

## Test Report

No.: SDHL1806013682FT

Date: Jul.10, 2018

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ZHONG SHAN SHI SONGLIN FURNITURE CO. LTD  
B BLOCK, JINLI INDUSTRIAL ZONEMSANXING ROAD, SANJIAO TOWN,  
ZHONGSHAN CITY, GUANGDONG PROV., CHINA528400

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

Sample Description : OFFICE CHAIR  
Supplier Item No. : SL-P1-K2  
Sample Receiving Date : Jun.20, 2018  
Test Performing Date : Jun.20, 2018 to Jul.10, 2018

### Test Result Summary

Test(s) Requested	Result(s)
Clause 5, 6, 10.3, 11, 12, 13, 14, 15 and 20 of ANSI/BIFMA X5.1-2017 (Type I, III)	PASS

#### Summary:

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

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



Hary Nie  
Approved signatory



SGS-CSTC Standards Technical Services Co., Ltd.  
Shunde Branch Harimies

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**TESTS AND RESULTS**
**Test Conducted:**

Clause 5, 6, 10.3, 11, 12, 13, 14, 15 and 20 of ANSI/BIFMA X5.1-2017 General-Purpose Office Chairs – Tests.

**No. of Sample:**

5 pieces (Sample 1, 2, 3, 4, & 5). For more sample information and pictures, please refer to the following page.

**Chair Type:** Type I, III.

Test and Requirements	Test Results
<b>5 Backrest Strength Test - Static - Type I and II</b>	
<b>5.4.1 Functional Load</b> There shall be no loss of serviceability to the chair when 667 N (150 lbf.) is applied to the backrest at the specified position for one (1) minute. With the backrest at its back stop position, apply a force that is initially 70 degrees $\pm$ 10 degrees to the plane of the backrest. The force is not intended to be maintained at 70 degrees $\pm$ 10 degrees throughout the loading of the backrest.	PASS
<b>5.4.2 Proof Load</b> There shall be no sudden and major change in the structural integrity of the chair, loss of serviceability is acceptable, when 1001 N (225 lbf.) is applied to the backrest at the specified position for one (1) minute. With the backrest at its back stop position, apply a force that is initially 70 degrees $\pm$ 10 degrees to the plane of the backrest. The force is not intended to be maintained at 70 degrees $\pm$ 10 degrees throughout the loading of the backrest.	PASS
<b>6 Backrest Strength Test - Static - Type III</b>	
<b>6.4.1 Functional Load</b> There shall be no loss of serviceability to the chair when 667 N (150 lbf.) is applied to the backrest at the specified position for one (1) minute. With the backrest at its back stop position, apply a force that is initially 90 degrees $\pm$ 10 degrees to the plane of the backrest. The force is not intended to be maintained at 90 degrees $\pm$ 10 degrees throughout the loading of the backrest.	PASS
<b>6.4.2 Proof Load</b> There shall be no sudden and major change in the structural integrity of the chair, loss of serviceability is acceptable, when 1001 N (225 lbf.) is applied to the backrest at the specified position for one (1) minute. With the backrest at its back stop position, apply a force that is initially 90 degrees $\pm$ 10 degrees to the plane of the backrest. The force is not intended to be maintained at 90 degrees $\pm$ 10 degrees throughout the loading of the backrest.	PASS



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Test and Requirements	Test Results
<p><b>10.3 Impact Test</b></p> <p>There shall be no loss of serviceability to the chair after a test bag weighing 57kg (125lbs.) is free fell from 36 mm (1.4 in.) above the uncompressed seat to the specified position on seat for 100,000 cycles.</p> <p>The drop height and/or seat height shall be adjusted during the test if the drop height changes by more than 13 mm (0.5 in.). The cycling device shall be set at a rate between 10 and 30 cycles per minute.</p> <p><i>Note: Chairs with less than 44 mm (1.75 in.) of cushioning materials in the seat shall have foam added to bring total cushioning thickness to 50 mm ± 6 mm (2 in. ± 0.25 in.). Any additional foam added to the top of the seat shall have a 25% Indentation Force Deflection (IFD) of 200 N ± 22 N (45 lbf. ± 5 lbf.). Flexible seat surfaces (i.e., mesh, flexible plastic, etc.) are not considered cushioning materials.</i></p>	PASS
<p><b>11 Stability Tests</b></p>	
<p><b>11.3.1 Rear Stability Test for Type III Chairs</b></p> <p>Place a support fixture made of a 1.5 mm ± 0.15 mm (0.060 in. ± 0.006 in.) thick polypropylene, 356 mm (14 in.) wide and 711 mm (28 in.) tall against the chair back so that it approximates the contour of the back. Load the chair with 6 disks (10 kg each). Place the first disk on the seat using the Template from Appendix G. As each disk is added to the stack slide it along the lower disk until it contacts the support fixture. Apply a rearward force parallel to the top surface of the highest disk. The location of the force application is 6 mm (0.25 in.) from the top of the disk. For chairs with seat height (as measured at the front of the bottom of the lowest disk when all disks are in the chair) less than 710 mm (28.0 in.), calculate the force as follows:</p> <ul style="list-style-type: none"> <li>• <math>F = 0.1964 (1195 - H)</math> Newton. H is the seat height in mm.</li> <li>• <math>[F = 1.1 (47 - H)]</math> pounds force. H is the seat height in inches.</li> </ul> <p>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.</p> <p>The chair shall not tip over.</p>	PASS
<p><b>11.3.2 Rear Stability Test for Type I and II Chairs</b></p> <p>Place a support fixture made of a 1.5 mm ± 0.15 mm (0.060 in. ± 0.006 in.) thick polypropylene, 356 mm (14 in.) wide and 711 mm (28 in.) tall against the chair back so that it approximates the contour of the back. Load the chair with 13 disks. Place the first disk on the seat using the Template from Appendix G. As each disk is added to the stack slide it along the lower disk until it contacts the support fixture. If the chair 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 chair, the chair shall also be tested according to 11.3.1 with the chair in the unlocked position.</p> <p>The chair shall not tip over.</p>	PASS



Test and Requirements	Test Results
<p><b>11.4 Front Stability</b>  <b>Test Procedure</b>            Apply a vertical load of 61kg (135 lbf.), through a 200 mm (7.87 in.) diameter disk, the center of which is 60 mm (2.4 in.) from the front center edge of the load-bearing surface of the seat. Apply a horizontal force of 20 N (4.5 lbf.) at the same height that the vertical force is applied. The force shall be coincident with the side-to-side centerline of the seat.</p> <p><b>Test Procedure - Alternate</b>            This alternate method may be used on chairs that have a seat surface that will support the stability loading fixture without the use of the front-stability loading disk(i.e., hard surfaced seats or seats with minimal cushion).            Apply a vertical load of 61kg (135 lbf.), by means of the front stability loading fixture at a point 60 mm (2.4 in.) from the front center edge of the load-bearing surface of the chair. Apply a horizontal force of 20 N (4.5 lbf.) at the same height that the vertical force is applied. The force shall be coincident with the side-to-side centerline of the seat.            The chair shall not tip over as the result of the force application.</p>	PASS
<b>12 Arm Strength Test - Vertical - Static</b>	
<p><b>12.4.1 Functional Load</b>            Apply an initially vertical pull force of 750N (169lbs.) to the load adapter which is 127 mm (5 in.) long and at least as wide as the width of the arm shall be attached to the top of the arm rest structure such that the load will be applied at the apparent weakest point that is forward of the chair backrest, for one (1) minute.            There shall be no loss of serviceability. For a height adjustable arm, failure to hold its height adjustment position to within 6 mm (0.25 in.) from its original set position as the result of the loading is considered a loss of serviceability.</p>	PASS
<p><b>12.4.2 Proof Load</b>            Apply an initially vertical pull force of 1125N (253 lbs.) to the load adapter which is 127 mm (5 in.) long and at least as wide as the width of the arm shall be attached to the top of the arm rest structure such that the load will be applied at the apparent weakest point that is forward of the chair backrest, for 15 seconds.            There shall be no sudden and major change in the structural integrity of the chair. For a height adjustable arm, a sudden drop in height of greater than 25 mm (1 in.) does not meet this requirement. Loss of serviceability is acceptable.</p>	PASS
<b>13 Arm Strength Test - Horizontal - Static</b>	
<p><b>13.4.1 Functional Load</b>            Apply an initially horizontal pull force of 445 N (100 lbf.) to the load adapter which is a loading device or strap, not greater than 25 mm (1 in.) in horizontal width, shall be attached to the arm so that the load is initially applied horizontally to the armrest structure at the apparent weakest point (for armrests that pivot in the horizontal plane, apply the load at the pivot point), for one (1) minute in the outward direction.            A functional load applied once shall cause no loss of serviceability.</p>	PASS



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Test and Requirements	Test Results
<p><b>13.4.2 Proof Load</b>            Apply an initially horizontal pull force of 667 N (150 lbf.) to the load adapter which is a loading device or strap, not greater than 25 mm (1 in.) in horizontal width, shall be attached to the arm so that the load is initially applied horizontally to the armrest structure at the apparent weakest point (for armrests that pivot in the horizontal plane, apply the load at the pivot point), for 15 seconds in the outward direction.            A proof load applied once shall cause no sudden and major change in the structural integrity of the unit. Loss of serviceability is acceptable.</p>	PASS
<p><b>14 Backrest Durability Test - Cyclic - Type I</b>            A weight of 109 kg (240 lb.) shall be secured in the center of the seat. Apply a 445 N (100 lbf.) total force to the backrest at the specified position at a rate between 10 and 30 cycles per minute.            For chairs with backrest widths less than or equal to 406 mm (16 in.) at the height of the loading point, apply the load to the backrest for 120,000 cycles.            For chairs with backrest widths greater than 406 mm (16 in.) at the height of the loading point, apply the load to the backrest for 80,000 cycles + 20,000 cycles at the position 102 mm (4 in.) to the right of the vertical centerline + 20,000 cycles at the position 102 mm (4 in.) to the left of the vertical centerline..            There shall be no loss of serviceability.  <i>Note: With the backrest at its back stop position, apply a force that is initially 90 degrees ± 10 degrees to the plane of the backrest. The force is not intended to be maintained at 90 degrees ± 10 degrees throughout the loading of the backrest.</i></p>	PASS
<p><b>15 Backrest Durability Test - Cyclic - Type II and III</b>            A weight of 109 kg (240 lb.) shall be secured in the center of the seat. Apply a 334 N (75 lbf.) total force to the backrest at the specified position at a rate between 10 and 30 cycles per minute.            For chairs with backrest widths less than or equal to 406 mm (16 in.) at the height of the loading point, apply the load to the backrest for 120,000 cycles.            For chairs with backrest widths greater than 406 mm (16 in.) at the height of the loading point, apply the load to the backrest for 80,000 cycles + 20,000 cycles at the position 102 mm (4 in.) to the right of the vertical centerline + 20,000 cycles at the position 102 mm (4 in.) to the left of the vertical centerline.            There shall be no loss of serviceability.  <i>Note: With the backrest at its back stop position, apply a force that is initially 90 degrees ± 10 degrees to the plane of the backrest. The force is not intended to be maintained at 90 degrees ± 10 degrees throughout the loading of the backrest.</i></p>	PASS
<p><b>20 Arm Durability Test – Cyclic</b>            Simultaneously apply a force of 400 N (90 lbf.) to each arm initially at a 10 degrees ± 1 degree angle. The arm loading device must follow the arm as it deflects or pivots. The force shall be applied and removed for 60,000 cycles at a rate between 10 and 30 cycles per minute. The arm loading device should distribute the load over a length of 100 mm (4 in.) on the arm pad. Center of load shall not be applied more than 25 mm (1.0 in.) in from the inside edge of the arm pad.            There shall be no loss of serviceability to the chair.</p>	PASS

### Remark:

- For the sample information and pictures, please refer to the following page.



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### SAMPLE INFORMATION AND PICTURES

**Weight:** 21.85 kg

**Overall Dimensions:** 755 mm L x 720 mm W x 1060~1150 mm H

**Other Dimensions:** Base radius, 350 mm

#### Sample as Received



View 1



View 2



View 3



View 4

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



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