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Emeco
Date: March 26, 2015

Report No.:102021948GRR-001
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Test Report For:

Emeco

**BS EN 16139:2013
BS EN 1728:2012**

Navy Chair

Jacob Wisniewski
Project Manager

Anthony Serge
Reviewer



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DATE RECEIVED: 2/11/15
DATES TESTED: 2/27/15 – 3/23/15

DESCRIPTION OF SAMPLES:

Part Description: Navy Chair
Condition of Test Sample: New

WORK REQUESTED/APPLICABLE DOCUMENTS:

To test the submitted sample per BS EN 16139:2013 Test Standard for the following test program:

<u>Test No.</u>	<u>Reference</u>	<u>Test Description</u>
1	EN 1728:2012, 6.4	Seat and Back Static Load Test
2	EN 1728:2012, 6.5	Seat Front Edge Static Load Test
3	EN 1728:2012, 6.6	Vertical Static Load on Back
8	EN 1728:2012, 6.17	Seat and Back Durability Test
9	EN 1728:2012, 6.18	Seat Front Edge Durability Test
12	EN 1728:2012, 6.15	Leg Forward Static Load Test
13	EN 1728:2012, 6.16	Leg Sideways Static Load Test
14	EN 1728:2012, 6.24	Seat Impact Test
15	EN 1728:2012, 6.25	Back Impact Test
21	EN 1728:2012, 6.28	Backward Fall Test
22	EN 1728:2012, 6.27.3	Drop Test From the Height of a Table

CONCLUSION:

Test	Results	Notation
EN 1728:2012, 6.4 Seat and Back Static Load Test	Compliant	No loss of serviceability.
EN 1728:2012, 6.5 Seat Front Edge Static Load Test	Compliant	No loss of serviceability.
EN 1728:2012, 6.6 Vertical Static Load on Back	Compliant	No loss of serviceability.
EN 1728:2012, 6.17 Seat and Back Durability Test	Compliant	No loss of serviceability.
EN 1728:2012, 6.18 Seat Front Edge Durability Test	Compliant	No loss of serviceability.
EN 1728:2012, 6.15 Leg Forward Static Load Test	Compliant	No loss of serviceability.
EN 1728:2012, 6.16 Leg Sideways Static Load Test	Compliant	No loss of serviceability.
EN 1728:2012, 6.24 Seat Impact Test	Compliant	No loss of serviceability.
EN 1728:2012, 6.25 Back Impact Test	Compliant	No loss of serviceability.
EN 1728:2012, 6.28 Backward Fall Test	Compliant	No loss of serviceability.
EN 1728:2012, 6.27.3 Drop Test From the Height of a Table	Compliant	No loss of serviceability.

TEST EQUIPMENT:

Asset	Description	Cal Date	Cal Due
138379	Stopwatch	09/02/2014	09/02/2016
138012	SCALE / 0-1,000 #	11/24/2014	11/24/2015
138148	DIGITAL PROTRACTOR	09/11/2014	09/11/2015
138279	FORCE GAGE; DIGITAL 100LB	03/31/2014	03/31/2015
138112	GRADUATED RULE 36"	10/11/2013	10/11/2018
138211	BED EDGE TESTER	VBU	VBU
138205	IMPACT TESTER	VBU	VBU
138247	MULTI-LOAD TESTER	VBU	VBU
138213	IMPACT HAMMER	VBU	VBU

1. Seat and Back Static Load Test (Level 2):

Date Tested: 2/27/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.4
Seat Load: 2,000 N
Back Load: 700 N

- Apply designated load to seat.
- While maintaining seat load, apply the back load.
- Repeat for 10 cycles.

Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Cycles	Description of Results
1	10	Pass

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



Seat and Back Static Load

2. Seat Front Edge Static Load Test (Level 2):

Date Tested: 3/2/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.5
Seat Load: 1,600 N

- Apply the specified force using the seat loading pad at a point on the seat center line 100 mm inwards from the front edge.
- Repeat 10 times.

Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Cycles	Description of Results
1	10	Pass

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



Seat Front Edge Static Load

3. Vertical Static Load on Back (Level 2):

Date Tested: 3/2/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.6
Seat Load: 1,800 N

- Place designated load in seat.
- Apply a vertical static force of 900 N to the top of the back rest.
- Repeat for 10 cycles.

Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Cycles	Description of Results
1	10	Pass

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



Vertical Static Load on Back

8. Seat and Back Durability Test (Level 2):

Date Tested: 3/2/15 – 3/12/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.17
Seat Load: 1,000 N
Back Load: 300 N

- Apply designated loads to seat and back.
- Repeat for 200,000 cycles.

Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Cycles	Description of Results
1	200,000	Pass

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



Seat and Back Durability

9. Seat Front Edge Durability Test (Level 2):

Date Tested: 3/13/15 – 3/17/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.18
Force: 800 N

- Apply designated force alternatively on two points, each 100 mm from the front edge and 100 mm in from each side edge.
- Repeat for 100,000 cycles.

Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Cycles	Description of Results
1	100,000	Pass

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



Seat Front Edge Durability

12. Leg Forward Static Load Test (Level 2):

Date Tested: 3/19/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.15
Seat Load: 1,800 N
Force: 620 N

- Place designated load in seat.
- Apply a horizontal force centrally to the rear of the seat, at seat level, in a forward direction.
- Repeat for 10 cycles.

Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Cycles	Description of Results
1	10	Pass

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



Leg Forward Static Load

13. Leg Sideways Static Load Test (Level 2):

Date Tested: 3/19/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.16
Seat Load: 1,800 N
Force: 760 N

- Place designated load in seat.
- Apply a horizontal force centrally to the side of the seat, at seat level, in the direction towards the restrained feet.
- Repeat for 10 cycles.

Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Cycles	Description of Results
1	10	Pass

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



Leg Sideways Static Load

14. Seat Impact Test (Level 2):

Date Tested: 3/23/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.24
Weight of Impactor: 25 kg

- Place one layer of 25 mm thick foam on the seat. Determine the height of the fall from the position of the impactor when it is resting on the surface of the foam.
- Place a second layer of 25 mm foam on the seat.
- Allow the seat impactor to fall freely from 300 mm onto the seat loading position.
- Repeat for 10 cycles.

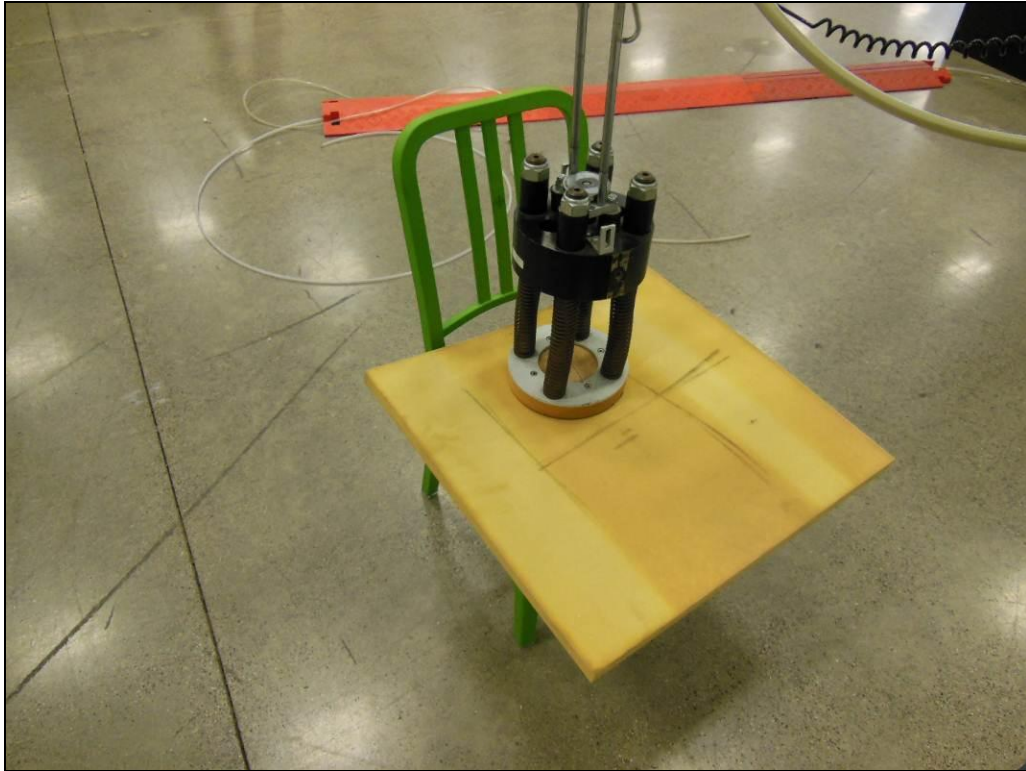
Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Cycles	Description of Results
1	10	Pass

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



Seat Impact Test

15. Back Impact Test (Level 2):

Date Tested: 3/23/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.25
Height of Fall, mm/°: 330/48

- Strike the center of the top outside of the back with the impact hammer. Drop the hammer through the height, or angle, specified.
- Repeat for 10 cycles.

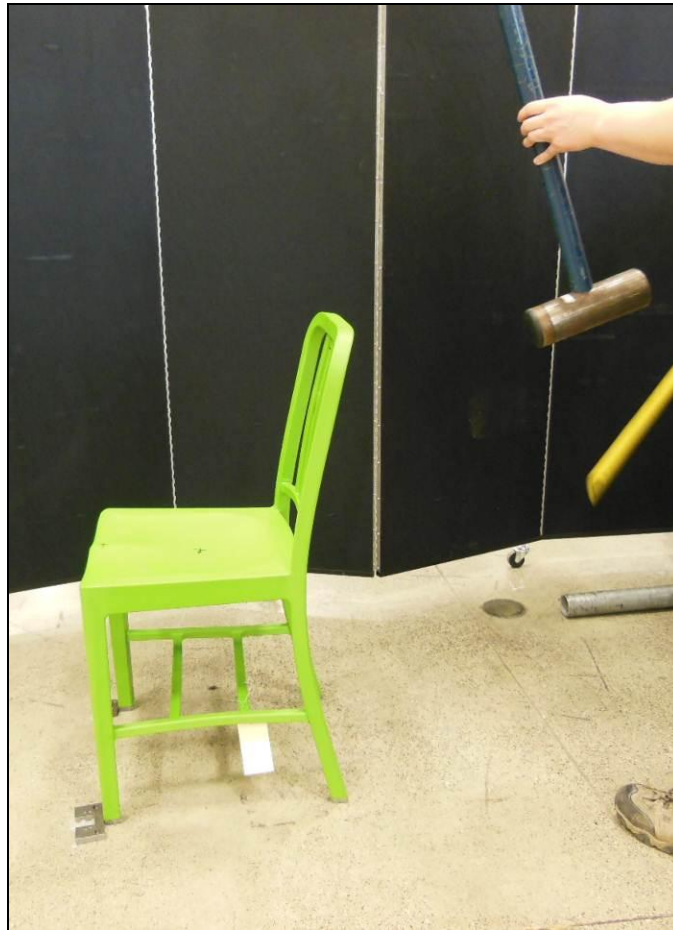
Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Cycles	Description of Results
1	10	Pass

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



Back Impact Test

21. Backward Fall Test (Level 2):

Date Tested: 3/23/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.28

- Place the unloaded unit on the rubber padded drop test floor.
- Apply a rearward horizontal load to a point 50 mm below the top of the back rest at the center. Measure the force required to lift the front legs off the floor.
- If the measured force is less than 30N, push the back rest until it reaches equilibrium, and then allow it to fall freely on its back.
- Repeat for 5 cycles.

Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Cycles	Description of Results
1	5	Pass

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



Backward Fall Test

22. Drop Test From the Height of a Table (Level 2):

Date Tested: 3/23/15
Condition of Test Sample: New
Number of Samples Tested: One (1)

Test Procedure:

Test Method: EN 1728:2012, 6.27.3
Drop Height: 600 mm

- Support the seating so that one leg is lifted to the specified drop height, and the line joining that leg to the leg diagonally opposite is incline 10° to the horizontal.
- The two remaining legs shall be maintained at the same level.
- Drop it on to the rubber faced test floor.
- Perform 5 cycles on a front leg, and 5 cycles on a rear leg.

Acceptance Criteria:

There shall be no fractures of any member, joint, or component. No loosening of joints intended to be rigid. Seating shall remain functional, and fulfill stability requirements.

Results:

Sample ID	Leg	Cycles	Description of Results
1	Front	5	Pass
	Rear	5	Pass

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



Drop Test From the Height of a Table

