

# EAGLE GROUP TEST REPORT

**SCOPE OF WORK**

SEFA 8M-2016 RECOMMENDED TESTING STANDARDS FOR LABORATORY GRADE METAL CASEWORK  
on Eagle MHC – Stainless Steel Inset Casework

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## TEST REPORT FOR EAGLE GROUP

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## SECTION 1

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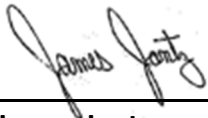
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**SECTION 2**

**SUMMARY AND CONCLUSION**

Date Received

27-Mar-2018 & 31-Aug-2018

Dates Tested

04-April-2018 to 18-Sept-2018

**DESCRIPTION OF SAMPLES**

Part Description:

Eagle MHC – Stainless Steel Inset Casework

Condition of Samples:

Production

**WORK REQUESTED/APPLICABLE DOCUMENTS**

SEFA 8M-2016 LABORATORY GRADE METAL CASEWORK

Intertek quote Qu-00797252

**CONCLUSION**

<b>TEST</b>		<b>RESULTS</b>
4.2	Cabinet Load Test	CONFORMING
4.3	Cabinet Concentrated Load Test	CONFORMING
4.4	Cabinet Torsion Test	CONFORMING
5.1	Door Hinge Test	CONFORMING
5.2	Door Impact Test	CONFORMING
5.3	Door Cycle Test	CONFORMING
6.1	Drawer Static Test	CONFORMING
6.2	Drawer and Door Pull Test	CONFORMING
6.3	Drawer Impact Test	CONFORMING
6.4	Drawer Internal Rolling Impact Test	CONFORMING
6.5	Drawer Cycle Test	CONFORMING
7.2	Shelf Load Test	CONFORMING
9.2	Load Test	CONFORMING
10.2	Table Static Load Test	CONFORMING
10.3	Table Racking Test	CONFORMING

**SAMPLE DISPOSITION**

The samples were returned to Eagle Group upon test completion.

**TEST EQUIPMENT**

ASSET #	DESCRIPTION	LAST CAL	NEXT DUE
117358	STEEL RULE 36"	8/3/2018	8/3/2019
138012	Scale/0-1,000#	10/12/2017	10/12/2018
138112	Graduated Rule 36"	10/11/2013	10/11/2018
138148	DIGITAL PROTRACTOR	12/19/2017	12/19/2018
138296-1-50	50lb steel bars	9/28/2017	1/4/2022
138279	FORCE GAUGE	12/26/2017	12/26/2018
138385	DIAL INDICATOR	3/1/2018	3/1/2019
138390	Portable Drawer Cycle Station	VBU	VBU
138500.05	STOPWATCH	11/14/2017	11/14/2018

**SECTION 3**

**4.1 SEFA 8M-2016 – DESCRIPTION OF TEST UNIT:**

Dates Tested: 28-Mar-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE	DIMENSIONS
SSC-HDDT6-48	Base Cabinet	35 ¼" x 47 15/16"
SSC-WCH-1348	Wall Cabinet	48" x 13" x 30"
SSC-HT-2460	Table	60" x 23" x 35"

**PART DESCRIPTION:**

Base unit has one drawer, two doors and a shelf.

The hardware on the units is as follows:

MODEL NUMBER	DESCRIPTION OF SAMPLE
384194	Hinge
Fulterer FR 5210	Drawer Slides

Refer to the following pages for photographs.



**Test Unit (Base Unit)**



**Shelf Support**



**Cabinet Glide**



**Drawer Slide**



**Drawer Pull**



**Door Hinge**



**Door Handle**



**4.2 SEFA 8M-2016 – CABINET LOAD TEST:**

Dates Tested: 18-Sep-2018

Condition of Test Samples: Production

Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

4.2.2 Test Method: Verify that the cabinet is level. Load the cabinet top by using 2000 lbs. (907.2 kg) of solid steel bars (Per Section 3.1) stacked 5 high and evenly spaced. After 24 hours, unload the cabinet.

Number of Samples Tested: One (1)

**ACCEPTANCE CRITERIA:**

4.2.3 Acceptance Level: The cabinet will have no signs of permanent failure.

**RESULTS:**

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



**Cabinet Load Test**

**4.3. SEFA 8M-2016 – CABINET CONCENTRATED LOAD TEST:**

Dates Tested: 15-May-2018

Condition of Test Samples: Production

Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

4.3.2 Test Method: Using 50 lb. solid weights or 10 lb sandbags (per Section 3.1), apply a total of 200 lbs. (90.70 kg) to the top of the cabinet along the cabinet centerline and operate doors and drawers.

Number of Sample Tested: One (1)

**ACCEPTANCE CRITERIA:**

4.3.3 Acceptance Level: Door and drawer operation shall be normal under condition of test load. There shall be no sign of permanent deformation to front rail, cabinet joinery, doors, or drawers. Doors and drawers shall operate normally.

**RESULTS:**

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



**Cabinet Concentrated Load Test**

**4.4 SEFA 8M-2016 – CABINET TORSION:**

Dates Tested: 15-May-2018 to 16-May-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

4.4.2 Test Method: The cabinet shall be tested in its normal upright position, raised not less than four inches off the floor and supported on rear and one front corner. The area of support under the cabinet shall be centered on the leveling feet of the cabinet. Per Section 3.1, secure the cabinet diagonally from the supported corner with seven solid steel bars so that 350 lbs. (158.75 kg.) of weight is placed on the top of the cabinet to prevent over-turning. Apply four solid steel bars (200 lbs. (90.72 kg.)) to the unsupported corner for a period of 24 hours. Remove weight and place the cabinet on the floor in its normal upright position. Observe the cabinet joinery. Level the cabinet and measure the face and back of the cabinet across the diagonal corners.

**ACCEPTANCE CRITERIA:**

4.4.3 Acceptance Level: When returned to normal position, the operation of the cabinet shall be normal, and there will be no signs of permanent damage. The difference between the two measurements taken from measuring the diagonal corners shall be no more than 1/8" (3.175 mm).

**RESULTS:**

The submitted sample met the acceptance criteria for the test described above. There was no change in the measurements. Refer to the following page for photograph.



**Cabinet Torsion**

**5.1 SEFA 8M-2016 – DOOR HINGE TEST:**

Dates Tested: 23-Jun-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

5.1.2. Test Method: Remove the shelf for this test. With unit and top set as described in Section 4.1, add sufficient weight to the top in order to prevent overturning. With cabinet door opened 90 degrees, hang a sling made up of two 100 lb. (45.35 kg) weights (shot bags or solid weights) over top of the door at a point 12” (304.8 mm) out from the hinge center-line. Slowly move door through the two full cycles of the hinge up to a 160° arc. Remove weight and swing door through its full intended range of motion and close door.

**ACCEPTANCE CRITERIA:**

5.1.3 Acceptance Level: The open door shall withstand a load of 200 lbs. (90.70 kg) when applied at a point 12” (304.8 mm) from the hinge center-line without significant permanent distortion. Operation of the door, after test, shall show no significant permanent distortion that will cause binding of the door or hinges or that will adversely affect operation of the catch.

**RESULTS:**

The submitted sample met the acceptance criteria of the test. The door operated normally through its entire range of motion, and the door catch operated normally. Refer to the following page for photograph.



**Door Hinge Test**



**5.2 SEFA 8M-2016 – DOOR IMPACT TEST:**

Dates Tested: 18-Sep-2018

Condition of Test Samples: Production

Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

5.2.2 Test Method: With unit and top set as described in Section 4.1, add sufficient weight to the top in order to prevent overturning. A 20 lbs. (9.07 kg.) sand bag (per Section #3.1) shall be suspended and dropped to provide an impact of 240 in-lbs. (27.1 Nm) at the center of the closed door.

**ACCEPTANCE CRITERIA:**

5.2.3 Acceptance Level: After the test, the door and catch shall operate normally and show no signs of permanent damage. This test is not intended to evaluate the cabinet finish.

**RESULTS:**

The door operated normally through its entire range of motion, and the door catch operated normally. Refer to the following page for photograph.



**Door Impact Test**

**5.3 SEFA 8M-2016 – DOOR CYCLE TEST:**

Dates Tested: 23-Jun-2018 to 30-Jun-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

5.3.2. Test Method: This test shall be in conformance to the ANSI test procedure A156.9, Grade 1, requirements for cycle testing of doors. A cycling mechanism shall swing door 90-degrees. Door shall operate for 100,000 cycles with a speed not greater than 15 cycles per minute.

**ACCEPTANCE CRITERIA:**

5.3.3 Acceptance Level: Door shall operate for the full cycle period without deterioration that will significantly affect the function of the door. The door shall operate freely without binding.

**RESULTS:**

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



**Door Cycle Test**

**6.1 SEFA 8M-2016 – DRAWER STATIC LOAD TEST:**

Dates Tested: 18-Sep-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

6.1.2. Test Method: With unit and top set as described in Section # 4.1, add sufficient weight to the top in order to prevent overturning. Open the drawer to 13” (330.2 mm.) of travel and hang 150 pounds (68.0 kg.) from the drawer head at the center-line of the drawer for five minutes. Remove the weight and operate the drawer through the full cycle.

**ACCEPTANCE CRITERIA:**

6.1.3. Acceptance Level: There shall be no permanent damage that will interfere with the normal operation of the drawer and the drawer head should remain tightly fastened to the drawer.

**RESULTS:**

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



**Drawer Static Load Test**

**6.2 SEFA 8M-2016 – DRAWER AND DOOR PULL TEST:**

Dates Tested: 17-Sep-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

6.2.2. Test Method: Pulls are to be installed in accordance with manufacturer’s practice using specified attaching hardware and method. Block door and drawer closed. Using a cable, pulley and weight assembly, apply a force of 50 lbs (22.676 kg) perpendicular to each pull. Remove weight.

**ACCEPTANCE CRITERIA:**

6.2.3 Acceptance Level: Pull shall resist force and support weight without breakage. After completion of test and removal of weight, there shall be no significant permanent distortion. Some pull designs will require variations to set up apparatus. These pulls shall be tested in conformance to the applied pull forces.

**RESULTS:**

There was no functional or structural damage to the unit. The drawer operated freely. The submitted sample met the acceptance criteria for the test described above. Refer to the following pages for photographs.



**Horizontal Pull on Drawer**



**Vertical Pull on Drawer**





**Horizontal Pull on Door**



**Vertical Pull on Door**

**6.3 SEFA 8M-2016 – DRAWER IMPACT TEST:**

Dates Tested: 18-Sep-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

6.3.2 Test Method: Remove drawer; support each corner with 2"x2"x1" (50.8 x 50.8 x 25.4 mm) supports. Drop a 10 lb. (4.545 kg) sand or shot bag from a height of 24" (609.6 mm) into the bottom of the drawer at the center of the width of the drawer. Remove the sand or shot bag.

**ACCEPTANCE CRITERIA:**

6.3.3. Acceptance Level: No damage or breakout of the drawer bottom.

**RESULTS:**

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



**Drawer Impact Test**

**6.4 SEFA 8M-2016 – DRAWER INTERNAL ROLLING IMPACT TEST:**

Dates Tested: 18-Sep-2018

Condition of Test Samples: Production

Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

6.4.2. Test Method: Position the drawer on a table at a 45 degree angle. Place a 2” (50.8 mm.) diameter by 12” (304.8 mm.) long steel rod (approximately 10 lbs. (4.535 kg.) 13” (330.2 mm.) from the target impact area such that the rod will roll freely to impact the back of the drawer. Subject the back to three impacts and reverse the drawer to subject the front to three additional impacts.

**ACCEPTANCE CRITERIA:**

6.4.3. Acceptance Level: The drawer shall show no signs (other than minor scratches and dents) of permanent damage. All joinery shall be intact and the drawer, when replaced in the unit, shall operate normally. Minor scratches and dents are acceptable.

**RESULTS:**

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



**Drawer Internal Rolling Impact Test – Front to Rear**



**Drawer Internal Rolling Impact Test – Rear to Front**

**6.5 SEFA 8M-2016 – DRAWER CYCLE TEST:**

Dates Tested: 17-Sep-2018 to 22-Sep-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

**TEST PROCEDURE:**

6.5.2. Test Method: Laboratory Load (100 lbs. (45.35 kg) – A static load of 100 lbs (45.35 kg) (using ten 10 lb. (4.535 kg) sand bags per Section 3.1) shall be uniformly distributed in the drawer. Measure force required to activate the drawer. Operate from a closed position to within 1/4” (6.35 mm) of full extension for 50,000 cycles at a rate not to exceed 10 cycles per minute.

**ACCEPTANCE CRITERIA:**

6.5.3. Acceptance Level: The drawer shall operate freely without evidence of dragging, rubbing, or binding. The force required to open and close loaded drawer shall not be more than a 20% increase of that required prior to test and shall not be greater than 8 pounds (3.628 kg.) to activate hardware.

**RESULTS:**

The submitted sample met the acceptance criteria for the test described above. Pull force at the end of the test was 2.0 lbf. Refer to the following page for photograph.



**Drawer Cycle Test**



**7.2 SEFA 8M-2016 – SHELF LOAD TEST:**

Dates Tested: 04-Apr-2018 to 18-Sep-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HDDT6-48	Base Cabinet

This test is only shelf deflection of the shelf in a base cabinet.

**TEST PROCEDURE:**

7.2.2 Test Method: A shelf shall be mounted in the manner in which it is designed. Measure the distance from the underside of the shelf to a reference point perpendicular to the center of the shelf. Use shot or sand bags weighing 10 lbs. (4.535 kg) each. Unless otherwise specified, load the shelf uniformly to 40 lbs. (18.14 kg) per square foot shelf area to a maximum of 200 lbs. (90.70 kg). Measure the deflection on the shelf by measuring the distance to the reference point and calculating the difference between the two measurements. Record data and remove the load.

**ACCEPTANCE CRITERIA:**

7.2.3. Acceptance Level: The allowable maximum deflection of a shelf is 1/180 of the span and not in excess of .25" (6.35 mm.). Maximum allowable deflection shall not exceed 0.25".

**RESULTS:**

SHELF TYPE	SHELF LOAD	DEFLECTION MEASURED	RESULTS
Base Cabinet	200 lbs.	0.08"	Conforming
Wall Cabinet	135 lbs.	0.09"	Conforming

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



**Shelf Load Test – Base Cabinet**



**Shelf Load Test – Wall Cabinet**

**9.2 SEFA 8M -2016 - WALL MOUNTED CABINET LOAD TEST:**

Dates Tested: 05-Apr-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-WCH-1348	Wall Cabinet

**TEST PROCEDURE:**

9.2.2 Test Method: A wall mounted cabinet shall be mounted as per manufacturer’s instructions and is to have the standard number of shelves. Use shot or sand bags weighing 10 lbs. (4.535 kg) each. Load the shelves per Section 7.0 including the bottom, each shelf, and top uniformly with 40 lbs. (18.14 kg) per square foot shelf area to a maximum of 200 lbs. (90.70 kg).

**ACCEPTANCE CRITERIA:**

9.2.3. Acceptance Level: With weights in place after a period of 24 hours, operate the doors through full travel to verify normal operation of the doors. Remove weights and operate doors to verify normal operation. Verify that there is no permanent deflection of the cabinet top, cabinet back, cabinet bottom, or shelves. After weights are removed, the cabinet shall show no permanent damage to the cabinet, cabinet bottom, or shelves.

**RESULTS:**

SHELF TYPE	STATIC LOAD	DESCRIPTION OF RESULTS
Cabinet Top	173 lbs.	Conforming
Cabinet Bottom	172 lbs.	Conforming
Shelves	135 lbs.	Conforming

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



**Wall Mounted Cabinet Load Test**

**10.2 SEFA 8M-2016 - TABLE STATIC LOAD TEST:**

Dates Tested: 15-Apr-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HT-2460	Table Frame

**TEST PROCEDURE:**

10.2.2. Test Method: Verify that the table is level. Load the table top by using solid steel bars (per Section 3,1) stacked evenly and spaced. (Weight on the top is included in the total load.)

Free Standing Table Load: 600 lb. (272.155 kg.)  
 Dimensions of Product: 60" W x 23" D x 35" H

**ACCEPTANCE CRITERIA:**

10.2.3. Acceptance Level: No structural breakage shall result from application of the load. With the full load, the apron rails shall not deflect more than 1/360 of the span of the table and not exceed 1/8" (3.175 mm).

**RESULTS:**

STATIC LOAD	DEFLECTION (IN.)	DESCRIPTION OF RESULTS
600 lbs.	.012"	Conforming

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



**Table Static Load**

**10.3 SEFA 8M -2016 - TABLE RACKING TEST:**

Dates Tested: 06-Apr-2018 to 09-Apr-2018  
 Condition of Test Samples: Production  
 Number of Samples Tested: One (1)

**DESCRIPTION OF SAMPLES:**

MODEL NUMBER	DESCRIPTION OF SAMPLE
SSC-HT-2460	Table Frame

**TEST PROCEDURE:**

10.3.2 Test Method: Racking Angle: 45 degrees  
 Time Under Test: 72 hours

**ACCEPTANCE CRITERIA:**

10.3.3 Acceptance Level: There shall be no structural damage to end panels, legs, or bases. The operation of the table shall be normal.

**RESULTS:**

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





**Table Racking Test**

