

Corduff Joinery

TEST Report

SCOPE OF WORKS

<Performance test – Door handle – Arklow, Cabra, Howth, Clara>

REPORT NUMBER

170609099GZU-001

ISSUE DATE

2017/6/19

[REVISED DATE]

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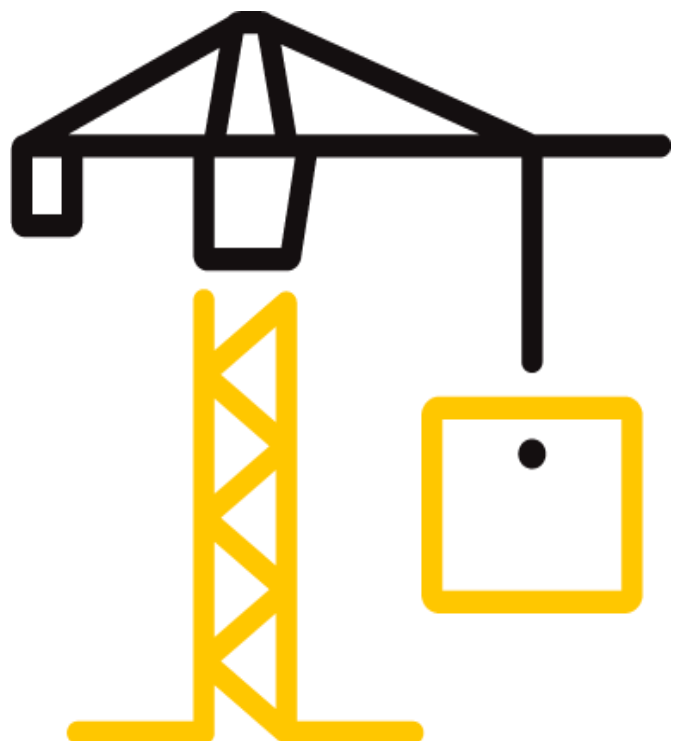
PAGES

12

DOCUMENT CONTROL NUMBER

TTRF_EN 1906:2012_c

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Test Report**Report Number: 170609099GZU-001****Report Date: 2017/6/19**

Applicant:	Corduff Joinery
Applicant Address:	Umerafree Corduff Carrickmacross Co Monaghan A81 K240 Ireland

Sample information	
Product:	Door handle
Trade Mark:	
Model and/or type reference:	Arklow, Cabra, Howth, Clara
Manufacturer:	China Link Wood & Metals Ltd.
Manufacturer Address:	Office 3905, Two Exchange Square; 8 Connaught Place, Central, HK
Sample ID:	S161124096-001~011
Date of receipt of test item:	2016-11-21, 2017-03-31
Situation of receipt samples:	Received in good condition
Date (s) of performance of tests:	2016-11-21~2017-05-05

Testing information									
Standard:	EN 1906:2012								
Rating(s):	<table border="1" style="display: inline-table;"><tr><td>1</td><td>6</td><td>—</td><td>0</td><td>0</td><td>3</td><td>0</td><td>A</td></tr></table>	1	6	—	0	0	3	0	A
1	6	—	0	0	3	0	A		
Classification of installation and use:	Intend use in internal, medium frequency used doors								
Testing Laboratory name:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch								
Address:	No. 9 Nan Xiang San Road, GETDD, Guangzhou, China								
Possible Test Case Verdicts									
Test Case does not apply to the Test object:	N/A								
Test object does meet the requirement:	P (Pass)								
Test object does not meet the requirement:	F (Fail)								
Conclusion:									
The submitted samples COMPLIED with all applicable clauses of EN 1906:2012 for the ratings.									
* When determining the test result, measurement uncertainty has been considered.									

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General product information:

Handle, Model Arklow, Cabra, Howth, Clara, are made by zinc alloy, door thicknesses: 35-45mm, and the maximum rotation angle is 45°. Four models are the same structure and finish except for appearance, and model Clara was subjected to a full test.

This report is cross-listing based on Report# 161124096GZU-001, May 16, 2017.

Detail "Ratings" information listed as following:

First digit (Category of use): Grade 1—Medium frequency of use by people with a high incentive to exercise care and with a small chance of misuse.

Second digit (Durability): Grade 6 —Customized 200 000 cycles requirement by the applicant.

Third digit (Door mass): No classification;

Fourth digit (Fire resistance): —No performance determined;

Fifth digit (Safety): Grade 0 — No safety requirement.

Sixth digit (Corrosion resistance): Grade 3—high resistance;

Seventh digit (Security): Grade 0—No performance determined;

Eighth digit (Type of operation): Type A—Spring assisted furniture.

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EN 1906:2012														
Building hardware – Lever handles and knob furniture														
– Requirements and test methods														
Clause	Requirement - Test	Result - Remark		Verdict										
4	Classification													
4.1	Code System													
4.1.1	Category of use (1 st) :	1	—											
4.1.2	Durability (2 nd) :	6	—											
4.1.3	Door mass (3 rd)	—	—											
4.1.4	Fire resistance (4 th)	0	—											
4.1.5	Safety (5 th)	0	—											
4.1.6	Corrosion resistance (6 th)	3	—											
4.1.7	Security (7 th)	0	—											
4.1.8	Type of operation (8 th)	A	—											
5	REQUIREMENT													
5.1	General Sets of furniture shall be classified in grades 1 to 4 in regard to performance requirements specified in 5.2 to 5.13.	Refer to Clause 5.2 to 5.13		P										
	Materials in products shall not release any dangerous substances in excess of the maximum levels specified in the European material standards.	Informative		—										
5.2	Check of spindle and fastening elements The spindle and fastening elements shall be supplied or specified by the manufacturer with every set of lock or latch furniture. The manufacturer shall state clearly the door thickness or range of the door thicknesses for which the furniture is suitable and in the case of spring assisted and spring loaded furniture, the angle of rotation permitted by the design.	Spindle and fastening elements were supplied by manufacturer. Door thicknesses: 35-45mm The angle of rotation the maximum rotation angle is 45°		P										
5.3	Rotational torque strength Lock or latch furniture shall show no failure of any component and the lever handles or knobs shall still operate after the test. Lever handles or knobs shall not deform permanently more than 5 mm as measured at 50 mm±2mm from the axis of rotation by the dial gauge. Category of use acceptance criteria:	After 100 000 cycles Rotational torque 20 Nm. Permanent deformation: 1,83 mm After 200 000 cycles Rotational torque 20 Nm. Permanent deformation: 2,16 mm		P										
		<table border="1"> <thead> <tr> <th>Grade</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Torque (Nm)</td> <td>20</td> <td>30</td> <td>40</td> <td>50</td> </tr> </tbody> </table>			Grade	1	2	3	4	Torque (Nm)	20	30	40	50
Grade	1	2	3	4										
Torque (Nm)	20	30	40	50										

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Clause	Requirement - Test	Result - Remark	Verdict											
5.4	<p>Axial strength of lock furniture or latch furniture and fixing</p> <p>There shall be no fail of any component and lever handles or knobs shall still operate after the test. After test the permanent deformation for lever handles or knobs measured at the reference point 75 mm±2mm from the axis of rotation shall not increase by more than 2 mm.</p> <p>Category of use acceptance criteria:</p> <table border="1"> <thead> <tr> <th>Grade</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Load (N)</td> <td>300</td> <td>500</td> <td>800</td> <td>1000</td> </tr> </tbody> </table>	Grade	1	2	3	4	Load (N)	300	500	800	1000	<p>Axial load: 300 N.</p> <p>Permanent deformation: 0,36 mm</p>	P	
Grade	1	2	3	4										
Load (N)	300	500	800	1000										
5.5	Free play and safety													
5.5.1	<p>Requirement of free play</p> <p>The maximum total movement measured shall not exceed the limit as below,</p> <p>Category of use acceptance criteria:</p> <table border="1"> <thead> <tr> <th>Grade</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Total movement (mm)</td> <td>≤10</td> <td>≤10</td> <td>≤6</td> <td>≤6</td> </tr> </tbody> </table> <p>This requirement only applies to lever handles and knobs that will not be driven during the endurance test.</p>	Grade	1	2	3	4	Total movement (mm)	≤10	≤10	≤6	≤6	<p>Maximum movement of initial: 0,06 mm</p> <p>Maximum movement of 45°: 0,13 mm</p>	P	
Grade	1	2	3	4										
Total movement (mm)	≤10	≤10	≤6	≤6										
5.5.2	<p>Safety requirement</p> <p>When the lock or latch furniture is fitted to the test block there shall be no sharp edges that can cause injury.</p>	No sharp edges can cause injury.	P											
5.6	<p>Free angular movement or misalignment</p> <p>The free angular movement or misalignment shall not exceed the limit as below,</p> <p>Category of use acceptance criteria:</p> <table border="1"> <thead> <tr> <th>Grade</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Total movement (mm)</td> <td>≤10</td> <td>≤10</td> <td>≤5</td> <td>≤5</td> </tr> </tbody> </table> <p>This requirement applies to all furniture with either a fixed or floating spindle.</p>	Grade	1	2	3	4	Total movement (mm)	≤10	≤10	≤5	≤5	Maximum movement: 0,16 mm	P	
Grade	1	2	3	4										
Total movement (mm)	≤10	≤10	≤5	≤5										
5.7	Torque of return mechanism													
5.7.1	General	See item 5.7.2 and 5.7.4	P											

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Clause	Requirement - Test	Result - Remark	Verdict																																				
5.7.2	<p>Unsprung and spring-assisted lever handles</p> <p>Category of use acceptance criteria:</p> <p>For unsprung lever handles, maximum moment,</p> <table border="1"> <thead> <tr> <th>Grade</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Operate moment (Nm)</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Return moment (Nm)</td> <td colspan="2">≤0.6</td> <td colspan="2">≤1.5</td> </tr> </tbody> </table> <p>For spring assisted lever handles,</p> <table border="1"> <thead> <tr> <th>Grade</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Operate moment (Nm)</td> <td colspan="2">≤1.5</td> <td colspan="2">≤2.4</td> </tr> <tr> <td>Return moment (Nm)</td> <td colspan="2">≤0.6</td> <td colspan="2">≤1.5</td> </tr> <tr> <td>Angle of rotation</td> <td colspan="4">≥40°</td> </tr> </tbody> </table>	Grade	1	2	3	4	Operate moment (Nm)	-	-	-	-	Return moment (Nm)	≤0.6		≤1.5		Grade	1	2	3	4	Operate moment (Nm)	≤1.5		≤2.4		Return moment (Nm)	≤0.6		≤1.5		Angle of rotation	≥40°				<p>Operate torque:1,46Nm</p> <p>Return torque:0,54Nm</p>	P	
Grade	1	2	3	4																																			
Operate moment (Nm)	-	-	-	-																																			
Return moment (Nm)	≤0.6		≤1.5																																				
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5.7.3	<p>Unsprung knobs</p> <p>Category of use acceptance criteria:</p> <table border="1"> <thead> <tr> <th>Grade</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Operate moment (Nm)</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Return moment (Nm)</td> <td colspan="4">≤0.6</td> </tr> </tbody> </table>	Grade	1	2	3	4	Operate moment (Nm)	-	-	-	-	Return moment (Nm)	≤0.6				<p>Spring-assisted lever handle</p>	N/A																					
Grade	1	2	3	4																																			
Operate moment (Nm)	-	-	-	-																																			
Return moment (Nm)	≤0.6																																						
5.7.4	<p>Spring-loaded lever handles or knobs</p> <p>The torque required to rotate the lever handles or knobs through a maximum of 60° 0/+5° or through the angle of rotation possible by the design shall meet the specified requirement as below,</p> <p>Category of use acceptance criteria:</p> <table border="1"> <thead> <tr> <th>Grade</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Operate moment (Nm)</td> <td colspan="2">≤1.5</td> <td colspan="2">≤2.4</td> </tr> <tr> <td>Return moment (Nm)</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Limited deviations "at rest"</td> <td>±4°</td> <td>±2°</td> <td>±1°</td> <td>±1°</td> </tr> </tbody> </table>	Grade	1	2	3	4	Operate moment (Nm)	≤1.5		≤2.4		Return moment (Nm)	-	-	-	-	Limited deviations "at rest"	±4°	±2°	±1°	±1°	<p>Spring-assisted lever handle</p>	N/A																
Grade	1	2	3	4																																			
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Return moment (Nm)	-	-	-	-																																			
Limited deviations "at rest"	±4°	±2°	±1°	±1°																																			

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Clause	Requirement - Test	Result - Remark			Verdict																									
5.8	<p>Durability of mechanism There shall be no failure of any component and the lever handle or knob shall still operate after test. After the test, the "at-rest" position of spring-loaded door furniture when against its stops shall conform to the "at-rest" position recorded before commencing, the detailed requirement specified as below,</p> <table border="1"> <thead> <tr> <th>Grade</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Number of cycles</td> <td colspan="2">100K</td> <td colspan="2">200K</td> </tr> <tr> <td>force L (N)</td> <td colspan="2">60</td> <td colspan="2">100</td> </tr> <tr> <td>force P (N)</td> <td colspan="2">60</td> <td colspan="2">100</td> </tr> <tr> <td>Limited deviations "at rest" (except for spring assisted levers)</td> <td>±4°</td> <td>±2°</td> <td>±1°</td> <td>±1°</td> </tr> </tbody> </table>	Grade	1	2	3	4	Number of cycles	100K		200K		force L (N)	60		100		force P (N)	60		100		Limited deviations "at rest" (except for spring assisted levers)	±4°	±2°	±1°	±1°	<p>Customized 200 000 cycles, function correctly after test; The test was done with a rigid steel stop.</p>			P
Grade	1	2	3	4																										
Number of cycles	100K		200K																											
force L (N)	60		100																											
force P (N)	60		100																											
Limited deviations "at rest" (except for spring assisted levers)	±4°	±2°	±1°	±1°																										
5.9	<p>Repeat test of axial strength of lock or latch furniture and methods of fixing The lock or latch furniture shall meet the requirement of 5.4.</p>	<p>After 100 000 cycles Axial load: 300 N. Permanent deformation: 0,50 mm After 200 000 cycles Axial load: 300 N. Permanent deformation: 0,84 mm</p>			P																									
5.10	<p>Repeat test of free play measurement The lock or latch furniture shall meet the requirement of 5.5.1</p>	<p>After 100 000 cycles Maximum movement of initial: 0,21 mm Maximum movement of 45°: 0,47 mm. After 200 000 cycles Maximum movement of initial: 1,35 mm Maximum movement of 45°: 1,84 mm</p>			P																									
5.11	<p>Repeat test of measurement of free angular movement or misalignment The lock or latch furniture shall meet the requirement of 5.6.</p>	<p>After 100 000 cycles Maximum movement: 0,18mm After 200 000 cycles Maximum movement: 0,24mm</p>			P																									

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Clause	Requirement - Test	Result - Remark	Verdict										
5.12	Repeat test or torque of return mechanism The lock or latch furniture shall meet the requirement of 5.7.	After 100 000 cycles Operate torque:1,49Nm Return torque:0,58Nm. After 200 000 cycles Operate torque:1,43Nm Return torque:0,54Nm	P										
5.13	Axial strength for safety furniture (optional) Category of use acceptance criteria: <table border="1" data-bbox="347 846 853 958"> <thead> <tr> <th>Grade</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Axial load (N)</td> <td colspan="2">1500</td> <td colspan="2">2500</td> </tr> </tbody> </table> After test, there shall be no failure of any component and the furniture shall remain fixed to the test block. The lever handle or knob need not operate after completion of the test.	Grade	1	2	3	4	Axial load (N)	1500		2500		No safety furniture.	N/A
Grade	1	2	3	4									
Axial load (N)	1500		2500										
5.14	Corrosion resistance Corrosion resistance shall comply with requirements of EN 1670:1998.	Grade 3 After 96 hours exposure, no corrosion was found on the surface	P										
8	Marking												
Annex A	Requirements for security lock furniture for use on burglary resistant doors	Furniture not approved for use on burglary resistant doors	N/A										
Annex C	Requirements for lock and latch furniture for use on fire/smoke door assemblies	Not approved for use on fire/smoke door assemblies	N/A										

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Appendix A: Product Documents

Model No.	Document Ref.	Document Title	Issue	Date
Arklow	-	Exploded drawing and BOM list	20170508	20170508
Cabra	-	Exploded drawing and BOM list	20170508	20170508
Howth	-	Exploded drawing and BOM list	20170508	20170508
Clara	-	Exploded drawing and BOM list	20170508	20170508

Note:

It is a mandatory requirement that Intertek is informed of any modifications or changes to the following:

- Product submitted for approval or that has been approved
- Manufacturing process
- Manufacturing address
- Materials
- Materials supplier
- Documents recorded within this register

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Appendix B: Sample received photo



Model: Clara



Model: Arklow

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Appendix B: Sample received photo



Model: Cabra

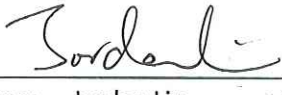
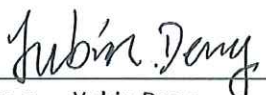


Model: Howth

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<p>Approved by:</p>  <p>Name: Credy Chen Title: Supervisor</p>	<p>Reviewed by:</p>  <p>Name: Jordan Lin Title: Project Engineer</p>	<p>Prepared by:</p>  <p>Name: Yubin Deng Title: Engineer</p>
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Revision:

Revision No.	Date	Changes	Author	Reviewer
Original	2017/6/19	First issue	Yubin Deng	Jordan Lin

The End of Report