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EMECO INDUSTRIES INC
Date:4/9/2010
P. O. No.: 11,848

Project No.: 100077856GRR-001A
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Test Report For:
EMECO INDUSTRIES INC

ANSI/BIFMA X5.1-2002
CHAIR TEST STANDARD

111 NAVY CHAIR


Lynwood Pearson
Project Manager


Bryan Stratton
Reviewer

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Attention: Magnus Breitling
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DATE RECEIVED: 4/5/2010
DATES TESTED: 4/5-4/9/2010

DESCRIPTION OF SAMPLES:

Part Description: 111 NAVY Chair
Condition of Test Sample: New

WORK REQUESTED/APPLICABLE DOCUMENTS:

To test the submitted sample per ANSI/BIFMA X5.1-2002 Chair Test Standard for the following test program:

<u>Test No.</u>	<u>Test Description</u>
6	Back Rest Strength-Non-Tilt
8	Drop-Dynamic
11	Seating Durability
12	Stability
16	Backrest Durability-Non-Tilt
18	Leg Strength

CONCLUSION:

The submitted sample meets the acceptance criteria of the tests listed above.

TEST EQUIPMENT:

Asset	Description	Cal Date	Cal Due
138012	SCALE / 0-1,000 #	12/04/2009	12/04/2010
138022	DIGITAL/ 0-1,000 READOUT/ LOAD 1,000 LBS.	03/17/2009	03/30/2011
138022.2	LOAD CELL / 0-1,000 # 1-3000 LBS.	03/17/2009	03/30/2011
138039.1	BAG WEIGHT- (300 lbs)	12/07/2007	VBU
138039.2	BAG WEIGH- (225 lbs)	12/07/2007	VBU
138042	SEATING IMPACT / 2 STATION	VBU	VBU
138043	BACK DURABILITY 0-300lbs	VBU	VBU
138112	GRADUATED RULE 36"	08/27/2008	08/27/2013
138185	STOPWATCH	02/18/2008	VBU
138914	FORCE GAUGE	03/06/2009	03/30/2011

6. BACK STRENGTH PROCEDURE - STATIC (Type II-III – Non-Tilt Seat):

Date Tested: 4/8/2010
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1 2002; Test No. 6
Functional Load: 150 lbf.
Proof Load: 250 lbf.

Number of Samples Tested: One (1)

Acceptance Criteria:

Functional Load: There shall be no loss of serviceability to the chair.

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

Results:

Sample No.	Static Load	Description of Results
3	150	Pass
	250	Pass

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



BACK STRENGTH PROCEDURE - STATIC

8. DROP TEST – DYNAMIC:

Date Tested: 4/8/2010
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1-2002; Test No. 8
Functional Load: 225 lbs.
Proof Load: 300 lbs.
Drop Height: 6"
Number of Samples Tested: One (1)

Acceptance Criteria:

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

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

Results:

Sample No.	Drop Weight	Description of Results
3	Functional Load - 225 lbs	Pass
	Proof Load - 300 lbs	Pass

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



Drop Test - Dynamic

11. SEATING IMPACT TEST

Dates Tested: 4/5-4/9/2010
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1-2002; Test No. 11

Section 11.3

Seat Center Impact Test

Bag Diameter: 16"
Bag Weight: 125 lbs.
Number Cycles: 100,000
Height of Drop: 1"
Cycles per Minute: 10 to 30

Section 11.4

Load Ease Test

Bag Diameter: 8"
Bag Weight: 165 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.

Results:

Section 11.3

Sample No.	Number of Cycles	Description of Results
2	100,000	Pass

Section 11.4

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

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



Seating Impact Test



Load Ease Test

12. STABILITY TEST -DYNAMIC (Front and Rear):

Date Tested: 4/8/2010

Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1-2002; Test No. 12
All of the chair's adjustable features shall be set for the most unstable conditions.

Chair Type: III

Rear Stability:

Weight in Seat
(Rear Stability Only): 173 lbs.

Front Stability:

Alternative: N/A
Vertical Load: 134.8 lbs.
Horizontal Force: 4.5 lbs.

Number of Samples Tested: One (1)

Acceptance Criteria:

Front Stability: The chair shall not tip over as the result of the force application.

Rear Stability: The force to tip shall not be less than:

Type III: 35 lbf.

Results:

Sample No.	Front Stability	Rear Stability
3	16 lbf. to tip	53 lbf. to tip

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



Stability Test - Rear



Stability Test - Front

16. BACK DURABILITY TEST-CYCLIC (Type III):

Dates Tested: 4/5-4/8/2010
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1-2002; Test No. 16
Backrest Width: 13-3/4"
Number of Cycles Required: 120,000
Center Pull Location: 80,000
Off Center Pull Location: 40,000
Force Applied to Chair Back: 75 lbf.
Load in Seat: 225 lbs.
Cycles per Minute: 10 to 30

Number of Samples Tested: One (1)

Acceptance Criteria:

No structural breakage or loss of serviceability.

Results:

Sample No.	Pull Location	Number of Cycles	Description of Results
1	Center Pull	120,000	Pass

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



16. BACK DURABILITY TEST-CYCLIC

18. LEG STRENGTH TEST - FRONT & SIDE APPLICATION:

Date Tested: 4/8/2010
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.1-2002; Test No. 18

Front to Rear Leg Application:

Functional Load: 75 lbf. (Load Each Leg)
Proof Load: 125 lbf. (Load Each Leg)

Side Load Application:

Functional Load: 75 Lbs (Load Each Leg)
Proof Load: 115 Lbs (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 No.	Load Application	Functional	Proof	Description of Results
3	Side to Side (Rear Side)	75 lbf.	115 lbf	Pass
	Side to Side (Front Side)	75 lbf.	115 lbf	Pass
	Front to Rear (Left Side)	75 lbf.	125 lbf.	Pass
	Front to Rear (Right Side)	75 lbf.	125 lbf.	Pass

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



LEG STRENGTH TEST - FRONT APPLICATION



LEG STRENGTH TEST - SIDE APPLICATION