



Intertek
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Intertek Test Report # 102100133MID-006rev1

(Replaces Intertek Report # 102100133MID-006)

EVALUATION
 OF
4701 Rim Exit Device (Exit Only)
 FOR
Hager Companies
 139 Victor Street
 St Louis, MO 63104

TEST STANDARD:

Per customer's specifications, using the following standard as a guideline: ANSI/BHMA A156.3 - 2014
 "American National Standard for Exit Devices."

SAMPLES:

Samples were identified by the client as Model 4701 Rim Exit Device.
 Samples were received in good condition on 12/10/2015, ID# MID1512100910-001
 Samples were selected at random per BHMA guidelines.
 Testing was conducted at the Intertek facility located in Middleton, WI.

TEST DATES: 1/20/2016 through 2/18/2016

RESULTS: COMPLIANT

Subsection	Test Description	Initial Test Results	Retest Test Results
8	Inside Operational Tests	Compliant	N/A
9	Outside Operational Tests	N/A	N/A
10	Strength Tests	N/A	N/A
11	Material Evaluation Tests	N/A	N/A
12	Coordinator & Carry-Open Bar Tests	N/A	N/A
13	Automatic Flush Bolt Tests	N/A	N/A

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

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DATA COLLECTION SHEETS

ANSI/BHMA A156.3-2014 AMERICAN NATIONAL STANDARD FOR EXIT DEVICES

2.7 Reference Tolerances

Required values in this Standard are given in US units. The SI (metric) equivalents are approximate. All values which do not carry specific tolerances or are not marked maximum or minimum shall have the following tolerances: Linear dimensions shall be $\pm 1/16$ in (1.6 mm). Pounds or pound force shall be $\pm 5\%$. Angular measurements shall be ± 4 degrees. Voltage measurements shall be ± 5 percent. Temperature measurements shall be ± 4 degrees F (± 2 degrees C).

7.11 Sample Test Locks

Test	Sequence	Number of Samples
Inside Operational	8.1-8.7 in order and then 8.8 when applicable.	1 panic device for all tests
Coordinator and carry-open bar	12	1 coordinator, and 1 sample carry-open bar when both are to be tested
Automatic Flush Bolts	13	1 top bolt and bottom bolt
Outside Operational	9.1-9.4	1 trim sample with 1 corresponding panic device
Strength	10.1-10.6	Each test is permitted to use a different trim with the corresponding panic device or 1 trim with the corresponding panic device shall be used for all the tests
Material Evaluation	11.1,11.2, and 11.3	1 sample exposed finished parts for each test
Finish	14.2-14.5	1 specimen of exposed finished parts shall be selected for each finish test and finish being tested.
	14.6	4 specimens of exposed finished parts shall be selected for each finish test and finish being tested.

8.2 Exit Tests

8.2.1

With the door latched, the actuating bar shall be depressed by a force not to exceed 15lbf. (67N) until the latch clears the strike. The measurement shall be taken at the center and 1.5 in. (38 mm) from each end on the actuating surface perpendicular to the door in the direction of swing. The actuating surface shall be visually and physically distinct from the rest of the device. Portions of the actuating bar which are below 30 in. (750mm) and more than 48 in. (1250mm) above the floor when installed per the manufacturer's templating are exempt from this requirement.

Sample #

Compliant/Non: Compliant

1.5" From Left	Center	1.5" From Right	Max Allowed All Grades
10	8	15	15 lbf max

Comments:

8.2.2

Using the setup and procedure in 8.2.1, apply a horizontal 250 lbf (1110 N) to the door approximately 3 in. (76 mm) from the latch edge and 40 in. (1020 mm) from the floor in the direction of the door swing. With the door latched, repeat the test in 8.2.1. The actuating bar shall be depressed by a force as listed below and the door swung open.

Sample #

Compliant/Non: Compliant

1.5" From Left	Center	1.5" From Right	Max Allowed All Grades
48	47	33	50 lbf max

Comments:

8.3 Outside Pull Tests

8.3.1

A force as listed below shall be exerted on the door approximately 3 in. (76 mm) from the latch edge and 40 in. (1020 mm) from the floor in an effort to simulate the door being pulled open. The door shall not open and the device shall function after release of the force. Repeat the test in 8.2.1.

Sample #

Compliant/Non: Compliant

Force Applied	Grade 1	Grade 2	Grade 3
409	400 lbf min.	400 lbf min.	300 lbf min.

Door Open? No

Device Function? Yes

1.5" From Left	Center	1.5" From Right	Max Allowed All Grades
8	10	12	15 lbf max

Comments:

8.3.2

Removable mullions shall be tested on a pair of doors with both leaves closed and with rim devices installed. Both devices shall be tested independently as outlined in Outside Pull Test 8.3.1. The doors shall not open and the devices shall function after release of the force. Repeat the test in 8.2.1.

Sample #

Compliant/Non: N/A

Device #1			
Force Applied	Grade 1	Grade 2	Grade 3
N/A	400 lbf min.	400 lbf min.	300 lbf min.

Door Open? N/A

Device Function? N/A

1.5" From Left	Center	1.5" From Right	Max Allowed All Grades
N/A	N/A	N/A	15 lbf max

Sample #

Compliant/Non: N/A

Device #2			
Force Applied	Grade 1	Grade 2	Grade 3
N/A	400 lbf min.	400 lbf min.	300 lbf min.

Door Open? N/A

Device Function? N/A

1.5" From Left	Center	1.5" From Right	Max Allowed All Grades
N/A	N/A	N/A	15 lbf max

Comments:

8.4 Inside Pull Tests (Grades 1 & 2)

A force as listed below shall be applied at the center of the actuating bar. The force shall be exerted perpendicular to the door in the opposite direction of swing. The device shall function after the force is removed. For devices with actuating bars, which are capable of being locked down, the test shall be repeated with the actuating bar locked down. Repeat the test in 8.2.1.

Exception: This test is not applicable for devices with activating mechanisms where the pull force cannot be applied simulating exertion with a person's hands.

Sample #

Compliant/Non: N/A

	Force Applied	Grade 1	Grade 2
Unlocked Down	N/A	400 lbf min.	400 lbf min.
Locked Down	N/A	400 lbf min.	400 lbf min.

1.5" From Left	Center	1.5" From Right	Max Allowed All Grades
N/A	N/A	N/A	15 lbf max

Comments:

8.5 Push Test (Grade 1 & 2)

With the actuating bar free and the door securely fastened to prevent its swinging open, apply a force as listed below at the center of the actuating bar perpendicular to the door in the direction of swing. After the force is removed, repeat the test in 8.2.1. If, when a crossbar is depressed, there is clearance between the bar and the door, it shall be a minimum of 1 in. (25 mm). Any gap shall not trap a test rod of 0.375 in. (10 mm) diameter at any position of the bar travel during the operation of the exit device resulting in the failure of the device to operate.

Sample #

Compliant/Non: Compliant

Force Applied	Grade 1	Grade 2
400	400 lbf min.	400 lbf min.

1.5" From Left	Center	1.5" From Right	Max Allowed All Grades
9	7	12	15 lbf

Comments:

8.6 Deadlatching Effectiveness Test (where applicable)

Install the device and strike in accordance with the manufacturer's published installation instructions with 1/8 in. (3.2 mm) added to the strike clearance dimension. Fully close and latch the door. With the device in the latched position, depress the latch. The latch shall not pass the edge of the strike and disengage. Repeat the test by opening and closing the door or by duplicating the action of opening and closing the door and depressing the latch five times. In applications where the latch is not accessible, simulate the strike location and test with the door in the open position. Any one failure constitutes failure of the entire test.

Sample #

Compliant/Non: Compliant

Cycles	Cycles All Grades
5	5

Comments:

8.7 Force to Latch Door Tests

Apply a force meter to the face of the door at a point 1 in. (25 mm) from the lock edge of the door and on the centerline of the latch (40 in. [1016 mm] from the bottom of the frame in the case of vertical rod devices) when the door is just clear of the latch contacting the lip of the strike. Close the door slowly by pushing the force gauge against the door until the latch fully engages the strike. The maximum measured force to fully latch the door shall not exceed that specified below.

Sample #

Compliant/Non: Compliant

Force Applied	Force Max All Grades
2	4.5 lbf max

Comments: