DURATIQUE™

Stainless Steel Antique Hardware

CO7100C / CO7200C
Door Lever Handle on Backplate

BS EN 12217 DURABILITY TEST REPORT

Conducted by:
Wintech Engineering Limited

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UKAS TESTING 2223

Technical Report – R20433
BS 6375-2:2009 - Performance of Windows and Doors, Classification for operation and strength characteristics and guidance on selection and specification

Dura Tique 7000/9000 Handle Lever Only

21st May 2019

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1. Introduction

This report describes tests carried in order to determine the durability of the sample with respect to operating forces and resistance to repeated operation of the test specimen supplied as follows:

Test Details	
Customer:	Coastal Group Global House Unit 3 Bojea Industrial Estate St Austell Cornwall PL25 5RJ United Kingdom
Product Tested:	Dura Tique 7000/9000 Handle Lever Only
Date of Sample Received:	27th March 2019
Date of Test:	29th March – 11th April 2019 - Repeated Opening and closing
Test Conducted at:	Wintech Engineering Limited Halesfield 2 Telford Shropshire TF7 4QH
Test Conducted by:	D Knight- Laboratory Technician D Adams- Senior Laboratory Engineer

Report Authorisation	
Report Compiled by:	N Steventon Laboratory Technician
Authorised by:	M Witkowska Deputy Quality Manager

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This report and the results shown within are based upon the information, drawings, samples and tests referred to in the report. The results obtained do not necessarily relate to samples from the production line of the above named company and in no way constitute any form of representation or warranty as to the performance or quality of any products supplied or to be supplied by them. Wintech Engineering Ltd or its employees accept no liability for any damages, charges, cost or expenses in respect of or in relation to any damage to any property or other loss whatsoever arising either directly or indirectly from the use of the report.

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2. Summary of Results

The following summarises the results of testing carried out, in accordance with the relevant testing and classification standards.

The performance of the sample tested has been assessed against the criteria described in below standards. The results as reported will be used to determine the conformance or non-conformance with the specification.

Test Method & Classification Standard	***Description***	***Classification***
BS EN 12046-2:2003 BS EN 12217:2003	Operating forces	1
BS EN 1191:2012	Repeated opening and closing	Class 6

More comprehensive details are reported in Section 6.

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.

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3. Description of Test Sample

Project number:	N/A
Product range name:	Dura Tique 7000/9000
Configuration:	Lever Testing only
Opening direction:	N/A
Is the sample typical of normal production?	Yes
Please define the closing condition of the sample i.e. closed, fastened, latched, locked and secured etc.	Lever down, release, lever up, release

Outer Frame

Outer frame width:	925 mm	**Outer frame material:**	Timber
Outer frame height:	1308 mm	**Outer frame gasket**	N/A
Outer frame Part Numbers	N/A	Gasket type:	

Leaf

Leaf width:	835 mm	**Leaf material:**	Timber
Leaf height:	1229 mm	**Leaf gasket**	N/A

Glazing

Glass unit	N/A	**Glazing gasket**	

Hardware

	Manufacturer:	Product description:	Product code:	Quantity:
Cylinder:	N/A			

Confirmation

Please confirm that the samples provided for testing are representative of standard production?	

The description of the test sample in this section has been supplied by the customer and has not been verified by Wintech Engineering Limited.

See Section 7 for test sample drawings as supplied by Coastal Group.

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4. Test Arrangement

4.1 Test Rig

The test sample was mounted in to a 100 x 75 mm timber sub-frame in accordance with manufacturer's installation requirements and was secured into the test rig ready for testing.

4.2 Instrumentation

4.2.1 Force Measurement

Calibrated force gauges and load cells were used to measure operation forces to +/- 5%.

4.2.2 Time

A calibrated stop watch was used to measure/record time

4.2.3 Torque

A calibrated torque meter was used for recording forces required to operate any finger operated hardware with an accuracy of +/- 5%

4.2.4 Scales

The mass of the opening leaf was measured using scales accurate to +/- 2%

4.2.5 Measuring Tape

A measuring tape and rule accurate to +/- 0.5mm were used

4.2.6 Temperature & Humidity

A digital data logger capable of measuring temperature with an accuracy of ± 1°C and humidity with an accuracy of ± 5 %Rh was used.

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5. Test Procedures

5.1 Sequence of Testing

Sample 1

1. Operating Forces
2. Resistance to Repeated Opening and Closing
3. Operating Forces

5.2 Operating forces

5.2.2 Operating hardware

The minimum force to engage the latch, lock and unlock the hardware before finally unlatching the hardware was recorded.

The sequence was repeated three times with the results averaged to obtain the final value.

5.3 Resistance to Repeated Opening and Closing

5.3.1 Prior to the test

The mass of the casement, sash or leaf was measured prior to any testing.

With the test sample installed in accordance to clause 6 of EN 1191:2012, the sample was subject to 5 manual operations before the following initial measurements were taken:

a) The operating forces, measured in accordance with BS EN 12046-1:2003
b) The mass of the leaf
c) The dead load applied by the operating equipment on the leaf

The operating equipment was adjusted in accordance with the operation of the hardware its reference velocity and attainment of forces within the specified limits, the rest times and strokes.

5.3.2 Cyclic test

The sample was subject to repeated opening and closing as outlined in Annex H of BS EN 1191:2012. Throughout the test, the operating hardware was subject to the required number of cycles as was the sash/sashes.

The test was configured for the correct amount of cycles according to the required classification as outlined in BS EN 12400:2002.

At every period equal 2500 cycles or 25% of the specified total test cycles, whichever is the greater, the test was halted and the test specimen was examined and the operating forces were measured and if necessary, lubrication and adjustment was carried out in accordance with the manufacturers maintenance instructions. The test was continued in the defined conditions for the next period.

The test was continued until the defined number of cycles was completed.

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5.3.3 Following the test

Following the completion of the defined number of cycles, the following measurements were taken:

a) The operating forces, measured in accordance with BS EN 12046-1:2003
b) The mass of the leaf
c) The dead load applied by the operating equipment on the leaf

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6. Test Results

6.1 Resistance to Repeated Opening and Closing

6.1.1 Initial Measurements

Description	Primary Leaf
Mass of leaf (kg)	N/A
Dead load applied by the operating equipment (kg)	N/A
Stroke of casement	N/A

The operating forces measured before the test are as follows:

Description	Primary Leaf	Classification
Latch Hardware (N)	59.5	1
Unlatch Hardware (N)	57.4	1
Overall Classification according to BS EN 12217:2003		1

6.1.2 Cycle Test

The number of cycles completed by the sample was **200,000** on the Handle only as requested by the customer and as required by **Class 6** of the standard.

The sample was lubricated as specified by the manufacturer at each period equal to 50,000 cycles or 25% whichever the greater.

6.1.3 Final Measurements

Description	Primary Leaf
Mass of leaf (kg)	N/A
Dead load applied by the operating equipment (kg)	N/A
Stroke of casement	N/A

The operating forces measured following the test are as follows:

Description	Primary Leaf	Classification
Latch Hardware (N)	33.6	2
Unlatch Hardware (N)	42.3	2
Overall Classification according to BS EN 12217:2003		2

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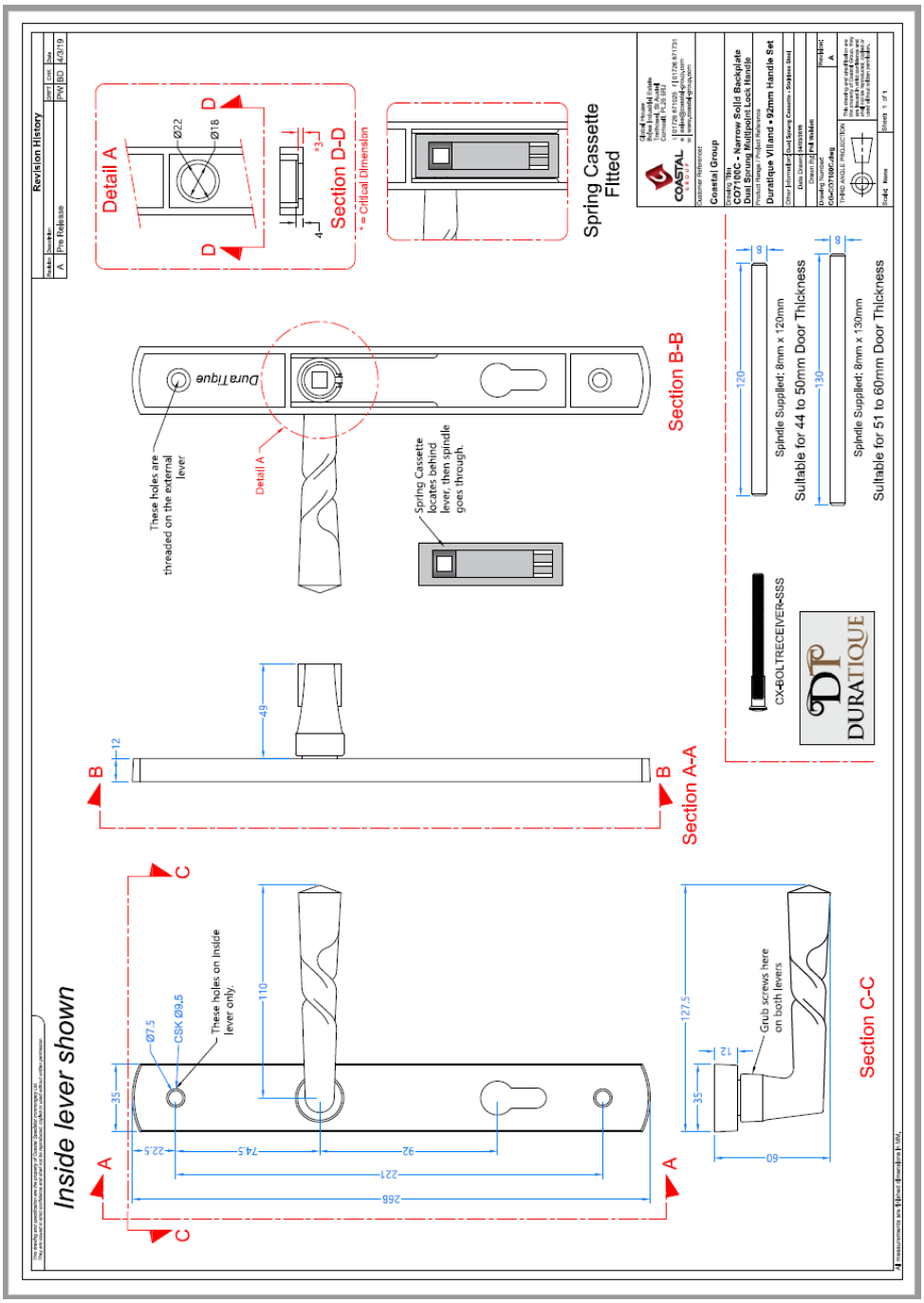
7. System Drawings



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