



Test Report No: WTH2104#1-3

Date: 04/02/2021

Testing of: Single top hung projecting casement window

Tested to: BS 6375-2:2009

Prepared for: Nico Manufacturing Ltd

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Test Report No.	WTH2104#1-3	Page	2	of	12
Testing of	Single top hung projecting casement window				
Testing to	BS 6375-2:2009				



## **CONTENTS**

	Page No.
Authorisation	3
Test requested by	4
Details of test	5
Details of samples	6
Conclusion of tests	7
Test window drawing	8
Operating forces, results (test 1)	9
Resistance to static torsion, results (test 2)	9
Racking, results (test 3)	9
Resistance to repeated opening and closing, results	10 & 11
Picture of test window	12


Test Report No.	WTH2104#1-3	Page	3	of	12
Testing of	Single top hung projecting casement window				
Testing to	BS 6375-2:2009				



### AUTHORISATION

Test completed by: D.Kury  
 Assisted by:  
 Test witnessed by:


Report produced by: D.Kury Position: Senior Test Engineer

Signature: 

Date: 17/02/2021

For and on behalf of Nico Manufacturing Ltd Test Laboratory

Report authorised by: M. Franklin Position: Laboratory Manager

Signature: 

Date: 02/03/2021

For and on behalf of Nico Manufacturing Ltd Test Laboratory

Date of issue of report 02/03/2021

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Test Report No.	WTH2104#1-3	Page	4	of	12
Testing of	Single top hung projecting casement window				
Testing to	BS 6375-2:2009				



### **TEST REQUESTED BY**

#### **Origin of test request**

Company Name	Nico Manufacturing Ltd
Company Address	109 Oxford Road Clacton on Sea Essex CO15 3TJ
Contact	Ian Harrison
Contact position	Sales Director

#### **Quotation Details**

Quotation No.	WTH2104
Dated:	05/01/2021

Test Report No.	WTH2104#1-3	Page	5	of	12
Testing of	Single top hung projecting casement window				
Testing to	BS 6375-2:2009				



### DETAILS OF TEST

Description	Single top hung
Model / type	Projecting casement window
Make / Brand	Veka
Date sample received	20/08/2020
Any special requirements	

Test Specification	BS 6375-2:2009 Performance of windows & doors. Classification for operation and strength characteristics
Date sample received	20/08/2020
Date testing started	04/02/2021
Date testing finished	16/02/2021
Job No.	WTH2104
Any special requirements	Initial requirement to test using test method as detailed in BS EN 1191 to Class 3 (20,000 cycles) as detailed in BS EN 2400. Additional requirement to continue testing using test method BS EN 1191 to 30,000 cycles. <b>This additional testing is not covered by our UKAS accreditation</b>

### **BS 6375-2: 2009 Table A.1 Summary of classification for windows**

Characteristics	Test method	Classification Standard	Class for all windows
Operating forces for windows	BS EN 12046-1	BS EN 13115	Class 1
Resistance to static torsion	BS EN 14609	BS EN 13115	Class 3
Racking	BS EN 14608	BS EN 13115	Class 3
Load-bearing capacity of safety devices	BS EN 14609	BS EN 14351	350 N
Resistance to repeated opening and closing	BS EN 1191	BS EN 12400	Class 3

The samples were mounted in timber sub frames (nominal 100mm x 50mm in section).

The samples were mounted in the test rig without any twists or bends that might influence the test result.

Test Report No.	WTH2104#1-3	Page	6	of	12
Testing of	Single top hung projecting casement window				
Testing to	BS 6375-2:2009				



#### **DETAILS OF SAMPLE**

Sample number	WTH2104A
Sample details	Single top hung projecting casement window
Fabricator	Consort Ltd
Material:	PVC-U Veka part nos;- 56mm Frame, part no 101160 75mm sculptured sash, part no 103264
Finish	White gloss
Lock & keeps	Lock - Nico Espag 750mm, part no 98820 Keeps - Nico cast zinc keeps, part no 9003
Hinges & protectors	Hinges - Nico standard 24" Hinge, part no 7940
Handle	Winlock, white, inline non-locking
Fixings	Hinges - 4.8 x 25mm pan head pierce point to sash and frame Lock - 4.3 x 25mm c'sk head pierce point Keeps - 4.3 x 25mm c'sk head pierce point Cavity wedges - 4.3 x 25mm c'sk head pierce point
Weather sealing	Co-extruded gaskets
Glass (or infill)	28mm Double glazed unit. 4-20-4mm.
Glazing system	Internally bead glazed with co-extruded gaskets. Shaped 28mm bead, part no 107.155
Sample dimensions	900mm (W) x 900mm (H)
Additional information	Cavity wedges - Veka part no 9898 & 9905 Run up block - Veka part no 109.380



### CONCLUSIONS OF TEST

Clause No.	Test Description	Test result
C.5.1 (Test 1)	<b>Operating forces</b>  (BS 6375-2 Max force to operate lever handle 100N or 10Nm) (BS 6375-2 Max force to move casement of sash 100N)	Pass
C.5.2.1 (Test 2)	<b>Mechanical strength - Resistance to static torsion</b>  (BS EN 14609 Force 300N for 5 minutes - deflection and operating forces measured and recorded)	Pass
C.5.2.2 (Test 3)	<b>Mechanical strength - racking</b>  (BS EN 14608 Force 600N for 5 minutes - deflection and operating forces measured and recorded)	Pass
C.5.3 (Test 4)	<b>Load-bearing capacity of safety devices</b>  (BS EN 14351 & Documented in house test method WTH-LBCSD-SOP Resist force of 350N for 60 seconds)	N/A
C.5.5 (Test 5)	<b>Resistance to repeated opening and closing</b>  (BS EN 1191 Window opened and closed minimum of 10,000 cycles for Class 2 (BS EN 12400) or 20,000 for Class 3 with operating forces measured at start and finish of test)	Pass Class 3  Additionally tested to 30,000 cycles which is NOT covered by UKAS accreditation

*Please Note: No impact resistance test was completed as currently the requirement in the UK is Class 0 with zero drop height of the impactor.*

The results contained in this report apply only to the samples tested and to the specific tests carried out within this report.

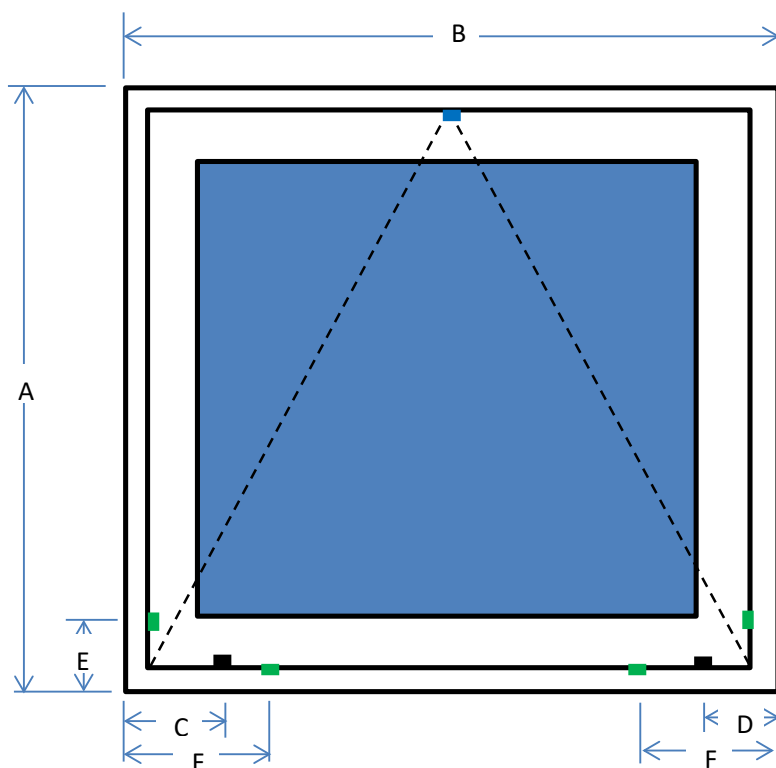
#### **Test specimen details**

Details of the samples construction and hardware components is based on information supplied by the test client, while these details have been checked and verified where possible WTH accepts no responsibility for the accuracy of details supplied.

Note : The test specimens were kept in the test laboratory at the required temperature and humidity for a minimum of 12 hours before testing was undertaken as specified in BS EN 14608:2004, BS EN 14609:2004 & BS EN 1191:2012.



# **TEST WINDOW DRAWING**



■ Run up block  
■ Weather wedge

A = 900 mm  
 B = 900 mm  
 C = 125 mm  
 D = 105 mm  
 E = 100 mm  
 F = 200 mm



Test Report No.	WTH2104#1-3	Page	9	of	12
Testing of	Single top hung projecting casement window				
Testing to	BS 6375-2:2009				



### RESULTS TEST 1-3

Sample No	WTH2104A	Temperature	22°C	Humidity	40%RH	Date	16/02/2021
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BS 6375-2 test	Requirement	Test results
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<b>Operating forces</b>  (Test 1)	BS EN 13115: 2001 Class 1  Lever handle operation, max 10Nm Movement of casement or sash Movement of casement or sash Lever handle operation, max 10Nm	Disengage = 1.3 Nm Open = 4.8 N Close = 19.1 N Engage = 1 Nm
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<b>Resistance to static torsion</b>  (Test 2)	Class 3. No damage or permanent deformation and remain operational  BS EN 13115: 2001 Class 1  Lever handle operation, max 10Nm Movement of casement or sash Movement of casement or sash Lever handle operation, max 10Nm	Load applied and removed, operational forces still within allowable limits  Disengage = 1.2 Nm Open = 5.1 N Close = 19.5 N Engage = 1 Nm
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<b>Resistance to racking</b>  (Test 3)	Class 3. No damage or permanent deformation and remain operational  BS EN 13115: 2001 Class 1  Lever handle operation, max 10Nm Movement of casement or sash Movement of casement or sash Lever handle operation, max 10Nm	Load applied and removed, operational forces still within allowable limits  Disengage = 1.6 Nm Open = 4.8 N Close = 22.5 N Engage = 1.6 Nm
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Test Report No.	WTH2104#1-3	Page	10	of	12
Testing of	Single top hung projecting casement window				
Testing to	BS 6375-2:2009				



#### TEST RESULTS 4-5

Sample No	WTH2104A	Temperature	23°C	Humidity	36%RH	Date	04/02/2021
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BS 6375-2 test	Requirement	Test results
<b>Resistance to repeated opening and closing</b>  (Test 5)	Class 3 Heavy duty as classified by BS EN 12400:2002  The window is to remain operation and functional within accepted forces	Window remained fully functional on completion of test and was considered to be fit for purpose
	<b>Operating forces before test</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.8 Nm Open = 10.2 N Close = 32.0 N Engage = 1.8 Nm
	<b>Operating forces after 2500 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.7 Nm Open = 5.8 N Close = 29.4 N Engage = 3.9 Nm
	<b>Operating forces after 5000 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.6 Nm Open = 7.2 N Close = 28.4 N Engage = 3.2 Nm
	<b>Operating forces after 7500 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.4 Nm Open = 5.6 N Close = 25.1 N Engage = 2.4 Nm
	<b>Operating forces after 10000 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.7 Nm Open = 4.9 N Close = 24.2 N Engage = 2.3 Nm
	<b>Operating forces after 12500 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.8 Nm Open = 4.9 N Close = 20.0 N Engage = 2.4 Nm

Test Report No.	WTH2104#1-3	Page	11	of	12
Testing of	Single top hung projecting casement window				
Testing to	BS 6375-2:2009				



#### TEST RESULTS 4-5

Sample No	WTH2104A	Temperature	22°C	Humidity	25%RH	Date	10/02/2021
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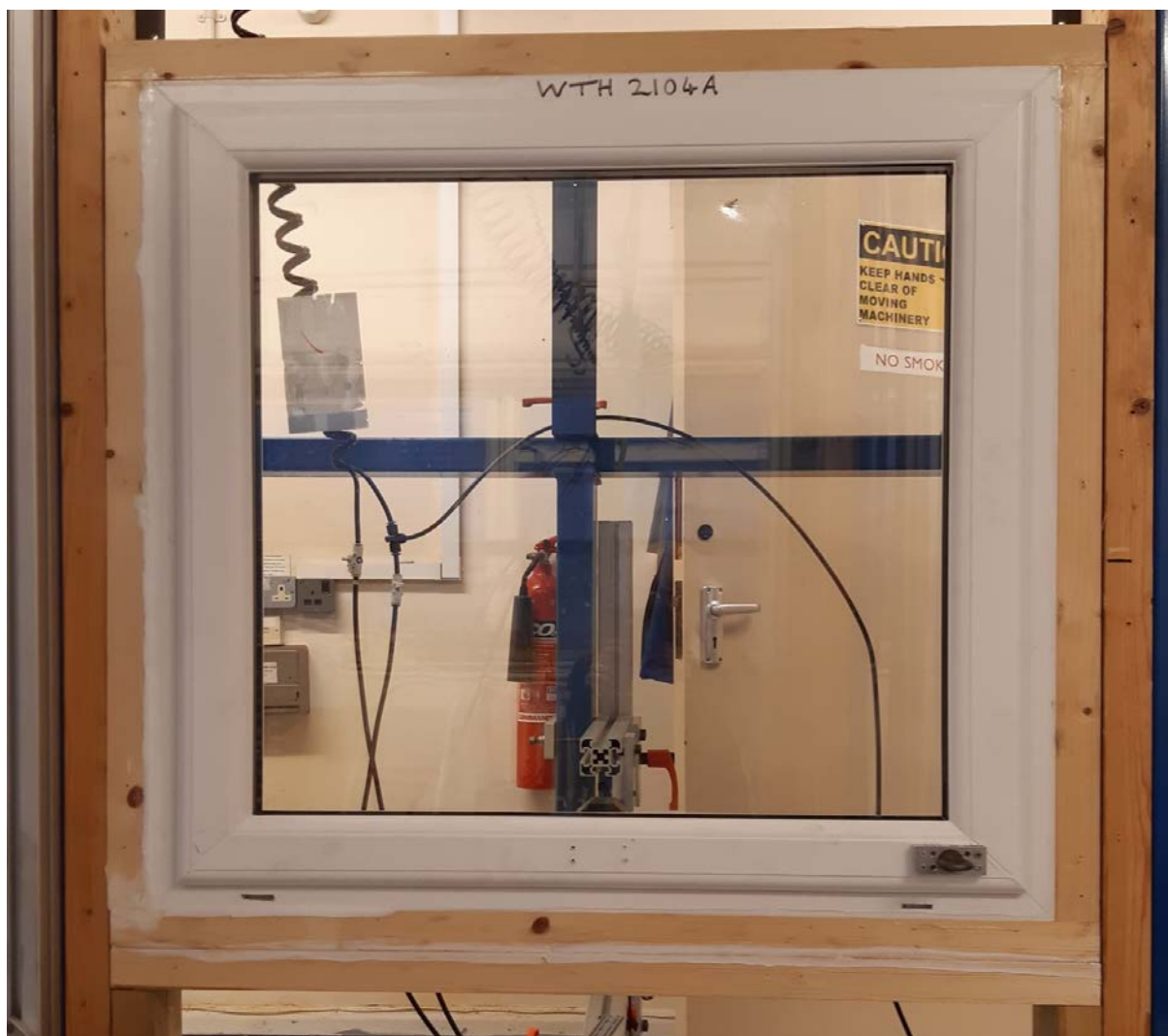
BS 6375-2 test	Requirement	Test results
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Resistance to repeated opening and closing  (Test 5)	<b>Operating forces after 15000 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.4 Nm Open = 5.1 N Close = 20.2 N Engage = 1.6 Nm
	<b>Operating forces after 17500 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.0 Nm Open = 4.8 N Close = 18.8 N Engage = 1.4 Nm
	<b>Operating forces after 20000 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.3 Nm Open = 4.7 N Close = 19.4 N Engage = 1.2 Nm
This part of the test (from 20000 to 30000 cycles) is not covered under UKAS accreditation	<b>Operating forces after 22500 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.1 Nm Open = 5.2 N Close = 19.6 N Engage = 0.9 Nm
	<b>Operating forces after 25000 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.2 Nm Open = 4.8 N Close = 20.1 N Engage = 1.2 Nm
	<b>Operating forces after 27500 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.4 Nm Open = 4.9 N Close = 20.4 N Engage = 1.2 Nm
	<b>Operating forces after 30000 cycles</b> BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.3 Nm Open = 4.8 N Close = 17.4 N Engage = 1.0 Nm

Test Report No.	WTH2104#1-3	Page	12	of	12
Testing of	Single top hung projecting casement window				
Testing to	BS 6375-2:2009				



**PICTURE OF TEST WINDOW**



**END OF REPORT**