

JINCHENG Hardware Industry Co., Ltd.

TEST Report

SCOPE OF WORKs

< CE Certification – Hinge – 4"x3"x3mm >

REPORT NUMBER

170302029GZU-001

ISSUE DATE

2018/7/26

[REVISED DATE]

/

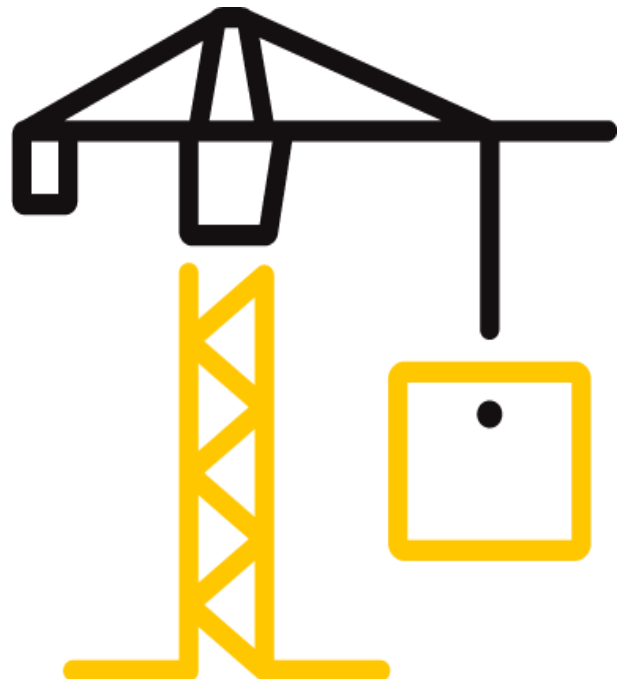
PAGES

11

DOCUMENT CONTROL NUMBER

TTRF_EN 1935:2002_e

© 2018 INTERTEK



Test Report

Report Number: 170302029GZU-001

Report Date: 2018/7/26

Applicant:	JINCHENG Hardware Industry Co.,Ltd.
Applicant Address:	No. 191, Wudong Industrial Development Zone, Lile Town, JiangHai District, JiangMen City, Guangdong Provice, China.

Sample information	
Product:	Door Hinge
Trade Mark:	Jincheng
Model and/or type reference:	4"x3"x3mm
Manufacturer:	JINCHENG Hardware Industry Co., Ltd.
Manufacturer Address:	No. 191, Wudong Industrial Development Zone, Lile Town, JiangHai District, JiangMen City, Guangdong Provice, China.
Sample ID:	S170302029-001~034, S180606093-001~010
Date of receipt of test item:	2016-12-06, 2017-10-31 and 2018-06-05
Situation of receipt samples:	Received in good condition
Date (s) of performance of tests:	2017-03-02 to 2018-07-23

Testing information									
Standard:	EN 1935:2002/AC:2003								
Rating(s):	<table border="1"> <tr> <td>4</td> <td>7</td> <td>6</td> <td>—</td> <td>1</td> <td>3</td> <td>0</td> <td>13</td> </tr> </table>	4	7	6	—	1	3	0	13
4	7	6	—	1	3	0	13		
Classification of installation and use:	Severe duty, use on door								
Testing Laboratory name:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch								
Address:	Room 4103 & 4203, No. 63, Punan Road, Huangpu District, Guangzhou, Guangdong Province, 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 mechanical performance requirements of EN 1935:2002/AC:2003 for ratings. Item 5.4 was complied after retest with second time received sample.									
* When determining the test result, measurement uncertainty has been considered.									

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Test Report

Report Number: 170302029GZU-001

Report Date: 2018/7/26

General product information:

The door hinge model is 4"x3"x3mm, five knuckles, two ball bearings butt hinge.

Detail "Ratings" information listed as following:

First digit (Category of use):	Grade 4	— severe duty, for use on door;
Second digit (Durability):	Grade 7	— 200,000 cycles;
Third digit (Test door mass):	Grade 6	— 120 kg;
Fourth character (Suitability for use on fire/smoke doors):		— Exclude in this mechanical report;
Fifth digit (Safety):	Grade 1	— Satisfy the essential requirement of safety in
Sixth digit (Corrosion resistance):	Grade 3	— high resistance;
Seventh digit (Security-Burglar-Resistance):	Grade 0	— not suitable for use on burglar-resistance door assemblies;
Eighth digit (Hinge Grade):	Grade 13	

Test Report

Report Number: 180606093GZU-001

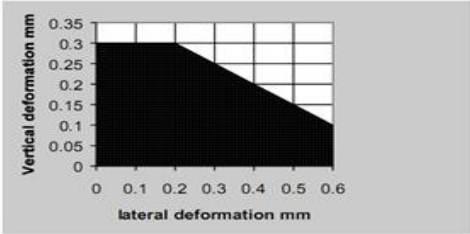
Report Date: 2018/7/26

EN 1935:2002/AC:2003				
Building hardware-Single-axis hinges-Requirements and test methods				
Clause	Requirement - Test	Result - Remark	Verdict	
4	Classification			
4.1	Category of use (1 st) :	Grade 4	--	
4.2	Durability (2 nd) :	Grade 7	--	
4.3	Door mass (3 rd)	Grade 6	--	
4.4	Suitability for use on fire/smoke doors (4 th)	Exclude in this mechanical report	--	
4.5	Safety (5 th)	Grade 1	--	
4.6	Corrosion resistance (6 th)	Grade 3	--	
4.7	Security-Burglar-Resistance (7 th)	Grade 0	--	
4.8	Hinge grade (8 th)	Grade 13	--	
5	Requirements			
5.1	Initial friction torque measurements The maximum permissible frictional torque shall be: - 2 Nm for grades 1 to 7, - 3 Nm for grades 8 to 11 and - 4 Nm for grades 12 to 14	Grade 13 0 degree: 1,62 Nm 30 degree: 1,70 Nm 60 degree: 1,35 Nm 90 degree: 1,46 Nm	P	
5.2	Static load			
	Table 2 – Static Load Tests			
	Hinge Grade	Load deformation mass, kg	Overload mass	Shear load, KN
	1	20	30	1.5
	2	40	60	1.5
	3	40	60	1.5
	4	40	60	1.5
	5	80	120	1.5
	6	80	120	1.5
	7	80	120	1.5
	8	120	180	1.5
	9	120	180	1.5
	10	120	180	1.5
	11	160	240	3.0
12	200	300	6.0	
13	240	360	10.0	
14	320	480	15.0	
5.2.1	Load deformation The total mass of the hinged test element plus any additional load is equal to the load deformation mass specified in Table 2 for the specified hinge grade.	Grade 13 Door mass 240 kg	P	
5.2.1(a)	The vertical displacement under load shall not exceed 2 mm.	0,28 mm	P	

Test Report

Report Number: 180606093GZU-001

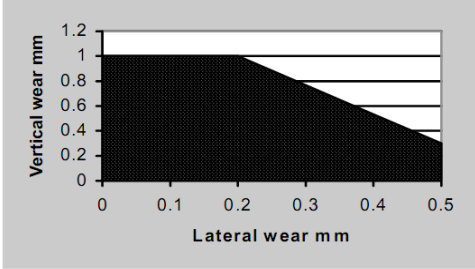
Report Date: 2018/7/26

EN 1935:2002/AC:2003			
Building hardware-Single-axis hinges-Requirements and test methods			
Clause	Requirement - Test	Result - Remark	Verdict
5.2.1(b)	The lateral displacement under load shall not exceed 4 mm:	0,20 mm	P
5.2.1(c)	Residual displacement after unloading shall be within the shaped area of Figure G.1  <small>Figure G.1 — Limits of allowable deformation in static load tests</small>	Lateral displacement: 0,16 mm Vertical displacement: 0,20 mm	P
5.2.1 (d)	there shall be no breakage of any component nor any cracking visible to normal or corrected vision.	No visible defects were found.	P
5.2.2	Overload The total mass of the hinged test element plus any additional load is equal to the load overload mass specified in Table 2 for the specified hinge grade:	Grade 13 Overload mass: 360 kg	P
5.2.2(e)	Shall be no breakage of any hinge leaf, knuckle, barrel, pin and no any cracking visible to normal or corrected vision	No visible defects were found.	P
5.2.2(f)	Shall remain connection to the frame even though the hinge may have been rendered inoperable	Connected to the frame well and operable.	P
5.3	Shear strength Without shock apply the shear load as specified in Table 2 at a uniform rate within 30 s \pm 5 s and maintain it for 1 min \pm 10 s. Remove the load without shock.	Grade 13 Shear load: 10,0 kN	P
5.3(g)	Shall be no breakage or cracking, or lateral deformation greater than 3 mm	No breakage or cracking Lateral deformation 1,39 mm	P
5.3(h)	Additional lateral and vertical displacements after test shall no exceed 1 mm : Shall operate for 20 cycles without breakage of any hinge leaf, knuckle, barrel or pin	Lateral displacement 0,30 mm Vertical displacement 0,00 mm	P
5.3(i)	Unlimited permanent deformation	Only for grade 14 burglar resistant door hinge	N/A

Test Report

Report Number: 180606093GZU-001

Report Date: 2018/7/26

EN 1935:2002/AC:2003			
Building hardware-Single-axis hinges-Requirements and test methods			
Clause	Requirement - Test	Result - Remark	Verdict
5.4	Durability		
5.4(j)	<p>The displacements from the datum surface shall be within the shaded area of Figure G.2.</p>  <p>Figure G.2 — Limits of allowable wear in durability test</p>	<p>After 200,000 cycles Lateral wear 0,36 mm Vertical wear 0,21 mm</p>	P
5.4(k)	<p>Maximum permissible frictional torque measured after the first 20 cycles and also after completion of test shall be:</p> <ul style="list-style-type: none"> - 2 Nm for grades 1 to 7, - 3 Nm for grades 8 to 11 and - 4 Nm for grades 12 to 14 	<p>Grade 13 Initial: 0 degree: 1,53 Nm 30 degree: 1,73 Nm 60 degree: 2,30 Nm 90 degree: 2,33 Nm Final: 0 degree: 1,30 Nm 30 degree: 1,70 Nm 60 degree: 2,88 Nm 90 degree: 2,38 Nm</p>	P
5.5	Corrosion resistance		
5.5.1	<p>Hinges not intended to be protected after fitting The requirements of 5.6 of EN 1670:1998 as below shall be met, according to the hinge classification :</p> <ul style="list-style-type: none"> - grade 0: no defined corrosion resistance; - grade 1: mild resistance (24 hours); - grade 2: moderate resistance (48 hours); - grade 3: high resistance (96 hours); - grade 4: very high resistance (240 hours). 	<p>Corrosion Grade 3 After 96 hours No corrosion occurred on the significant surface</p>	P
5.5.2	Hinges intended to be protected after fitting.	No to be protected after fitting.	N/A
5.6	Hinges for use on fire-resistant and/or smoke-control doors:	Exclude in this mechanical report.	—
5.7	Hinges for use on burglar-resistant doors	Not use on burglar-resistant doors	N/A
5.8	Families of hinges with common design features:	No families of hinges.	N/A
6	Test apparatus		
7	Test method		
8	Marking		

Test Report

Report Number: 180606093GZU-001

Report Date: 2018/7/26

EN 1935:2002/AC:2003			
Building hardware-Single-axis hinges-Requirements and test methods			
Clause	Requirement - Test	Result - Remark	Verdict
8.1	To ensure that only single-axis hinges manufactured in accordance with this standard are installed on designated fire-resistant and /or smoke-control doors or locked doors on escape routes, such single-axis hinges shall be marked as follows: a) manufacturer's name or trademark or other means of identification; b) the hinge grade according to 4.9; c) the number of this European Standard. NOTE Items b) and c) should be clearly visible after installation.	Refer to the CE marking	P
8.2	The packaging in which the single-axis hinges are packed shall clearly denote on the outside label the classification (hinge grade), size, finish and manufacturer's reference number.	Refer to the packaging	P
8.3	In cases where the hinges are handed, the designation of the handing shall be in accordance with prEN 12519 as follows: - Hinge for use on a clockwise opening door or window : Symbol 'L' - Hinge for use on an anti-clockwise opening door or window : Symbol 'R'	The hinges are not handed	N/A
8.4	The technical literature or the packaging for the hinge, or both, shall carry recommendations for lubrication of the hinges on installation and in service. NOTE 1 Unless there are special reasons for alternative recommendations, lubrication should normally be carried out twice per annum. NOTE 2 For CE marking and labelling, see ZA.3.	Not need to use lubrication	N/A
9	Evaluation of conformity		
9.1	Initial type test Samples, selected in accordance with 7.1, representing the series, shall be subjected to the full test sequence of 7.1.2 to 7.1.5 inclusive, and where relevant, to annex B. If necessary, (for example, after component changes or redesigns likely to affect the product performance) this initial type test shall be repeated.	Refer to the test result (Clause 5)	—
9.2	Factory production control	Refer to relevant FPC report	—

Test Report

Report Number: 180606093GZU-001

Report Date: 2018/7/26

EN 1935:2002/AC:2003			
Building hardware-Single-axis hinges-Requirements and test methods			
Clause	Requirement - Test	Result - Remark	Verdict
9.3	Further testing of samples	Not require for performance test	N/A
9.3.1	Periodic testing At intervals of no more than six months, samples representative of the series shall be taken from finished stock and subjected to the following tests : y) Initial frictional torque and static load tests (7.1.2) z) Durability test (7.1.4) aa) Corrosion test (7.1.5)	Not require for performance test	N/A
9.3.2	Yearly testing (for products used for doors on escape routes, and for products claiming compliance with annex B) At intervals of not more than one year, two samples representative of the series shall be taken from finished product stock and subjected to the full test sequence of clause 7.	Not require for performance test	N/A

Test Report

Report Number: 170302029GZU-001
Report Date: 2018/7/26

Appendix A: Product Documents

Model No.	Document Ref.	Document Title	Issue	Date
4"x3"x3mm	4"x3"x3mm	Producting Drawing	06-Jun-18	06-Jun-18

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

Test Report

Report Number: 170302029GZU-001

Report Date: 2018/7/26

Appendix B: Product Photo



4"x3"x3mm-2BB-SS304

Test Report

Report Number: 170302029GZU-001

Report Date: 2018/7/26

Appendix B: Product Photo



After 96 hours salt spray test,material: ss304

Test Report

Report Number: 170302029GZU-001
Report Date: 2018/7/26

Appendix C: Sample received photo



Approved by:

Name: Jordan Lin
Title: Reviewer

Name: Fingal Zhang
Title: Test Engineer

Revision:

Revision No.	Date	Changes	Author	Reviewer
Original	2018/7/26	First issue	Fingal Zhang	Jordan Lin

The End of Report