

## Test Report

No.: SDHL1703004943FT

Date: Sep.26, 2017

Page 1 of 7

MERRYFAIR CHAIR SYSTEM SDN BHD

NO. 2, JALAN KORPORAT 1/KU9, TAMAN PERINDUSTRIAN MERU, KAPAR, 42200 SELANGOR, MALAYSIA.

The following sample(s) was / were submitted and identified on behalf of the client as:

Sample Description : OLA PUBLIC SEATING  
 Buyer Item No. : 1095 FD A00 AJ  
 Sample Receiving Date : Mar.24, 2017  
 Sample 1<sup>st</sup> Resubmission Date : May 15, 2017  
 Sample 2<sup>nd</sup> Resubmission Date : Sep.20, 2017  
 Test Performing Date : Mar.24, 2017 to Sep.26, 2017

### Test Result Summary

Test(s) Requested	Result(s)
ANSI/BIFMA X5.4 - 2012	PASS

#### Summary:

- For further details, please refer to the following page(s).

Signed for and on behalf of  
 Shunde Branch  
 SGS-CSTC Co., Ltd.



Caming Fan  
 Approved signatory



SGS-CSTC Inspection & Testing Services  
 Shunde Branch Harbin

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**TESTS AND RESULTS**

**Test Conducted:**

ANSI/BIFMA X5.4-2012 Lounge and Public Seating – Tests, American National Standard for Office Furnishings.

**General Test Condition:**

The following test program was conducted in a laboratory environment maintained at 15°C to 25°C and 50%±5 RH. The sample was individually tested after conditioning in the test environment for at least 24 hours prior to conducting the test.

The complete detailed procedures may be found in the referenced specification and are only summarized herein.

**No. of Sample:**

2 pieces (Sample 1 & 2). For more sample information and pictures, please refer to the following page.

**Types of Lounge Seating:** Single Seating (Type C). For the classification of types, please refer to Annex A.

Test	Test Description and Requirements	Test Results
<b>Safety, Durability, and Structural Adequacy</b>		
5	<b>Back Strength Test - Horizontal Static - Functional Load</b> No loss of serviceability when 667N (150lbs.) is applied simultaneously for 1 min. Applied 90° to the back at 16in. above the seat.	PASS
	<b>Back Strength Test - Horizontal Static - Proof Load</b> No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 1112N (250lbs.) is applied simultaneously for 1 min. Applied 90° to the back at 16in. above the seat.	PASS
6	<b>Back Strength Test - Vertical Static - Functional Load</b> No loss of serviceability when 890N (200lbs.) is applied simultaneously for 1 min. Applied 90° to the back at 16in. above the seat.	N/A
	<b>Back Strength Test - Vertical Static - Proof Load</b> No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 1334N (300lbs.) is applied simultaneously for 1 min. Applied 90° to the back at 16in. above the seat.	N/A
7	<b>Back Durability Test - Horizontal – Cyclic</b> No loss of serviceability in 120,000 cycles with a 102kg (225lbs.) in the center of each seat and a force of 334N (75lbf.) 90° to the center of the chair back.	PASS
8	<b>Back Durability Test - Vertical – Cyclic</b> No loss of serviceability after applying a vertical downward force of 890 N (200 lbf) at the top of the backrest for 10000 cycles.	N/A



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Test	Test Description and Requirements	Test Results
9	<p><b>Arm Strength Test Horizontal – Static - Functional Load</b> No loss of serviceability when apply horizontally inward and outward to the armrest at the most forward point of the armrest with the following force, for 1 min.</p> <ul style="list-style-type: none"> <li>- For units with a distance between the arms less than 889 mm (35 in.), a force of 445 N (100 lbf.)</li> <li>- For units with distance between the arms greater than or equal to 889 mm (35 in.), a force of 592 N (133 lbf.)</li> </ul>	N/A
9	<p><b>Arm Strength Test Horizontal – Static - Proof Load</b> No sudden and major change in the structural integrity (loss of serviceability is acceptable) when apply horizontally inward and outward to the armrest at the most forward point of the armrest with the following force, for 1 min.</p> <ul style="list-style-type: none"> <li>- For units with a distance between the arms less than 889 mm (35 in.), a force of 667 N (150 lbf.)</li> <li>- For units with distance between the arms greater than or equal to 889 mm (35 in.), a force of 890 N (200 lbf.)</li> </ul>	N/A
10	<p><b>Arm Strength Test Vertical – Static - Functional Load</b> No loss of serviceability when apply the vertical load uniformly applied along a 127mm (5in.) length at the apparent weakest point with the following force, for 1 min.</p> <ul style="list-style-type: none"> <li>- For units with armrest width of greater than 75 mm (3 in.) a force of 890 N (200 lbf.)</li> <li>- For units with an armrest width of less than or equal to 75 mm (3 in.) a force of 750 N (169 lbf.)</li> </ul>	N/A
	<p><b>Arm Strength Test Vertical – Static - Proof Load</b> No sudden and major change in the structural integrity (loss of serviceability is acceptable) when apply the vertical load uniformly applied along a 127mm (5in.) length at the apparent weakest point with the following force, for 1 min.</p> <ul style="list-style-type: none"> <li>- For units with armrest width of greater than 75 mm (3 in.) a force of 1335 N (300 lbf.)</li> <li>- For units with an armrest width of less than or equal to 75 mm (3 in.) a force of 1125 N (253 lbf.)</li> </ul>	N/A
11	<p><b>Arm Durability Test for Multiple Seat Units - Horizontal – Cyclic</b> There shall be no loss of serviceability when apply a 445 N (100 lbf.) force at an appropriate rate between 10 and 30 cycles per minute for 50,000 cycles.</p>	N/A
12	<p><b>Arm Durability Test for Multiple Seating Units - Vertical – Cyclic</b> There shall be no loss of serviceability when apply a 667 N (150 lbf.) force at an appropriate rate between 10 and 30 cycles per minute for 10,000 cycles.</p>	N/A
13	<p><b>Arm Durability Test for Single Seat Units - Angular – Cyclic</b> Simultaneously apply a force of 400 N (90 lbf.) to each arm initially at a 10° ± 1° degree angle for 60,000 cycles at a rate between 10 and 30 cycles per minute. There shall be no loss of serviceability to the unit.</p>	N/A





Test	Test Description and Requirements	Test Results												
14	<b>Seating Durability Tests – Cyclic</b> No loss of serviceability after 100,000cycles impact. A weight of 57kg (125lbs.) free falls onto the seat from 3.6 in. height for each seating.	PASS												
15	<b>Drop Test – Dynamic - Functional Load</b> No loss of serviceability when 102kg (225lbs.) weight free falls from 6in. height to the center of the seat for each seating.	PASS												
	<b>Drop Test – Dynamic - Proof Load</b> No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 136kg (300lbs.) weight free falls from 6in. height to the center of the seat for each seating.	PASS												
16.3	<b>Leg Strength Test -Front Load - Functional Load</b> No loss of serviceability when A force of 334 N (75 lbf.) is applied once to each front leg individually for one (1) minute.	N/A												
	<b>Leg Strength Test -Front Load - Proof Load</b> No sudden and major change in the structural integrity (loss of serviceability is acceptable) when A force of 503 N (113 lbf.) or a force equal to the weight of the entire unit, whichever is greater, is applied once to each front leg individually for one (1) minute.	N/A												
16.4	<b>Leg Strength Test - Side Load - Functional Load</b> No loss of serviceability when a force of 334N (75lbf.) is applied once to each front and rear leg individually for 1 minute.	N/A												
	<b>Leg Strength Test - Side Load - Proof Load</b> No sudden and major change in the structural integrity (loss of serviceability is acceptable) when A force of 503 N (113 lbf.) or a force equal to the weight of the entire unit, whichever is greater, is applied once to a front and rear leg individually for one (1) minute.	N/A												
17	<b>Unit Drop Test – Dynamic</b> No loss of serviceability after lifting one end of the unit specified as below and allowing it to drop freely. Repeat a) on the opposite end of the unit.  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Drop Height for Lounge Seating Unit</th> </tr> <tr> <th>Unit Weight</th> <th>Drop Height</th> </tr> </thead> <tbody> <tr> <td>&lt;45 kg (100 lbs.)</td> <td>180 mm (7.1 in.)</td> </tr> <tr> <td>45 - 90 kg (100-200 lbs.)</td> <td>120 mm (4.7 in.)</td> </tr> <tr> <td>&gt;90 - 136 kg (200 - 300 lbs.)</td> <td>60 mm (2.4 in.)</td> </tr> <tr> <td>&gt; 136 kg (300 lbs.)</td> <td>n/a</td> </tr> </tbody> </table>	Drop Height for Lounge Seating Unit		Unit Weight	Drop Height	<45 kg (100 lbs.)	180 mm (7.1 in.)	45 - 90 kg (100-200 lbs.)	120 mm (4.7 in.)	>90 - 136 kg (200 - 300 lbs.)	60 mm (2.4 in.)	> 136 kg (300 lbs.)	n/a	N/A
Drop Height for Lounge Seating Unit														
Unit Weight	Drop Height													
<45 kg (100 lbs.)	180 mm (7.1 in.)													
45 - 90 kg (100-200 lbs.)	120 mm (4.7 in.)													
>90 - 136 kg (200 - 300 lbs.)	60 mm (2.4 in.)													
> 136 kg (300 lbs.)	n/a													
18.1	<b>Caster/Unit Base Durability Test for Pedestal Base Units</b> There shall be no loss of serviceability. The caster shall not separate from the base as a result of the application of the 22 N (5 lbf.) force after 500 cycles over a hard surface with obstacles and 25, 000 cycles over a smooth hard surface without obstacles under a 113kg (250lbs.) load on the seat. Test stroke is 762mm (30in.) minimum.	N/A												



Test	Test Description and Requirements	Test Results
18.2	<p><b>Caster/Unit Frame Durability Test for Units with Legs</b>            There shall be no loss of serviceability. The caster shall not separate from the base as a result of the application of the 22 N (5 lbf.) force after the following tests under a 113kg (250lbs.) load on the seat. Test stroke is 762mm (30in.) minimum.</p> <ul style="list-style-type: none"> <li>- For single seating units, the unit, or unit's frame with casters, shall be cycled for 500 cycles over the obstacles and then 25,000 cycles on a smooth hard surface without obstacles.</li> <li>- Multiple seating units shall be cycled 250 cycles over the obstacles.</li> </ul>	N/A
19	<p><b>Swivel Test – Cyclic</b>            No loss of serviceability after 120,000 cycles of rotation (360°) under a 113kg (250lbs.) load on the seat.</p>	N/A
20	<p><b>Tilt Mechanism Test – Cyclic</b>            No loss of serviceability after 200,000 cycles under a 102kg (225lbs.) load to the center of the seat</p>	N/A
21.3	<p><b>Stability Test - Rear Stability for Non-tilting Units</b>            Load the seat (or, for multiple seat units, load the seat of one of the seating positions) with 6 disks. Apply a horizontal force to the highest disk. The location of the force application is 6 mm (0.25 in.) from the top of the disk.</p> <ul style="list-style-type: none"> <li>- For units with seat height (as measured at the front of the bottom of the lowest disk when all disks are in the unit) less than 710 mm (28.0 in.), calculate the force as follows:  <math>F = 0.1964 (1195 - H)</math> Newton. H is the seat height in mm.</li> <li>- For units 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.</li> </ul> <p>The application of the force shall not cause the unit to tip over.</p>	PASS
21.4	<p><b>Stability Test - Rear Stability Test for Tilting Units</b>            Load one seat position with 13 disks. If the unit does not tip over and the tilt mechanism does not tilt to its most rearward position (i.e., at its tilt stop) when the disks are placed in the seat, the unit shall also be tested according to 21.3.1 with the unit in the unlocked position.            The application of the force shall not cause the unit to tip over.</p>	N/A
21.5	<p><b>Stability Test - Front Stability</b>            A downward force shall be applied initially at 45° to the test platform by attaching a strap centered over the front portion of the seat. The force shall be applied until the total unit weight is transferred to the front support members. The force shall not be less than 40% of the unit weight.</p>	PASS
22	<p><b>Tablet Arm Load Ease Test – Cyclic</b>            No loss of serviceability to the unit after a 343 N (77 lbf.) force applied through a 203 mm ± 13 mm (8.0 in. ± 0.51 in.) diameter area centered on the writing area of the tablet for a total 100,000 cycles.</p>	N/A



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Test	Test Description and Requirements	Test Results
23	<p><b>Tablet Arm Static Load Test</b>                      Apply a load of 68 kg (150 lb) at the apparent weakest position for 1 minute and remove the load. The load applied once shall cause no sudden and major change in the structural integrity of the unit. After performing the test, the tablet arm must allow egress from the unit; other losses of serviceability are acceptable.</p>	N/A

**Annex A: Classification of Types of Lounge Seating**

Single Seating	Multiple Seating
Style A - with arm(s) and with backrest	Style A - with arm(s) and with backrest(s)
Style B - with arm(s) and without backrest	Style B - with arm(s) and without backrests
Style C - without arms and with backrest	Style C - without arms and with backrest(s)
Style D - without arms and without backrest	Style D - without arms and without backrests

**Remark:**

1. N/A – Not applicable; N/R – Not Requested; N/P – Not provided.
2. For the sample information and pictures, please refer to the following page.



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**SAMPLE INFORMATION AND PICTURES**

Weight: 17.70 kg

Overall Dimensions: 442 mm L x 457 mm D x 702 mm H

Other Dimensions: /

**Sample as Received**



View 1



View 2



View 3



View 4

\*\*\*End of Report\*\*\*

