


Test Report 9755639.
Smart Systems Limited
Incorporating Smart Extrusions

Introduction.

This report has been prepared by David Vinyard and relates to the activity detailed below:

Job/Registration Details	Client Details
Job number: 9755639 Job type: Testing Samples Submitted Start Date: 18/04/2019 Test type: Direct Sample ID: 10183258 Registration: NA Protocol: NA Quality system: NA Registration: NA Protocol: NA Quality system: NA	Smart Systems Limited Incorporating Smart Extrusions Arnolds Way Yatton BS49 4QN United Kingdom

The report has been approved for issue by Chris Rayment – Team Manager

Approved For Issue	
	Issue Date: 29 April 2019

Objectives.

Direct test

Product Scope.

MC600 curtain wall

Report Summary.

The sample was received on 18 April 2019 and the testing was started on 18 April 2019.

The sample submitted complied with the requirements of the test work conducted.

PAS24:2016 Direct Test.

1 off MC600 curtain wall

(Sample ID No 10183258)

Date sample received: 18 April 2019

Test Results.

1. Infill Removal The test sample met the requirements of the Specification in respect of B.4.4
2. Soft Body Impact The test sample met the requirements of the Specification in respect of B.4.8

B.2 Sample Selection.

The sample submitted for tests were selected using the criteria in B.2 of the Specification. The sample was submitted for test mounted in a 75mm x 100mm timber subframe in accordance with the manufacturer's installation requirements. The test sample was manufactured by the client.

The results within this test report are valid only for the conditions under which the testing was carried out, and only for the specified products.

B.3 Requirements for Test Apparatus.

The test apparatus for the manual and mechanical tests is shown in figures B.2 to B.5.

B.4 Test Methods.

The method of testing the samples followed the sequence detailed in B.4 of the Specification.

Description of Sample.

Sample Type -	MC600 curtain wall		
Material -	Aluminium		
Construction -	Cleated		
Classification -	W		
Glass -	Double glazed 4-20-4mm toughened glass sealed unit		
Panel -	Not applicable		
Glass Retention System -	Caps and screwed in pressure plates		
Sample dimensions -	Overall length:	1000mm	Height: 2000mm

Description of Test Sample (MC 600 Curtain Wall).



Outer Frame width	1000mm	Outer Frame Material	Aluminium
Outer Frame height	2000mm	Outer Frame Gasket	
Outer Frame Part Numbers		Gasket Type	EDPM
Top	MC614,601,655,652,DK154	Manufacturer	VEKER
Bottom	MC614,601,655,652,DK154	Product Name	28mm GLAZING GASKET
Lock Side	MC614,601,655,DK154,DK053	Product Code	ACSC212
Hinge Side	MC614,601,655,DK154,DK053	Threshold	
Outer Frame section dimensions		Manufacturer	
Width	55mm	Product name	
Depth	164.5mm	Product Code	
Reinforcing:		Materials	
Manufacturer		Outer Frame Joint Method	
Product Name		Head	BRACKET AND SPRING PIN
Product code		Foot	BRACKET AND SPRING PIN
Material			



Leaf		Leaf Material:	
Leaf Width:		Leaf Gasket	
Leaf Height:		Gasket type:	
Leaf Part Numbers:		Manufacturer:	
Top:		Product Name:	
Bottom:		Product Code	
Lock side:		Leaf Midrail:	
Hinge Side		Manufacturer:	
Leaf section size		Product name:	
Width:		Product code:	
Depth:		Material:	
Reinforcing		Leaf joint method	
Manufacturer:		Head:	
Product Name:		Foot:	
Product Code:			
Material:			
Bead			
Manufacturer:			
Product Name:			
Product Code:			
Material:			
Bead Size:			

Description of Test Sample. (Continued)

Glazing Unit		Glazing Gasket Internal	
Manufacturer:	ASHTON GLASS	Gasket Type:	EDPM
Inner Thickness:	6mm	Manufacturer:	VEKER
Spacer Material:	16mm	Product Name:	28mm GLAZING GASKET
Outer Thickness:	6mm	Product Code	ACSC 212
Unit Sizes:	920mm x 1920mm	Glazing External	
Glazing Tape Details		Manufacturer:	ESSENTRA
Manufacturer:		Product Name:	PRESSURE PLATE
Product Name:		Product Code	DK154
Product Code			

Hardware			Fixings	Quantity
STITCH PLATE	ACDK066	FIXINGS AT 250,mm CENTERS	ACMC610	
TRANSOM BRACKET	ACMC600		ACET060, PUA028	4
TRANSOM END PAD	ACMC614			4
28mm CORNER GASKET	ACMC628			4
SPRING PIN	ACMC650			4
GLAZING SUPPORT	ACMC630			2
ANTI TAMPER SCREWS		FITTED TO EACH END OF TRANSOM AND MULLION	TTPHB1464AA2. FASTENRIGHT LIMITED.	8

Note – Parts list supplied by client and not verified by BSI

Test Results.

Performance Requirements

Assessment

B.4.4.2 Infill Manual Test

The sample was mounted, vertically and square, in the test rig as described in B.3.1.

The test was carried out in accordance with the requirements of this Annex using the tools described in Group A and Group B where applicable.

6mm and 25mm chisel used to remove the cap covers and expose pressure plate screws.

No entry gained in 3 minutes

Pass

Note – At the client's request, the time required to remove one pressure plate was explored and noted. One pressure plate was successfully removed in 5 minutes 24 seconds.

Date of test – 18 April 2019

Test engineer(s) – DV JS JN

Laboratory temperature – 18.3°C

B.4.4.3 Infill Mechanical Test

The sample was mounted, vertically and square, in the test rig as described in B.3.1.

The test was carried out with a perpendicular-to-plane load of 2.0kN applied to each corner of the glazing.

Note – At the client's request, the top left corner of the glazing was loaded with a 5kN perpendicular-to-plane load.

No evidence of bead failure. No entry gained.

Pass

Date of test – 18 April 2019

Test engineer(s) – DV JS JN

Laboratory temperature – 18.3

Test Results.

Performance Requirements

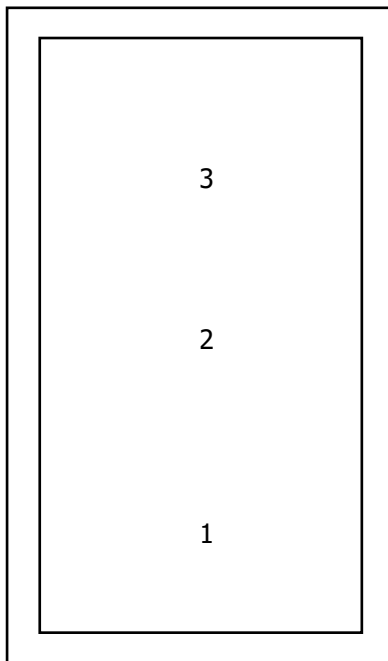
Assessment

Clause B.4.8 Soft Body Impact Test

The sample was mounted, vertically and square, in the test rig as described in B.3.1

The test was carried out in accordance with the requirements, objectives and procedures Detailed in B.4.8.1 using the impact points and procedure described in B.4.8.2 and B.4.8.3 and Figure B.10.

Diagram of impact points



Impact Point	Height from Floor Level	Effect
1	0.8m	None
2	1.25m	None
3	1.70m	None

No entry gained

Pass

Test Sample.

Sample Id	ER Number	Description
1	10183258	Curtain wall

Description of Test Sample.

Sample Description
1 off MC600 curtain wall

Test Requirements.

PAS24 direct test

Clause	Requirements
Results table	PAS24 direct test

Glossary of Terms.

PASS: Complies. Tested by BSI engineers at BSI laboratories.

PASS1: Complies. Witnessed by BSI engineers in manufacturers laboratory.

PASS2: Complies. Tests carried out by third party lab; results accepted by BSI.

PASS*: Report resulted in uncertainty and states that Compliance is more probable than non-compliance.

FAIL: Non compliance – Product does not meet the requirements of this clause.

FAIL*: Report resulted in uncertainty and states that Non-compliance is more probable than compliance.

N/A: Not applicable to design under consideration.

N/T: Not tested due to similarity to previously tested item; reference earlier test report.

Conditions of Issue.

This Test Report is issued subject to the conditions stated in current issue of 'BSI Terms of Service'. The results contained herein apply only to the particular sample(s) tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of BSI, who reserve the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought.

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*** End of Report ***