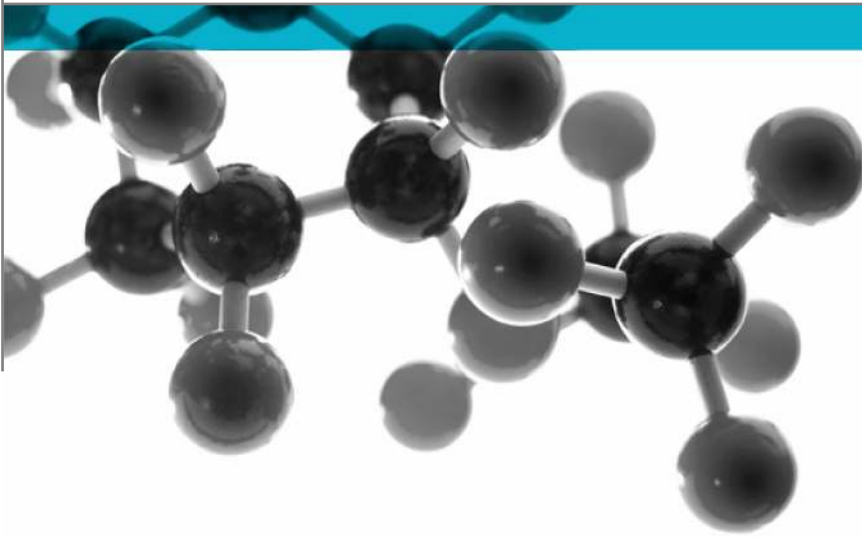


Exova Warringtonfire  
KeyIndustrial Park  
Fernside Road  
Willenhall  
West Midlands  
WV13 3YA

T : +44 (0) 1902 722 122  
F : +44 (0) 1902 727 242  
E : [willemhall@exova.com](mailto:willemhall@exova.com)  
W: [www.exova.com](http://www.exova.com)



# BS EN 14351-1:2006



**Test of: Window restrictors**

**Windows and doors – Product standard,  
performance characteristics**

A Report To: Nico Manufacturing Ltd

Date:14/06/2013

Copy: 1

Issue No.: 1

Page 1

Document Reference: WIL 328855

Testing  
Advising  
Assuring

Registered Office: Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian EH28 8PL United Kingdom. Reg No.SC 70429

This report is issued in accordance with our terms and conditions, a copy of which is available on request.



0621

## TEST CONCLUSIONS

Samples of:  
 Manufacturer Nico Manufacturing Ltd  
 Product Window Restrictors  
 Model Various

have been tested in accordance with: BS EN 14351-1:2006  
 By Exova Warringtonfire Willenhall, a UKAS accredited Testing Laboratory (No. 0621) and EC Notified  
 Body number (No. 1104)

At Key Industrial Park, Fernside Rd, Willenhall, West Midlands, WV13 3YA.  
 Results and comments as detailed below:

Clause No.	Description	Compliance
4.8	Load bearing capacity of safety devices – 350N	Yes

No inferences can be made regarding performance against other requirements of this standard

Tests marked “N/A” are not applicable to the sample under test.  
 Tests marked “N/T” were not applied to the sample under test

Document No.: WIL 328855 Page No.: 2 of 39  
 Author: M Garfield Issue Date: 14/06/2013  
 Client: Nico Manufacturing Ltd Issue No.: 01



## AUTHORISATION

Tests performed by: Mark Garfield, Test Engineer

Report issued by: Mark Garfield, Test Engineer

Signed 

Date 14/06/13

For and on behalf of Exova Warringtonfire

Report authorised by: Mark West, Assistant Operations Manager

Signed 

Date 14/06/13

For and on behalf of Exova Warringtonfire

Report issued: 14 June 2013



0621

**NOTE.**

Tests marked "Not UKAS Accredited" are not covered by the Laboratory UKAS accreditation schedule.

Tests marked NT were not tested

Tests marked NA are not applicable to the product on test.

The laboratory has tested the product supplied by the client as sampled in accordance with their own requirements

Exova Warringtonfire is an EC Notified Body Number 1104

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Document No.: WIL 328855  
Author: M Garfield  
Client: Nico Manufacturing Ltd

Page No.: 3 of 39  
Issue Date: 14/06/2013  
Issue No.: 01



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## TEST DETAILS

### CLIENT DETAILS

Company name Nico Manufacturing Ltd  
 Address Oxford road  
 Clacton on sea  
 Essex

Postcode CO15 3TJ

Contact Duncan Kury

### ORDER DETAILS

Order number  
 Dated

### SAMPLE DETAILS

Product	Window restrictors	
Model	7940, 7960, 8340, 8360, 6000/6013 and 6000/6017	
Manufacturer	Sample 1 DEM	Sample 6 Quantum Windows
	Sample 2 Quantum Windows	Sample 7 DEM
	Sample 3 Dunster house	Sample 8 Windowbuild
	Sample 4 Windowbuild	Sample 9 Selecta
	Sample 5 Quantum Windows	Sample 10 Quantum Windows
Frame Dimensions	Sample 1 1200mm x 1200mm	Sample 6 700mm x 1300mm
	Sample 2 1200mm x 1200mm	Sample 7 700mm x 1303mm
	Sample 3 1200mm x 1200mm	Sample 8 698mm x 1298mm
	Sample 4 1200mm x 1200mm	Sample 9 700mm x 1300mm
	Sample 5 1200mm x 1200mm	Sample 10 700mm x 1301mm
Sash Dimensions	Sample 1 1145mm x 1143mm	Sample 6 635mm x 1255mm
	Sample 2 1135mm x 1135mm	Sample 7 644mm x 1244mm
	Sample 3 1145mm x 1145mm	Sample 8 631mm x 1230mm
	Sample 4 1130mm x 1133mm	Sample 9 645mm x 1245mm
	Sample 5 1143mm x 1140mm	Sample 10 645mm x 1242mm
Material	Sample 1 PVC	Sample 6 PVC
	Sample 2 PVC	Sample 7 PVC
	Sample 3 PVC	Sample 8 PVC
	Sample 4 PVC	Sample 9 PVC
	Sample 5 Aluminium	Sample 10 Aluminium
Details of Hardware		
Hinges	Nico	
Hinge protection	Nico	
Lock	Various	
Markings	None	
Date of Manufacture	Unknown	
Other information	None	

### TEST DETAILS

Test specification BS EN 14351 :2006  
 Full test Yes  
 Test to clauses  
 Test Method BS EN 14609:2004 strength of safety devices

Sample received 02/05/13

Document No.: WIL 328855

Page No.: 5 of 39

Author: M Garfield

Issue Date: 14/06/2013

Client: Nico Manufacturing Ltd

Issue No.: 01



Test started 02/05/13  
Test completed 02/05/13

Special Test requirements  
Other reports to be used in conjunction with this report



## TEST PROCEDURE

---

<b>Introduction</b>	<p>This test report should be read in conjunction with the Standard BS EN 14351-1:2006: Windows and doors – Product standard, performance characteristics – Part 1: Windows and external pedestrian door set's with out resistance to fire and/or smoke leakage characteristics.</p> <p>The specimens were judged on their ability to comply with the performance criteria as required in BS EN 14351-1:2006, with test methods BS EN 14609.</p>
<b>Instruction To Test</b>	<p>The test was conducted on the 02/05/13 on behalf of Nico Manufacturing Ltd.</p> <p>Mr Duncan Kury, a representative of Nico Manufacturing Ltd witnessed the test.</p> <p>Initial requirement was as defined in BS6375-2, requiring a performance of a threshold value of 350N for load-bearing capacity of safety devices.</p>
<b>Test Specimen Construction</b>	<p>A description of the test construction is given in the Schedule of Components. The description is based on a detailed survey of the specimens and information supplied by the sponsor of the test.</p>
<b>Sampling</b>	<p>The samples were not independently witnessed or selected and were provided direct from the test sponsor.</p>
<b>Installation</b>	<p>The sample was supplied mounted within a timber sub-frame of nominal section 75mm x 100mm fitted flush with the exterior face, in accordance with the clients fitting instructions.</p>
<b>Test Climate</b>	<p>The sample was conditioned in the laboratory in the range 10-30 °C and 25-75% humidity.</p>

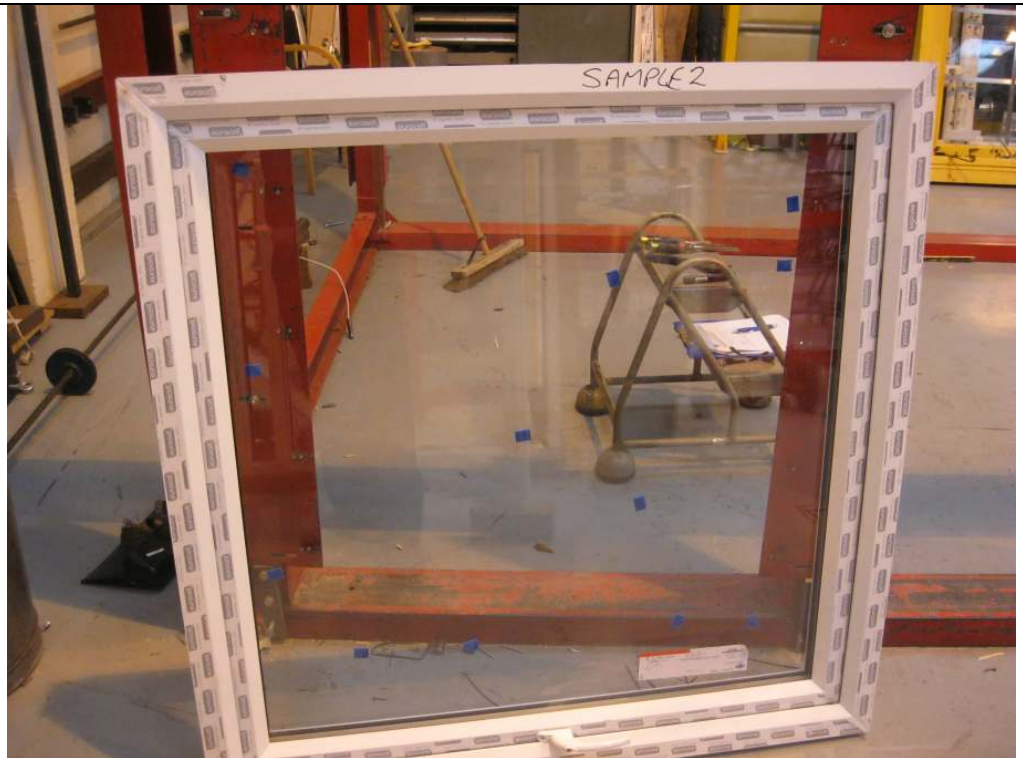
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# INITIAL OBSERVATIONS

**Sample 1**



**Sample 2**





**Sample 3**



**Sample 4**



**Sample 5**



**Sample 6**



**Sample 7**



**Sample 8**



**Sample 9**



**Sample 10**



**Restrictor  
6000/6013**



**Restrictor  
6000/6017**



**Restrictor 7760**



**Restrictor 8240**



## SCHEDULE OF COMPONENTS

### Sample 1

<u>Item</u>	<u>Description</u>
<b>1. Window casement (s)</b>	
Overall Size	1200 x 1200 mm
Supplier	: DEM Windows
Profile codes	Halo Eclipse P50208 SASLI
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Sash framing section sizes	1143 x 1143 mm
Corner fixing method Type size quantity	: Welded
Reinforcement	
i. position	: All
ii. profile code	: S141139
iii. material	: Steel
iv. density	: kg/m <sup>3</sup> (stated)
v. length	: 981 x 981mm
<b>2. Window casement glass</b>	
Supplier	: Glass craft
Thickness	: 28mm
Overall size	1021 x 1021mm
<b>3. Window frame head</b>	
Supplier	: DEM/ Halo Eclipse
Profile code	: P50201
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1200
Rebate	:
Fixing jamb to head joints	:
i. type	: Welded
ii. size	:
iii. quantity	:
Reinforcement	
i. position	: All
ii. profile code	: S41101
iii. material	: Steel
iv. density	: kg/m <sup>3</sup> (stated)
v. length	: 1078mm
<b>4. Window frame jamb</b>	
Supplier	: DEM/ Halo eclipse
Profile code	: P50201
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1200mm
Rebate	:
Fixing jamb to sill joints	:
i. type	: Welded
ii. material	:

<u>Item</u>	<u>Description</u>
iii. size	:
iv. quantity	:
Reinforcement	
i. position	: All
ii. profile code	: S41101
iii. material	: Steel
iv. density	: kg/m <sup>3</sup> (stated)
v. length	: 1078mm
<b>5. Window frame sill</b>	
Supplier	: DEM/ Halo eclipse
Profile code	: P50201
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1200mm
Rebate	
Reinforcement	
i. position	: All
ii. profile code	: S41101
iii. material	: Steel
iv. density	:
v. length	: 1078mm
<b>6. Hinges</b>	
Supplier	: Nico manufacturing
Description	: 24" restricted friction hinge
Reference	: 8360
Quantity	: 2
Fixing hinge to sash	
i. type	: Pan head pierce point
ii. size	: 4.8mm x 25mm
iii. quantity	: 4
Fixing hinge to frame	
i. type	: Pan head drill point
ii. size	: 4.8 x16mm
iii. quantity	: 3
<b>7. Restrictor</b>	
Supplier	: Nico manufacturing
Description	: Restrictor safety catch
Reference	: 600 (catch) 6017 (striker)
Fixing restrictor to sash	
i. type	: Csk pierce point
ii. size	: 4.3 x 25mm
iii. quantity	: 2
Fixing restrictor to frame	
i. type	: Csk pierce point
ii. size	: 4.3 x 25mm
iii. quantity	: 2



## Sample 2

### 1. Window casement (s)

Overall Size	:	1200 x 1200mm
Supplier	:	Quantum windows eurocell logic 70mm
Profile codes	:	7008w
Material	:	PVC
Density	:	kg/m <sup>3</sup> (stated)
Sash framing section sizes	:	1136 x 1136mm
Corner fixing method Type size quantity	:	Welded
Reinforcement	:	None
i. position	:	
ii. profile code	:	
iii. material	:	
iv. density	:	kg/m <sup>3</sup> (stated)
v. length	:	

### 2. Window casement glass

Supplier	:	CET glass processors (holdings) Ltd
Thickness	:	4-20-4
Overall size	:	1018 x 1018mm

### 3. Window frame head

Supplier	:	Eurocell euro logic
Profile code	:	7021w
Material	:	PVC
Density	:	kg/m <sup>3</sup> (stated)
Overall section size	:	1200mm
Rebate	:	
Fixing jamb to head joints	:	
i. type	:	Welded
ii. size	:	
iii. quantity	:	
Reinforcement	:	
i. position	:	None
ii. profile code	:	
iii. material	:	
iv. density	:	kg/m <sup>3</sup> (stated)
v. length	:	

### 4. Window frame jamb

Supplier	:	Eurocell euro logic
Profile code	:	7021w
Material	:	PVC
Density	:	kg/m <sup>3</sup> (stated)
Overall section size	:	1200mm
Rebate	:	
Fixing jamb to sill joints	:	
i. type	:	Welded
ii. material	:	
iii. size	:	
iv. quantity	:	
Reinforcement	:	None
i. position	:	

- ii. profile code
- iii. material :
- iv. density : kg/m<sup>3</sup> (stated)
- v. length :

#### 5. Window frame sill

- Supplier : Eurocell euro logic
- Profile code : 7021w
- Material : PVC
- Density : kg/m<sup>3</sup> (stated)
- Overall section size : 1200mm
- Rebate
- Reinforcement : None

- i. position :
- ii. profile code :
- iii. material :
- iv. density :
- v. length :

#### 6. Hinges

- Supplier : Nico manufacturing
- Description : 24" restricted friction hinge
- Reference : 8360
- Quantity : 2

##### Fixing hinge to sash

- i. type : Pan head pierce point
- ii. size : 4.8mm x 25mm
- iii. quantity : 4

##### Fixing hinge to frame

- i. type : Pan head drill point
- ii. size : 4.8 x16mm
- iii. quantity : 3

#### 7. Restrictor

- Supplier : Nico manufacturing
- Description : Restrictor safety catch
- Reference : 6000 (catch) 6017 (striker)

##### Fixing restrictor to sash

- i. type : Csk pierce point
- ii. size : 4.3mm x 25mm
- iii. quantity : 2

##### Fixing restrictor to frame

- i. type : Csk pierce point
- ii. size : 4.3mm x 25mm
- iii. quantity : 2

## Sample 3

### 1. Window casement (s)

Overall Size	:	1200 x 1200mm
Supplier	:	Dunster house/ selecta Advance 70
Profile codes	:	1704 sash
Material	:	PVC
Density	:	kg/m <sup>3</sup> (stated)
Sash framing section sizes	:	1144mm x 1144mm
Corner fixing method Type size quantity	:	Welded
Reinforcement		
i. position	:	All
ii. profile code	:	1754
iii. material	:	Steel
iv. density	:	kg/m <sup>3</sup> (stated)
v. length	:	982 x 982 mm

### 2. Window casement glass

Supplier	:	
Thickness	:	28mm
Overall size	:	1022 x 1022mm

### 3. Window frame head

Supplier	:	Dunster house/ selecta advance 70
Profile code	:	1700
Material	:	PVC
Density	:	kg/m <sup>3</sup> (stated)
Overall section size	:	1200mm
Rebate	:	
Fixing jamb to head joints	:	Welded
i. type	:	
ii. size	:	
iii. quantity	:	
Reinforcement		
i. position	:	All
ii. profile code	:	1750mm
iii. material	:	Steel
iv. density	:	kg/m <sup>3</sup> (stated)
v. length	:	1082mm

### 4. Window frame jamb

Supplier	:	Dunster house/ selecta advance 70
Profile code	:	1700
Material	:	PVC
Density	:	kg/m <sup>3</sup> (stated)
Overall section size	:	1200mm
Rebate	:	1200mm
Fixing jamb to sill joints	:	
i. type	:	Welded
ii. material	:	
iii. size	:	
iv. quantity	:	
Reinforcement		
i. position	:	All
ii. profile code	:	1750

- iii. material : Steel
- iv. density : kg/m<sup>3</sup> (stated)
- v. length : 1082

#### 5. Window frame sill

- Supplier : Dunster house/ selecta advance 70
- Profile code : 1700
- Material : PVC
- Density : kg/m<sup>3</sup> (stated)
- Overall section size : 1200mm

Rebate

Reinforcement

- i. position : All
- ii. profile code : 1750
- iii. material : Steel
- iv. density :
- v. length : 1082

#### 6. Hinges

- Supplier : Nico manufacturing
- Description : 24" restricted friction hinge
- Reference : 8360
- Quantity : 2

Fixing hinge to sash

- i. type : Pan head pierce point
- ii. size : 3.9mm x 19mm
- iii. quantity : 4

Fixing hinge to frame

- iv. type : Pan head drill point
- v. size : 3.9 x 19mm
- vi. quantity : 3

#### 7. Restrictor

- Supplier : Nico manufacturing
- Description : Restrictor safety catch
- Reference : 6000 (catch) 6017 (striker)

Fixing restrictor to sash

- i. type : Csk pierce point
- ii. size : 4.3mm x 25mm
- iii. quantity : 2

Fixing restrictor to frame

- i. type : Csk pierce point
- ii. size : 4.3mm x 25mm
- iii. quantity : 2

## Sample 4

### 1. Window casement (s)

Overall Size	1200 x 1200 mm
Supplier	: Windowbuild profile 22
Profile codes	22650 sash
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Sash framing section sizes	1132 mm
Corner fixing method	: Welded
Reinforcement	None
i. position	:
ii. profile code	:
iii. material	:
iv. density	: kg/m <sup>3</sup> (stated)
v. length	:

### 2. Window casement glass

Supplier	: Windowbuild
Thickness	: 4-16-4
Overall size	1020 x 1020 mm

### 3. Window frame head

Supplier	: Profile 22
Profile code	: 22810 outer frame
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1200 mm
Rebate	:
Fixing jamb to head joints	:
i. type	: Welded
ii. size	:
iii. quantity	:
Reinforcement	None
i. position	:
ii. profile code	:
iii. material	:
iv. density	: kg/m <sup>3</sup> (stated)
v. length	:

### 4. Window frame jamb

Supplier	: Profile 22
Profile code	: 22810 outer frame
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1200mm
Rebate	:
Fixing jamb to sill joints	:
i. type	: Welded
ii. material	:
iii. size	:
iv. quantity	:
Reinforcement	None
i. position	:
ii. profile code	:

iii. material :  
 iv. density : kg/m<sup>3</sup> (stated)  
 v. length :

### 5. Window frame sill

Supplier : Profile 22  
 Profile code : 22810 outer frame  
 Material : PVC  
 Density : kg/m<sup>3</sup> (stated)  
 Overall section size : 1200mm

Rebate  
 Reinforcement : None

i. position :  
 ii. profile code :  
 iii. material :  
 iv. density :  
 v. length :

### 6. Hinges

Supplier : Nico manufacturing  
 Description : 24" restricted friction hinge  
 Reference : 7960  
 Quantity : 2

Fixing hinge to sash

i. type : Pan head pierce point  
 ii. size : 4.8mm x 25mm  
 iii. quantity : 3

Fixing hinge to frame

i. type : Pan head pierce point  
 ii. size : 4.2mm x 25mm  
 iii. quantity : 3

### 7. Restrictor

Supplier : Nico manufacturing  
 Description : Restrictor safety catch  
 Reference : 6000 (catch) 6013 (striker)

Fixing restrictor to sash

i. type : Csk pierce point  
 ii. size : 4.3mm x 25mm  
 iii. quantity : 2

Fixing restrictor to frame

i. type : Csk pierce point  
 ii. size : 4.3mm x 25mm  
 iii. quantity : 2

## Sample 5

### 1. Window casement (s)

Overall Size	1200 x 1200mm
Supplier	: Quantum windows Beaufort V1
Profile codes	AW 6244-1
Material	: Aluminium
Density	: kg/m <sup>3</sup> (stated)
Sash framing section sizes	1142 x 1142mm
Corner fixing method Type size quantity	: XA903 wide chevron 1 per corner
Reinforcement	XA711 14.2mm corner cleat
i. position	: None
ii. profile code	:
iii. material	:
iv. density	: kg/m <sup>3</sup> (stated)
v. length	:

### 2. Window casement glass

Supplier	: CET glass processors (holdings) Ltd
Thickness	: 4-20-4
Overall size	1052 x 1052 mm

### 3. Window frame head

Supplier	: Beaufort V1
Profile code	: Aw605-1
Material	: Aluminium
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1200mm
Rebate	:
Fixing jamb to head joints	: XA904 narrow chevron 2 per corner XA903 wide chevron 1 per corner XA430 141mm corner cleat 1 per corner XA435 5-1mm corner cleat 1 per corner
i. type	:
ii. size	:
iii. quantity	:
Reinforcement	
i. position	: None
ii. profile code	:
iii. material	:
iv. density	: kg/m <sup>3</sup> (stated)
v. length	:

### 4. Window frame jamb

Supplier	: Beaufort V1
Profile code	: AW 605-1
Material	: Aluminium
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1200mm
Rebate	:
Fixing jamb to sill joints	: XA904 narrow chevron 2 per corner XA903 wide chevron 1 per corner XA430 141mm corner cleat 1 per corner XA435 5-1mm corner cleat 1 per corner
i. type	:
ii. material	:

iii. size	:	
iv. quantity	:	
Reinforcement	:	None
i. position	:	
ii. profile code	:	
iii. material	:	
iv. density	:	kg/m <sup>3</sup> (stated)
v. length	:	
<b>5. Window frame sill</b>		
Supplier	:	Beaufort V1
Profile code	:	AW 605-1
Material	:	
Density	:	kg/m <sup>3</sup> (stated)
Overall section size	:	1200mm
Rebate	:	
Reinforcement	:	None
i. position	:	
ii. profile code	:	
iii. material	:	
iv. density	:	
v. length	:	
<b>6. Hinges</b>		
Supplier	:	Nico manufacturing
Description	:	24" restricted friction hinge
Reference	:	8360
Quantity	:	2
Fixing hinge to sash	:	
i. type	:	Pan head drill point
ii. size	:	4.8mm x 16mm
iii. quantity	:	4
Fixing hinge to frame	:	
vii. type	:	Pan head drill point
viii. size	:	4.8mm x 16mm
ix. quantity	:	3
<b>7. Restrictor</b>		
Supplier	:	Nico manufacturing
Description	:	Restrictor safety catch
Reference	:	6000 (catch) 6017 (striker)
Fixing restrictor to sash	:	
i. type	:	Csk drill point
ii. size	:	3.9 x 25mm
iii. quantity	:	2
Fixing restrictor to frame	:	
i. type	:	Csk drill point
ii. size	:	3.9mm x 25mm
iii. quantity	:	2



## Sample 6

### 1. Window casement (s)

Overall Size	700 x 1300 mm
Supplier	: Quantum windows eurocell euro logic
Profile codes	7005w
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Sash framing section sizes	636 x 1236mm
Corner fixing method Type size quantity	: Welded
Reinforcement	None
i. position	:
ii. profile code	:
iii. material	:
iv. density	: kg/m <sup>3</sup> (stated)
v. length	:

### 2. Window casement glass

Supplier	: CET glass processors (holdings) Ltd
Thickness	: 4-20-4
Overall size	578 x 1118mm

### 3. Window frame head

Supplier	: Eurocell euro logic
Profile code	: 7021w
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 700mm
Rebate	:
Fixing jamb to head joints	: Welded
i. type	:
ii. size	:
iii. quantity	:
Reinforcement	
i. position	: None
ii. profile code	:
iii. material	:
iv. density	: kg/m <sup>3</sup> (stated)
v. length	:

### 4. Window frame jamb

Supplier	: Eurocell euro logic
Profile code	: 7021 w
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1300mm
Rebate	:
Fixing jamb to sill joints	Welded
i. type	:
ii. material	:
iii. size	:
iv. quantity	:
Reinforcement	
i. position	: None
ii. profile code	:

- iii. material :
- iv. density : kg/m<sup>3</sup> (stated)
- v. length :

#### 5. Window frame sill

- Supplier : Eurocell euro logic
- Profile code : 7021/w
- Material : PVC
- Density : kg/m<sup>3</sup> (stated)
- Overall section size : 700mm
- Rebate
- Reinforcement : None

- i. position :
- ii. profile code :
- iii. material :
- iv. density :
- v. length :

#### 6. Hinges

- Supplier : Nico manufacturing
- Description : 16" restricted friction hinge to bottom
- Reference : 16" standard friction hinge to top
- Quantity : Restricted 8340 standard 8240
- Fixing hinge to sash : 1 of each
- i. type : Pan head pierce point
- ii. size : 4.8mm x 25mm
- iii. quantity : 3
- Fixing hinge to frame
- i. type : Pan head pierce point
- ii. size : 4.8mm x 25mm
- iii. quantity : 3

#### 7. Restrictor

- Supplier : Nico manufacturing
- Description : Restrictor safety catch
- Reference : 6000 (catch) 6017 (striker)
- Fixing restrictor to sash
- i. type : Csk pierce point
- ii. size : 4.3mm x 25mm
- iii. quantity : 2
- Fixing restrictor to frame
- i. type : Csk pierce point
- ii. size : 4.3mm x 25mm
- iii. quantity : 2

## Sample 7

### 1. Window casement (s)

Overall Size	:	700 x 1300
Supplier	:	DEM windows
Profile codes	:	Halo eclipse/ P50208 sash
Material	:	PVC
Density	:	kg/m <sup>3</sup> (stated)
Sash framing section sizes	:	648 x 1248
Corner fixing method	:	Welded
Reinforcement	:	
i. position	:	All
ii. profile code	:	S41139
iii. material	:	Steel
iv. density	:	kg/m <sup>3</sup> (stated)
v. length	:	481 x 1081mm

### 2. Window casement glass

Supplier	:	Glasscraft
Thickness	:	28mm
Overall size	:	521 x 1121 mm

### 3. Window frame head

Supplier	:	DEM/ Haloclipse
Profile code	:	P50201
Material	:	PVC
Density	:	kg/m <sup>3</sup> (stated)
Overall section size	:	700mm
Rebate	:	
Fixing jamb to head joints	:	Welded
i. type	:	
ii. size	:	
iii. quantity	:	
Reinforcement	:	
i. position	:	All
ii. profile code	:	S41101
iii. material	:	Steel
iv. density	:	kg/m <sup>3</sup> (stated)
v. length	:	578mm

### 4. Window frame jamb

Supplier	:	DEM/ Halo eclipse
Profile code	:	P50201
Material	:	PVC
Density	:	kg/m <sup>3</sup> (stated)
Overall section size	:	1300mm
Rebate	:	
Fixing jamb to sill joints	:	
i. type	:	Welded
ii. material	:	
iii. size	:	
iv. quantity	:	
Reinforcement	:	
i. position	:	All
ii. profile code	:	S41139

- iii. material : Steel
- iv. density : kg/m<sup>3</sup> (stated)
- v. length : 1178mm

#### 5. Window frame sill

- Supplier : DEM/ Halo eclipse
- Profile code : P50201
- Material : PVC
- Density : kg/m<sup>3</sup> (stated)
- Overall section size : 700mm

Rebate

Reinforcement

- i. position : All
- ii. profile code : S41101
- iii. material : Steel
- iv. density :
- v. length : 1178mm

#### 6. Hinges

- Supplier : Nico manufacturing
- Description : 16" restricted friction hinge to bottom
- Reference : 16" standard friction hinge to top
- Quantity : Restrictor 8340, standard 8240

Fixing hinge to sash

- 1 of each
- i. type : Pan head pierce point
- ii. size : 4.8mm x 25mm
- iii. quantity : 3

Fixing hinge to frame

- i. type : Pan head drill point
- ii. size : 4.8mm x 16mm
- iii. quantity : 3

#### 7. Restrictor

- Supplier : Nico manufacturing
- Description : Restrictor safety catch
- Reference : 6000 (catch) 6017 (striker)

Fixing restrictor to sash

- i. type : Csk pierce point
- ii. size : 4.3mm x 25mm
- iii. quantity : 2

Fixing restrictor to frame

- i. type : Csk pierce point
- ii. size : 4.3mm x 25mm
- iii. quantity : 2

## Sample 8

### 1. Window casement (s)

Overall Size	700 x 1300 mm
Supplier	: Windowbuild / Profile 22
Profile codes	22650 sash
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Sash framing section sizes	632, 1232mm
Corner fixing method Type size quantity	: Welded
Reinforcement	None
i. position	:
ii. profile code	:
iii. material	:
iv. density	: kg/m <sup>3</sup> (stated)
v. length	:

### 2. Window casement glass

Supplier	: Windowbuild
Thickness	: 4-16-4
Overall size	520 x 1120mm

### 3. Window frame head

Supplier	: Profile 22
Profile code	: 22810 outerframe
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1300
Rebate	:
Fixing jamb to head joints	:
i. type	: Welded
ii. size	:
iii. quantity	:
Reinforcement	:
i. position	:
ii. profile code	:
iii. material	:
iv. density	: kg/m <sup>3</sup> (stated)
v. length	:

### 4. Window frame jamb

Supplier	: Profile 22
Profile code	: 22810 outerframe
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1300mm
Rebate	:
Fixing jamb to sill joints	:
i. type	: Welded
ii. material	:
iii. size	:
iv. quantity	:
Reinforcement	None
i. position	:
ii. profile code	:

iii. material	:	
iv. density	:	kg/m <sup>3</sup> (stated)
v. length	:	
<b>5. Window frame sill</b>		
Supplier	:	Profile 22
Profile code	:	22810 outer frame
Material	:	PVC
Density	:	kg/m <sup>3</sup> (stated)
Overall section size	:	700 mm
Rebate	:	
Reinforcement	:	
i. position	:	None
ii. profile code	:	
iii. material	:	
iv. density	:	
v. length	:	
<b>6. Hinges</b>		
Supplier	:	Nico manufacturing
Description	:	16" restrictor friction hinge to bottom of sash 16" standard friction hinge to top of sash
Reference	:	Restrictor 7940, standard 7740
Quantity	:	1 of each
Fixing hinge to sash	:	
i. type	:	Pan head pierce point
ii. size	:	4.8mm x 25mm
iii. quantity	:	3
Fixing hinge to frame	:	
i. type	:	Pan head pierce point
ii. size	:	4.2mm x 13mm
iii. quantity	:	3
<b>7. Restrictor</b>		
Supplier	:	Nico manufacturing
Description	:	Restrictor safety catch
Reference	:	6000 (catch) 6013 (striker)
Fixing restrictor to sash	:	
i. type	:	Csk pierce point
ii. size	:	4.3 x 25mm
iii. quantity	:	2
Fixing restrictor to frame	:	
i. type	:	Csk pierce point
ii. size	:	4.3 x 25mm
iii. quantity	:	2

## Sample 9

### 1. Window casement (s)

Overall Size	700 x 1300mm
Supplier	: Dunster house/ selecta advance 70
Profile codes	1704 sash
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Sash framing section sizes	644 x 1244mm
Corner fixing method Type size quantity	: Welded
Reinforcement	
i. position	: All
ii. profile code	: 1754
iii. material	: Steel
iv. density	: kg/m <sup>3</sup> (stated)
v. length	: 482 x 1082 mm

### 2. Window casement glass

Supplier	:
Thickness	: 28mm
Overall size	522 x 1122mm

### 3. Window frame head

Supplier	: Dunster house/ selecta advance 70
Profile code	: 1700
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 700mm
Rebate	:
Fixing jamb to head joints	: Welded
i. type	:
ii. size	:
iii. quantity	:
Reinforcement	
i. position	: All
ii. profile code	: 1750
iii. material	: Steel
iv. density	: kg/m <sup>3</sup> (stated)
v. length	: 582mm

### 4. Window frame jamb

Supplier	: Dunster house/ selecta advance 70
Profile code	: 1700
Material	: PVC
Density	: kg/m <sup>3</sup> (stated)
Overall section size	: 1300mm
Rebate	:
Fixing jamb to sill joints	: Welded
i. type	:
ii. material	:
iii. size	:
iv. quantity	:
Reinforcement	
i. position	: All
ii. profile code	: 1750

- iii. material : Steel
- iv. density : kg/m<sup>3</sup> (stated)
- v. length : 1182mm

#### 5. Window frame sill

- Supplier : Dunster house/ selecta advance 70
- Profile code : 1700
- Material : PVC
- Density : kg/m<sup>3</sup> (stated)
- Overall section size : 700 mm

Rebate

Reinforcement

- i. position : All
- ii. profile code : 1750
- iii. material : Steel
- iv. density :
- v. length : 582mm

#### 6. Hinges

- Supplier : Nico manufacturing
- Description : 16" restricted friction hinge to bottom  
16" standard friction hinge to top
- Reference : Restricted 8340 standard 8240
- Quantity : 1 of each

Fixing hinge to sash

- i. type : Pan head pierce point
- ii. size : 4.3 x 19mm
- iii. quantity : 3

Fixing hinge to frame

- i. type : Pan head pierce point
- ii. size : 4.3 x 19mm
- iii. quantity : 3

#### 7. Restrictor

- Supplier : Nico manufacturing
- Description : Restrictor safety catch
- Reference : 6000 (catch) 6017 (striker)

Fixing restrictor to sash

- i. type : Csk pierce point
- ii. size : 4.3 x 25mm
- iii. quantity : 2

Fixing restrictor to frame

- i. type : Csk pierce point
- ii. size : 4.3 x 25mm
- iii. quantity : 2



## Sample 10

### 1. Window casement (s)

Overall Size : 700 x 1300m  
 Supplier : Quantum windows Beaufort v1  
 Profile codes : AW624-1  
 Material : Aluminium  
 Density : kg/m<sup>3</sup> (stated)  
 Sash framing section sizes : 642 x 1242mm  
 Corner fixing method Type size quantity : XA903 wide chevron 1 per corner  
 XA711 14.2mm corner cleat 1 per corner

#### Reinforcement

i. position : None  
 ii. profile code :  
 iii. material :  
 iv. density : kg/m<sup>3</sup> (stated)  
 v. length :

### 2. Window casement glass

Supplier : CET glass processors  
 Thickness : 4-20-4  
 Overall size : 552 x 1152 mm

### 3. Window frame head

Supplier : Beaufort V1  
 Profile code : AW 605-1  
 Material : Aluminium  
 Density : kg/m<sup>3</sup> (stated)  
 Overall section size : 700mm  
 Rebate :  
 Fixing jamb to head joints : XA904 narrow chevron 2 per corner  
 XA903 wide chevron 1 per corner  
 XA430 14mm corner cleat 1 per corner  
 XA435 5.1mm corner cleat 1 per corner

i. type :  
 ii. size :  
 iii. quantity :

#### Reinforcement

None  
 i. position :  
 ii. profile code :  
 iii. material :  
 iv. density : kg/m<sup>3</sup> (stated)  
 v. length :

### 4. Window frame jamb

Supplier : Beaufort V1  
 Profile code : AW 605-1  
 Material : Aluminium  
 Density : kg/m<sup>3</sup> (stated)  
 Overall section size : 1300mm  
 Rebate :  
 Fixing jamb to sill joints : XA904 narrow chevron 2 per corner  
 XA903 wide chevron 1 per corner  
 XA430 14mm corner cleat 1 per corner  
 XA435 5.1mm corner cleat 1 per corner

i. type :

ii. material	:	
iii. size	:	
iv. quantity	:	
Reinforcement	:	None
i. position	:	
ii. profile code	:	
iii. material	:	
iv. density	:	kg/m <sup>3</sup> (stated)
v. length	:	
<b>5. Window frame sill</b>		
Supplier	:	Beaufort V1
Profile code	:	AW 605-1
Material	:	Aluminium
Density	:	kg/m <sup>3</sup> (stated)
Overall section size	:	700mm
Rebate	:	
Reinforcement	:	None
i. position	:	
ii. profile code	:	
iii. material	:	
iv. density	:	
v. length	:	
<b>6. Hinges</b>		
Supplier	:	Nico Manufacturing
Description	:	16" restricted friction hinge to bottom 16" standard friction hinge to top
Reference	:	Restricted 8340 standard 8240
Quantity	:	1 of each
Fixing hinge to sash		
i. type	:	Pan head drill point
ii. size	:	4.8 x 16mm
iii. quantity	:	3
Fixing hinge to frame		
i. type	:	Pan head drill point
ii. size	:	4.8 x 16mm
iii. quantity	:	3
<b>7. Restrictor</b>		
Supplier	:	Nico manufacturing
Description	:	Restrictor safety catch
Reference	:	6000 (catch) 6017 (striker)
Fixing restrictor to sash		
i. type	:	Csk drill point
ii. size	:	3.9 x 25mm
iii. quantity	:	2
Fixing restrictor to frame		
i. type	:	Csk drill point
ii. size	:	3.9 x 25mm
iii. quantity	:	2

## PERFORMANCE CRITERIA & TEST RESULTS

Clause	Result	Pass/Fail
<b>4.8 Load-bearing capacity of safety devices</b>	<b>Restrictor : 8360 (restrictor fitted on both hinges)</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>Sample 1</b>	<b>Restrictor : 6000/6017</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>4.8 Load-bearing capacity of safety devices</b>	<b>Restrictor : 8360 (restrictor fitted on both hinges)</b>	
	Testing was carried out, 350N was applied for 60 seconds, the hinge bent slightly but the casement was held in position.	<b>PASS</b>
<b>Sample 2</b>	<b>Restrictor : 6000/6017</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>4.8 Load-bearing capacity of safety devices</b>	<b>Restrictor : 8360 (restrictor fitted on both hinges)</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>Sample 3</b>	<b>Restrictor : 6000/6017</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>4.8 Load-bearing capacity of safety devices</b>	<b>Restrictor : 7960 (restrictor fitted on both hinges)</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>Sample 4</b>	<b>Restrictor : 6000/6013</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>

Clause	Result	Pass/Fail
<b>4.8 Load-bearing capacity of safety devices</b>	<b>Restrictor : 8360 (restrictor fitted on both hinges)</b> Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>Sample 5</b>	<b>Restrictor : 6000/6017</b> Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>4.8 Load-bearing capacity of safety devices</b>	<b>Restrictor : 8340 (restrictor fitted on bottom hinge)</b> Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>Sample 6</b>	<b>Restrictor : 6000/6017</b> Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>4.8 Load-bearing capacity of safety devices</b>	<b>Restrictor : 8340 (restrictor fitted on bottom hinge)</b> Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>Sample 7</b>	<b>Restrictor : 6000/6017</b> Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>4.8 Load-bearing capacity of safety devices</b>	<b>Restrictor : 7940 (restrictor fitted on bottom hinge)</b> Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>Sample 8</b>	<b>Restrictor : 6000/6013</b> Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>

Clause	Result	Pass/Fail
<b>4.8 Load-bearing capacity of safety devices</b>	<b>Restrictor : 8340 (restrictor fitted on bottom hinge)</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>Sample 9</b>	<b>Restrictor : 6000/6017</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>4.8 Load-bearing capacity of safety devices</b>	<b>Restrictor : 8340 (restrictor fitted on bottom hinge)</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>
<b>Sample 10</b>	<b>Restrictor : 6000/6017</b>	
	Testing was carried out, 350N was applied for 60 seconds with out damage occurring.	<b>PASS</b>

## CONCLUSIONS

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**Evaluation against objective**

The sample as provided by the client was subjected to operational & strength testing in accordance with BS EN 14351-1:2006 and achieved the requirements of clause 4.8 Load-bearing capacity of safety devices.

**Observations & comments**

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## LIMITATIONS

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**Limitations**

The results relate only to the behaviour of the specimens of the element of construction under the particular conditions of test. They are not intended to be the sole criteria for assessing the potential performance of the element in use, nor do they reflect the actual behaviour in use.

**Range of window assemblies covered by this report**

It is our opinion that the range of window assemblies covered by this report are limited to the following

- Assemblies with identical hardware fitted no further apart than in the tested assembly
- Assemblies of the same or smaller overall dimensions to the tested assembly

**Uncertainty of Measurement**

The uncertainties of measurements calculated for a confidence level of 95% throughout these tests are within the limits of these tolerances.

The standard specifies the following tolerances

- Forces:  $\pm 2\%$
  - Distances:  $\pm 1\text{mm}$  for tape measures  $\pm 0.01\text{mm}$  for dial gauges
  - Times:  $\pm 5\text{s}$
-

## REVISION HISTORY

<b>Issue No :</b>	<b>Re - Issue Date :</b>
<b>Revised By:</b>	<b>Approved By:</b>
<b>Reason for Revision:</b>	

<b>Issue No :</b>	<b>Re - Issue Date :</b>
<b>Revised By:</b>	<b>Approved By:</b>
<b>Reason for Revision:</b>	

END OF REPORT