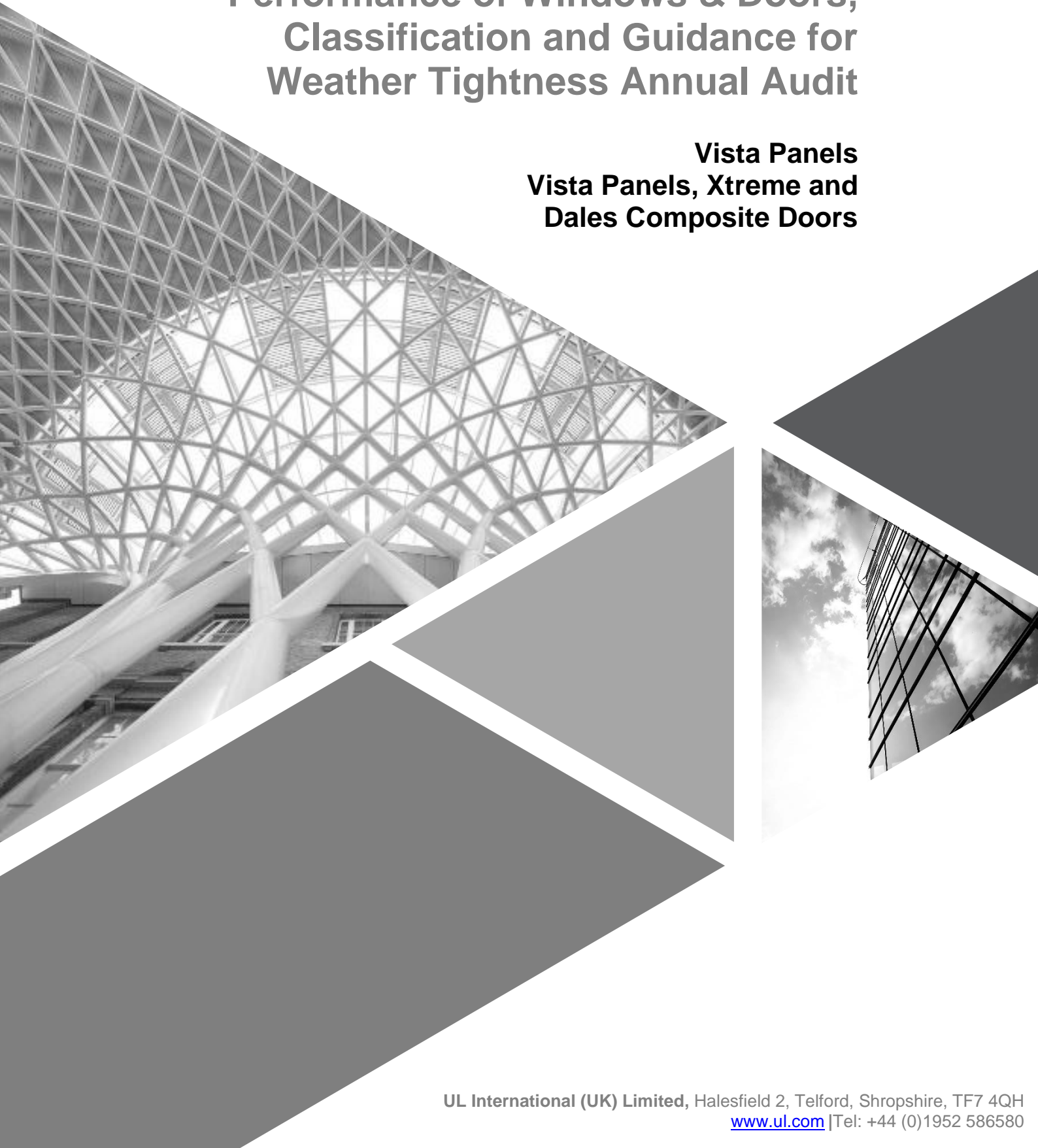


**Technical Report – R4790888868-2  
BS 6375-1:2015+A1:2016  
Performance of Windows & Doors,  
Classification and Guidance for  
Weather Tightness Annual Audit**

**Vista Panels  
Vista Panels, Xtreme and  
Dales Composite Doors**





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**1. Introduction**

Test Details	
Customer:	Vista Panels Unit H1 Prenton Way North Cheshire Trading Estate Wirral CH43 3DU United Kingdom
Product Tested:	Single door-set
Date of Test:	2 <sup>nd</sup> February 2024
Sample ID Tested:	Sample 2
Test Conducted at:	UL International (UK) Limited Halesfield 2 Telford Shropshire TF7 4QH
Test Conducted by:	S Ward <i>Engineering Technician</i>

Report Authorisation	
Report Compiled by:	R Cooper <i>Project Handler</i> 
Authorised by:	M Witkowska <i>Laboratory Manager</i> 

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## 2. Summary of Results

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

	<b>Test Method &amp; Classification Standard</b>	<b>Achieved Max. Test Pressure</b>	<b>Classification</b>
<b>Initial Air Permeability</b>	BS EN 1026:2016 BS EN 12207:2000	600 Pa	4
<b>Water Tightness</b>	BS EN 1027:2000 BS EN 12208:2000	100 Pa	3A

More comprehensive details are reported in Section 6.

**Note:** *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.*

### 2.1 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 4 of BS EN 12207:2000 and Section 4 and Section 5 of BS EN 12210:2016. If the measured value is on the limit, the result is defined as a pass. This means that the risk of a false positive is 50%. For further information regarding risk assessment refer to ILAC G8: 2019.

### 2.2 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 is +/- 1.65 % whereas for the wind resistance measurements is +/- 1.69 %.

### 3. Description of Test Sample

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

See Section 7 for test sample drawings as provided by Vista Panels.

<b>Product range name:</b>	Vista Panels, Xtreme and Dales Composite Doors
<b>Project name to appear on front page of the test report:</b>	Vista Panels, Xtreme and Dales Composite Doors
<b>Configuration:</b>	Single Door-Set
<b>Opening direction:</b>	Left Hand Opening In
<b>Product manufacturer:</b>	Vista Panels
<b>The sample is typical of normal production:</b>	Yes
<b>Please define the closing condition of the sample:</b>	Latched & Locked Centrally, Hooks engaged Top & Bottom
<b>Weight of Sample including subframe (kg):</b>	Approx. 50kg
<b>Weight of sash (kg) - applicable for sample tested with accordance with BS 6375-2:2009</b>	n/a

Outer Frame			
Height:	2117 including PVC Cill	<b>Outer frame gasket</b>	Co-ex to EWS031
Width:	1034mm	Gasket type:	Flipper
Outer frame material:	PVC	Manufacturer:	Eurocell
Surface finish	Smooth	Product name:	n/a
<b>Outer frame Part Numbers</b>		Product code:	n/a
Top:	EWS031 5.3 WQL Profile	<b>Threshold</b>	
Bottom:	AC85646W Cill	Manufacturer:	Exitex
Lock side:	EWS031 5.3 WQL Profile	Product name:	MXS15/2 - RITB
Hinge side:	EWS031 5.3 WQL Profile	Product code:	1.01.0760.1050.15
<b>Outer frame section size</b>		Material:	Aluminium
Width:	70mm	<b>Outer frame joint method</b>	
Depth:	80mm	Head:	Welded
<b>Reinforcing:</b>		Foot:	Screwed On
Manufacturer:	Eurocell		
Product name:	Large Composite Door Frame Insert		
Product code:	EWS831P		
Material:	Re-cycled PVC		

Leaf, Sash, or Casement - 1			
Width:	914mm	<b>Leaf / casement gasket</b>	
Height:	2013mm	Gasket type:	Flipper – Co-ex to Profile
Material:	GRP Composite Slab	Manufacturer:	Eurocell
Surface finish:	GEL Coat – Wood Grained Finish	Product name:	n/a
<b>Leaf / casement part numbers</b>		Product code:	n/a
Top:		<b>Leaf midrail</b>	
Bottom:		Manufacturer:	n/a
Lock side:	DoorCo Original Slab	Product name:	n/a
Hinge side:		Product code:	n/a
<b>Leaf / casement section size</b>		Material:	
Width:	n/a	<b>Leaf / casement joint method</b>	
Depth:	n/a	Head:	n/a
<b>Reinforcing</b>	n/a	Foot:	n/a
Manufacturer:	DoorCo		
Product name:	Combi Door Slab		
Product code:	914 4/6P WH		
Material:	GRP		

Leaf, Sash, or Casement - 2			
Width:	914mm	<b>Leaf / casement gasket</b>	
Height:	2013mm	Gasket type:	Flipper – Co-ex to Profile
Material:	GRP Composite Slab	Manufacturer:	Eurocell
Surface finish:	GEL Coat – Wood Grained Finish	Product name:	n/a
<b>Leaf / casement part numbers</b>		Product code:	n/a
Top:		<b>Leaf midrail</b>	
Bottom:		Manufacturer:	n/a
Lock side:	DoorCo Original Slab	Product name:	n/a
Hinge side:		Product code:	n/a
<b>Leaf / casement section size</b>		Material:	
Width:	n/a	<b>Leaf / casement joint method</b>	
Depth:	n/a	Head:	n/a
<b>Reinforcing</b>	n/a	Foot:	n/a
Manufacturer:	DoorCo		

Product name:	Combi Door Slab		
Product code:	914 4/6P WH		
Material:	GRP		

Glazing			
Glass unit		Glazing gasket	
Manufacturer:	Art Glass	Gasket type:	n/a
Inner thickness:	18mm	Manufacturer:	n/a
Spacer material:	Silver Painted Spacer Bar - 17.5mm Air Space x 6.5mm Height - Rear Weld	Product name:	n/a
Outer thickness:	26mm	Product code:	n/a
Unit sizes:	26x559x913mm	Glazing clip	
Bead		Manufacturer:	n/a
Manufacturer:	ODL Europe	Product name:	n/a
Product name:	Half Glazed Trisys Cassette	Product code:	n/a
Product code:	Inner: TSWHT2236CASSINS Outer: TSWHT2236	Glazing tape details	
Bead size:	n/a	Manufacturer:	UK Industrial Tapes
Bead material:	PC/ABS	Product name:	BLUEFILMIC LINER Tape
		Product code:	ProLINK 1000R

Hardware				
	Manufacturer:	Product description:	Product code:	Quantity:
<b>Hinges:</b>	Nico Manufacturing	White Icon Adjustable Hinge	4961WHF (Chinese Manufacture))	3 (Top, Middle, Bottom)
<b>Hinge fixing:</b>	Rapierstar	Countersunk Screw	CSR 4.8x45 Z StarPVCU	Each Hinge has 4 screws to the slab & 4 screws to the Frame
<b>Hinge protectors:</b>	n/a	n/a	n/a	n/a
<b>Hinge protector fixings:</b>	n/a	n/a	n/a	n/a
<b>Locking hardware:</b>	Ingenious Locks & Hardware	Multipoint Lock	1009 Duplex MPL	1
<b>Locking hardware fixing:</b>	Rapierstar	Countersunk Screw	CFG 4.3x40Z	8
<b>Cylinder:</b>	Ingenious Locks & Hardware	Key/Key EPC 1 Star Cylinder	6001-13-3535-SN	1

<b>Cylinder fixing:</b>	Ingenious Locks & Hardware	Countersunk Bolt	M5 65 Z	1
<b>Handle:</b>	Ingenious Locks & Hardware	Lever/Lever PVD Chrome Handles	4007-LL-SS-04	1
<b>Handle fixings:</b>	Ingenious Locks & Hardware	Pan-Head Securing Bolts	M5 x 60	2
<b>Touch bar:</b>	n/a	n/a	n/a	n/a
<b>Cylinder support:</b>	Ingenious Locks & Hardware	Cylinder Guard	9101	1
<b>Cylinder escutcheon:</b>	n/a	n/a	n/a	n/a
<b>Keeps:</b>	Ingenious Locks & Hardware	1009 MPL Keep Set	1141LH, 1141RH, 1143	1 of each
<b>Keep fixings:</b>	Rapierstar	Countersunk Screw	CFG 4.3x30Z	2 per Keep
<b>Drip bar:</b>	Exitex	Deflector 20	1.01.0110.0914.30	1
<b>Drip bar fixings:</b>	Rapierstar	Countersunk Screw	CFG 4.3x20Z	4
<b>Any additional hardware:</b>	n/a	n/a	n/a	n/a

**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.**

<b>Company:</b>	Vista Panels
<b>Name:</b>	Pip Anger
<b>Position:</b>	Technical Director
<b>Date:</b>	19 <sup>th</sup> January 2024



## 4. Test Arrangement

### 4.1 Test Chamber

A window specimen, supplied for testing in accordance with the relevant British and European Standards, was mounted into a rigid test chamber. The pressure within the chamber was controlled by means of a centrifugal fan and a system of ducting and valves. The static pressure difference between the outside and inside of the chamber being measured by means of a pressure transmitter.

### 4.2 Instrumentation

#### 4.2.1 Static Pressure

A pressure measuring device capable of measuring rapid changes in pressure to an accuracy within 5%, was used to measure the pressure differential across the sample.

#### 4.2.2 Air Flow

An air flow meter mounted in the air system ducting was used to measure the airflow required to obtain pressures within the test chamber. The system has the capability of measuring airflow through the sample to an accuracy of  $\pm 5\%$ .

#### 4.2.3 Water Flow

A flow meter(s), mounted in the spray frame water supply system, was used to measure water flow to the test sample to an accuracy of  $\pm 10\%$ .

#### 4.2.4 Temperature & Humidity

A digital data logger capable of measuring temperature with an accuracy of  $\pm 3^{\circ}\text{C}$  and humidity with an accuracy of  $\pm 5\% \text{Rh}$  was used.

#### 4.2.5 Barometric Pressure

A digital barometer capable of measuring barometric pressure with an accuracy of  $\pm 1 \text{ kPa}$  was used.

### 4.3 Pressure Generation

#### 4.3.1 Static Air Pressure

The air supply system comprised of a centrifugal fan assembly and associated ducting and control valves and was used to create both positive and negative static pressure differentials. The fan provided a constant airflow at the required pressure and period required for the tests.

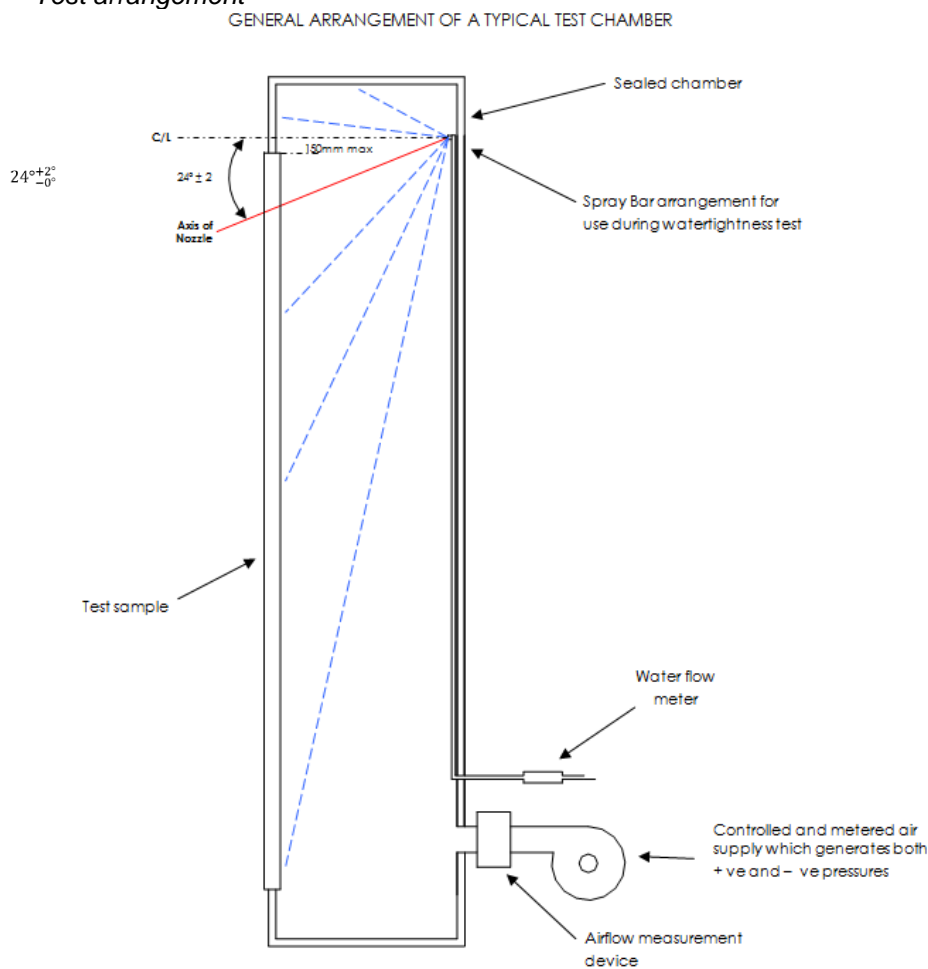
**Note:** *References are made to both positive and negative pressures in this document, it should be noted that in these instances, positive pressure is when pressure on the weather face of the sample is greater than that on the inside face and vice versa.*

#### 4.4 Water Spray System

The spray nozzles have a circular full cone spray pattern and a spray angle of  $120^\circ (+0^\circ/-10^\circ)$  at working pressure of 2 – 3 bar and a flow rate of 2 litres/min ( $\pm 0.2$  litres/min) per nozzle. The nozzles were spaced at 400 mm ( $\pm 10$ mm) along the axis of the spraybar and the nozzles were arranged so that the lateral distance between the outer edge of the surround and the outermost nozzles shall be greater than 50mm but not exceeding 250mm.

The nozzle line was located not more than 150mm above the topmost horizontal joint line of any moving frame or the glazing line of any fixed glazing, in order to provide complete wetting of the adjacent horizontal frame member(s). The nozzle line was also located at a distance of 250mm ( $+10$ mm/- 0mm) from the external face of the specimen as defined by the outermost external joint plane of moving parts or the glazing plane of fixed parts.

Figure 1 – Test arrangement



## 5. Test Procedures

Testing was carried out in accordance with the following standards:

- |   |                        |
|---|------------------------|
| – Performance of windows and doors<br>Part 1: Classification for weathertightness and guidance on selection and specification | BS 6375-1:2015+A1:2016 |
| – Windows and doors - Air Permeability - Test method  | BS EN 1026:2016        |
| – Windows and doors - Air Permeability - Classification   | BS EN 12207:2000       |
| – Windows and doors - Watertightness - Test method  | BS EN 1027:2000        |
| – Windows and doors - Watertightness - Classification   | BS EN 12208:2000       |

### 5.1 Sequence of Testing

1. Air Permeability – Infiltration
2. Air Permeability – Exfiltration
3. Watertightness

**Note:** *Prior to all testing the sample was conditioned for at least 4 hours at between 10 – 30°C & 25 – 75% RH, as required by the relevant testing standards.*

### 5.2 Air Permeability - Infiltration

The air leakage of the test chamber and joints between the chamber and test sample was determined by sealing the sample with adhesive tape and polythene sheeting and measuring the air flows at positive pressure differentials of: 50, 100, 150, 200, 250, 300, 450 and 600 Pa, each step being held for at least 10 seconds.

The sample was unsealed, and any opening lights were opened and closed at least once before being brought into the closing condition defined by the manufacturer as listed in Section 3. Three pressure pulses of 660 Pa positive pressure were then applied to the test sample.

Air flows measurements were then repeated with the sample unsealed and the difference between readings being the air leakage through the test sample which was then adjusted to normal conditions as defined in BS EN 1026:2016.

### 5.3 Air Permeability - Exfiltration

The air permeability test was repeated using negative pressures as described in Section 5.2.

### 5.4 Watertightness

Any opening lights were opened and closed at least once before being brought into the closing condition defined by the manufacturer as listed in Section 3. Three pressure pulses of 660 Pa positive pressure were then applied to the test sample.

Water was then sprayed on to the sample as per section 4.4, for 15 minutes at 0 Pa. The water spray continued, and the pressure was increased in the following increments: 50 and 100 Pa (each stage being held for 5 minutes).

The interior face of the sample was continuously monitored for water ingress throughout the test.

## 6. Test Results

### 6.1 Lab Conditions

The conditions measured inside the laboratory were as follows:

Temperature (°C)	Humidity (%rh)	Atmospheric Pressure (kPa)
19.1	45.3	101.4

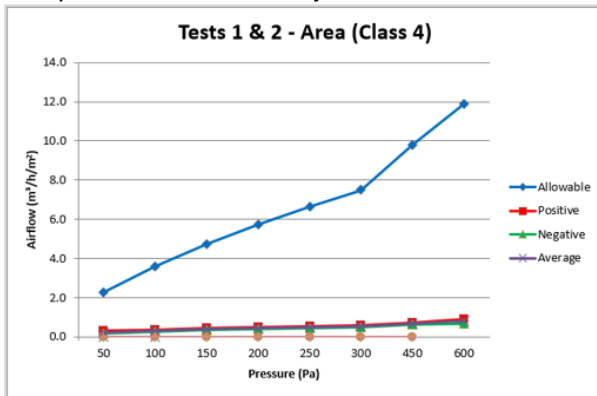
### 6.2 Air Permeability

Calculated area of test sample                      2.17 m<sup>2</sup>  
 Measured length of opening joints                5.72 m

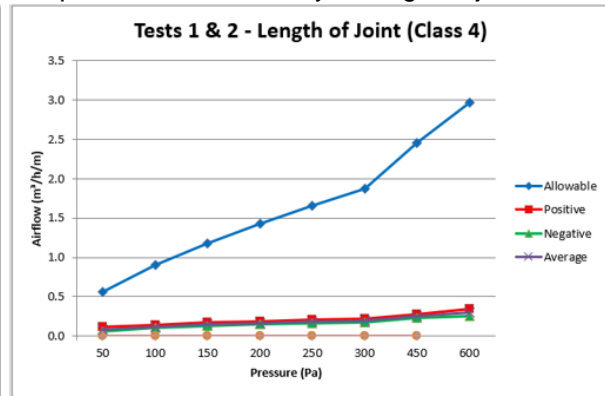
#### 6.2.1 Air Permeability Tests 1 & 2

Pressure Differential Pa	Air Permeability Rate Infiltration & Exfiltration Tests m <sup>3</sup> /hr/m <sup>2</sup> - Area			Air Permeability Rate Infiltration & Exfiltration Tests m <sup>3</sup> /hr/m - Length of Joint		
	Test No. 1	Test No. 2	Average	Test No. 1	Test No. 2	Average
50	0.30	0.16	0.23	0.11	0.06	0.09
100	0.37	0.27	0.32	0.14	0.10	0.12
150	0.45	0.33	0.39	0.17	0.13	0.15
200	0.50	0.39	0.44	0.19	0.15	0.17
250	0.54	0.44	0.49	0.21	0.17	0.19
300	0.58	0.47	0.53	0.22	0.18	0.20
450	0.73	0.61	0.67	0.28	0.23	0.26
600	0.90	0.68	0.79	0.34	0.26	0.30

Graph 1 – Air Permeability – Area



Graph 2 – Air Permeability – Length of joint



### 6.2.2 Initial Air Permeability – Classification

Based on Area	Based on Length of Opening Joint
4	4
Overall class	
4	

### 6.3 Watertightness Testing

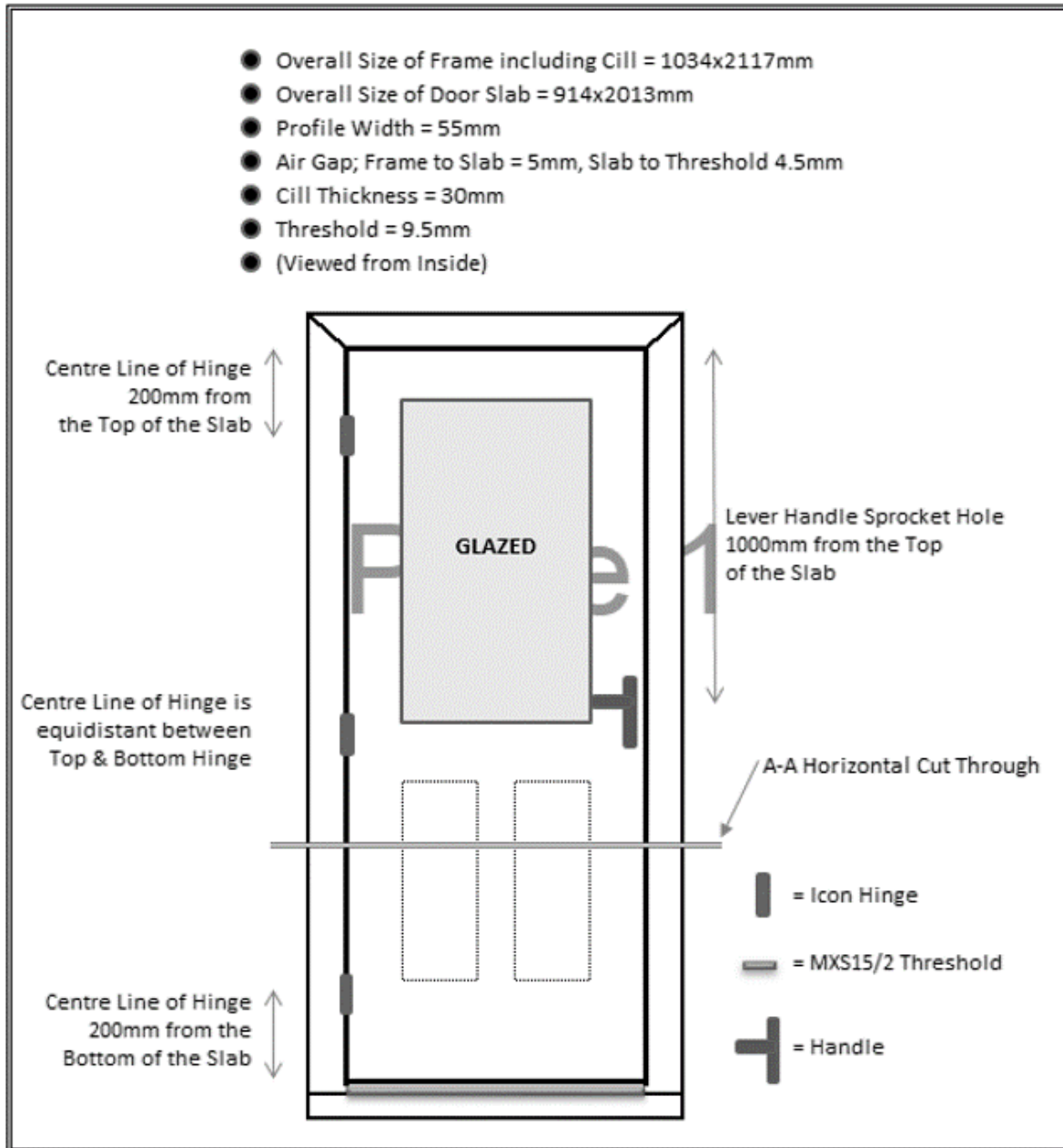
#### 6.3.1 Watertightness – Results

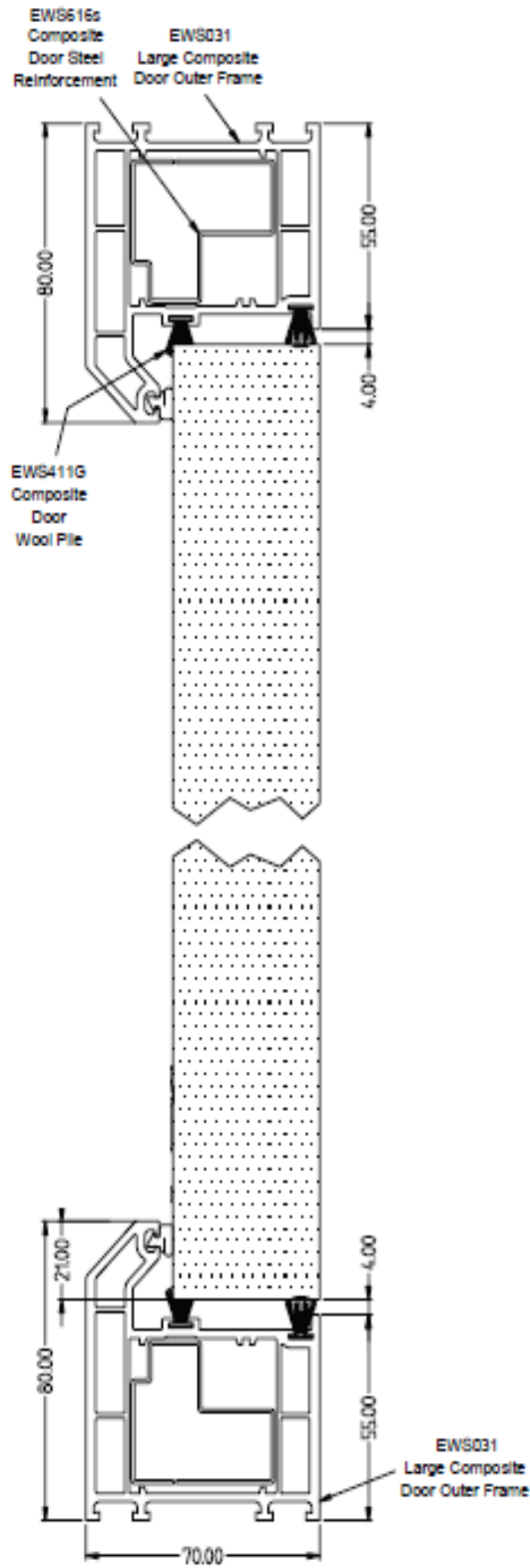
<b>Water Temperature (°C)</b>		17.6	
<b>Spray method used</b>		1A	
Observations			
Air Pressure (Pa)	Time Stage Held (minutes)	Comments	Classification
0	15	No leakage observed	1A
50	5	No leakage observed	2A
100	5	No leakage observed	3A

#### 6.3.2 Watertightness - Classification

Overall Classification
3A

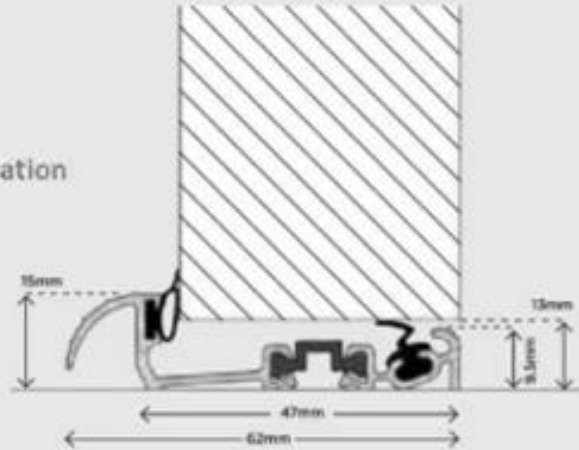
### 7. System Drawings





## MXS 15/2 RITB

Inward Opening  
Available in Gold & Mill Finish  
Part M Compliant  
Thermally Broken Prevents Condensation







TEL 507 Rev 3 – Test Report BS 6375-1:2015+A1:2016 Audit  
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Date: March 5, 2024

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----- END OF REPORT -----



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