



Test Report No: WTH2102#1-3

Date: 12/01/2021

Testing of: Single side hung projecting casement window

Tested to: BS 6375-2:2009

Prepared for: Nico Manufacturing Ltd

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AUTHORISATION

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Date: 26/01/2021

For and on behalf of Nico Manufacturing Ltd Test Laboratory

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For and on behalf of Nico Manufacturing Ltd Test Laboratory

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TEST REQUESTED BY

Origin of test request

Company Name	Nico Manufacturing Ltd
Company Address	104 Oxford Road Clacton on Sea Essex CO15 3TJ
Contact	Ian Harrison
Contact position	Sales Director

Quotation Details

Quotation No.	WTH2102
Dated:	05/01/2021

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DETAILS OF TEST

Description	Single side hung
Model / type	Projecting casement window
Make / Brand	Veka
Date sample received	18/04/2019
Any special requirements	

Test Specification	BS 6375-2:2009 Performance of windows & doors. Classification for operation and strength characteristics
Date sample received	18/04/2019
Date testing started	12/01/2021
Date testing finished	21/01/2021
Job No.	WTH2102
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. This additional testing is not covered by our UKAS accreditation

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.



DETAILS OF SAMPLE

Sample number	WTH1903A
Sample details	Single side 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 Multilock, part no 9191020 Keeps - Nico cast zinc keeps, part no 9003 centre & 9103 top & bottom
Hinges & protectors	Hinges - Nico standard 16" Hinge, part no 7740
Handle	Winlock white inline nonlocking
Fixings	Hinges - 4.8 x 25mm pan head pierce point to sash and frame Lock and keeps - 4.3 x 25mm c'sk head pierce point to sash and frame 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	850mm (W) x 1300mm (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)	Operating forces (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)	Mechanical strength - Resistance to static torsion (BS EN 14609 Force 300N for 5 minutes - deflection and operating forces measured and recorded)	Pass
C.5.2.2 (Test 3)	Mechanical strength - racking (BS EN 14608 Force 600N for 5 minutes - deflection and operating forces measured and recorded)	Pass
C.5.3 (Test 4)	Load-bearing capacity of safety devices (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)	Resistance to repeated opening and closing (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.

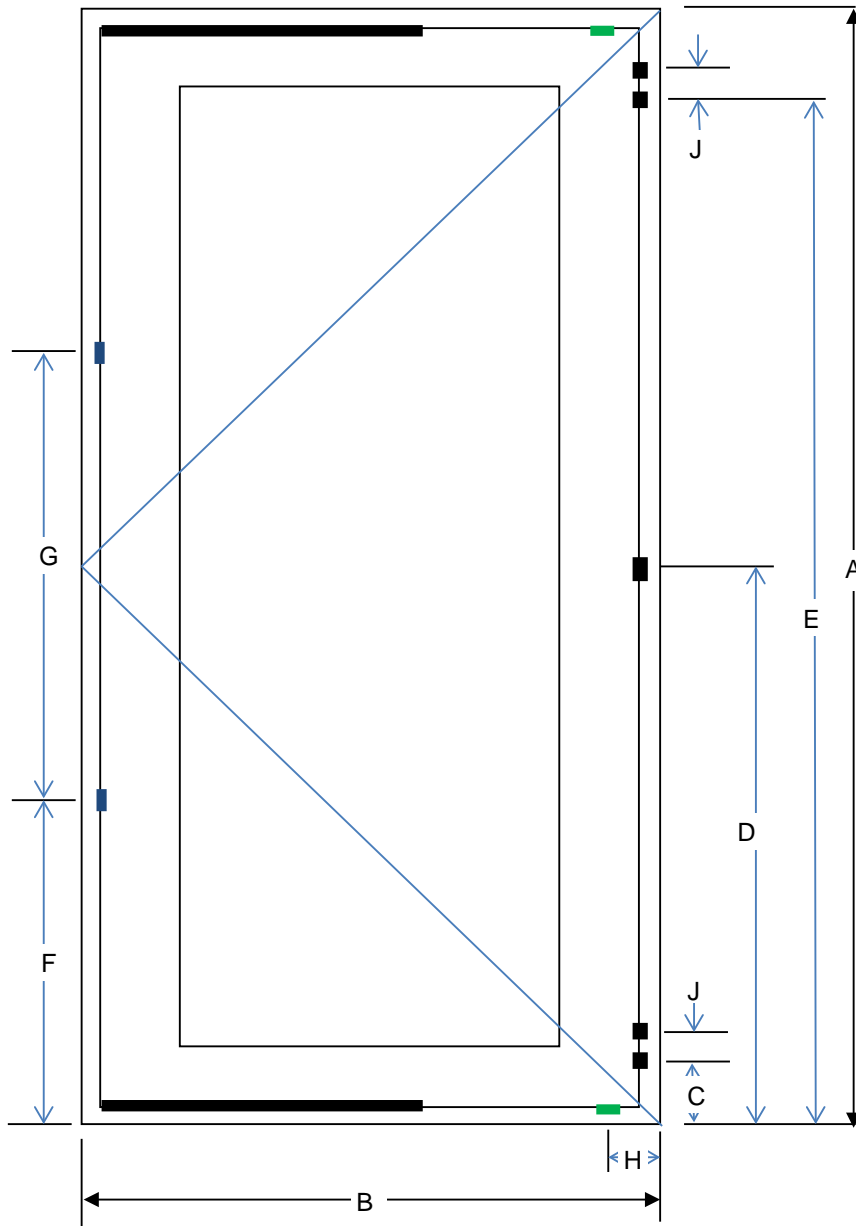
Test specimen details

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	=	1300	mm
B	=	850	mm
C	=	120	mm
D	=	660	mm
E	=	1120	mm
F	=	450	mm
G	=	400	mm
H	=	80	mm
j	=	70	mm



RESULTS TEST 1-3

Sample No	WTH1903A	Temperature	21°C	Humidity	33%RH	Date	21/01/2021
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BS 6375-2 test	Requirement	Test results
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Operating forces (Test 1)	BS EN 13115: 2001 Class 1	
	Lever handle operation, max 10Nm	Disengage = 1.3 Nm
	Movement of casement or sash	Open = 7.7 N
	Movement of casement or sash	Close = 21.9 N
	Lever handle operation, max 10Nm	Engage = 1.3 Nm

Resistance to static torsion (Test 2)	Class 3. No damage or permanent deformation and remain operational	
	BS EN 13115: 2001 Class 1	
	Lever handle operation, max 10Nm	Disengage = 1.2 Nm
	Movement of casement or sash	Open = 7.3 N
	Movement of casement or sash	Close = 23.1 N
Lever handle operation, max 10Nm	Engage = 1.4 Nm	

Resistance to racking (Test 3)	Class 3. No damage or permanent deformation and remain operational	
	BS EN 13115: 2001 Class 1	
	Lever handle operation, max 10Nm	Disengage = 1.2 Nm
	Movement of casement or sash	Open = 34.0 N
	Movement of casement or sash	Close = 49.0 N
Lever handle operation, max 10Nm	Engage = 1.3 Nm	



TEST RESULTS 4-5

Sample No	WTH1903A	Temperature	20°C	Humidity	42%RH	Date	12/01/2021
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BS 6375-2 test	Requirement	Test results
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Resistance to repeated opening and closing (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
	Operating forces before test BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.8 Nm Open = 13.2 N Close = 41.9 N Engage = 2.7 Nm
	Operating forces after 2500 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.6 Nm Open = 9.8 N Close = 32.8 N Engage = 2.8 Nm
	Operating forces after 5000 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.1 Nm Open = 19.1 N Close = 38.3 N Engage = 2.3 Nm
	Operating forces after 7500 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.5 Nm Open = 8.5 N Close = 36.2 N Engage = 1.8 Nm
	Operating forces after 10000 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.3 Nm Open = 10.4 N Close = 34.1 N Engage = 2.5 Nm
	Operating forces after 12500 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.3 Nm Open = 19.6 N Close = 41.1 N Engage = 1.6 Nm

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TEST RESULTS 4-5

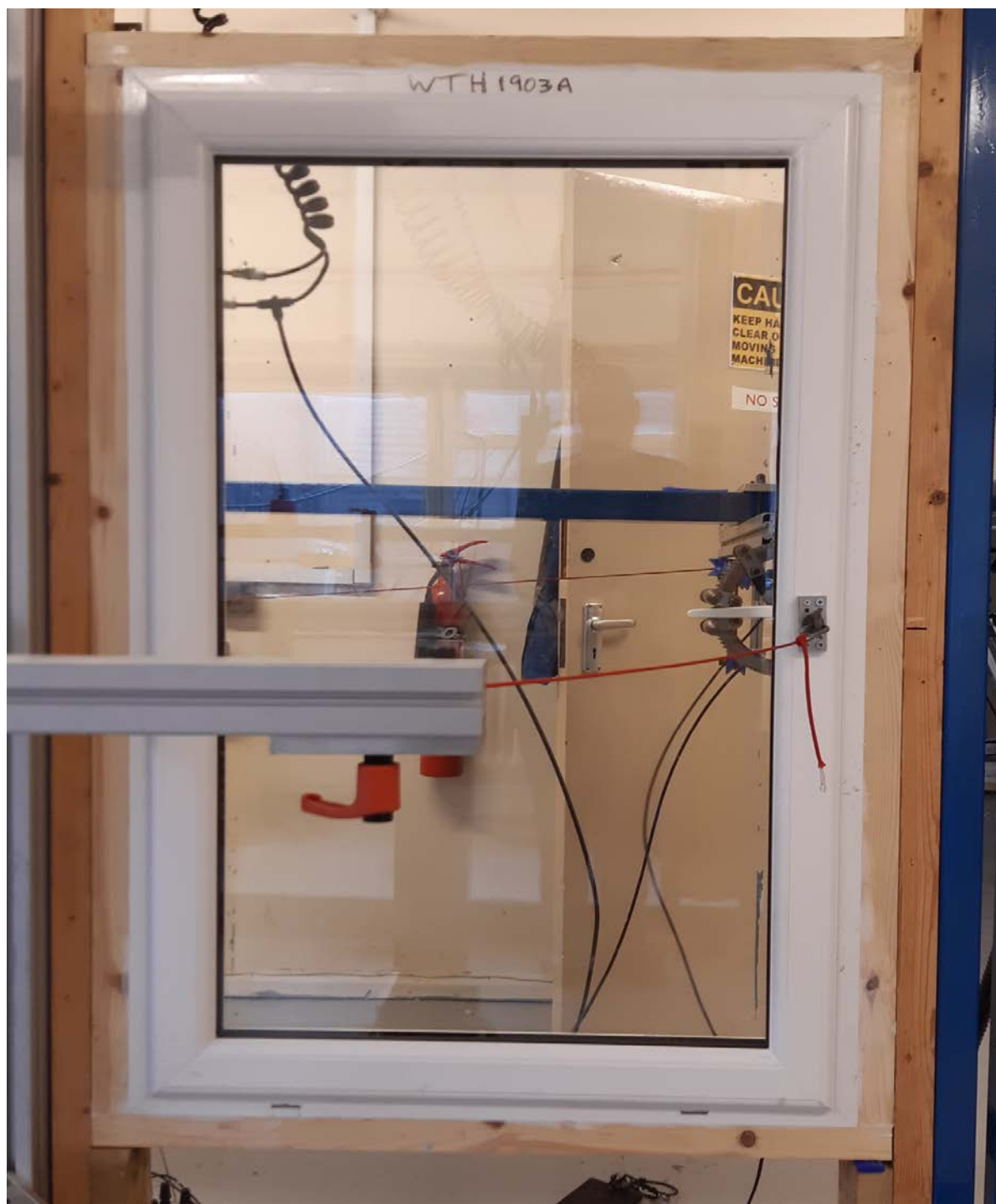
Sample No	WTH1903A	Temperature	19°C	Humidity	36%RH	Date	15/01/2021
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BS 6375-2 test	Requirement	Test results
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Resistance to repeated opening and closing (Test 5)	Operating forces after 15000 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.8 Nm Open = 13 N Close = 42 N Engage = 2.7 Nm
	Operating forces after 17500 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.6 Nm Open = 9.8 N Close = 33 N Engage = 2.8 Nm
	Operating forces after 20000 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.1 Nm Open = 19 N Close = 38 N Engage = 2.3 Nm
	Operating forces after 22500 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.5 Nm Open = 8.5 N Close = 36 N Engage = 1.8 Nm
This part of the test (from 20000 to 30000 cycles) is not covered under UKAS accreditation	Operating forces after 25000 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 2.3 Nm Open = 10 N Close = 34 N Engage = 2.5 Nm
	Operating forces after 27500 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.3 Nm Open = 19.6 N Close = 41.1 N Engage = 1.6 Nm
	Operating forces after 30000 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 1.3 Nm Open = 19.6 N Close = 41.1 N Engage = 1.6 Nm



PICTURE OF TEST WINDOW



END OF REPORT