

# BS 6375-3:2009+A1:2013 - Performance of windows and doors - Classification for additional performance characteristics and guidance on selection and specification

**Gretch Unitas Limited**

**Test Report No. R4791475629-2**

21 January 2025



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# 1. Introduction

Test Details	
Customer:	Gretsch Unitas Ltd 5 Spitfire Close Coventry Business Park COVENTRY, CV5 6UR GB
Test witnessed by:	S Golder <i>Gretsch Unitas Ltd</i> 29 <sup>th</sup> October 2024
Product tested:	Single Door
Date(s) sample(s) received:	21 <sup>st</sup> October 2024
Date of test:	29 <sup>th</sup> October 2024
Test conducted at:	UL International (UK) Limited Halesfield 2 Telford Shropshire TF7 4QH
Test conducted by:	D Adams <i>Senior Engineering Technician</i> C Holden <i>Senior Laboratory Technician</i>

Report Authorisation	
Report compiled by:	E Round <i>Laboratory Engineer</i> 
Authorised by:	J Ratcliffe <i>Laboratory Engineer</i> 



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## 2. Summary of Results

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

Test Description	Result
Annex A – Basic security test	<b>Pass</b>
Annex C – Closure against obstruction test	<b>Pass</b>

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 6 indicate that the product conforms with the relevant accuracy requirements of Annex A of BS EN 6375-3:2009+A1:2013 and with the relevant accuracy requirements of Section 5 BS EN 12046-2 – 2000.

With regards to BS EN 12046-2 – 2000 the expanded measurement uncertainty ( $k=2$  for approximately 95% coverage probability) is no greater in magnitude than the accuracy requirements defined in the standard. 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 result as reported in this test report relating to the Annex A - Basic security test did not account measurement of uncertainty as no numerical values were recorded during the test.

For the Annex C – Closure against obstruction test 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  $\pm 0.76\%$  for the operating force measurements.

## 3. Description of Test Sample

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

See Section 7 for test sample drawings as provided by Gretch Unitas Limited.

<b>Product range name:</b>	Composite door with GU Secury LogIQ Automatic Hardware
<b>Project name to appear on front page of the test report:</b>	Composite door with GU Secury LogIQ Automatic Hardware
<b>Configuration:</b>	Single composite door
<b>Opening direction:</b>	Inward opening
<b>Is the sample typical of normal production?</b>	Yes
<b>Please define the closing condition of the sample:</b>	Active leaf locked & key removed

Outer Frame			
<b>Outer frame width:</b>	1000mm	<b>Outer frame material:</b>	UPVC
<b>Outer frame height:</b>	2100mm	<b>Outer frame gasket</b>	
<b>Outer frame Part Numbers</b>		Gasket type:	X
Top:	Liniar LSW016	Manufacturer:	Liniar
Bottom:	Stormguard threshold	Product name:	Repair Gasket Black
Lock side:	Liniar LSW016	Product code:	LGA401
Hinge side:	Liniar LSW016	<b>Threshold</b>	
<b>Outer frame section size</b>		Manufacturer:	Stormguard Allamd Smith
Width:		Product name:	Stormguard
Depth:	70mm	Product code:	AM3-70
<b>Reinforcing:</b>		Material:	Aluminium
Manufacturer:	Liniar	<b>Outer frame joint method</b>	
Product name:		Head:	Outer frame corners welded
Product code:	LSR016	Foot:	Threshold mechanical fixed
Material:	Steel	<b>Surface Finish</b>	White



<b>Leaf</b>			
<b>Leaf/Casement width:</b>	850	<b>Leaf/ Casement material:</b>	GRP 68mm composite slab
<b>Leaf/ Casement height:</b>	1970	<b>Leaf/ Casement gasket</b>	
<b>Leaf/ Casement Part Numbers</b>		Gasket type:	X
Top:	n/a	Manufacturer:	Rotoc/Diventer
Bottom:	n/a	Product name:	Black Weatherseal
Lock side:	n/a	Product code:	M5108 6mm
Hinge side:	n/a	<b>Leaf midrail:</b>	n/a
<b>Leaf/ Casement section size</b>		Manufacturer:	██████████
Width:	850	Product name:	██████
Depth:	1970	Product code:	X
<b>Reinforcing:</b>		Material:	X
Manufacturer:	n/a	<b>Leaf/Casement joint method</b>	
Product name:	n/a	Head:	n/a
Product code:	n/a	Foot:	n/a
Material:	n/a	<b>Surface Finish</b>	Acrylic Capped Renolit Foil Finish with a 1.5mm abs sheet bonded to a monocoque structure



Hardware				
	Manufacturer:	Product description:	Product code:	Quantity:
Hinges:	██████	██████ composite door hinge		4no
Hinge fixing:	Rapier Star	5.0 x 40 wood screw		8
Hinge protectors:	Mila	Dog Bolt		4
Hinge protector fixings:				4
Locking hardware:	GU	Secury LogIQ Automatic		
Locking hardware fixing:	UK Fasteners	4.0 x 40 screws		
Cylinder:	Mila	Apecs 3 Star		1no
Cylinder fixing:	Mila			
Handle:	n/a			
Handle fixings:	n/a			
Touch Bar	n/a			
Cylinder Support				
Cylinder Escutcheon	Mila	Supa Finger pull		1no
Keeps:	GU	Centre Keep / Remote Deadbolt Keep.	L-10000-12-L/R-1 / L-10000-20-0-1A	1no / 3no
Keep fixings:	Rapierstar	4.3 x 30 PVC screws / 3.9 x 45 Self drilling steel screws		

**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.**

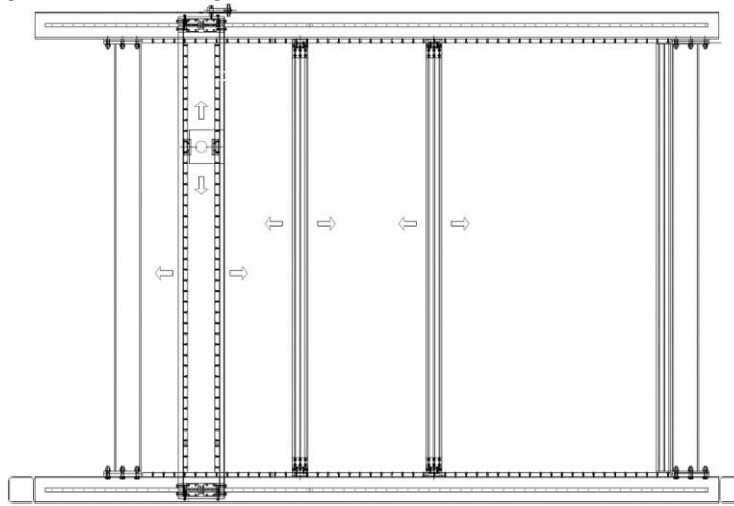
<b>Company:</b>	GU Ltd
<b>Name:</b>	Simon Golder
<b>Position:</b>	Technical Manager
<b>Date:</b>	28.10.24

## 4. Test Arrangement

### 4.1 Test Rig

The test sample was supplied mounted in 100 x 50mm 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).
- 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 crosshead 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 x 50 x 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°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.

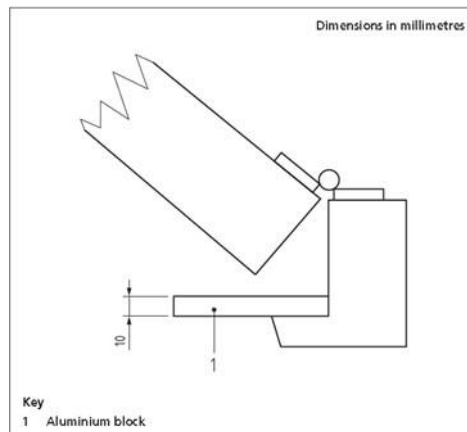
### 5.2 Closure against Obstruction Test

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
19.2	60.7

### 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:

Location	Description of method used	Attack time (minutes)
Top Hinge	Attacks were made with the two paint scrapers to try and manipulate the hinge.	03:00
<b>Summary:</b> No entry was gained throughout the test		

Figure 3 – Attack locations



## 6.3 Closure against obstruction test

### 6.3.1 Operating forces prior to the closure against obstruction test

Operating forces measured prior to closure against obstruction	Test 1	Test 2	Test 3	Average	Class
Closing Force [N]	48.4	48.2	48.2	48.3	Class 2
Latch Hardware (N)	N/A	N/A	N/A	N/A	N/A
Lock Hardware [cNm]	12.0	12.0	12.0	12.0	Class 4
Un-Lock Hardware [cNm]	12.0	12.0	12.0	12.0	Class 4
Unlatch Hardware (cNm)	31.4	31.7	30.8	31.3	Class 2
Commence Opening [N]	3.2	4.2	3.2	3.5	Class 4
Maintain Opening [N]	3.2	3.8	3.4	3.8	Class 4
<b>Overall class</b>					<b>2</b>

**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.

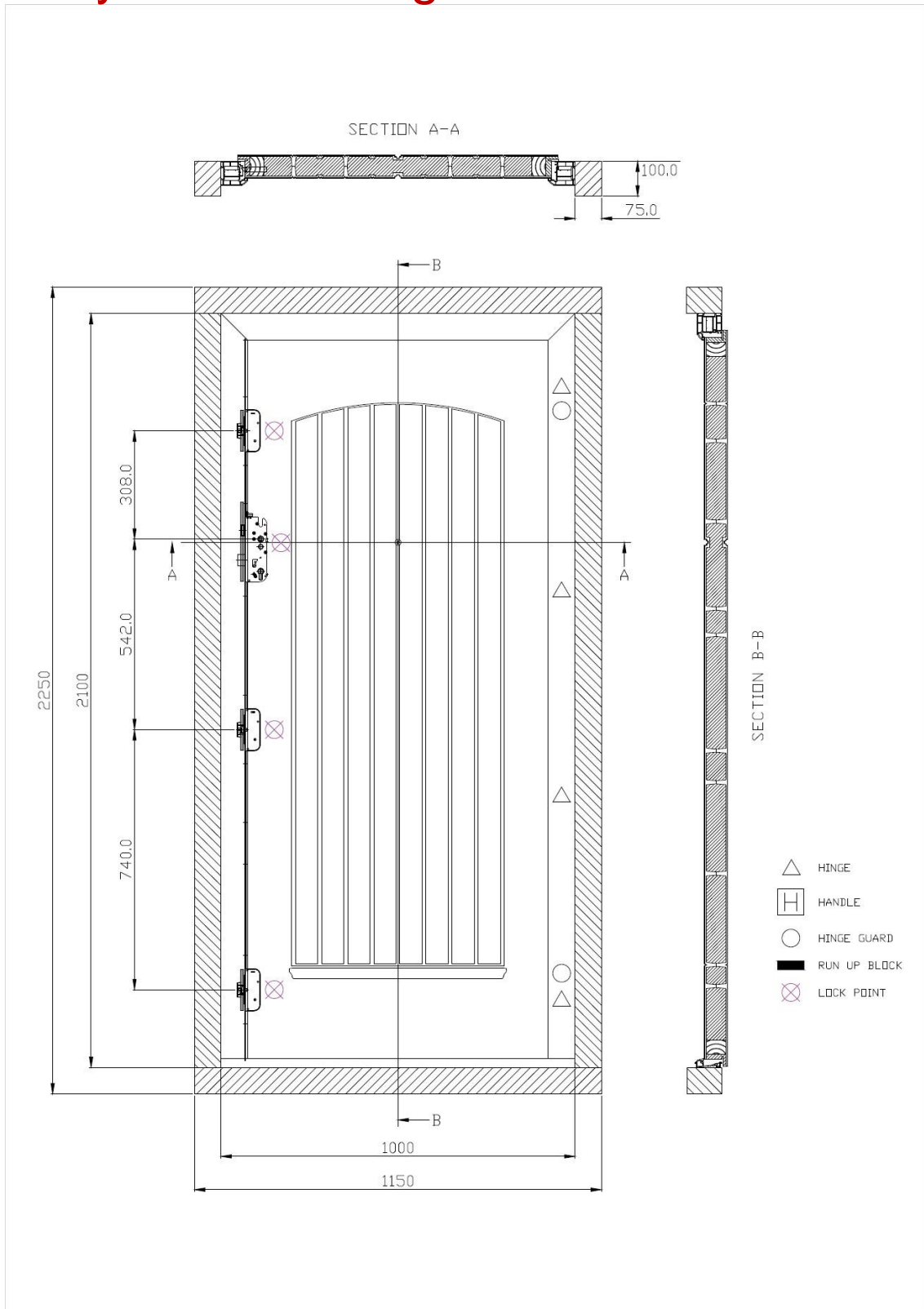
There were no signs of any damage following the test.

### 6.3.3 Operating forces following the closure against obstruction test

Operating forces measured prior to closure against obstruction	Test 1	Test 2	Test 3	Average	Class
Closing Force [N]	47.4	47.8	47.4	47.5	Class 2
Latch Hardware (N)	N/A	N/A	N/A	N/A	N/A
Lock Hardware [Nm]	30.0	32.0	30.0	30.7	Class 4
Un-Lock Hardware [Nm]	32.0	32.0	32.0	32.0	Class 4
Unlatch Hardware (N)	34.3	34.1	34.8	34.4	Class 2
Commence Opening [N]	3.6	3.2	3.2	3.3	Class 4
Maintain Opening [N]	3.8	3.4	3.6	3.6	Class 4
<b>Overall class</b>					<b>2</b>

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

## 7. System Drawings





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