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EMECO INDUSTRIES INC  
Date: March 16, 2017  
P.O. No. N / A

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Quote No.: Qu-00768242  
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**Test Report For:**  
**EMECO INDUSTRIES INC**  
**ANSI/BIFMA X5.1-2017**  
**GENERAL-PURPOSE**  
**OFFICE CHAIRS – TESTS**  
**20-06 Bar Stool**



**Lynwood Pearson**  
**Project Manager**

**James Jantz**  
**Reviewer**

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**DATE RECEIVED:** March 7, 2017  
**DATES TESTED:** March 8 – March 16, 2017

**DESCRIPTION OF SAMPLES:**

Part Description: 20-06 Bar Stool  
Condition of Test Sample: New

**WORK REQUESTED/APPLICABLE DOCUMENTS:**

To test the submitted sample per ANSI/BIFMA X5.1–2017 General Purpose Office Chairs Test Standard for the following test program:

Test No.	Test Description:
7	Drop Test – Dynamic
10	Seating Durability Tests – Cyclic
11	Stability Tests
17	Leg strength Test – Front and Side Application
18	Footrest Static Load Test – Vertical
19	Footrest Durability Test – Vertical – Cyclic

**CONCLUSION:**

Test	Results	Notation
ANSI/BIFMA 5.1– 2017 #7 Drop Test – Dynamic	Compliant	No loss of serviceability.
ANSI/BIFMA 5.1 – 2017 #10 Seating Durability Tests – Cyclic	Compliant	No loss of serviceability.
ANSI/BIFMA 5.1– 2017 #11 Stability Tests	Compliant	No loss of serviceability.
ANSI/BIFMA 5.1– 2017 #17 Leg strength Test – Front and Side Application	Compliant	No loss of serviceability.
ANSI/BIFMA 5.1– 2017 #18 Footrest Static Load Test – Vertical	Compliant	No loss of serviceability.
ANSI/BIFMA 5.1– 2017 #19 Footrest Durability Test – Vertical – Cyclic	Compliant	No loss of serviceability.

**TEST EQUIPMENT:**

<b>Asset #</b>	<b>Description</b>	<b>Last Cal</b>	<b>Next Due</b>
138012	Scale/0-1,000#	10/18/2016	10/18/2017
138039.10	WEIGHT BAG	VBU	VBU
138039.2	WEIGHT BAG	VBU	VBU
138042	SEATING IMPACT / 2 STATION	VBU	VBU
138112	Graduated Rule 36"	10/11/2013	10/11/2018
138211	BED EDGE TESTER	VBU	VBU
138272	Load Cell 0-10000#	10/19/2016	10/19/2017
138279	FORCE GAUGE	3/3/2017	3/3/2018
138400	SCIENTIFIC STOPWATCH	4/26/2016	4/26/2017
138916.2	TIMING BOX	VBU	VBU

**7. DROP TEST – DYNAMIC:**

Date Tested: March 16, 2017  
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1-2017; Test No. 7  
Functional Load: 225 lbs.  
Proof Load: 300 lbs.  
Drop Height: 6"

Number of Samples Tested: One (1)

Acceptance Criteria:

Functional Load: There shall be no loss of serviceability.

Proof Load: There shall be no sudden and major change in the structural integrity of the product. Loss of serviceability is acceptable.

Results:

Sample ID	Drop Weight	Results
1	Functional Load – 225 lbs.	Pass
	Proof Load – 300 lbs.	Pass

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



**Drop Test – Dynamic**

## 10. SEATING DURABILITY TESTS – CYCLIC

Date Tested: March 10 – March 16, 2017  
Condition of Test Sample: New

### Test Procedure:

Test Method: ANSI/BIFMA X5.1-2017; Test No. 10

### Section 10.3 Impact Test

Bag Diameter: 16”  
Bag Weight: 125 lbs.  
Number Cycles: 100,000  
Height of Drop: 1.4”  
Cycles per Minute: 10 to 30

### Section 10.4 Front Corner Load-Ease Test – Cyclic – Off-center

Bag Diameter: 8”  
Bag Weight: 200 lbs.  
Number of Cycles Required: 20,000 to each Front Corner  
Cycles per Minute: 10 to 30

Number of Samples Tested: One (1)

### Acceptance Criteria:

There shall be no loss of serviceability to the chair after completion of both the Impact and Load Ease Tests. If applicable, the chair base (center structure) shall not touch the test platform as a result of the impact loads.

### Results:

#### Section 10.3

Sample No.	Number of Cycles	Description of Results
1	100,000	Pass

#### Section 10.4

Location of Force	Number of Cycles	Description of Results
Left Front Corner	20,000	Pass
Right Front Corner	20,000	Pass

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



**Impact Test**



**Load Ease Test**



**11. STABILITY TESTS (Front and Rear):**

Date Tested: March 16, 2017  
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1-2017; Test No. 11  
All of the chair's adjustable features shall be set for the most unstable conditions.

Chair Type: III

Section 11.3

Weight in Seat

Rear Stability

Type I: 286 lbs. (13 disks)  
Type II: 286 lbs. (13 disks)  
Type III: 132 lbs. (6 disks)

Section 11.4

Alternative:

Vertical Load:

Horizontal Force:

Front Stability

N / A

135 lbs.

4.5 lbs.

Number of Samples Tested: One (1)

Acceptance Criteria:

Rear Stability:

The force to tip shall not be less than:

Type I: Chair must not tip over

Type II: Chair must not tip over

Type III: [F = 1.1 (47 – H) pounds force.]. H is the seat height in inches. For chairs with seat height equal to or greater than 710 mm (28.0 in.), a fixed force of 93 N (20.9 lbf.) shall be applied. :

Front Stability:

The chair shall not tip over as the result of the force application of 4.5 lbf.

Results:

Sample ID	Seat Height	Front Stability	Rear Stability	Results
1	30.25"	11.8 lbf. to tip	N / A	Pass

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



**Front Stability**

**17. LEG STRENGTH TEST – FRONT AND SIDE APPLICATION:**

Date Tested: March 16, 2017  
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1–2017; Test No. 17

Section 17.3

Functional Load: 75 lbf. (Load Each Leg)  
Proof Load: 113 lbf. (Load Each Leg)

Section 17.4

Functional Load: 75 lbf. (Load Each Leg)  
Proof Load: 113 lbf. (Load Each Leg)

Number of Samples Tested: One (1)

Acceptance Criteria:

Functional Load: No structural breakage or loss of serviceability, including stacking if applicable.

Proof Load: No sudden and major change in the structural integrity of the product. Loss of serviceability is acceptable.

Results:

Sample ID	Load Application	Functional	Results	Proof	Results
1	Side to Side (Rear Side)	75 lbf.	Pass	113 lbf	Pass
	Side to Side (Front Side)	75 lbf.	Pass	113 lbf	Pass
	Front to Rear (Left Side)	75 lbf.	Pass	113 lbf.	Pass
	Front to Rear (Right Side)	75 lbf.	Pass	113 lbf.	Pass

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



**Leg Strength Test – Front Application**



**Leg Strength Test – Side Application**

### 18. FOOTREST STATIC LOAD TEST – VERTICAL

Date Tested: March 10, 2017  
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1-2017; Test No. 18  
Functional Load: a) Apply a force F1 of 100 lbf. uniformly along a 4 in. distance along the footrest but not greater than 2 in. from the outside edge at the apparent weakest point of the structure for one (1) minute in the vertical downward direction. If the footrest adjusts in height relative to the seat and allows for a force application 180 degrees (on the opposite side of the chair) from the primary force application, maintain force F1 and apply an additional force F2 of 100 lbf. to the footrest at the opposing position for an additional one (1) minute. The F2 force shall also be applied uniformly along a 4 in. distance along the footrest but not greater than 2 in. from the outside edge.  
b) If applicable, remove force F2.  
c) Increase the force F1 to 200 lbf. for one (1) minute.

Proof Load: Apply a force of 300 lbf. uniformly along a 4 in. distance along the footrest but not greater than 2 in. from the outside edge at the apparent weakest point of the structure for one (1) minute in the vertical downward direction.

Number of Samples Tested: One (1)

Acceptance Criteria:

The load applied once shall cause no sudden and major change in the structural integrity of the unit. Loss of serviceability is acceptable.

Results:

Sample ID	Load (lbf.)	Results
1	Functional Load 200 lbf.	Pass
	Proof Load 300 lbf.	Pass

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



**Footrest Static Load Test – Vertical**

**19. FOOTREST DURABILITY TEST – VERTICAL – CYCLIC**

Date Tested: March 8 – March 10, 2017  
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1-2017; Test No. 19  
Load To Footrest: 200 lbs.  
Direction of Force: Vertically Downward  
Number of Cycles Required: 50,000  
Cycles per Minute: 10 to 30

Number of Samples Tested: One (1)

Acceptance Criteria:

There shall be no loss of serviceability. Adjustable footrests that move more than 25 mm (1 in.) in the first 500 cycles shall be considered to have lost their serviceability.

Results:

Sample ID	Number of Cycles	Description of Results
1	50,000	Pass

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





**Footrest Durability Test – Vertical – Cyclic**

**Revisions Made To Test Report**

<b>Date</b>	<b>Revision Description</b>	<b>Revised by</b>	<b>Revised by</b>
16-Mar-2017	Initial release.	Lynwood Pearson	<i>Lynwood Pearson</i>