INTEGRITY TESTING LABORATORIES

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LABORATORY NO: F2309151-11
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CLIENT P.O. email
STANDARDS: SEFA 8M-20, ANSI/BIFMA X5.9-19, BS EN 14727:05 EN 16121:2014+A1:2017

SAMPLES METAL BASE CABINET 48”W x 36”H x 24”D
MODEL - BLACKSMITH BASE CABINET B01

ABSTRACT

This report serves to document the testing of the above sample to all applicable test paragraphs of SEFA 8M-2020 for metal laboratory grade furniture, and ANSI/BIFMA X5.9-2019, tests for storage products, and BS EN 14727:2005 & EN 16121:2014+A1:2017, laboratory storage. The remainder of this report will show how the samples submitted for testing **met the requirements needed for conformance to the stated test paragraphs of these standards.**



Blacksmith Base Cabinet - B01
1 full width drawer, 2 cabinet doors, 1 interior shelf - Dimensions: 48”W x 36”H x 24”D

This report applies only to the sample, or samples submitted for testing and is not necessarily indicative of the quality or condition of apparently identical or similar products. Samples were submitted as received, directly by the client along with all descriptors, names, models, or ID, no sampling procedures were performed by these laboratories. Client provided samples can affect reported results. No external service providers were utilized for the reported determinations. As a mutual protection to clients, the public, or these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed, and upon that condition that it not be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories. Where statements of conformity are made in testing reports, the following decision rules are applied: PASS - Results within limits/specifications - FAIL - Results exceed limits/specifications. All laboratory procedures were performed in compliance with ISO/IEC 17025-2017.

RESULTS

SEFA 8M-2020			
Test	**Description**	**Test Loads and Procedure Summary**	**Result**
4.2	Cabinet Load Test	A test load of 2000 lb was applied to sample top through 8 evenly spaced stacks of specified 501b loading bars. Test load remained in place for a period of 10 minutes.	PASS-No loss of serviceability after the test
4.3	Cabinet Concentrated Load Test	A test load of 200 lb was applied to sample top through four specified 501b loading bars along the cabinet centerline. Proper drawer and door operation were verified under loaded conditions.	PASS-No loss of serviceability after the test
4.4	Cabinet Torsion Test	The sample cabinet was supported under the base comers by three square 4" test fixtures, leaving one comer unsupported. A counterbalancing load of 350 lb was placed on the sample top diagonally opposite the unsupported comer. A test load of 200 lb was then applied to sample top in the appropriate location directly over the unsupported base comer for a period of 24 hrs, and then removed.	PASS-No loss of serviceability after the test. Diagonal deformation measurements were less than the 1/8" requirement.
5.1	Door Hinge Test	A counterbalancing load opposite the front face was placed on the sample top. With one cabinet door open 90 degrees, a 200 lb mass was hung from the door 12" from the hinge centerline. The door was then swung through two full cycles of a 160 degree are, and the load was removed.	PASS-No loss of serviceability after the test
5.2	Door Impact Test	A counterbalancing load was placed on the sample top. A 20 lb steel shot bag connected to a 12" long nylon strap was then suspended and released to impact the center of a closed door face with 240 in-lb.	PASS-No loss of serviceability after the test
5.3	Door Cycle Test	A mechanical door cycling device was affixed to the door through a free floating attachment device. The door was then cycled through a 90 degree are at a rate of 15 cycles per minute for a total of 100,000 cycles.	PASS-No loss of serviceability after the test
6.1	Drawer Static Test	The sample drawer was extended to 13" of travel. A 150 lb test mass was then suspended from the drawer face for a period of 5 minutes.	PASS-No loss of serviceability after the test
6.2	Drawer and Door Pull Test	A laboratory force gauge was utilized to apply a 50 lb load in both the outward, and then downward direction to each drawer and door pull.	PASS-No loss of serviceability after the test
6.3	Drawer Impact Test	The sample drawer was removed and supported with 2x2x1 inch supports at the 4 corners. A 101b steel shot bag was suspended 24" high over the center of the drawer, and then released to impact the center of the drawer bottom.	PASS-No loss of serviceability after the test
6.4	Drawer Internal Rolling Impact Test	The sample drawer was removed and supported at a 45 degree angle. A 2" diameter x 12" long 10 lb solid steel rod was supported to impact the drawer back by releasing it from a distance of 13". The test was repeated 3X for the front and back faces.	PASS-No loss of serviceability after the test
6.5	Drawer Cycle Test - 100 lb Laboratory Load	The sample drawer was evenly loaded with 1001b of steel shot bags. A pneumatic cylinder connected to a valve and timing device was affixed to the center of the drawer through a free floating attachment device. The drawer was then cycled from fully closed to %" of full extension at a rate of 10 cycles per minute for a total of 50,000 cycles.	PASS-No loss of serviceability after the test. The pull force to operate the drawer after the test was 6.5 lbf.
7.2	Shelf Load Test	A reference measurement of the center shelf height was taken. A test load of 40 lb per square foot, or 200 lb maximum was applied uniformly to the shelf, and a deflection measurement was taken.	PASS-No loss of serviceability after the test. Shelf deflection was less than the requirement.

RESULTS (cont.)

ANSI/BIFMA X5.9-2019			
Test	**Description**	**Test Loads and Procedure Summary**	**Result**
4.0	Unit Strength test	Appropriate functional test loads applied to sample top, drawers, shelves, and bottom for a period of 60 minutes and proof loads for a period of 15 minutes	PASS-No loss of serviceability after the test
5.0	Leg/Glide Strength Test	The unloaded sample was positioned on a test platform and leveled. The glides were restricted from movement in the appropriate manner. Loads of 50 lb and 100 lb, and then 150 lb and 75 lb were each applied horizontally in the specified locations in two directions	PASS-No loss of serviceability after the test
6.0	Racking Resistance Test	The sample was loaded with the appropriate top and drawer loads, and placed on two comer supporting blocks. The alternate comers were then loaded with two 50 lb loads for a period of 60 minutes.	PASS-No loss of serviceability after the test
7.0	Top Load Ease Test	200 Ib. shot filled bag lifted from the cabinet top and set 1" from the edge for a total of 10,000 cycles	PASS-No loss of serviceability after the test
9.3	Stability Test for units with one or more extendible members	The extendible member and cabinet bottom were loaded with the required test loads, and placed in the required positions. An additional 10 lb horizontally outward load was applied to the required drawer pull.	PASS-Unit did not tip over
10	Unit Drop Test	Each end of the sample was raised the 2.4” above a test platform and released allowing it to impact the platform.	PASS-No loss of serviceability after the test
12	Extendible member rebound test	Appropriate test loads were placed in each applicable drawer and adjust apparatus to apply proper inward load, releasing 2" from the fully closed position. Repeat 4 more times	PASS-No loss of serviceability after the test
13	Out Stop Test	Appropriate test loads were placed in the drawer and pull force recorded. Adjust apparatus to apply 5 additional lb outward load for 80% of travel repeat 4 times. Remove 80% travel restriction, push drawer 2” closed from fully extended position and release for 15,000 cycles	PASS-No loss of serviceability after the test
14.3	Force test for Door locks	Appropriate test loads were placed in the cabinet, and required outward 50 lb loads were applied to the door handles.	PASS-No loss of serviceability after the test
14.4	Locking mechanism cycle test	Appropriate test loads were placed in the cabinet, and the locking mechanism was cycled for a total of 5,000 cycles	PASS-No loss of serviceability after the test
15.2	Cycle test for extendible member	Appropriate test loads were placed in each applicable drawer and cycled in and out for a total of 50,000 cycles	PASS-No loss of serviceability after the test
17.2	Strength test for hinged door	Appropriate test loads applied to cabinet door. The door was then cycled from fiilly closed to fully open 10 times.	PASS-No loss of serviceability after the test
17.3	Override test for hinged door	Appropriate outward test loads applied to cabinet door.	PASS-No loss of serviceability after the test
17.6	Door wear and fatigue cycle test	An actuator device was adjusted to cycle the door from fully closed to fully open for a total of 20,000 cycles	PASS-No loss of serviceability after the test
17.10	Door slam closed test	A device was adjusted to slam the door shut from 30 degrees open, and was repeated for a total of 10 times.	PASS-No loss of serviceability after the test
20	Pull force test	When required, a pull force test was performed on each applicable extendible member, and the force was recorded.	PASS-No loss of serviceability after the test. All pull forces were less than 11.2 lbf.

RESULTS (cont.)

BS EN 14727:2005 & EN 16121:2014+A1:2017.			
Test	**Description**	**Test Loads and Procedure Summary**	Result
7.1.1	Stable position of shelves - Horizontal	An outward horizontal force of 50% of the shelf weight was applied to the middle of the shelf.	PASS-No loss of serviceability after the test
7.1.1	Stable position of shelves - Vertical	A downward vertical load of 100N was applied to the most unstable position of the shelf 25mm in from the front edge.	PASS-No loss of serviceability after the test
7.1.2	Deflection of shelves	An evenly distributed test load of 1.0 kg/dm^2 was applied to the shelves for a period of 60 minutes.	PASS-No loss of serviceability after the test
7.2	Shelf supports	An evenly distributed test load was applied to the shelves and the remainder of the cabinet. A 1.7 kg impact plate was allowed to strike the shelf surface adjacent to the shelf support, and repeated 10X.	PASS-No loss of serviceability after the test
7.3.2	Strength of pivoted door	A 30kg load was applied to cabinet door l00mm from the door end. The door was then cycled from 45-135 degrees for 10 cycles.	PASS-No loss of serviceability after the test
7.3.4	Durability test on hinged pivot doors	A 2kg load was applied to cabinet door on the centerline. The door was then cycled from 45-135 degrees for 50,000 cycles.	PASS-No loss of serviceability after the test
7.5.2	Slam open test for drawers	An evenly distributed test load of 0.2 kg/dm^3 was applied to the drawer and closed. An apparatus was then adjusted to apply an outward force to impact the drawer stop position for 10 cycles.	PASS-No loss of serviceability after the test
7.5.3	Strength test for drawers	An unloaded drawer was fully extended. A vertically downward test load of 250N was then applied to the drawer comer end 10X.	PASS-No loss of serviceability after the test
7.5.4	Durability test for drawers	An evenly distributed test load of 0.2 kg/dm^3 was applied to the drawer and closed. An apparatus was then adjusted to cycle the drawer from the open and closed positions for 50,000 cycles.	PASS-No loss of serviceability after the test
7.5.5	Displacement test for drawer bottoms	An unloaded drawer was fully extended. A vertically downward test load of 70N was then applied to the drawer bottom 10X.	PASS-No loss of serviceability after the test
7.7.1	Static load on top surfaces	The cabinet components were loaded with the required test loads. A vertically downward test load of 1000N was then applied to the top surface 10X.	PASS-No loss of serviceability after the test
7.8.3	Static overload test	The cabinet components were loaded with the required test loads for a period of 1 week and removed.	PASS-No loss of serviceability after the test
8.1	Stability test with closed doors and drawers	An outward overturning moment of 200Nm was applied to the top of the cabinet surface. (sample modification of an additional 5kg counterweight on the back cabinet wall was required to conform to this test)	PASS-Unit did not tip over
8.2	Stability test with open doors and drawers	A distributed test load of 0.2 kg/dm^3 was applied to the drawer and closed. All drawers and doors were then opened simultaneously.	PASS-Unit did not tip over
10.0	Instructions	Installation Instructions were not included in this test program	

CONCLUSION

During the execution of the testing program, the **SUBMITTED BLACKSMITH BASE CABINET B01** performed well with no structural failures or loss of serviceability. **This sample conforms to the requirements of SEFA 8M-2020 ANSI/BIFMA X5.9-2019, and BS EN 14727:2005 & EN 16121:2014+A1:2017.**



Respectfully Reviewed and Authorized,

Edwin A. Leach, Laboratory Director,
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