptable impact energy depends on panel material and size. Highest impact energy giving acceptable result at serviceability/safety level given in Table of results

Wind resistance - serviceability test and impact test results

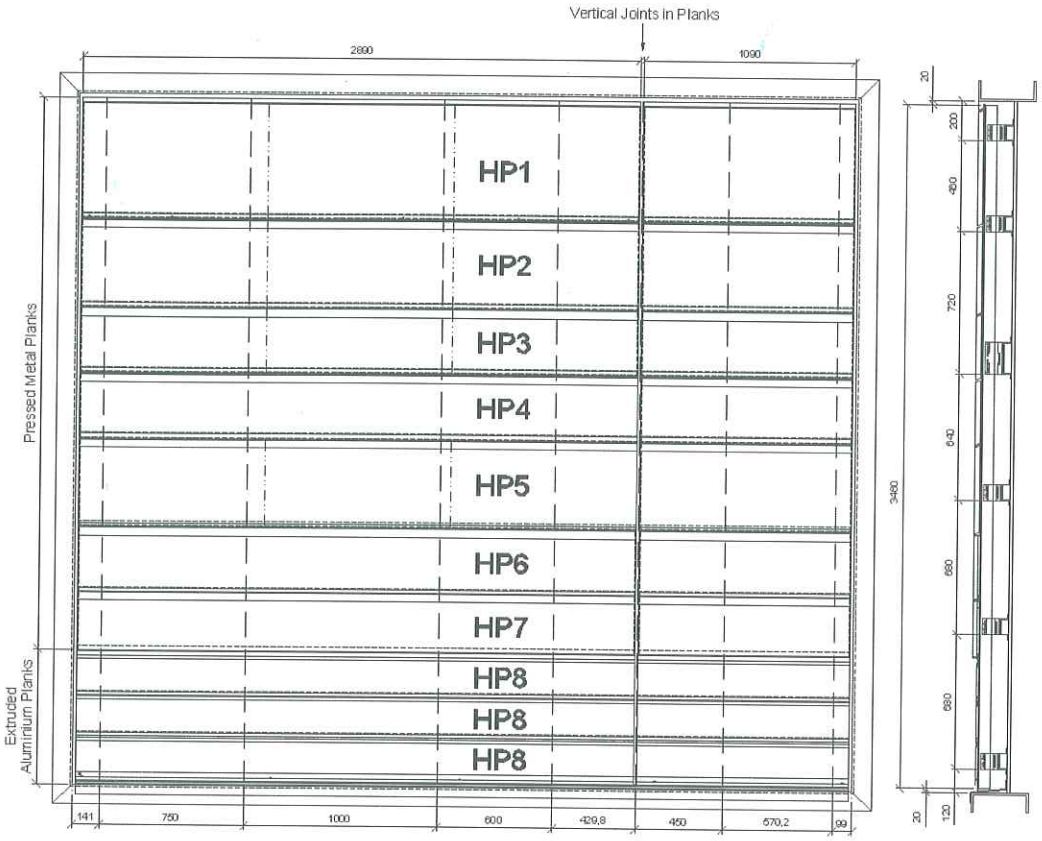
Material	Panel size	span	Load	deflection	Impact
0.8mm zinc	290x35	680	1200	7.7/-7.5	0/ND
1.0mm zinc	290x35	680	2000	6.7/-6.9	0/500
1.0mm zinc	325x35	680	1200	5.1/-7.5	0/500
0.7mm steel	290x35	680	1200	5.6/-7.2	0/ND
0.8mm stainless steel	290x35	680	1600	5.8/-7.0	120/500
1.0mm stainless steel	325x35	750	1200	5.6/-7.8	ND
1.0mm stainless steel	325x35	1000	1200	6.7/-8.9	350/500
1.0mm stainless steel	440x35	750	1200	8.8/-9.2	ND
1.0mm stainless steel	440x35	1000	1200	9.4/-9.5	120/500
1.5mm painted aluminium	290x34	680	2000	4.3/-5.2	120/500
1.5mm painted aluminium	330x34	680	2000	4.6/-6.0	0/500
1.5mm painted aluminium	290x35	750	2000	1.6/-3.6	ND
1.5mm painted aluminium	290x35	1000	2000	3.9/-6.1	0/350
1.5mm painted aluminium	325x35	750	1200	3.6/-6.9	120/ND
1.5mm painted aluminium	325x35	1000	1200	6.0/-9.1	0/500
0.9mm painted aluminium	245x34	680	1600	7.5/-7.0	0/500
2.0mm aluminium	580x35	750	2000	/-9.3	120/ND
2.0mm aluminium	580x35	1000	2000	11.6/-10.7	120/500
1.5mm aluminium	440x35	750	1600	6.9/-10.5	ND
1.5mm aluminium	440x35	1000	1600	9.7/-11.7	350/500
1.2mm aluminium	325x35	750	1200	6.1/-8.7	120/ND
1.2mm aluminium	325x35	1000	1200	7.0/-10.4	0/500
1.0mm copper	290x35	680	1600	3.9/-7.3	0/500
1.0mm copper	325x35	680	2000	4.4/-7.3	0/500

Notes

1. Span given is distance between supports along axis of panel.
2. Values given are for positive for wind pressure and negative for wind suction. Permitted deflection limited to span/90 where span taken as diagonal of panel bay.
3. First figure is serviceability level, second figure is for safety, ND indicates value not determined.

Elevation of test wall with planks laid horizontally

Planks were tested in conjunction with extruded aluminium planks which are also shown on drawing



HP1 = 2mm Alu

HP2 = 1.5mm Alu

HP3 = 1.2mm Alu

HP4 = 1mm S/Steel

HP5 = 1mm S/Steel

HP6 = 1.5mm Precoat Alu

HP7 = 1.5mm Precoat Alu

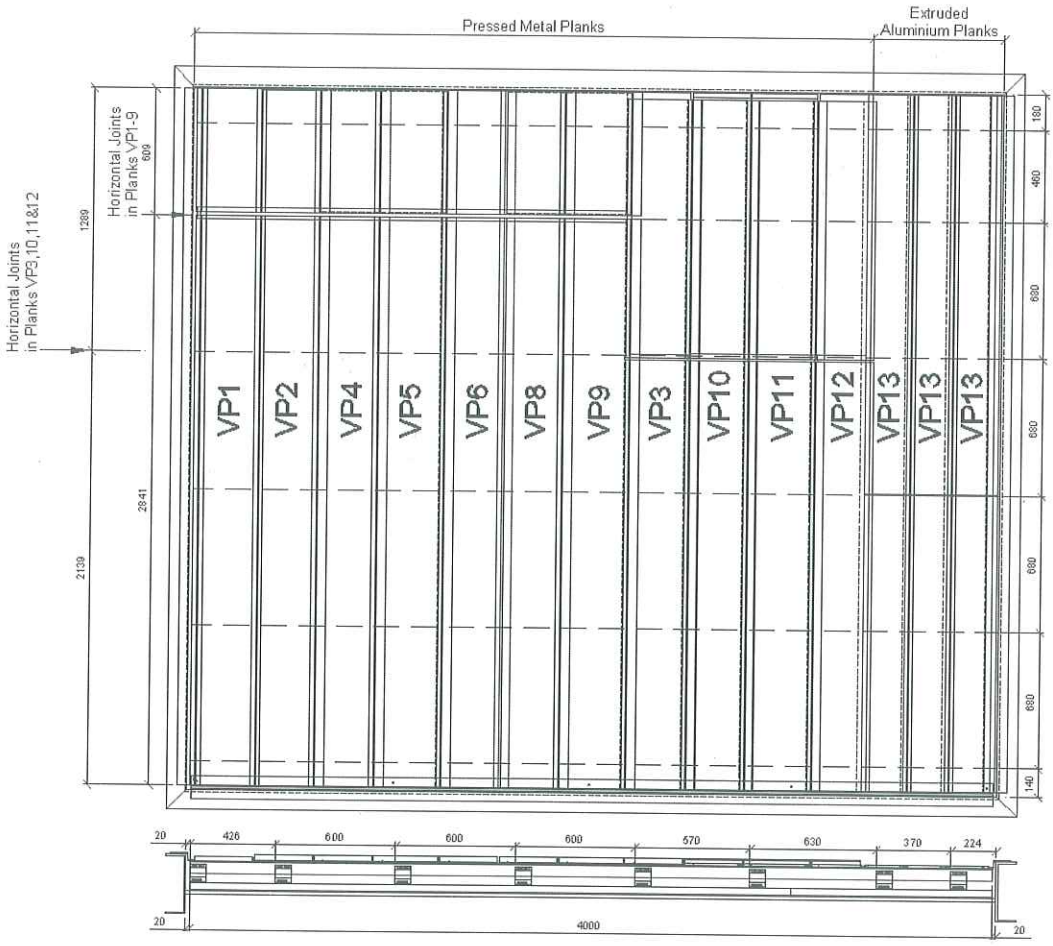
HP8 = Extruded Plank

— — Carrier Rails

—·— **Panel Stiffener**

Elevation of test wall with planks laid vertically

Planks were tested in conjunction with extruded aluminium planks which are also shown on drawing



VP1a = VM Rolled

VP2a = 0.7mm Steel

VP3a = 0.8mm Zinc

VP4a = 1mm Zinc

VP5a = 1mm Zinc

VP6a = 0.8mm S/Steel

VP8a = 1mm Copper

VP9a = 1mm Copper

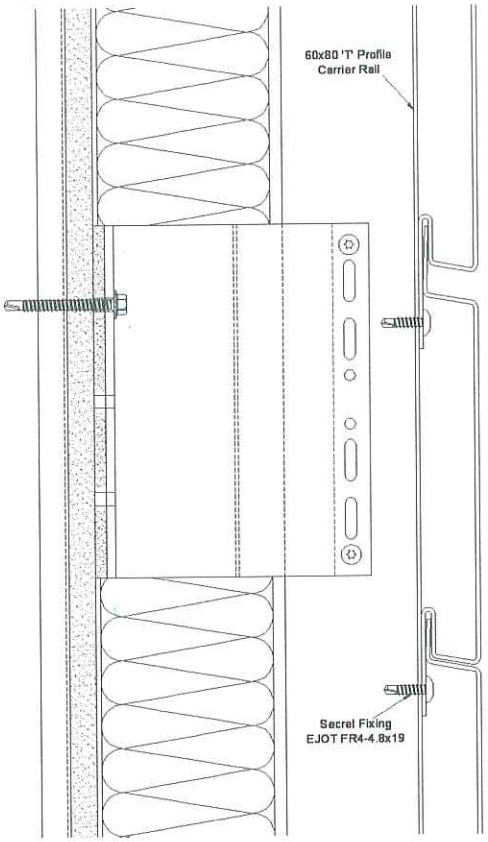
VP10a = 1.5mm Pre Alu

VP11a = 1.5mm Pre Alu

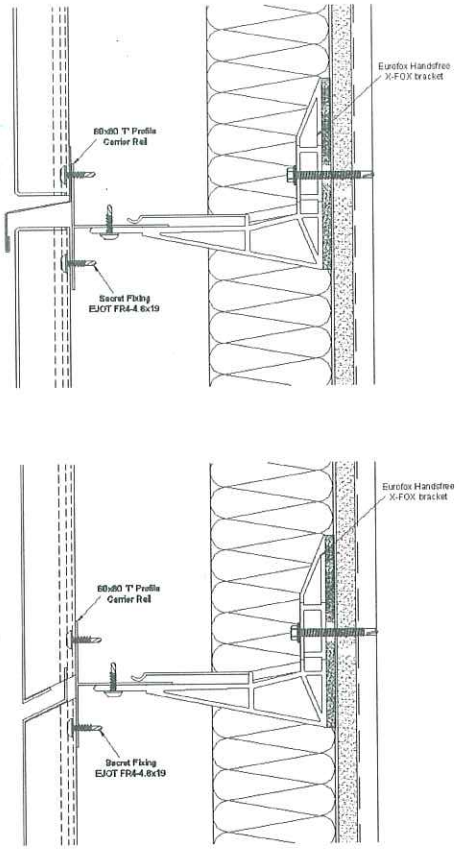
VP12a = 0.9mm Pre Alu

VP13 = Extruded Plank

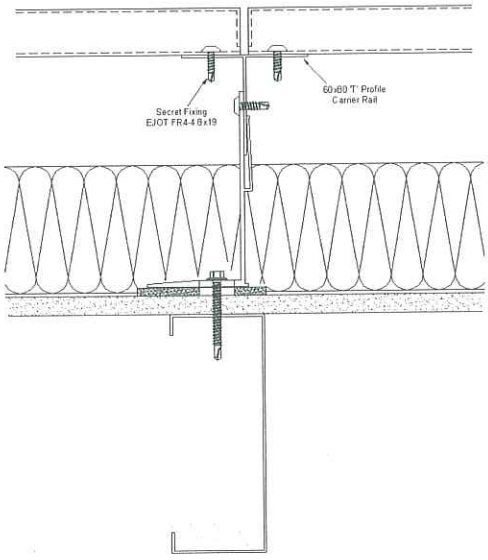
— — Carrier Rails



Section through plank showing fixing details



Vertical section through horizontal joints in vertical planks



Horizontal section through vertical joint in horizontal planks

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Installer: Sotech Limited
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