

HAFELE AMERICA CO. TEST REPORT

SCOPE OF WORK

ANSI/BHMA A156.9-2020 – Sections 4.2 and 4.3 (Hinge Permanent Set Test and Hinge Operating Life Cycle)
per NAAWS 4.0 Section 10

Product # - 344.06.800 Aximat 300 HNG Cup SCR Mount ZN NIP w/344.06.930 Aximat 3-D HNG Arm FL O/L W/O SCRS NIP

REPORT NUMBER

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REPORT FOR HAFELE AMERICA CO.

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SECTION 1

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SECTION 2

SUMMARY AND CONCLUSION

Date Received: Mar-07-2024-Apr-16-2024
 Dates Tested: May-07-2024-May-15-2024
 Location Tested: Intertek Kentwood, MI

DESCRIPTION OF SAMPLES

Part Description:	344.06.800	Aximat 300 HNG Cup SCR Mount ZN NIP
	344.06.930	Aximat 3-D HNG Arm FL O/L W/O SCRS NIP

Condition of Samples: Production

WORK REQUESTED/APPLICABLE DOCUMENTS

ANSI/BHMA A156.9-2020 (Test No. 1 Hinge Permanent Set Test and Test No. 2 Hinge Operating Life Test) per NAAWS 4.0 Section 10) BHMA Grade 1 (Sections: 4.2 and 4.3)
 Intertek quote: Qu-01425017

CONCLUSION

TEST	RESULTS
1. BHMA Grade 1- 4.2 Hinge Permanent Set Test	CONFORMING
2. BHMA Grade 1- 4.3 Hinge Operating Life Cycle Test	CONFORMING

The test results show that the **Product # - 344.06.800 Aximat 300 HNG Cup SCR Mount ZN NIP w/344.06.930 Aximat 3-D HNG Arm FL O/L W/O SCRS NIP** met the requirements per ANSI/BHMA A156.9-2020 Grade 1 & NAAWS NORTH AMERICAN ARCHITECTURAL WOODWORK STANDARDS 4.0 SECTION 10 SEPTEMBER 2021.

SAMPLE DISPOSITION

The samples were returned to HAFELEAMERICA.CO.at the conclusion of the testing.

TEST EQUIPMENT

ASSET #	EQUIPMENT	CALIBRATION DATE	CALIBRATION DUE
138012	Scale/0-1,000#	08/10/2023	08/10/2024
138520	Steel Rule 0-48"	02/12/2024	02/12/2025
138900.13	Stopwatch	03/11/2024	03/11/2025
138279	100lb Digital force gage	02/06/2024	02/06/2025
138339	Dial Indicator	06/30/2023	06/30/2024
138340	Dial Indicator	07/06/2023	07/06/2024

4.2 HINGE PERMANENT SET TEST:

Date Received: Mar-07-2024-Apr-16-2024
 Dates Tested: May-15-2024
 Location Tested: Intertek Kentwood, MI

DESCRIPTION OF SAMPLES:

Part Description:	344.06.800	Aximat 300 HNG Cup SCR Mount ZN NIP
	344.06.930	Aximat 3-D HNG Arm FL O/L W/O SCRS NIP

Condition of Samples: Production
 Number of Samples Tested: One (1)

TEST PROCEDURE:

Test Method: Test No. 1 Grade 1 Per ANSI/BHMA A156.9-2020 Test No. 4.2:
 4.2.1 Open the door 5 ±3 degrees and with no weight applied measure the position of the door with the 1 indicator located 14 inches down on the width and the second one at the end centered with the top hinge.
 4.2.2 160 lbs shall be applied to the door at 14” away from the door frame.
 4.2.3 Slowly open the door to a 90± 3 degrees open position and then return to the 5±3 degree open position
 4.2.4 Remove the test load and then measure the position of the door as per 4.2.1.

ACCEPTANCE CRITERIA:

Per ANSI/BHMA A156.9-2020 Test No. 6.1:
 1. The amount of set shall not exceed 0.030” in the Vertical and shall not exceed 0.020” in the Horizontal Permant Set.

RESULTS:

SAMPLE ID	HINGE LOAD	VERTICAL SET	HORIZONTAL SET	RESULTS
1	160 lbs.	.016	0.014	Conforming

The submitted sample **met** the acceptance criteria of the test described above. Refer to the following page for photograph.



4.2 Permanent Set Test –

4.3 HINGE OPERATING LIFE CYCLE TEST:

Date Received: Mar-07-2024-Apr-16-2024
 Dates Tested: May-07-2024-May-14-2024
 Location Tested: Intertek Kentwood, MI

DESCRIPTION OF SAMPLES:

Part Description:	344.06.800	Aximat 300 HNG Cup SCR Mount ZN NIP
	344.06.930	Aximat 3-D HNG Arm FL O/L W/O SCRS NIP

Condition of Samples: Production
 Number of Samples Received: One (1) Set

TEST PROCEDURE:

Standard Cycles: 100,000 cycles
 Standard Door Load: 40 lbs.
 Standard Door size: 29.5”H x 14.5” W.

ACCEPTANCE CRITERIA:

Per ANSI/BHMA A156.9-2020:
 All Grades: 100,000 cycles. The amount of set shall not exceed 0.030” in the Vertical and 0.020” in the Horizontal.

RESULTS:

SAMPLE ID	CYCLES	Vertical Deflection (in)	Horizontal Set (in.)	RESULTS
1	0	0	0	Start of Test
	100,000	.019	0.012	Test Complete

The submitted sample **met** the acceptance criteria of the test described above. Refer to the following pages for photographs.



4.3 HINGE OPERATING LIFE CYCLE TEST

