



4700 Broadmoor SE, Suite 200
Kentwood, MI 49512

Telephone: 616-656-7401
Facsimile: 616-656-2022
www.intertek-etlsemko.com

ORANGEBOX USA
Date: April 21, 2017
P.O. No. P000230-5

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Test Report For:
OrangeBox USA
ANSI/BIFMA X5.4-2012
LOUNGE and PUBLIC SEATING TEST
STANDARD
Cubb-07



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Lynwood Pearson
Project Manager

James Jantz
Reviewer

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Attention: Owain Ingram-Jones
OrangeBox USA
99 Monroe Avenue Northwest Suite 200
Grand Rapids, MI 49503
USA
Phone: +1 (616) 617-8885
E-mail: Owain.Ingram-Jones@orangebox.com

DATE RECEIVED: February 2, 2017
DATES TESTED: February 8 – April 21, 2017

DESCRIPTION OF SAMPLES:

Condition of Test Sample: New
Part Description: Cubb-07

WORK REQUESTED/APPLICABLE DOCUMENTS:

To test the submitted sample per ANSI/BIFMA X5.4-2012 Test Standard for the following test program:

| Test No. | Test Description: |
|----------|----------------------------------|
| 5 | Backrest Strength - Horizontal |
| 6 | Backrest Strength - Vertical |
| 7 | Backrest Durability - Horizontal |
| 8 | Backrest Durability - Vertical |
| 21 | Stability |

CONCLUSION:

| Test | Results | Notation |
|--|-----------|----------------------------|
| ANSI/BIFMA 5.4-2012 #5 Backrest Strength - Horizontal | Compliant | No loss of serviceability. |
| ANSI/BIFMA 5.4-2012 #6 Backrest Strength - Vertical | Compliant | No loss of serviceability. |
| ANSI/BIFMA 5.4-2012 #7 Backrest Durability - Horizontal | Compliant | No loss of serviceability. |
| ANSI/BIFMA 5.4-2012 #8 Backrest Durability - Vertical | Compliant | No loss of serviceability. |
| ANSI/BIFMA 5.4-2012 #21 Stability | Compliant | No loss of serviceability. |

TEST EQUIPMENT:

| Asset # | Description | Last Cal | Next Due |
|----------------|---|-----------------|-----------------|
| 138012 | Scale/0-1,000# | 10/18/2016 | 10/18/2017 |
| 138112 | Graduated Rule 36" | 10/11/2013 | 10/11/2018 |
| 138148 | DIGITAL PROTRACTOR | 9/20/2016 | 9/20/2017 |
| 138272 | Load Cell 0-10000# | 10/19/2016 | 10/19/2017 |
| 138279 | FORCE GAUGE | 3/3/2017 | 3/3/2018 |
| 138325 | 4 Station Backrest Durability Machine | VBU | VBU |
| 138325.4 | Load cell used on station 4 on back durability machine. | 8/16/2016 | 8/16/2017 |
| 138400 | SCIENTIFIC STOPWATCH | 4/26/2016 | 4/26/2017 |
| 138916.2 | TIMING BOX | VBU | VBU |

5. BACK STRENGTH HORIZONTAL:

Date Tested April 21, 2017
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.4-2012 Test No. 5

Functional Load: 150 lbf. each seating position
Proof Load: 250 lbf. each seating position
Time Duration of Load: 1 minute

Number of Samples Tested: One (1)

Acceptance Criteria:

Functional Load: A functional load applied once shall cause no loss of serviceability to the unit.

Proof Load: A proof 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 | Static Load | Description of Results |
|-----------|-------------|------------------------|
| 2 | 150 lbf. | Pass |
| | 250 lbf. | Pass |

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



Horizontal Back Strength

6. BACK STRENGTH VERTICAL:

Date Tested April 21, 2017
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.4-2012 Test No. 6

Functional Load: 200 lbf. each seating position
Proof Load: 300 lbf. each seating position
Time Duration of Load: 1 minute

Number of Samples Tested: One (1)

Acceptance Criteria:

Functional Load: A functional load applied once shall cause no loss of serviceability to the unit

Proof Load: A proof 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 | Static Load | Description of Results |
|-----------|-------------|------------------------|
| 2 | 200 lbf. | Pass |
| | 300 lbf. | Pass |

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



Vertical Back Strength

7. BACK DURABILITY TEST – HORIZONTAL – CYCLIC:

Date Tested February 8 – February 13, 2017
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.4-2012 Test No. 7

Force Applied: 75 lbf. each seating position
Number of Cycles Required: 120,000
Weight in Seat: 225 lbs.
Cycles Per Minute: 20 ± 10

Number of Samples Tested: One (1)

Acceptance Criteria:

There shall be no loss of serviceability.

Results:

| Sample ID | Number of Cycles | Description of Results |
|-----------|------------------|------------------------|
| 1 | 120,000 | Pass |

The sample met the acceptance level criteria. Refer to the following page for photograph.



Horizontal Back Durability - Cyclic

8. BACK DURABILITY – VERTICAL – CYCLIC:

Date Tested April 20 – 21, 2017
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.4-2012 Test No. 8

Force Applied: 200 lbf. each seating position

Number of Cycles Required: 10,000

Cycles Per Minute: 20 ± 10

Number of Samples Tested: One (1)

Acceptance Criteria:

There shall be no loss of serviceability.

Results:

| Sample ID | Cycles | Description of Results |
|-----------|--------|------------------------|
| 2 | 10,000 | Pass |

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



Vertical Back Durability - Cyclic

21. STABILITY TEST:

Date Tested February 8, 2017
Condition of Test Sample: New

Test Procedure:

Test Method: ANSI/BIFMA X5.4-2012 Test No. 21

Chair Weight: 19 lbs.

On units with adjustable features, all adjustments shall be set to provide the most unstable conditions.

Rear Stability:

Seat Height 19"

Weight in Seat

(Rear Stability Only): 286 lbs (13 disks) Tilting Seat
132 lbs (6 disks) Non - Tilting Seat

Number of Samples Tested: One (1)

Acceptance Criteria:

Front Stability: The force determined in the recorded findings in 21.5.2(b) shall be not less than 40 percent of the total weight of the unit.

Rear Stability: Tilting Seat: Chair must not tip over
Non - Tilting Seat: [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.

Results:

| Sample ID | Front Stability | Rear Stability | Description of Results |
|-----------|------------------|------------------|------------------------|
| 1 | 13.7 lbf. to tip | 55.5 lbf. to tip | Pass |

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



Stability Test - Front



Stability Test – Rear

