Fisher American LLC
Fisheramerican.com
800-419-1900

Test Report For:
Fisher American LLC

SEFA8M-2016
LABORATORY GRADE METAL CASEWORK

## WORK REQUESTED/APPLICABLE DOCUMENTS:

SEFA 8M-2016 Laboratory grade metal casework

Nos. of Specimen: 1pc.

Test Result Pass Details shown as following table

| Clause | Test Items | Result | Note |
|---|---|---|---|
| 4.0 | Base cabinets | --- | --- |
| 4.1 | Description of test cabinet | --- | --- |
| 4.2 | Cabinet load test | Pass | --- |
| 4.3 | Cabinet concentrated load test | Pass | --- |
| 4.4 | Cabinet torsion | Pass | --- |
| 5.0 | Doors | --- | --- |
| 5.1 | Door hinge test | Pass | --- |
| 5.2 | Door impact test | Pass | --- |
| 5.3 | Door cycle test | Pass | --- |
| 6.0 | Drawers | --- | --- |
| 6.1 | Drawer static test | Pass | --- |
| 6.2 | Drawer and door pull test | Pass | --- |
| 6.3 | Drawer impact test Pass | --- | --- |
| 6.4 | Drawer internal rolling impact test | Pass | --- |
| 6.5 | Drawer cycle test | Pass | # 2 |
| 7.0 | Shelving | --- | --- |
| 7.1 | Description of test unit | --- | --- |
| 7.2 | Shelf load test | Pass | --- |
| 8.0 | Cabinet surface finish test | --- | --- |
| 8.1 | Chemical spot test | Pass | #3 |
| 8.2 | Hot water test | Pass | --- |
| 8.3 | Impact test | Pass | --- |
| 8.4 | Paint adhesion test | Pass | --- |
| 8.5 | Paint hardness test | Pass | --- |
| 9.0 | Wall, counter mounted and tall units | --- | --- |
| 9.1 | Description of test cabinet | N/A | #1 |
| 9.2 | Wall cabinet load test | N/A | # 1 |
| 10 | Tables | --- | --- |
| 10.1 | Description of test unit | N/A | # 1 |
| 10.2 | Table static load | N/A | # 1 |
| 10.3 | Table racking | N/A | # 1 |

Notes

#1 - N/A means not applicable to this product design.

#2 - As client's requirement, drawer cycle test was performed with Laboratory Load.

#3 - The test was performed by SGS other internal laboratory

**4.1 DESCRIPTION OF TEST CABINET:**

Date Tested: JUL 02, 2020
Condition of Test Sample: New
Overall Size of the test sample: 48” (W) x 22" (D )x 35” (H)

Description of Samples:

| Model Number | Description of Sample |
|---|---|
| **SLS - 4822** | Base Cabinet |

Part Description:
Base unit has one drawer, two doors and one adjustable shelf. The drawer is above the cupboard, full width and approximately one-fourth the height of the cabinet's face opening. The inside depth of the drawer is 18.1". Cupboard provides unobstructed entry into the cabinet interior with the doors open. The cabinet back is the removable type.
Note to Tester: For the tests to be valid, the required test units must be used

| 1 of Base Cabinet | Photo 2 of Base Cabinet |
|---|---|
|  |  |
| Photo 3 of Base Cabinet | Photo 1 of Hinge |
|  |  |

| Photo 2 of Hinge | Photo 1 of Drawer Slide |
| --- | --- |
|  |  |
| Photo of Leveling Bolt mounted in cabinet | Photo of Drawer / door Pull |
|  |  |
| Photo of Shelf Support | |
|  | |

**4.2 CABINET LOAD TEST:**

Date Tested: JUL 03, 2020

Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

4.2.2 Test Procedure:

Test Method: Verify that the cabinet is level and supported only by the levelers. Load the cabinet top by using 2000 pounds of solid steel bars (per Section 3.1) stacked five high and evenly spaced. After ten minutes, unload the cabinet.

Number of Samples Tested: One(1)

4.2.3 Acceptance Level:

The cabinet will have no signs of permanent failure. After the load is removed, inspect the levelers. Any deformation shall not interfere with the function of the leveling system.

Results:

Pass. The submitted sample meets the acceptance criteria for the test described above. Refer to the following photograph.

Cabinet Load Test

**4.3 CABINET CONCENTRATED LOAD TEST:**

Date Tested: JUL 03, 2020

Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS 4822 | Base Cabinet |

4.3.2 Test Procedure:

Test Method: Using solid weights or 10 pound sand bags (per Section 3.1), apply a total of 200 pounds to the top of the cabinet along the cabinet centerline. Operate doors and drawers.

Number of Samples Tested: One (1)

4.3.3 Acceptance Level:

Door and drawer operation shall be normal under condition of test load. There shall be no signs of permanent deformation to front rail, cabinet joinery, doors, or drawers.

Results:

Page: The submitted sample meets the acceptance criteria for the test described above. Refer to the following photograph.

Concentrated Load Test

**4.4 CABINET TORSION:**

Date Tested: JUL 03, 2020 TO JUL 04, 2020 Condition of Test Samples: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

4.4.2 Test Procedure: 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 located not more than 6" in from each supported corner. Secure the cabinet diagonally form the supported corner with seven solid steel bars per Section 3.1 350 lbs of weighty on the top of the cabinet to prevent overturning. Apply four solid steel bars (200 lbs of weight) to the unsupported corner for a period of 24 h. 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.

Number of Samples Tested: One (1)

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" (3.175mm).

Results:

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

Cabinet Torsion Test

**5.1 DOOR HINGE TEST:**

Date Tested: JUL 06, 2020 Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

5.1.2. Test Procedure:

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 pound weights (shot bags or solid weights) over top of the door at a point 12" out from the hinge centerline. Slowly move door through two full cycles of the hinge at 160 degree arc. Remove weight and swing door through its full intended range of motion and close door.

Number of Samples Tested: One (1)

5.1.3 Acceptance Level:

The open door shall withstand a load of 200 pounds when applied at a point 12" from the hinge centerline without permanent damage. Operation of the door, after test shall show no significant permanent damage that will cause binding of the door or hinges or that will adversely affect operation of the catch.

Results:

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

Cabinet Torsion Test

**5.2 DRAWER AND DOOR PULL TEST:**

Date Tested: JUL 13, 2020

Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

5.2.2. Test Procedure:

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 lb sand bag (Section 3.1) shall be suspended and dropped to provide an impact of 240 inch-pounds (27.1) at the center of the closed door.

Number of Samples Tested: One (1)

5.2.3 Acceptance Level:

After the test the door and catch shall operate normally and show no signs of permanent damage. A dent or depression is an indication of permanent damage. This test is not intended to evaluate the cabinet finish.

Results:

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

Door Impact Test

**5.3 DOOR CYCLE TEST:**

Dates Tested: JUL 08, 2020 TO JUL 13, 2020 Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

5.3.2. Test Procedure:

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. (Notes take approximately 112 hours)

Number of Samples Tested: One (1)

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:

Pass. There was no functional or structural damage to the unit. The doors operated freely without binding. The sample meets the acceptance criteria. Refer to the following photograph.

Door Cycle Test

**6.1 DRAWER STATIC TEST:**

Date Tested: JUL 13, 2020 Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

6.1.2. Test Procedure:

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" of travel and hang 150 pounds from the drawer head at the centerline of the drawer for five minutes. Remove the weight and operate the drawer through the full cycle.

Number of Samples Tested: One (1)

6.1.3. Acceptance Level:

There shall be no interference with the normal operation of the drawer and the drawer head should remain tightly fastened to the drawer.

Results:

Pass. The submitted sample met the acceptance criteria of the test. Refer to the following photograph.

Drawer Static Load Test

**6.2 DRAWER AND DOOR PULL TEST:**

Date Tested: JUL 13, 2020

Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

6.2.2. Test Procedure:

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 force gauge attached with a 1" wide bracket, apply a force of 50 pounds, for 15 s, perpendicular to each pull. Revise setup to apply force downward

Number of Samples Tested: One (1)

6.2.3. Acceptance Level:

Pulls shall resist force without breakage. After completion of test and removal of weight, there shall be no significant permanent deformation.

Results:

Pass. There was no functional or structural damage to the unit. The drawer and door operated freely. The sample meets the acceptance criteria. Refer to the following photographs.

Drawer / Door Pull Test

Drawer / Door Pull Test

**6.3 DRAWER IMPACT TEST:**

Date Tested: JUL 13, 2020

Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

6.3.2. Test Procedure:

Test Method: Remove drawer; support each corner with 2"x2"x1" supports. Drop 10 pound sand or shot bag from a height of 24" into the bottom of the drawer at the center of the width of the drawer. Remove the sand or shot bag.

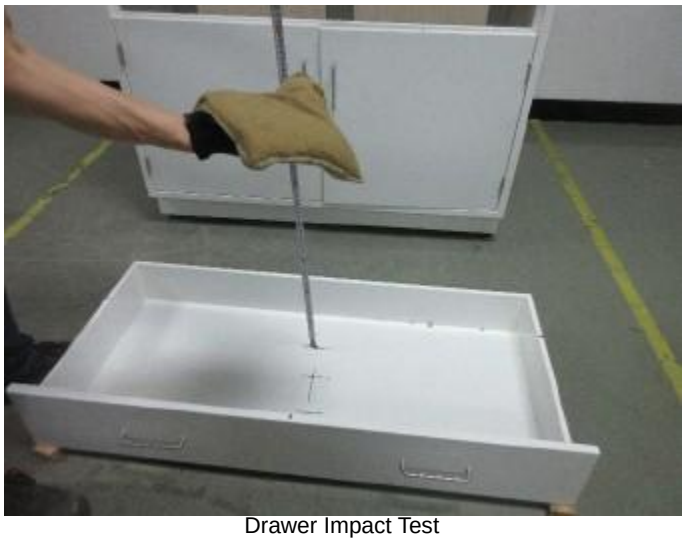
Number of Samples Tested: One (1)

6.3.3. Acceptance Level:

No damage or breakout of the drawer bottom.

Results:

Pass. The submitted sample meets the above acceptance criteria. Refer to the following photograph.



Drawer Impact Test

**6.4 DRAWER INTERNAL ROLLING IMPACT TEST:**

Date Tested: JUL 13, 2020

Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

6.4.2. Test Procedure:

Test Method: Position the drawer on a table at a 45-degree angle. Place a 2" (50.8 mm) diameter by 12" long steel rod (approximately 10 pounds 13" 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.

Number of Samples Tested: One (1)

6.4.3. Acceptance Level:

The drawer shall show no 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:

Pass. The submitted sample meets the acceptance criteria of the test described. Refer to the following photograph.

Rolling Impact Test

**6.5 DRAWER CYCLE TEST:**

Date Tested: JUL 28, 2020 TO AUG 01, 2020

Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

6.5.2. Test Procedure:

Test Method: Laboratory Load (100 pounds - A static load of 100 pounds (using ten 10-pound sandbags 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" of full extension for 50,000 cycles at a rate not to exceed 10 cycles per minute.

Number of Samples Tested: One (1)

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 greater 8 pounds Kg) to activate hardware.

Results:

Pass. The submitted sample meets the acceptance criteria of the test. Refer to the following page for a photograph

Cabinet Drawer Cycle Test

**7.2 DRAWER AND DOOR PULL TEST:**

Date Tested: JUL 28, 2020

Condition of Test Sample: New

| Model Number | Description of Sample |
|---|---|
| SLS – 4822 | Base Cabinet |

The test is only testing shelf deflection of the shelf in base and wall cabinet

Base Cabinet has a shelf that is 19.5" depth x 47.6" wide.

7.2.2. Test Procedure:

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 pounds each. Unless otherwise specified, load the shelf uniformly to 40 pounds per square foot shelf area to a maximum of 200 pounds. 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 load from the shelf.

7.2.3. Acceptance Level:

The allowable maximum deflection of a shelf is 1/180 of the span and not in excess of .25”.

Results:

| Shelf Type | Shelf Load | Deflection Measured | Description of Results |
|---|---|---|---|
| Base Cabinet Shelf | 200 LBS | 1 / 8“ | PASS |

The submitted sample meets the acceptance criteria of the test. Refer to the following page for a photograph.

Shelf Load Test

**8.1 CHEMICAL SPOT TEST:**

Date Tested: JUL09, 2020

Condition of Test Sample: Production Samples

Description of Samples:

Part Description:

Material Submitted:

Material Specification: SEFA-8M-2016

Test Procedure:

Test Method: SEFA8M-2016, Sec 8.1

The received sample to be tested for chemical resistance as described herein: Place panel on flat surface, clean with soap and water and blot dry. Condition the panel for 48-hours at 73+3 °F (23+2 °C) and 50 ± 5% relative humidity or the currently accepted guideline set by ASTM. Test the panel for chemical resistance using forty-nine different chemical reagents by one of the following methods.

Method A: Test Volatile chemicals by placing a cotton ball saturated with reagent in the mouth of a 1-oz. bottle and inverting the bottle on the surface of the panel.

Method B: Test non-volatile chemicals by placing five drops of the reagent on the surface of the panel and covering with a 24 mm watch glass, convex side down.

For both of the above methods, leave the reagents on the panel for a period of one hour. Wash off the panel with water, clean with detergent and naphtha, and rinse with deionized water. Dry with a towel and evaluate after 24 hours at 73±3°F and 50 ± 5% relative humidity or the currently accepted guideline set by ASTM using the following rating system.

Rating Scale:

Level 0 No detectable change.

Level 1 Slight change in color or gloss.

Level 2 Slight surface etching or severe staining.

Level 3 Pitting, cratering, swelling, or erosion of coating. Obvious and significant deterioration.

Number of Samples Tested: One (1) panel.

Deviation:

Acceptance Criteria:

Results will vary from manufacturer to manufacturer due to differences in finish formulations. Laboratory grade finishes shall result in no more than four (4) Level 3 conditions. Individual test results, for the specified 49 reagents, will be verified with the established third party, independent SEFA 8 test submittal form. Suitability for a given application is dependent upon the chemicals used in a given laboratory.

| Test No | Chemical | Method | Rating | Comments |
|---|---|---|---|---|
| 1 | Acetate, Amyl | A | 0 | / |
| 2 | Acetate, Ethyl | A | 0 | / |
| 4 | Acetone | A | 0 | / |
| 6 | Alcohol, Butyl | A | 0 | / |
| 7 | Alcohol, Ethyl | A | 0 | / |
| 8 | Alcohol, Methyl | A | 0 | / |
| 10 | Benzene | A | 1* | / |
| 11 | Carbon Tetrachloride | A | 1* | / |
| 12 | Chloroform | A | 0 * | / |
| 14 | Cresol | A | 1* | / |
| 15 | Dichloroacetic Acid | A | 2* | / |
| 16 | Dimethylformanide | A | 1* | / |
| 17 | Dioxane | A | 1* | / |
| 18 | Ethyl Ether | A | 0 | / |
| 19 | Formaldehyde, 37% | A | 0 | / |
| 21 | Furfural | A | 1* | / |
| 22 | Gasoline | A | 0 | / |
| 27 | Methyl Ethyl Ketone | A | 0 | / |
| 28 | Methylene Chloride | A | 0 | / |
| 29 | Mono Chlorobenzene | A | 0 | / |
| 30 | Naphthalene | A | 0 | / |
| 34 | Phenol, 90% | A | 0 | / |
| 46 | Toluene | A | 0 | / |
| 47 | Trichloroethylene | A | 0 | / |
| 48 | Xylene | A | 0 | / |

** Chemical listed above with a "0" will have no effect to the cabinets, even with long term exposure. Operating under best practices and good laboratory hygiene, cleaning of any spills will reduce or eliminate the possibility of permanent marking or discoloration from any chemical with a rating of 1 or 2 from the list above*

| Test No | Chemical | Method | Rating | Comments |
|---|---|---|---|---|
| 3 | Acetic Acid, 98% | B | 0 | / |
| 5 | Acid Dichromate, 5% | B | 0 | / |
| 9 | Ammonium Hydroxide, 28% | B | 0 | / |
| 13 | Chromic Acid, 60% | B | 0 | / |
| 20 | Formic Acid, 90% | B | 0 | / |
| 23 | Hydrochloric Acid, 37% | B | 0 | / |
| 24 | Hydrofluoric Acid, 48% | B | 1* | / |
| 25 | Hydrogen Peroxide, 30% | B | 0 | / |
| 26 | Iodine, Tincture of | B | 0 | / |
| 31 | Nitric Acid, 20% | B | 0 | / |
| 32 | Nitric Acid, 30% | B | 0 | / |
| 33 | Nitric Acid, 70% | B | 0 | / |
| 35 | Phosphoric Acid, 85% | B | 0 | / |
| 36 | Silver Nitrate, Saturated | B | 0 | / |
| 37 | Sodium Hydroxide, 10% | B | 0 | / |
| 38 | Sodium Hydroxide, 20% | B | 0 | / |
| 39 | Sodium Hydroxide, 40% | B | 0 | / |
| 40 | Sodium Hydroxide, Flake | B | 0 | / |
| 41 | Sodium Sulfide, Saturated | B | 0 | / |
| 42 | Sulfuric Acid, 33% | B | 0 | / |
| 43 | Sulfuric Acid 77% | B | 0 | / |
| 44 | Sulfuric Acid, 96% | B | *2** | / |
| 45 | Sulfuric Acid, (77%) and Nitric Acid (70%), equal parts | B | 2* | / |
| 49 | Zinc Chloride, Saturated | B | 0 | / |

** Chemical listed above with a "0" will have no effect to the cabinets, even with long term exposure. Operating under best practices and good laboratory hygiene, cleaning of any spills will reduce or eliminate the possibility of permanent marking or discoloration from any chemical with a rating of 1 or 2 from the list above*

| Totals | | | |
|---|---|---|---|
| Items | Requirement | No. Reagent with 3 Ratings | Disposition |
| Volatile Subtotal: | - | 0 | -- |
| Non-volatile Subtotal: | - | 0 | -- |
| Grand Totals: | No More than Four Level 3 Conditions | 0 | PASS |

**8.2 HOT WATER TEST:**

Date Received: JUL 06, 2020

Dates Tested: JUL 08, 2020

Description of Samples:

| | |
|---|---|
| Part Description: | Panel with white coating |
| Material Submitted: | Painted Steel Panels |
| Material Specification: | SEFA-8M-2016 |
| Condition of Test Sample: | Production |

Test Procedure:

| | |
|---|---|
| Test Method: | SEFA-8M-2016, Sec 8.2 |
| Procedure: | Hot water (190°F to 205°F shall be allowed to trickle (with a steady stream and at a rate of not less than 6 ounces per minute) on the finished surface, which shall be set at an angle of 45°, for a period of five minutes. |
| Number of Specimens Tested: | One (1) |

Acceptance Criteria:

After cooling and wiping dry, the finish shall show no visible effect from the hot water.

Results:

| Specimen | Visible Effects From Hot Water | Disposition |
|---|---|---|
| 1 | None | Pass |

**8.3 IMPACT TEST:**
Date Received: JUL 06, 2020
Dates Tested: JUL 08, 2020

Description of Samples:

| | |
|---|---|
| Part Description: | Panel with white coating |
| Material Submitted: | Painted Steel Panels |
| Material Specification: | SEFA-8M-2016 |
| Condition of Test Sample: | Production |

Test Procedure:

| | |
|---|---|
| Test Method: | SEFA 8M-2016, Sec 8.3 |
| Procedure: | Position the panel on a smooth concrete floor. A one-pound ball (Approximately 2" [50.8 mm] in diameter) shall be dropped from a distance of 12" (304.8 mm) onto a flat horizontal surface. |
| Number of Specimens Tested: | One (1) |

Acceptance Criteria:

There shall be no visual evidence to the naked eye of cracks or checks in the finish due to impact.

Results:

| Specimen | Cracks or Checks in Finish | Disposition |
|---|---|---|
| 1 | None | Pass |

**8.4 PAINT ADHESION TEST:**

Date Received: JUL 06, 2020

Dates Tested: JUL 08, 2020

Description of Samples:

| | |
|---|---|
| Part Description: | Panel with white coating |
| Material Submitted: | Painted Steel Panels |
| Material Specification: | SEFA-8M-2016 |
| Condition of Test Sample: | Production |

Test Procedure:

| | |
|---|---|
| Test Method: | SEFA8M-2016, Sec 8.4: ASTM D3359-02, Method B, Cross-Cut Tape Test |
| Procedure: | Two sets of six parallel lines 2 mm apart shall be cut with a razor blade to intersect at right angles thusforming a grid of 25 squares. The cuts shall be made just deep enough to go through the coating, but not into the substrate. Brush the grid area lightly with a soft brush then place a piece of tape over the grid. Rub the tape firmly with the eraser of a pencil to ensure good contact. Remove the tape by rapidly pulling it back upon itself as close to an angle of 180° as possible. |
| Tape: | Permacel P99 |
| Number of Specimens Tested: | One (1) Panel |

Acceptance Criteria:

A 4B rating or better (ninety five percent or more of the grid area shall show finish intact.)

Results:

| Specimen | Tape Rating | % of Intact Squares | Disposition |
|---|---|---|---|
| 1 | 5B | 100% | Pass |

**8.5 PAINT HARDNESS TEST:**

Date Received: JUL 06, 2020

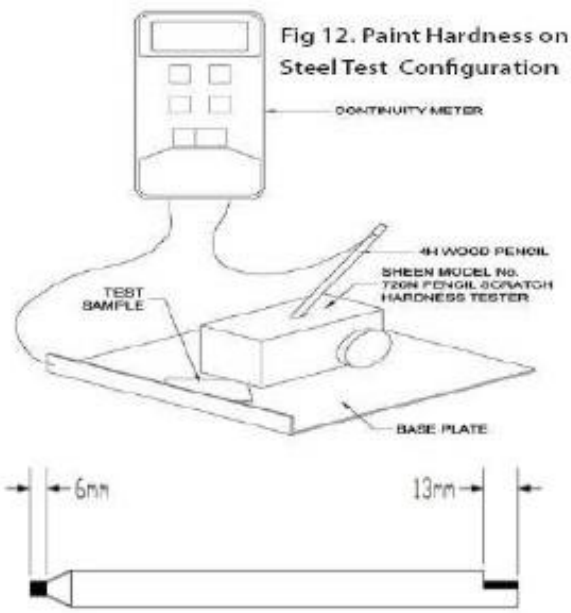
Dates Tested: JUL 08, 2020

Description of Samples:

| | |
|---|---|
| Part Description: | Panel with white coating |
| Material Submitted: | Painted Steel Panels |
| Material Specification: | SEFA-8M-2016 |
| Condition of Test Sample: | Production |

Test Procedure:

| | |
|---|---|
| Test Method: | SEFA8M-2016, Sec 8.5; ASTM D3363-05 |
| Procedure: | Clip a corner of the sample at 45° exposing a raw metal edge. Place the sample on a raw metal base plate so that the exposed metal edge of the sample makes contact with the turned up side of the base plate (see figure below). |




Remove approximately 6 mm of wood from a 4H pencil, being careful to leave an undisturbed smooth cylinder of lead. Holding the pencil at an angle of 90° to an abrasive paper, rub the lead against the paper marinating an exact angle of 90° until a flat smooth and circular cross section is obtained. On the other end the pencil removes approximately 13 mm of wood from one half of the pencil (see figure above).

Sheen model 720 N Pencil Scratch Hardness Tester. Connect a continuity meter to the base plate and to the top of the pencil, being sure to make good contact with the exposed portion of the lead. Following the manufactures instructions place the tester on the surface of the test sample and push it forward approximately 13 mm. rotate the pencil 90° in the holder and repeat the test to one side of the first test. Repeat this two more times for a total of four tests, each with a different quadrant of the pencil lead.

Pencils used: Mitsubishi®

Number of Specimens Tested: One (1) Panel

Acceptance Criteria:

The paint finish shall withstand the abrasion of a 4H pencil without penetrating through to the substrate and completing a continuous circuit.

Results:

| Specimen | Pencil Hardness | Pencil Penetrating to Substrate | Completing a Continuous Circuit | Disposition |
|---|---|---|---|---|
| 1 | 4H | None | None | Pass |

## CERTIFICATE OF SEFA COMPLIANCE

Performed testing has been completed as specified per **SEFA 8M-2016** Laboratory grade metal casework on the laboratory-grade furniture produced by Fisher American LLC.

SEFA 8M-2016 Laboratory grade metal casework

Nos. of Specimen: 1pc

Test Result: Pass. Details shown as following table

| Clause | Test Items | Results | Note |
|---|---|---|---|
| 4.0 | Base cabinets | --- | --- |
| 4.1 | Description of test cabinet | --- | --- |
| 4.2 | Cabinet load test | Pass | --- |
| 4.3 | Cabinet concentrated load test | Pass | --- |
| 4.4 | Cabinet torsion | Pass | --- |
| 5.0 | Doors | --- | --- |
| 5.1 | Door hinge test | Pass | --- |
| 5.2 | Door impact test | Pass | --- |
| 5.3 | Door cycle test | Pass | --- |
| 6.0 | Drawers | --- | --- |
| 6.1 | Drawer static test | Pass | --- |
| 6.2 | Drawer and door pull test | Pass | --- |
| 6.3 | Drawer impact test | Pass | --- |
| 6.4 | Drawer internal rolling impact test | Pass | --- |
| 6.5 | Drawer cycle test | Pass | #2 |
| 7.0 | Shelving | --- | --- |
| 7.1 | Description of test unit | --- | --- |
| 7.2 | Shelf load test | Pass | |
| 8.0 | Cabinet surface finish test | --- | --- |
| 8.1 | Chemical spot test | Pass | #3 |
| 8.2 | Hot water test | Pass | --- |
| 8.3 | Impact test | Pass | --- |
| 8.4 | Paint adhesion test | Pass | --- |
| 8.5 | Paint hardness test | Pass | --- |
| 9.0 | Wall, counter mounted, and tall units | --- | --- |
| 9.1 | Description of test cabinet | N/A | #1 |
| 9.2 | Wall cabinet load test | N/A | # 1 |
| 10 | Tables | --- | --- |
| 10.1 | Description of test unit | N/A | #1 |
| 10.2 | Table static load | N/A | #1 |
| 10.3 | Table racking | N/A | # 1 |

Notes:

#1- N/A means not applicable to this product design.

#2- As client's requirement, drawer cycle test was performed with Laboratory Load.

#3- The test was performed by internal laboratory.