

| | |
|------------------------|--|
| Requester: | Sandler Seating 1175 Peachtree St. Suite 1850 Atlanta, GA 30361 |
| Contact Name / Number: | Rusty Wolf (404)982 - 9000 |
| Dates Tested: | 10/01/10 – 10/06/10 |
| Date Submitted: | 10/08/10 |
| Technician: | Jason Wisniewski, Jon Roblin, Doug Woodard |
| Customer Request I.D. | N/A |

Scope: To test the Woodlook V1 Chair manufactured by Sandler Seating for BIFMA Compliance by subjecting it to the following tests:

Requested Tests:

| <u>Test Name</u> | <u>Requirement</u> |
|---|----------------------------------|
| Backrest Strength Test - Static - Type II & III | ANSI/BIFMA X5.1-2002, Section 6 |
| Drop Test - Dynamic | ANSI/BIFMA X5.1-2002, Section 8 |
| Seating Durability Tests - Cyclic | ANSI/BIFMA X5.1-2002, Section 11 |
| Stability Tests | ANSI/BIFMA X5.1-2002, Section 12 |
| Arm Strength Test - Vertical - Static | ANSI/BIFMA X5.1-2002, Section 13 |
| Arm Strength Test - Horizontal - Static | ANSI/BIFMA X5.1-2002, Section 14 |
| Backrest Durability Test - Cyclic - Type II & III | ANSI/BIFMA X5.1-2002, Section 16 |
| Leg Strength Test - Front and Side Application | ANSI/BIFMA X5.1-2002, Section 18 |
| Arm Durability Test - Cyclic | ANSI/BIFMA X5.1-2002, Section 20 |
| Static Load Test | Informational Purposes only |

Product Description:

| <u>Specimen</u> | <u>Description</u> | <u>Supplier</u> |
|-----------------|-----------------------------|-----------------|
| 1, 2 | Woodlook V1 Chair No Arms | Sandler Seating |
| 3 | Woodlook V1 Chair With Arms | Sandler Seating |

This report shall not be reproduced, except in full, without written permission from Advanced Furniture Testing, Inc. Results contained within this report only apply to the actual product tested under the testing conditions documented in this report.



Test Request Number: AFT-00695

12764 Greenly Street
Suite 20
Holland, MI 49424
PH 616-928-0791
FAX 616-928-0792
www.furnituretest.com



Page 2 of 13

Summary:

| <u>Test Name</u> | <u>Specimens</u> | <u>Results</u> |
|---|------------------|------------------|
| Backrest Strength Test - Static - Type II & III | 2 | Passed |
| Drop Test - Dynamic | 1 | Passed |
| Seating Durability Tests - Cyclic | 2 | Passed |
| Stability Tests | 1, 3 | Passed |
| Arm Strength Test - Vertical - Static | 3 | Passed |
| Arm Strength Test - Horizontal - Static | 3 | Passed |
| Backrest Durability Test - Cyclic - Type II & III | 1 | Passed |
| Leg Strength Test - Front and Side Application | 2 | Passed |
| Arm Durability Test - Cyclic | 3 | Passed |
| Static Load Test | 1 | Information only |

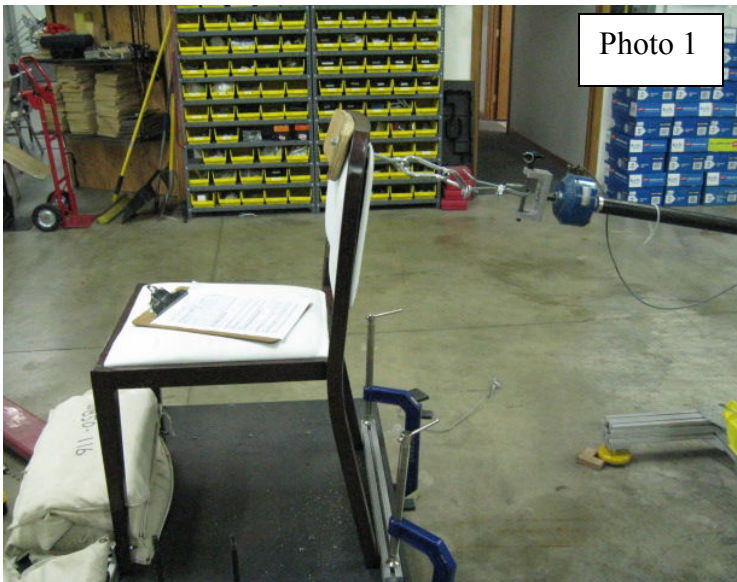
Test Results:

1. Backrest Strength Test - Static - Type II & III:

Testing was performed per ANSI/BIFMA X5.1-2002, Section 6.

Notes:

- Temperature / humidity 76° F / 47 RH%.
- Functional Load = 150 lbs. for 1 minute.
- Proof Load = 250 lbs. for 1 minute.
- See Photo 1 for set up.



| <u>Specimen</u> | <u>Load</u> | <u>Time</u> | <u>Observations</u> |
|-----------------|-------------|-------------|---|
| 2 | 150 | 1 min. | No loss of serviceability. |
| | 250 | 1 min. | No sudden and major change in structural integrity. |

Requirement:

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

Proof Load: A Proof Load applied once shall cause no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.

| | |
|------------|---|
| Equipment: | Tape measure (TD-010), Test machine (TM-010), Stopwatch (TD-002) Digital protractor (TD-073) |
|------------|---|

2. Drop Test – Dynamic:

Testing was performed per ANSI/BIFMA X5.1-2002, Section 8.

Notes:

- Temperature / humidity 73° F / 50 RH%.
- Chair was subjected to a 225 and a 300 lb. drop one time each.
- Each drop was applied through a 16" bag from 6" above the seat
- See Photo 2 for set up.



Photo 2

| <u>Specimen</u> | <u>Load (lbs.)</u> | <u>Observations</u> |
|-----------------|--------------------|---|
| 1 | 225 | No loss of serviceability |
| | 300 | No sudden and major change in structural integrity. |

Requirement:

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 chair. Loss of serviceability is acceptable.

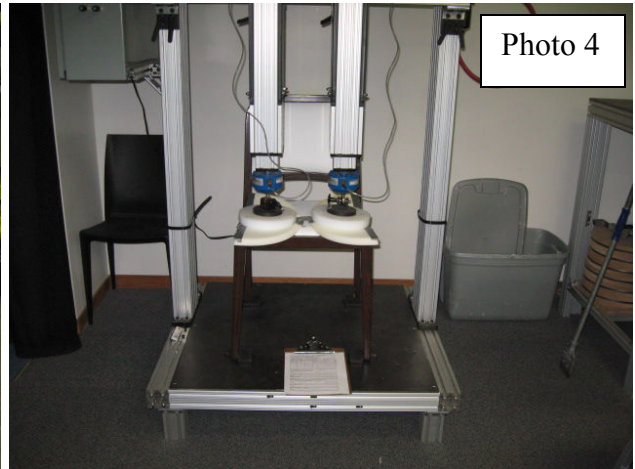
| | |
|------------|-----------------------|
| Equipment: | Tape measure (TD-011) |
|------------|-----------------------|

3. Seating Durability Tests – Cyclic:

Testing was performed per ANSI/BIFMA X5.1-2002, Section 11.

Notes:

- Temperature / humidity 70 - 73° F / 48 - 50 RH%.
- A 125 lb. load was dropped from 1 inch above uncompressed seat surface through a 16 inch diameter bag.
- The bag was centered from side to side and 0.5 inch forward of the front of the backrest.
- Following the impact segment an alternating 165 lb. load was applied through 8 in. load pads 20,000 times to each front corner of the seat.
- Impact test rate: 19 cpm.
- Load ease test rate: 20 cpm.
- See Photos 3 and 4 for set up.



| <u>Specimen</u> | <u>Test</u> | <u>Cycles</u> | <u>Observations</u> |
|-----------------|-------------|---------------|----------------------------|
| 2 | Impact | 100,000 | No loss of serviceability. |
| | Load Ease | 20,000 | No loss of serviceability. |

Requirement:

There shall be no loss of serviceability to the chair after the completion of both the impact and load ease tests.

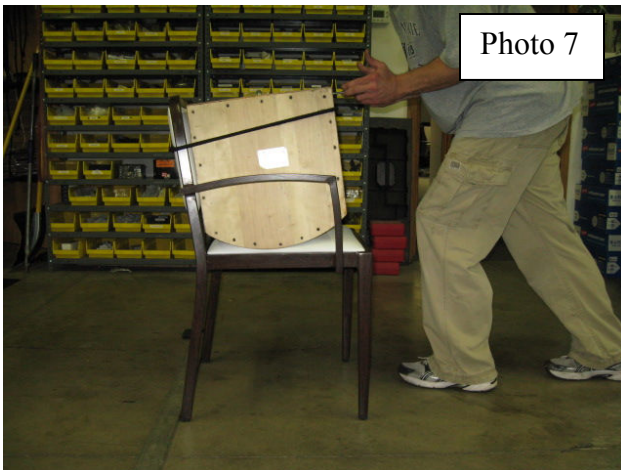
| | |
|------------|--|
| Equipment: | Test machines (TM-002.1, TM-017), Tape measure (TD-011), Stop watch (TD-002) |
|------------|--|

4. Stability Tests:

Testing was performed per ANSI/BIFMA X5.1-2002, Section 12.

Notes:

- Temperature / humidity 71° F / 49 RH%.
- See Photo 5 and 6 (Front Stability) and 7 and 8 (Rear Stability) for set up.



4. Stability Tests: (continued)

Front Stability:

| <u>Specimen</u> | <u>Force to Transfer Weight to Front Legs</u> |
|-----------------|---|
| 1 | 24.6 lbs. |
| 3 | 22.4 lbs. |

Rear Stability:

| <u>Specimen</u> | <u>Force to Transfer Weight to Rear Legs</u> |
|-----------------|--|
| 1 | 49.3 lbs. |
| 3 | 52.8 lbs. |

Requirement:

Rear Stability: The force determined in 12.3.2 shall not be less than that shown for each type of chair: (Type III: 156 N (35 lbs.))

Front Stability: The chair shall not tip over as a result of the (4.5 lb) force application.

| | |
|------------|---|
| Equipment: | Tape measure (TD-029), Force gage (TD-007), 174 lb. weight (TD-043) |
|------------|---|

5. Backrest Durability Test - Cyclic - Type II & III:

Testing was performed per ANSI/BIFMA X5.1-2002, Section 16.

Notes:

- Temperature / humidity 72 - 73° F / 48 - 50 RH%.
- 225 lb. load centered in the seat.
- 75 lb. force applied at 90° to the plane of the back once per cycle.
- Test was set to be applied at the side to side center of the back for 80,000 cycles, then 20,000 cycles 4" right and 4" left of center.
- Test rate: 25 cpm.
- See Photo 7 for set-up.



| <u>Specimen</u> | <u>Location</u> | <u>Cycles</u> | <u>Observations</u> |
|-----------------|-----------------|---------------|----------------------------|
| 1 | Center | 80,000 | No loss of serviceability. |
| | 4" to the Left | 80,000 | Continued test. |
| | | 100,000 | No loss of serviceability. |
| | 4" to the Right | 100,000 | Continued test. |
| | | 120,000 | No loss of serviceability. |

Requirement: *There shall be no loss of serviceability*

| | |
|------------|---|
| Equipment: | Test machine (TM-022.5), Tape Measure (TD-011), Stopwatch (TD-002) Digital protractor (TD-073) |
|------------|---|

6. Arm Strength Test - Vertical - Static:

Testing was performed per ANSI/BIFMA X5.1-2002, Section 13.

Notes:

- Temperature / humidity 71° F / 50 RH%.
- The left arm assembly was tested with load adapter at the midpoint of the armrest.
- Functional load: 200 lbs.
- Proof load: 300 lbs.
- See Photo 8 for set up.



| <u>Specimen</u> | <u>Load (lbs.)</u> | <u>Time (sec.)</u> | <u>Observations</u> |
|-----------------|--------------------|--------------------|------------------------------|
| 3 | 200 | 60 | No loss of serviceability. |
| | 300 | 60 | No sudden and major changes. |

Requirement:

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 chair. Loss of serviceability is acceptable.*

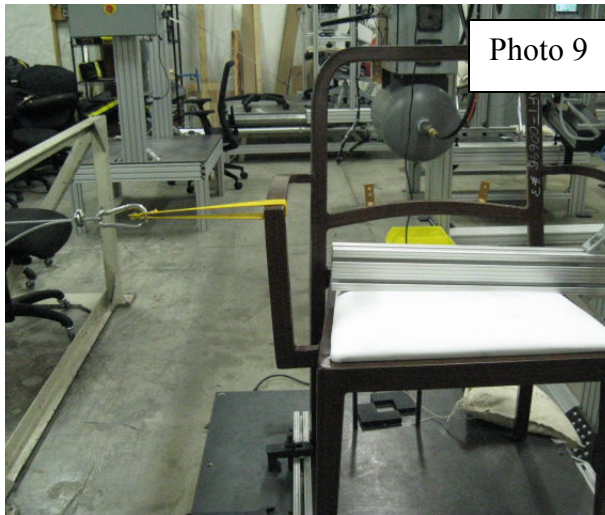
| | |
|-------------------|---|
| Equipment: | Tape measure (TD-011), Stop Watch (TD-002), Test machine (TM-009) |
|-------------------|---|

7. Arm Strength Test - Horizontal - Static:

Testing was performed per ANSI/BIFMA X5.1-2002, Section 14.

Notes:

- Temperature / humidity 71° F / 50 RH%.
- The specimen was secured to the test platform.
- The right hand assembly was tested with cable assembly attached at approximately 1 inch in from the front edge of the structure.
- Functional load: 100 lbs. for 1 minute.
- Proof load: 150 lbs for 1 minute.
- See Photo 9 for set up.



| <u>Specimen</u> | <u>Load (lbs.)</u> | <u>Time (sec.)</u> | <u>Observations</u> |
|-----------------|--------------------|--------------------|------------------------------|
| 3 | 100 | 60 | No loss of serviceability. |
| | 150 | 60 | No sudden and major changes. |

Requirement:

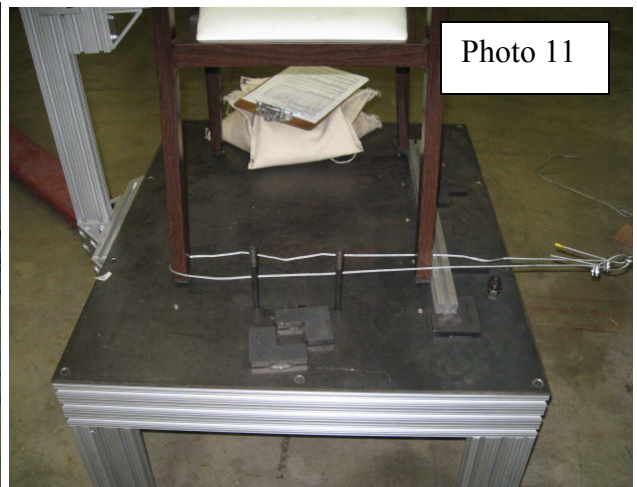
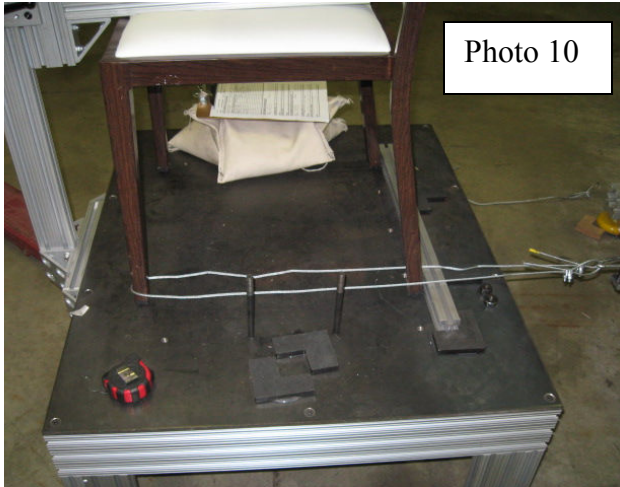
Functional Load: A Functional load applied once shall cause no loss of serviceability.

Proof Load: A Proof Load applied once shall cause no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.

| | |
|-------------------|---|
| Equipment: | Tape measure (TD-010), Stop Watch (TD-002), Test machine (TM-010) |
|-------------------|---|

8. Leg Strength Test - Front and Side Application:

- Temperature / humidity 71° F / 50 RH%.
- See Photo 10 (Front Application) and 11 (Side Application) for set up.



| <u>Specimen</u> | <u>Leg</u> | <u>Application</u> | <u>Load (lbs.)</u> | <u>Time (sec.)</u> | <u>Observations</u> |
|-----------------|------------|--------------------|--------------------|--------------------|-----------------------------|
| 2 | RH Front | Front | 75 | 60 | No loss of serviceability. |
| | LH Front | Front | 75 | 60 | No loss of serviceability. |
| | RH Front | Side | 75 | 60 | No loss of serviceability. |
| | LH Rear | Side | 75 | 60 | No loss of serviceability. |
| | RH Front | Front | 125 | 60 | No sudden and major change. |
| | LH Front | Front | 125 | 60 | No sudden and major change. |
| | RH Front | Side | 115 | 60 | No sudden and major change. |
| | LH Rear | Side | 115 | 60 | No sudden and major change. |

Requirement:

Functional Load: Functional load(s) applied once in each direction shall cause no loss of serviceability.

Proof Load: Proof Load(s) applied once in each direction shall cause no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.

| | |
|------------|--|
| Equipment: | Tape measure (TD-011), Stopwatch (TD-002), Test machine (TM-010) |
|------------|--|

9. Arm Durability Test - Cyclic:

Testing was performed per ANSI/BIFMA X5.1-2002, Section 20.

Notes:

- Temperature / humidity 71 - 74° F / 46 - 50 RH%
- A 90 lb. load applied once per cycle to each arm.
- Load applied at midpoint of depth of each arm structure.
- Test rate: 24 cpm.
- See Photo 12 for set up.



Photo 12

| <u>Specimen</u> | <u>Cycles</u> | <u>Observations</u> |
|-----------------|---------------|---------------------------|
| 3 | 60,000 | No loss of serviceability |

Requirement: *Structural breakage or loss of serviceability shall constitute failure.*

| | |
|------------|---|
| Equipment: | Test machine (TM-007), Tape Measure (TD-029), Stopwatch (TD-002), Digital protractor (TD-073) |
|------------|---|

10. Static Load Test:

Testing was performed per the requester’s instructions.

Notes:

- Temperature / humidity 75° F / 48 RH%.
- A 350 lb. load was placed on the seat center for 1 hour.
- See Photo 13 for set up.



| <u>Specimen</u> | <u>Load (lbs.)</u> | <u>Time (Min.)</u> | <u>Observations</u> |
|-----------------|--------------------|--------------------|---------------------------|
| 1 | 350 | 60 | No loss of serviceability |

Requirement: Testing was performed for informational purposes only.

| | |
|------------|---|
| Equipment: | Stop Watch (TD-002), Calibrated shot bags |
|------------|---|