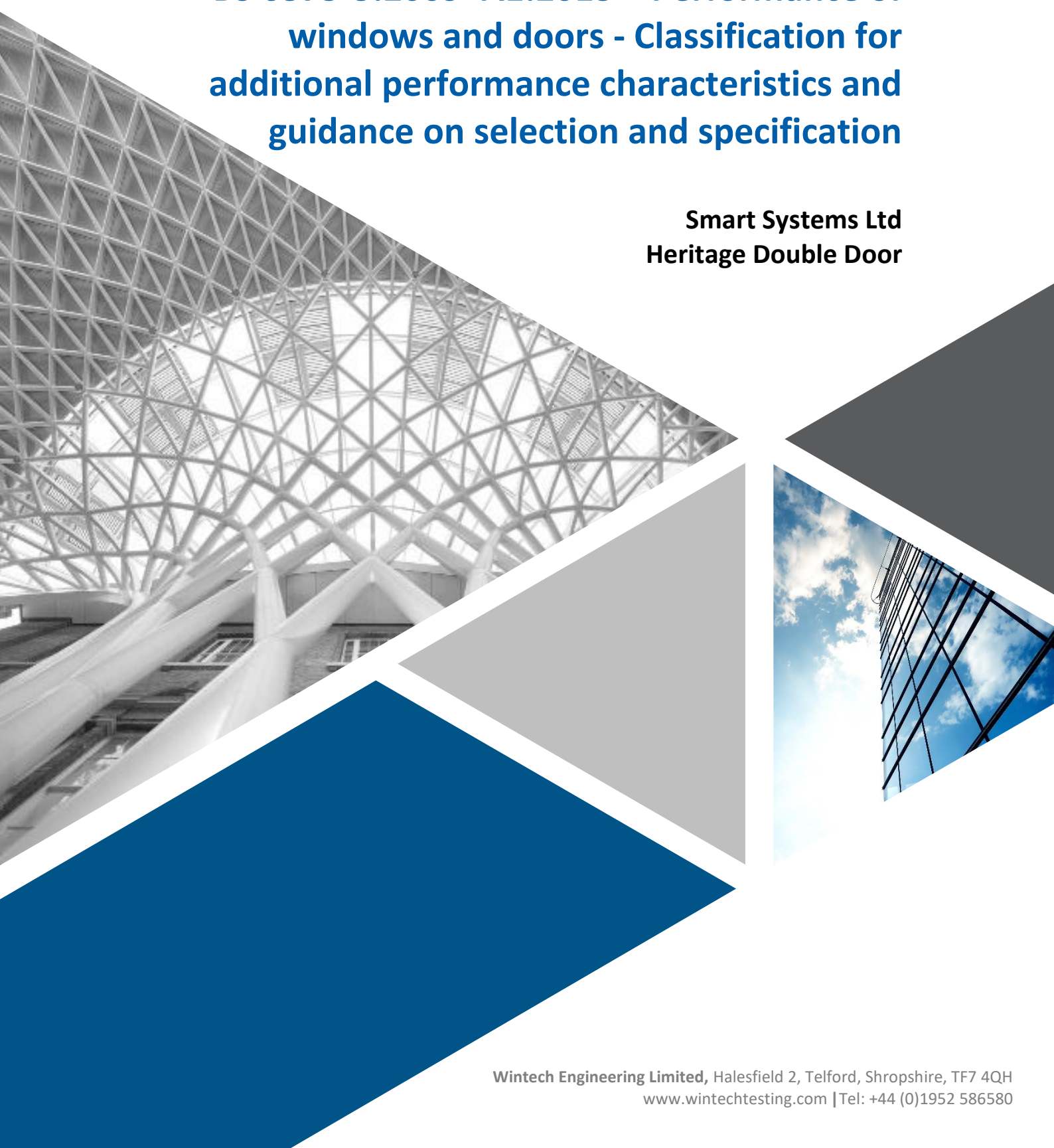


**Technical Report – R20604**  
**BS 6375-3:2009+A1:2013 – Performance of**  
**windows and doors - Classification for**  
**additional performance characteristics and**  
**guidance on selection and specification**

**Smart Systems Ltd**  
**Heritage Double Door**





**Contents**

1.	Introduction.....	2
2.	Summary of Results.....	3
3.	Description of Test Sample.....	4
4.	Test Arrangement.....	7
5.	Test Procedures.....	8
6.	Test Results.....	9
7.	System Drawings .....	12

**1. Introduction**

This report describes tests carried in order to determine compliance with BS 6375-3:2009+A1:2013.

Test Details	
Customer:	Smart Systems Ltd Arnolds Way Yatton North Somerset BS49 4QN
Product Tested:	Heritage Double Door
Date of Test:	15 <sup>th</sup> October 2019
Test Conducted at:	Wintech Engineering Limited Halesfield 2 Telford Shropshire TF7 4QH
Test Conducted by:	D Knight - Senior Laboratory Technician D Adams - Engineering Technician

Report Authorisation	
Report Compiled by:	D Price Senior Engineering Associate 
Authorised by:	M Witkowska Deputy Quality Manager 

Wintech Engineering Ltd is accredited by the United Kingdom Accreditation Service as UKAS Testing Laboratory No. 2223.

**REPRODUCTION OF THIS DOCUMENT IN WHOLE OR ANY PART THEREOF MUST NOT BE MADE WITHOUT PRIOR WRITTEN PERMISSION FROM WINTECH ENGINEERING LTD.**

This report and the results shown within are based upon the information, drawings, samples and tests referred to in the report. The results obtained do not necessarily relate to samples from the production line of the above-named company and in no way constitute any form of representation or warranty as to the performance or quality of any products supplied or to be supplied by them. Wintech Engineering Ltd or its employees accept no liability for any damages, charges, cost or expenses in respect of or in relation to any damage to any property or other loss whatsoever arising either directly or indirectly from the use of the report.

## 2. Summary of Results

The following summarises the results of testing carried out, in accordance with BS 6375-3:2009+A1:2013.

The performance of the sample tested has been assessed against the criteria described in below standards. The results as reported will be used to determine the conformance or non-conformance with the specification without making any consideration of the uncertainty.

Test Description	Result
Annex A – Basic security test	Pass
Annex C – Closure against obstruction test	Pass

More comprehensive details are reported in Section 6.

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

Note: 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 Smart Systems Ltd and has not been verified by Wintech Engineering Limited.

See Section 7 for test sample drawings as provided by the customer.

<b>Project number:</b>	20604
<b>Product range name:</b>	Alitherm Heritage Full Frame.
<b>Configuration:</b>	Double door
<b>Opening direction:</b>	Open in
<b>Product manufacturer:</b>	Smart systems
<b>Is the sample typical of normal production?</b>	yes
<b>Please define the closing condition of the sample i.e. closed, fastened, latched, locked and secured etc.</b>	locked

#### Outer Frame

<b>Outer frame width:</b>	1800mm	<b>Outer frame material:</b>	Aluminium
<b>Outer frame height:</b>	2200mm	<b>Outer frame gasket</b>	
<b>Outer frame Part Numbers</b>	W20015	<b>Gasket type:</b>	EDPM
Top:	W20015	<b>Manufacturer:</b>	Smarts
Bottom:	W20015	<b>Product name:</b>	Bubble Gasket
Lock side:	W20015	<b>Product code:</b>	ACVL031N
Hinge side:	W20015	<b>Threshold</b>	
<b>Outer frame section size</b>		<b>Manufacturer:</b>	SMARTS
Width:	33mm	<b>Product name:</b>	Alitherm Heritage
Depth:	47mm	<b>Product code:</b>	W20015
<b>Reinforcing:</b>	NA	<b>Material:</b>	Aluminium
<b>Manufacturer:</b>		<b>Outer frame joint method</b>	
<b>Product name:</b>		<b>Head:</b>	Glue and Crimp
<b>Product code:</b>		<b>Foot:</b>	Screw Joint with bracket
<b>Material:</b>		<b>Surface Finish</b>	Powder coat

**Leaf**

<b>Leaf/Casement width:</b>	883mm	<b>Leaf/ Casement material:</b>	Aluminium
<b>Leaf/ Casement height:</b>	2175mm	<b>Leaf/ Casement gasket</b>	
<b>Leaf/ Casement Part Numbers</b>		Gasket type:	EDPM
Top:	W20129	Manufacturer:	Smarts
Bottom:	W20129	Product name:	Flipper Gasket
Lock side:	W20129	Product code:	ACET160
Hinge side:	W20129	<b>Leaf Transom and lockbox</b>	
<b>Leaf/ Casement section size</b>		Manufacturer:	Smarts
Width:	54mm	Product name:	Alitherm Heritage
Depth:	59mm	Product code:	W20135, W20038
<b>Mullion</b>		Material:	Aluminium
Manufacturer:	Smarts	<b>Leaf/Casement joint method</b>	
Product name:	Mullion	Head:	Glue and Crimp
Product code:	W20149	Foot:	Glue and Crimp
Material:	Aluminium.	<b>Surface Finish</b>	Powder Coating

**Glazing**

<b>Glass unit</b>		<b>Glazing gasket</b>	
Manufacturer:	Ashton Glass	Gasket type:	Glazing gasket
Inner thickness:	6mm	Manufacturer:	Smarts
Spacer material:	Aluminium	Product name:	Alitherm Heritage
Outer thickness:	6mm	Product code:	ACET 843 E Gasket ACET 840 Wedge Gasket
Unit sizes:	798mm x 789mm 731mm x 281mm 798mm x 978mm	<b>Glazing clip</b>	NA
<b>Bead</b>		Manufacturer:	
Manufacturer:	Smarts	Product name:	
Product name:	Alitherm Heritage	Product code:	
Product code:	W20171	<b>Glazing tape details</b>	NA
Bead size:	15.5mm x 8.5mm	Manufacturer:	
Bead material:	Aluminium	Product name:	
		Product code:	

**Hardware**

	Manufacturer:	Product description:	Product code:	Quantity:
Hinges:	Banks	Open in Hinge	ACW20162	8
Hinge fixing:	Banks	M4 X 20MM M4 Riv Nut	Supplied with hinge	
Hinge protectors:	Fuhr		ACW20375	8
Hinge protector fixings:	Smart	M4 x 20MM M4 Riv Nut, Fixing plate		
Locking hardware:	Fuhr	Primary Door Lock	ACW20465	1
		Secondary Door Lock	ACW20466	1
		Top Shoot bolt	ACDV738	2
		Bottom Shootbolt	ACDV737	2
Locking hardware fixing:	Smarts	M4 x 25MM M4 Insert		16
Cylinder:	ERA	45/40 Three Star Cylinder	ACCY3045S3	2
Cylinder fixing:		M5 X 100MM		2
Handle:	Trojan	Lever/Lever.	ACW20061	2
Handle fixings:		M5X70mm	Supplied with handles	6
Touch Bar	NA			
Cylinder Support	NA			
Center Keep	Fuhr.	Center Keep	ACW20066	1
Keeps:	Fuhr	Supplied with locks		
Keep fixings:	Smarts	Lock keeps	No .8 x 32mm	15
		ShootBolt Keeps	No.7 x 25mm	11
		Center Keep	No.8 x 32mm	3
Drip bar:	NA			
Drip bar fixings:	NA			
Run Up Blocks	Smart	Run Up Blocks	ACET380	4

**Confirmation**

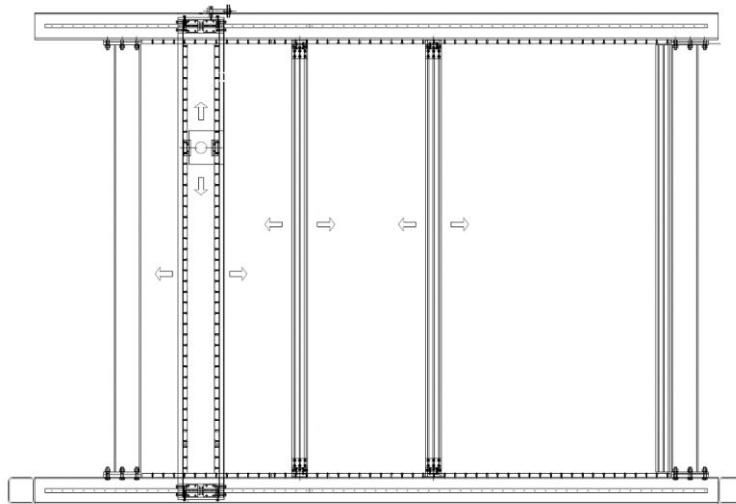
Please confirm that the samples provided for testing are representative of standard production?	Yes.
---	------

#### 4. Test Arrangement

##### 4.1 Test Rig

The test sample was supplied mounted in 100 x 50 mm timber sub-frame in accordance with manufacturer's installation requirements. It was fitted into the test rig, shown below which was constructed to meet the requirements of the test specification and was fitted plumb, square and without twist or bends.

Figure 1 – Test rig used for testing



##### 4.2 Attack Tools (defined in Annex A of BS 6375-3:2009+A1:2013)

- A.2.1 Assorted mild steel wire, each not more than 2 mm in diameter and not more than 700 mm in length.
- A.2.2 Two credit cards, of size  $(55 \pm 5)$  mm  $\times$   $(85 \pm 5)$  mm and  $(0.7 \pm 0.3)$  mm thick.
- A.2.3 Two paint scrapers, with a blade width of approximately  $(75 \pm 15)$  mm width.
- A.2.4 One craft knife, with a maximum overall length of 180 mm, a straight blade  $(0.6 \pm 0.1)$  mm thick and an exposed blade of length  $(28 \pm 7)$  mm, e.g. a Stanley®-trimming type knife<sup>4</sup>.
- A.2.5 Two flat-blade screwdrivers, of length  $(150 \pm 20)$  mm overall, a shank length of  $(75 \pm 15)$  mm, a shank diameter of  $(3 \pm 0.5)$  mm and a blade width of  $(3 \pm 1)$  mm. The shank shall be of vanadium/chrome tool grade steel.
- A.2.6 One flat-blade screwdriver, of length  $(200 \pm 20)$  mm overall, a shank diameter of  $(6 \pm 1)$  mm and a blade width of  $(6 \pm 1)$  mm.
- A.2.7 One cross-point screwdriver, of length  $(200 \pm 20)$  mm overall, a shank diameter of  $(6 \pm 1)$  mm and point size 2.
- A.2.8 One cross-head screwdriver, of length  $(200 \pm 20)$  mm overall, a shank diameter of  $(6 \pm 1)$  mm and point size PZ2 (posi-drive).
- A.2.9 One brick bolster, of length  $(250 \pm 25)$  mm and a blade width of  $(60 \pm 15)$  mm.

##### 4.3 Closure against Obstruction Equipment (defined in Annex C of BS 6375-3:2009+A1:2013)

- C.2.1 Aluminium block, of size  $(50 \times 50 \times 10)$  mm  $\pm 1.0$  mm.
- C.2.2 Weight and pulley system, capable of applying 200 N with an accuracy of  $\pm 2\%$ .

##### 4.4 Temperature

A digital data logger capable of measuring temperature with an accuracy of  $\pm 1^\circ\text{C}$  was used.



## 5. Test Procedures

### 5.1 Basic Security Test

The objective of this test was to establish that there is no inherent vulnerability in the design of the window or doorset, which from the outside would permit entry by defeating the glazing and or locking system.

The tools defined in section 4.2 were used in order to gain entry through the window or doorset.

The test total test time was limited to a total of 3 minutes.

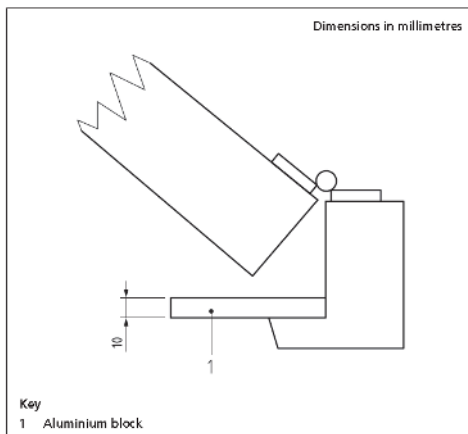
### 5.2 Closure against Obstruction Test

The objective of this test was to determine any damage resulting from the door leaf being closed against an object.

An Aluminium block was placed in the gap between the leaf and bottom of the hinge side jamb as shown in Figure 2. A load of 200 N was applied in the closing direction at the handle, perpendicular to the plane of the frame. The load was held in place for a period of 15 +/- 5 seconds.

A check of operating forces was carried out before and following the test in order to assess any change in operating performance.

Figure 2 – Closure against obstruction



## 6. Test Results

### 6.1 Lab Conditions

The conditions measured inside the laboratory were as follows:

Temperature °C	Humidity %rh
18.8	53.8

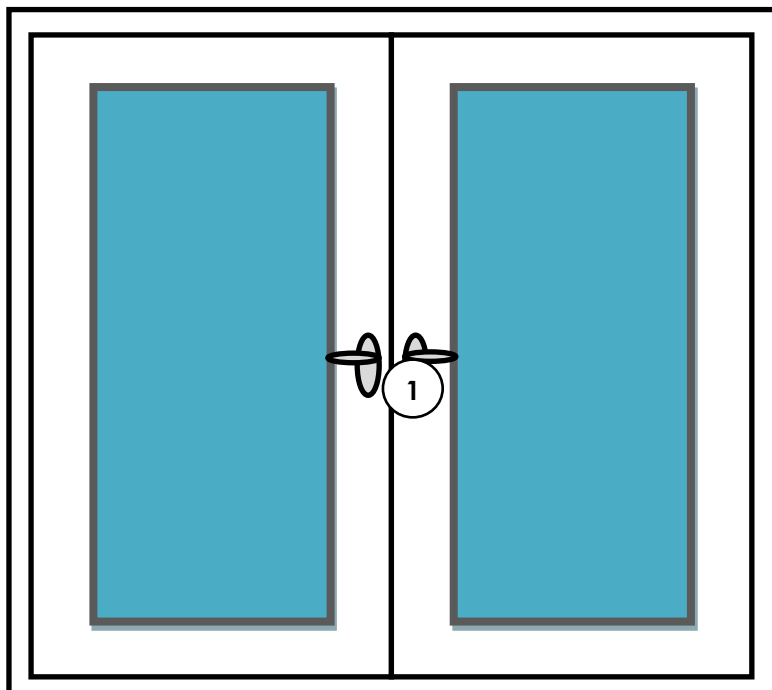
### 6.2 Basic Security Test

Attempts were made from the external face to gain entry through the sample in accordance with Annex A of BS 6375-3:2009+A1:2013. The results are as follows:

Table 1

Location	Description of method used	Attack time (minutes)
1 – Hinge/Dogbolt	Using 1 x paint scraper to try and manipulate the dead bolt. No entry gained.	3:00
<b>Summary: No entry was gained throughout the test</b>		

Figure 3 – Attack locations



### 6.3 Closure against Obstruction Test

#### 6.3.1 Operating Forces prior to the Closure against Obstruction Test

Master Door					
Operating forces measured prior to closure against obstruction	Test 1	Test 2	Test 3	Average	Class
Closing Force [N]	20.0	17.9	17.3	18.4	3
Engage Hardware [N]	84.5	85.8	84.8	85.0	1
Lock Hardware [Nm]	0.2	0.2	0.2	0.2	4
Un-Lock Hardware [Nm]	0.2	0.2	0.2	0.2	4
Disengage Hardware [N]	61.8	61.0	59.8	60.9	1
Commence Opening [N]	56.4	52.7	50.8	53.3	1
Maintain Opening [N]	8.3	9.6	8.5	8.8	4
<b>Overall Class</b>					Class 1

Note: Operating forces were measured in accordance with BS EN 12046-2:2000

Slave Door					
Operating forces measured prior to closure against obstruction	Test 1	Test 2	Test 3	Average	Class
Closing Force [N]	25.3	19.3	19.6	21.4	2
Engage Hardware [N]	66.9	65.1	62.7	64.9	1
Lock Hardware [Nm]	0.2	0.2	0.2	0.2	4
Un-Lock Hardware [Nm]	0.2	0.2	0.2	0.2	4
Disengage Hardware [N]	37.7	42.0	38.9	39.5	2
Commence Opening [N]	29.4	28.0	30.1	22.5	3
Maintain Opening [N]	4.0	3.8	3.8	3.8	4
<b>Overall Class</b>					Class 1

Note: Operating forces were measured in accordance with BS EN 12046-2:2000

#### 6.3.2 Closure against Obstruction

An Aluminium block was placed in the gap between the leaf and bottom of the hinge side jamb and a load of 200 N was applied in the closing direction at the handle, perpendicular to the plane of the frame. The load was held in place for a period of 15 +/- 5 seconds.

There were no signs of any damage following the test.

**6.3.3 Operating Forces following the Closure against Obstruction Test**

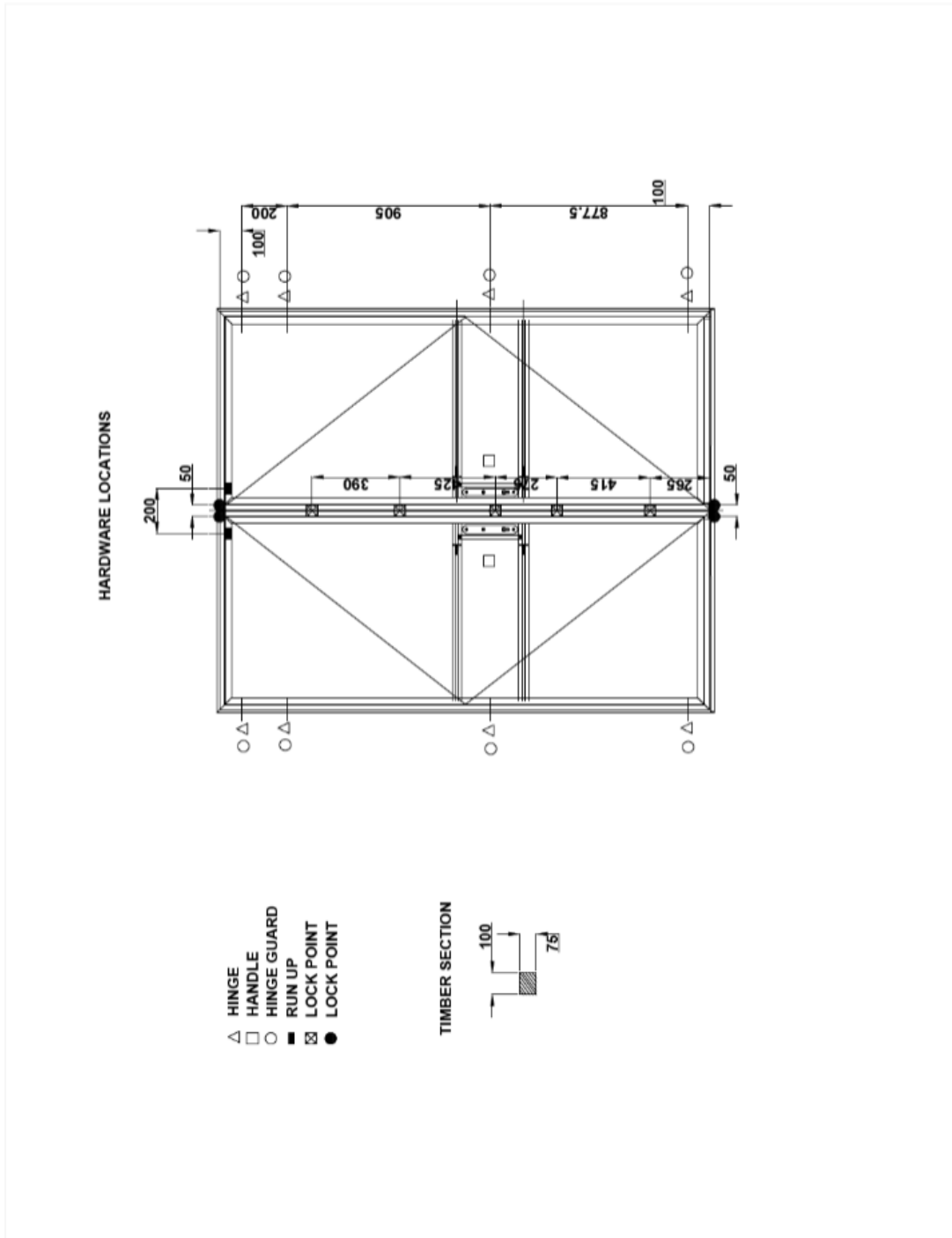
Master Door					
Operating forces measured prior to closure against obstruction	Test 1	Test 2	Test 3	Average	Class
Closing Force [N]	14.1	15.7	14.6	14.8	3
Engage Hardware [N]	82.7	79.8	82.8	81.7	1
Lock Hardware [Nm]	0.16	0.16	0.16	0.16	4
Un-Lock Hardware [Nm]	0.16	0.16	0.16	0.16	4
Disengage Hardware [N]	72.0	73.4	75.4	73.6	1
Commence Opening [N]	74.4	71.8	73.0	73.0	1
Maintain Opening [N]	5.8	5.1	5.1	5.3	4
<b>Overall Class</b>					Class 1

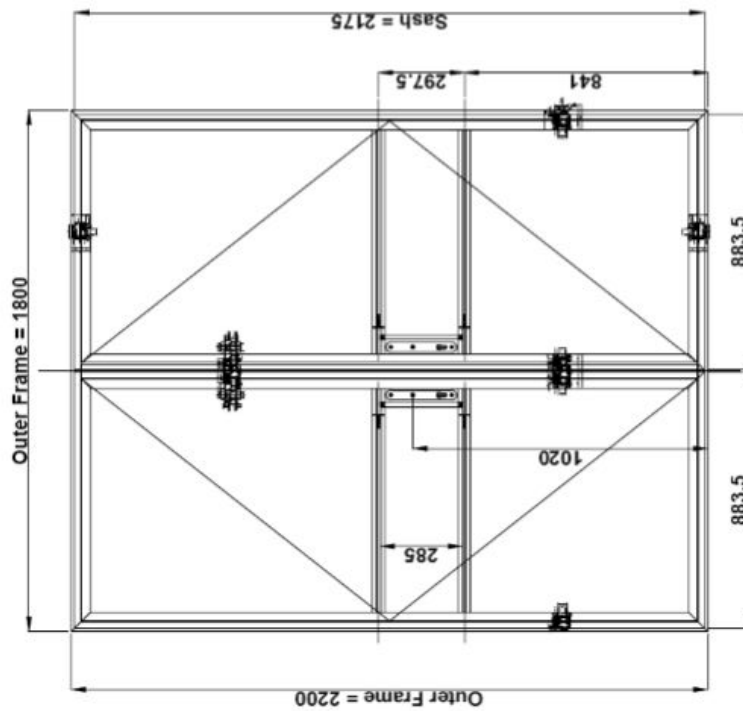
Note: Operating forces were measured in accordance with BS EN 12046-2:2000

Slave Door					
Operating forces measured prior to closure against obstruction	Test 1	Test 2	Test 3	Average	Class
Closing Force [N]	20.3	15.1	19.7	18.3	3
Engage Hardware [N]	60.6	55.1	56.2	57.3	1
Lock Hardware [Nm]	0.2	0.2	0.2	0.2	4
Un-Lock Hardware [Nm]	0.2	0.2	0.2	0.2	4
Disengage Hardware [N]	38.4	39.2	45.3	29.3	2
Commence Opening [N]	25.7	23.4	23.4	24.1	3
Maintain Opening [N]	4.3	4.0	4.2	4.1	4
<b>Overall Class</b>					Class 1

Note: Operating forces were measured in accordance with BS EN 12046-2:2000

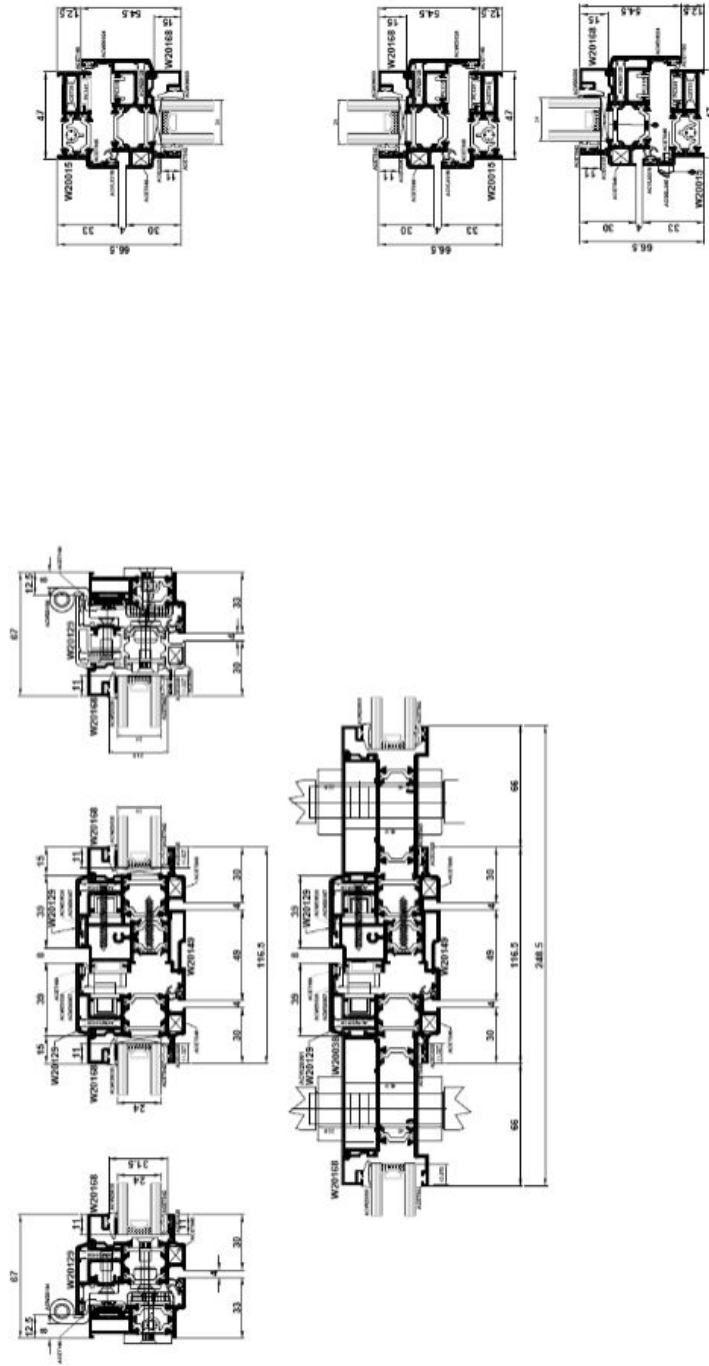
**7. System Drawings**





SECTION AREA	0	mm <sup>2</sup>	DRAWN		PART NUMBER	
	0.00	mm	DATE		Alitherm Heritage Open In Double	
OUTSIDE PERIMETER	0.000	kg	SCALE		Door with Eurogroove Std T/hold	
EST. WEIGHT PER METRE	Material : 6063 T6	Generally to BS EN - 755 - 9	Copyright Smart Systems Ltd.	ULTIMATE FINISH		
				MILL FINISH ONLY		✓
				POWDER COATED		✓
				ANODISED		✓





SECTION AREA		PART NUMBER	
OUTSIDE PERIMETER	0	Alitherm Heritage Open In Double Door with Eurogroove Std T/hold	
EST. WEIGHT PER METRE	0.00	ULTIMATE FINISH	MILL FINISH ONLY ✓
Material : 6063 T6	Generally to BS EN 754-9. Please to BS EN 12020	POWDER COATED	✓
		ANODISED	✓

**smart**  
architectural aluminium



2223

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



# WINTECH

TESTING & CERTIFICATION



Facade Testing



Onsite Testing



WinMark Certification



Window & Door Testing

Wintech Testing & Certification is an independent UKAS accredited testing laboratory and certification body. We provide a comprehensive range of services to the building and construction industries, either onsite or at our own state-of-the-art test laboratory in Telford, Shropshire, in the heart of industrial England.

☎ +44 (0) 1952 586580

✉ [sales@wintechtesting.com](mailto:sales@wintechtesting.com)

🌐 [www.wintechtesting.com](http://www.wintechtesting.com)