

SF40-FR

Shadow Fixed 40mm Fire Rated Rainscreen System

CWCT Technical Report

Hamilton

METAL FORMING LTD

SPANWALL 
A HAMILTON BRAND



Technical Report – R4790086764 - Rev 2 CWCT – Standard for systemised building envelopes – 2005

Spanwall Ltd

SF40-FR and FP30 System Test



Contents

1. Introduction.....	2
2. Summary of Results	3
3. Description of Test Sample.....	5
4. Test Arrangement.....	9
5. Test Procedures	12
6. Test Results	15
7. System Drawings.....	27
8. Support Steelwork Drawing	34
9. Dismantling.....	35
10. Amendments	42

Rev 2 (Revised Report) – this report has been amended as shown in Section 10 and it replaces previous report No. R4790086764 Rev 1 dated 3rd January 2023.



1. Introduction

This report describes tests carried in order to determine the weather tightness of the sample with respect to water penetration, wind and impact resistance on sample supplied as follow:

Test Details	
Customer:	Hilton Metal Forming
Product Tested:	SF40-FR and FP30 System Test
Date of Test:	16 th , 17 th and 18 th November 2021 31 st January 2022 17 th , 18 th and 22 nd February 2022
Test Conducted at:	UL International (UK) Limited Halesfield 2 Telford Shropshire TF7 4QH
Test Conducted by:	P Seymour - Laboratory Technician K Alden- Senior Engineering Technician D Reynolds – Engineering Technician
Test Supervised by:	M Witkowska - Laboratory Leader 
Test Witnessed by:	M O'Donohue

Report Authorisation	
Report Compiled by:	D Price – Senior Engineering Associate 
Authorised by:	M Wass – Engineering Manager 

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2. Summary of Results

2.1 The test methods

The performance of the sample tested has been assessed against the criteria described in below standards.

CWCT Standard Test Methods for Building Envelopes - December 2005	
Air Leakage (Infiltration & Exfiltration)	CWCT Section 5
Water Penetration – Static	CWCT Section 6
Water Penetration – Dynamic Aero Engine	CWCT Section 7
Water Penetration – Hose	CWCT Section 9
Wind Resistance – Serviceability	CWCT Section 11
Wind Resistance – Safety	CWCT Section 12
Impact – Retention to Performance & Safety to Persons	CWCT TN 76

2.2 Decision Rule

Classifications reported in Section 5 indicate that the product conforms with the relevant accuracy requirements of the testing standards (as summarised below) and the expanded measurement uncertainty ($k=2$ for approximately 95% coverage probability) is no greater in magnitude than the accuracy requirements defined in Section 2 of CWCT Standard Test Methods for Building Envelopes.

2.3 Measurement Uncertainty

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%, and for the air leakage measurements and wind resistance measurements is $\pm 1.91\%$ and for the mass of the dislodge fragments is $\pm 0.03\%$.



2.4 Summary of Results

The following summarises the results of testing carried out, in accordance with the relevant testing and classification standards.

Test Type	Peak Test Pressure	Result	Date of Test	Classification
Test 1 - Air Leakage – Infiltration	600 Pa	Pass	16.11.21	A4
Test 2 - Air Leakage – Exfiltration	100 Pa	N/A	16.11.21	N/A
Test 3 – Water Penetration (Static Pressure)	600 Pa	Pass	16.11.21	R7
Test 4 - Wind Resistance – Serviceability – Backing Wall	2400 Pa	Pass	16.11.21	-
Test 5 - Repeat Air Leakage – Infiltration	600 Pa	Pass	16.11.21	A4
Test 6 - Repeat Air Leakage – Exfiltration	100 Pa	N/A	16.11.21	N/A
Test 7 – Repeat Water Penetration (Static Pressure)	600 Pa	Pass	16.11.21	R7
Test 8 – Water Penetration – Dynamic Aero Engine	600 Pa	Pass	17.11.21	-
Test 9 - Water Penetration – Hose	-	Pass	18.11.21	-
Test 10 - Wind Resistance – Serviceability – Cavity	2400 Pa	Pass	31.01.22	-
Test 11 - Wind Resistance – Safety – Cavity	3600 Pa	Pass	31.01.22 17.02.22	-
Test 12 - Wind Resistance – Safety – Backing Wall	3600 Pa	Pass	17.02.22	-
Test 13 - Impact Resistance – Retention of Performance	Cat B	Class 1	18.02.22 22.02.22	-
Test 14 - Impact Resistance – Safety to Persons	Cat B	Negligible Risk	18.02.22 22.02.22	-
Dismantle, Inspect & Report	Sample Passed			

More comprehensive details are reported in Section 6.

These results are valid only for the conditions under which the test was conducted.

All measurement devices, instruments and other relevant equipment were calibrated and traceable to National Standards.



3. Description of Test Sample

The description of the test sample in this section has been supplied by the customer and has not been verified by UL International (UK) Limited.

See Section 7 for test sample drawings as supplied by Spanwall Ltd.

Product Description

Full product name:	FP30 Plank System
Product type:	Rainscreen System
Product description:	Secret Fix Over Lapping Joint Plank System
Manufactured by:	Spanwall Ltd.

Support Framing and bracketry

Material:	Aluminium Alloy 6063 T6
Finish:	Mill Finish
Vertical rail Ref:	NV-T60-100-2.2 / NV-L60-40-2.2
Horizontal rail Ref:	NV-L60-40-2.2
Fixing method (rail to backing wall):	Tek Screw
Fixing Ref:	SFS SX3/28-S16-6.0x48
Fixing method (rail to rail):	M5 Tek Screw
Fixing Ref:	Spanwall M5 Tek Screw 507
Max Span between vertical rails:	1200mm
Max Span between horizontal rails:	571mm
Brackets ref:	Spanwall Wall Bracket 300mm Single / Double Spanwall Horizontal Wall Bracket 300mm

Panels/tiles/brickslip

Material:	Aluminium
Material ref (source, spec):	3103 H14
Finish:	Mill Finish
Thickness:	3mm
Reinforcing:	N/A
Max height of panel:	620 Landscape 3655 Portrait (Grid Centre Size)
Max width of panel:	3000 Landscape 420 Portrait (Grid Centre Size)
Max size of panel by area (m2):	1.788 m2
Fixing method:	Discreet Fix in overlapping joint secured with Low Profile Tek Screw
Bracket/clip ref:	N/A
Screws/fixings ref:	Spanwall SX3-D12-5.5x30

Interface Details (curtain wall to window/door inserts)

Window interface detail:	As per Drawing
Door interface detail:	As per Drawing

Backing Wall

Structural support type:	SFS
Insulation type:	N/A
Insulation thickness:	N/A
Airtight membrane:	Proctor Procheck FR200
Watertight membrane:	As above
Particle board detail:	RCM Y-Wall 12mm
Sealants and tapes:	SikaTack Panel / Proctor Reflectafoil Tape 100mm Soudal Fix All Crystal



Fixings ref:	Rufpert DF3 CSK Wing Driller Light 4.8 x 38
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Drainage

Drainage type (pressure equalised etc.):	Pressure Equalised
Drainage specification and weep holes etc.	8.5mm Weep Holes in Bottom Return of Panels

Additional brackets & Fixings

Ref:	Spanwall Flashings 3mm Aluminium
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Product Description

Full product name:	SF40-FR
Product type:	Rainscreen System
Product description:	Ventilated Rainscreen System with 40mm Deep Panel
Manufactured by:	Hamilton Metal Forming.

Support Framing and bracketry

Material:	Aluminium Alloy 6063 T6
Finish:	Mill Finish
Vertical rail Ref:	NV-T60-100-2.2 / NV-L60-40-2.2
Horizontal rail Ref:	N/A
Fixing method (rail to backing wall):	Tek Screw
Fixing Ref:	SFS SX3/28-S16-6.0x48
Fixing method (rail to rail):	M5 Tek Screw
Fixing Ref:	Spanwall M5 Tek Screw 507
Max Span between vertical rails:	948mm
Max Span between horizontal rails:	N/A
Brackets ref:	Spanwall Wall Bracket 300mm Single / Double

Panels/tiles/brickslip

Material:	Aluminium
Material ref (source, spec):	3103 H14
Finish:	Mill Finish
Thickness:	3mm
Reinforcing:	3mm Aluminium Stiffeners as per drawings
Max height of panel:	1420 Landscape 2900 Portrait (Grid Centre Size)
Max width of panel:	2920 Landscape 1395 Portrait (Grid Centre Size)
Max size of panel by area (m2):	4.118 m2
Fixing method:	Discreet Fix in shadow gap secured with Low Profile Tek Screw
Bracket/clip ref:	Spanwall 505 / 506
Screws/fixings ref:	Spanwall SX3-D12-5.5x30

Interface Details (curtain wall to window/door inserts)

Window interface detail:	As per Drawing
Door interface detail:	As per Drawing

Backing Wall

Structural support type:	SFS
Insulation type:	N/A
Insulation thickness:	N/A
Airtight membrane:	Proctor Procheck FR200
Watertight membrane:	As above
Particle board detail:	RCM Y-Wall 12mm



Sealants and tapes:	SikaTack Panel / Proctor Reflectafoil Tape 100mm Soudal Fix All Crystal
Fixings ref:	Rufpert DF3 CSK Wing Driller Light 4.8 x 38

Drainage

Drainage type (pressure equalised etc.):	Pressure Equalised
Drainage specification and weep holes etc.	8.5mm Weep Holes in Bottom Return of Panels

Additional brackets & Fixings

Ref:	Spanwall Flashings 3mm Aluminium
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Drawings

Drawing/s must be provides covering the below; -Full drawing of sample including front elevation -Cross Sections (Panels/Rails Etc.) -Hardware Locations -Fixings -Drainage Points Note: drawings are required to show all relevant dimensions.	As detailed in section 7
Test sample size:	As detailed in section 7

Confirmation

Customer is to confirm that the samples provided for testing are representative of standard production. Please note: the details given above, as well as the drawings supplied by the customer as confirmed as typical of normal production are not verified by UL International (UK) Limited.	
Company:	Hamilton Metal Forming
Name:	Justin Reid
Position:	Design Manager
Date:	22 nd March 2022



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