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**Intertek Report No. 160401002GZU-001**

EVALUATION

OF

**AHG2-4545FB (A2112), Grade 2**

FOR

**ASSA ABLOY KOREA\_ANGEL METAL**

131, Seongseo4chacheomdan-ro, Dalseo-gu, Daegu, South Korea

**TEST STANDARD:**

All tests were conducted in accordance with the client's test plan with reference to ANSI/BHMA A156.1:2013 American National Standard for Butts and Hinges.

**TEST SAMPLES:**

Sample identified as model AHG2-4545FB (A2112), brass hinge, hinge size 4.5"X4.5" X3.4mm, 5 Knuckles and 2 Ball Bearings, Grade 2 .

Hinges were received in good condition on March 25, 2016 and August 10, 2016 which manufactured by ASSA ABLOY KOREA\_ANGEL METAL.

**TEST DATES:**

April 18, 2016 to November 9, 2016

**RESULTS:**

Product **COMPLIED WITH** ANSI/BHMA A156.1:2013 grade 2 requirements.

The attached data are results of the product testing and evaluation.

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Reviewed By:

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Report No.:160401002GZU-001  
Applicant: ASSA ABLOY KOREA\_ANGEL METAL  
Model: AHG2-4545FB (A2112)  
A156.1:2013 A Dated 2015-12

ANSI/BHMA A156.1:2013  
Report Date: 2016/11/30  
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**DATA SHEETS**  
**ANSI/BHMA 156.1:2013**  
**AMERICAN NATIONAL STANDARD FOR**  
**BUTTS AND HINGES**

Model: AHG2-4545FB (A2112)  
Grade: 2  
Hinge height: 4.5 Inches  
Door Weight: 150 lbs

**6.1 Friction Test (lbf.)**

Friction Requirements Maximum Resistance (lbf.)

Inches	3	3 1/2	4	4 1/2	5	6	8
Gr.1&2	N/A	0.50	0.625	0.75	0.88	1.15	1.50
Gr.3	0.50	0.625	1.00	1.50	1.75	2.00	N/A

	In	Out	Average	Status
Friction (lbf.)	0.49	0.51	0.50	Compliant

**6.2 Vertical and Lateral Baseline Measurements (inches)**

	Top	Center	Bottom
Vertical	0.001	0.007	0.008
	0.001	0.002	0.006

Lateral	0.050	0.053	0.042
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**6.3 Overload Test** Maximum all grades: .062 inches

Lateral shift: <u>0.001</u> inches	Status Compliant
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**6.4 Cycle Test**

Cycle requirements

Test door weight. 150 lbs.

Grade 1	Grade 2	Grade 3	Light Weight
2,500,000	1,500,000	350,000	350,000

Date	Cycle Count	Tech
2016-08-20	0	Jordan Lin
2016-08-26	145,235	Jordan Lin
2016-09-01	302,003	Jordan Lin
2016-09-07	449,350	Jordan Lin
2016-09-14	632,658	Jordan Lin
2016-09-23	834,256	Jordan Lin
2016-10-15	995,682	Jordan Lin
2016-11-01	1,325,600	Jordan Lin
2016-11-09	1,500,000	Jordan Lin

**Post Cycle Tests:**

**6.5 Hinge Pin Rise Test**

Hinge pin rise requirements-Maximum all Grades 1/4 inches

Pin rise  inches Status

**6.6 Vertical and Lateral Wear Test**

Vertical wear requirements - Maximum (inches)

Grade 1	Grade 2	Grade 3	Light Weight
.020 inches	.030 inches	.105 inches	.125 in

	Vertical		
	Top	Center	Bottom
Post Test	0.003	0.010	0.010
	0.003	0.004	0.009

Total wear 

0.002	0.003	0.002
0.002	0.002	0.002

Status

Lateral wear requirements - Maximum all Grades .062 inches

	Lateral		
	Top	Center	Bottom
Post Test	0.052	0.054	0.043

Total wear 

0.002	0.001	0.001
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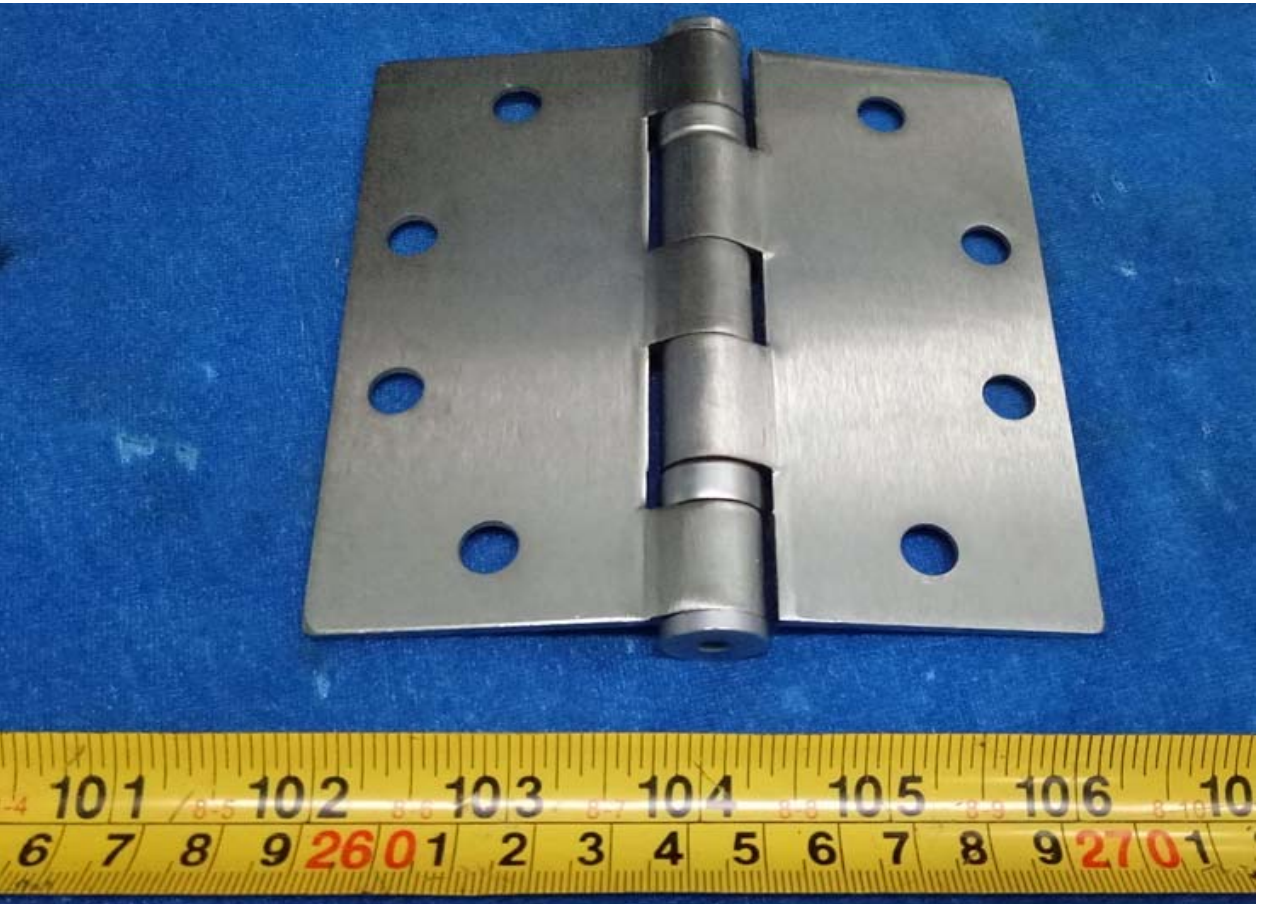
Status

**6.7 Overload Test**

Overload requirements - Maximum all Grades .062 inches

Lateral shift:  inches Status

Product Photo



AHG2-4545FB (A2112)

<b>Product Drawing and BOM</b>			
<b>Document Ref.</b>	<b>Document Title</b>	<b>Project No.: 160401002GZU-001</b>	
		<b>Issue</b>	<b>Date</b>
BEARING	bearing drawing	201611	201611
HINGE-A	leaf drawing	201611	201611
HINGE-B	leaf drawing	201611	201611
SHAFT	shaft drawing	201611	201611

# Revision Page

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Revision No.	Date	Changes	Author	Reviewer
Original	November 30, 2016	First issue	Jordan Lin	Credy Chen