Test Report No:	WTH 1614-3
Date:	14/12/2016
Testing of:	Single side hung projecting casement window
Tested to:	Operation & Strength BS 6375: Part 2
Prepared for:	Nico Manufacturing

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AUTHORISATION

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Date: 06/01/2017

For and on behalf of Nico Manufacturing Ltd Test Laboratory

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Date of issue of report 09/01/2017

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TEST REQUESTED BY

Origin of test request

Company Name	Nico Manufacturing Ltd
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Contact position	Sales Director

Quotation Details

Quotation No.	
Dated:	

DETAILS OF TEST

Description	Single side hung
Model / type	Projecting casement window
Make / Brand	Veka 70
Manufacturer	Consort Ltd
Date of manufacture	09/11/2016
Other information	

Test Specification	BS 6375: Part 2: 2009 Performance of windows & doors. Classification for operation and strength characteristics
Date sample received	17/11/2016
Date testing started	14/12/2016
Date testing finished	20/12/2016
Job No.	WTH 1614
Any special requirements	

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 2

DETAILS OF SAMPLE

Sample details	Single side hung projecting casement window
Fabricator	Consort Ltd
Material:	PVC-U, fully welded joints Frame - Veka profile part no 101160 Sash - Veka profile part no 103264
Finish	White
Lock & keeps	Locks - Nico telescopic shootbolt , part no 979111422 Keeps - Cast zinc, part nos ; Espag keeps 9003, corner keeps 93K1
Hinges & protectors	Hinges - Nico 16" satandard 13mm friction hinge, part no 7740 Nico Restrictor safety catch, Part no - catch 6100, pin 6013.
Handle	ERA Maxim 3, cranked
Fixings	Lock; 3.9 x 30mm c'sk head pierce point Keeps; 4.3 x 25mm c'sk head pierce point to front position, 3.9 x 25mm c'sk drill point to rear position. Hinges; 4.3 x 25mm pan head pierce point to sash and frame. Restrictor safety catch; 4.3 x 25mm c'sk pierce point to sash and frame.
Weather sealing	Co-extruded EPDM gasket
Glass (or infill)	28mm double glazed sealed unit, 4-20-4mm Toughened glass.
Glazing system	Internally bead glazed Beads have co-extruded EPDM gaskets
Sample dimensions	1200mm (h) x 600mm (w) overall.

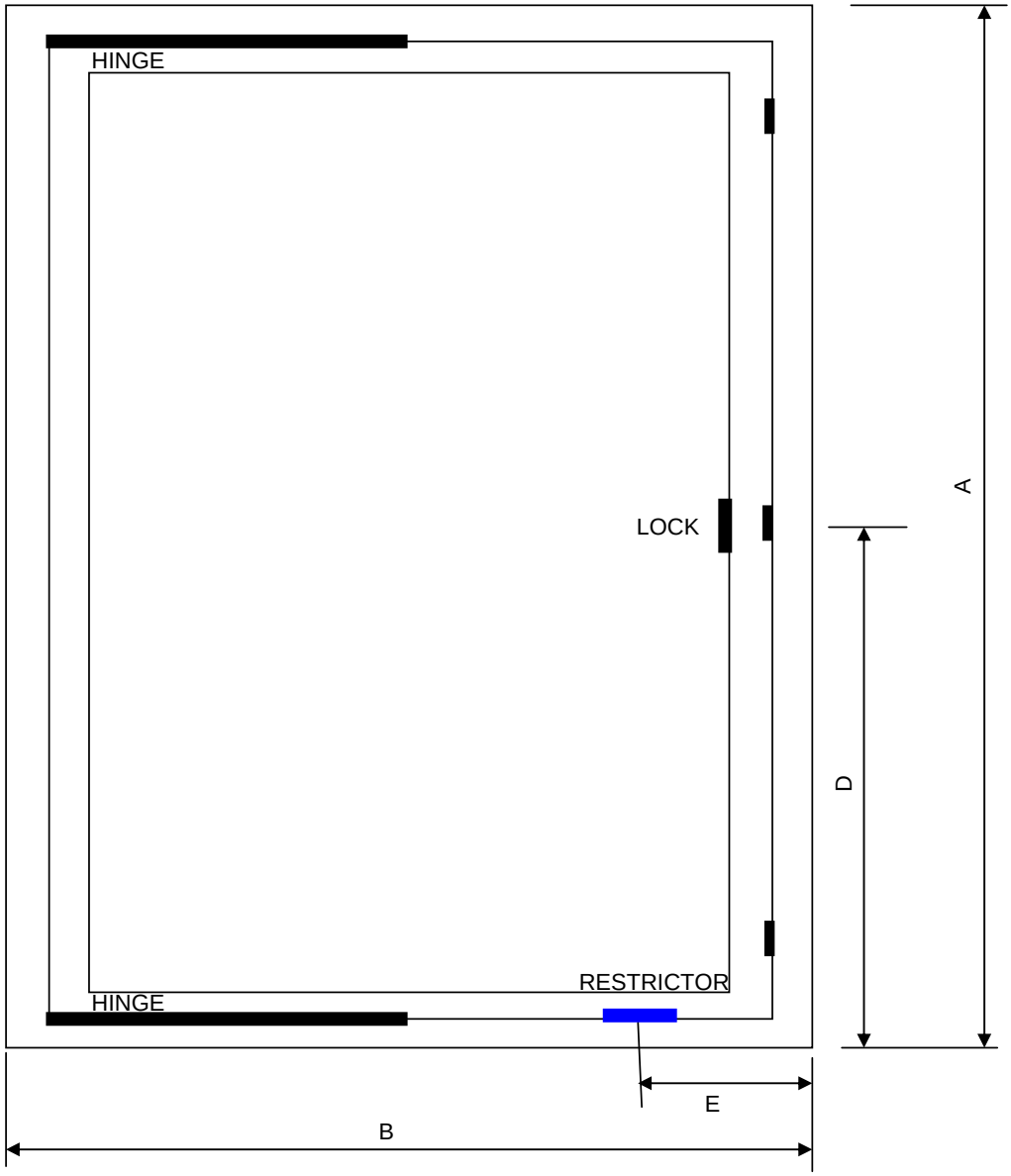
CONCLUSIONS OF TEST

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 satic torsion** (BS EN 14609 Force 300N for 5 minutes - deflection and opeating forces measured and recorded)	Pass
C.5.2.2 (Test 3)	**Mechanical strength - racking** (BS EN 14608 Force 600N for 5 minutes - deflection and opeating forces measured and recorded)	Pass
C.5.3 (Test 4)	**Load-bearing capacity of safety devices** (BS EN 14351 Resist force of 350N for 60 seconds)	Pass
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

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.

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



A	=	1200	mm
A1	=	N/A	mm
B	=	1200	mm
B1	=	N/A	mm
C	=	N/A	mm
D	=	600	mm
E	=	230	mm

RESULTS TEST 1-3

BS 6375-2 test	Requirement	Test results
Opeating forces (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 = 28.5 N Open = 15.4 N Close = 39.3 N Engage = 39.6 N
Resistance to static torsion (Test 2)	Class 3. No damage or permanent deformation and remain operational BS EN 13115: 2001 Class 3 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 = 26.7 N Open = 14.9 N Close = 47.5 N Engage = 44.2 N
Resistance to racking (Test 3)	Class 3. No damage or permanent deformation and remain operational BS EN 13115: 2001 Class 3 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 = 26.5 N Open = 17.9 N Close = 56.6 N Engage = 64.0 N

TEST RESULTS 4

BS 6375-2 test	Requirement	Test results
Load bearing capacity of safety devices	Withstand force of 350N for 60 seconds BS EN 14351-1:2006 Clause 4.8	Withstood force and remained operational

TEST RESULTS 4-5

BS 6375-2 test	Requirement	Test results
Resistance to repeated opening and closing (Test 5)	Class 2 Moderate duty as classified by BS EN 12400 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 = 27.8 N Open = 16.1 N Close = 38.8 N Engage = 40.3 N
	Operating forces after 2500 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 25.5 N Open = 14.4 N Close = 34.8 N Engage = 36.7 N
	Operating forces after 5000 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 23.8 N Open = 14.6 N Close = 31.8 N Engage = 34.9 N
	Operating forces after 7500 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 22.5 N Open = 13.6 N Close = 31.3 N Engage = 34.6 N
	Operating forces after 10000 cycles BS EN 13115: 2001 Class 1 Lever handle operation, max 10Nm Movement of casement or sash, max 100N	Disengage = 23.1 N Open = 15.4 N Close = 39.2 N Engage = 36.1 N

PICTURE OF TEST WINDOW