

Test Report

No.: SDHL1901002063FT

Date: Mar.13, 2019

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FOSHAN ZHONG MENG SHENG YE OFFICE FURNITURE CO., LTD.
NO.6, GAOJIAO NANFANG INDUSTRIAL AREA, LONGJIANG TOWN, SHUNDE DISTRICT,
FOSHAN CITY, GUANGDONG PROVINCE, CHINA

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

Sample Description : OFFICE CHAIRS
Style / Item No. : POLYGRAM ZM-685AH
Manufacturer : FOSHAN ZHONG MENG SHENG YE OFFICE FURNITURE CO., LTD.
Supplier : FOSHAN ZHONG MENG SHENG YE OFFICE FURNITURE CO., LTD.
Sample Receiving Date : Jan.26, 2019
Test Performing Date : Jan.29, 2019 to Mar.13, 2019

Test Result Summary

Test(s) Requested	Result(s)
Clause 5, 7, 9, 10.3, 11.3, 11.4, 12, 13, 16.1 and Base Test – Static 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.




Bill Wang
Approved signatory



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TESTS AND RESULTS

Test Conducted:

Clause 5, 7, 9, 10.3, 11.3, 11.4, 12, 13, 16.1 and Base Test – Static of ANSI/BIFMA X5.1-2017 General-Purpose Office Chairs – Tests.

No. of Sample:

1 piece. For more sample information and pictures, please refer to the following page.

Chair Type: Type I, III.

Test and Requirements	Test Results
5 Backrest Strength Test - Static - Type I and II	
5.4.1 Functional Load 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
5.4.2 Proof Load 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
7 Drop Test - Dynamic	
7.4.1 Functional Load Test There shall be no loss of serviceability when a test bag weighing 102 kg (225 lb.) is free fell from 152 mm (6 in.) above the uncompressed seat to the specified position on seat. Remove the bag, and set height to its lowest position and repeat the test for chairs with seat height adjustment features.	PASS
7.4.2 Proof Load Test There shall be no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable when a test bag weighing 136 kg (300 lb.) is free fell from 152 mm (6 in.) above the uncompressed seat to the specified position on seat. Remove the bag, and set height to its lowest position and repeat the test for chairs with seat height adjustment features.	PASS
9 Tilt Mechanism Test – Cyclic There shall be no loss of serviceability to the tilt mechanism after 300,000cycles at a rate between 10 and 30 cycles per minute under a 109kg (240lbs.) load to the center of the seat. <i>Note: This test shall be performed on Type I and Type II chairs with tilting backrests.</i>	PASS
10 Seating Durability Tests – Cyclic	



Test and Requirements	Test Results
<p>10.3 Impact Test</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>11 Stability Tests</p>	
<p>11.3.1 Rear Stability Test for Type III Chairs</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"> • $F = 0.1964 (1195 - H)$ Newton. H is the seat height in mm. • $[F = 1.1 (47 - H)$ pounds force.]. H is the seat height in inches. <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>11.3.2 Rear Stability Test for Type I and II Chairs</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>11.4 Front Stability</p> <p><u>Test Procedure</u> 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><u>Test Procedure - Alternate</u> 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
12 Arm Strength Test - Vertical - Static	
<p>12.4.1 Functional Load 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>12.4.2 Proof Load 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
13 Arm Strength Test - Horizontal - Static	
<p>13.4.1 Functional Load 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



Test and Requirements	Test Results
13.4.2 Proof Load 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.	PASS
16.1 Caster/Chair Base Durability Test for Pedestal Base Chairs No loss of service after 2,000cycles over a hard surface with 3 obstacles and 98,000cycles over a smooth hard surface without obstacles under a 122kg (270lbs.) load at a rate of 10 ± 2 cycles per minute. Test stroke is 762 ± 50 mm (30 ± 2 in.) minimum. No part of the caster shall separate from the chair as a result of the application of the 22 N (5 lbf.) force.	PASS
Appendix C Base Test – Static There shall be no sudden and major change in the structural integrity of the base. The center column may not touch the test platform during the load applications when a force of 11,120 N (2500 lbf.) is applied to the vertical support column, or test fixture that simulates the taper/base interface for one (1) minute. Remove the force, and then apply a second force of 11,120 N (2500 lbf.) for one (1) minute.	PASS

Remark:

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



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SAMPLE INFORMATION AND PICTURES

Weight: 14.10 kg

Overall Dimensions: 730 mm L x 760 mm W x 1035~1115 mm H

Other Dimensions: Base radius 335 mm

Sample as Received



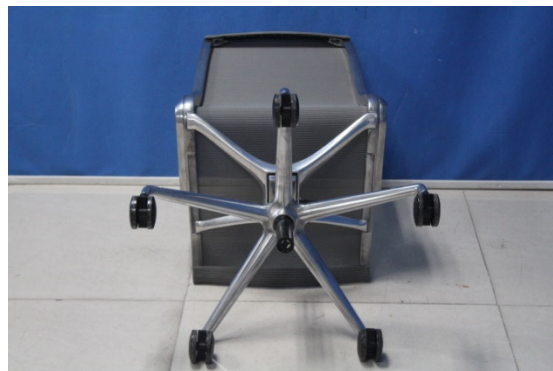
View 1



View 2



View 3



View 4



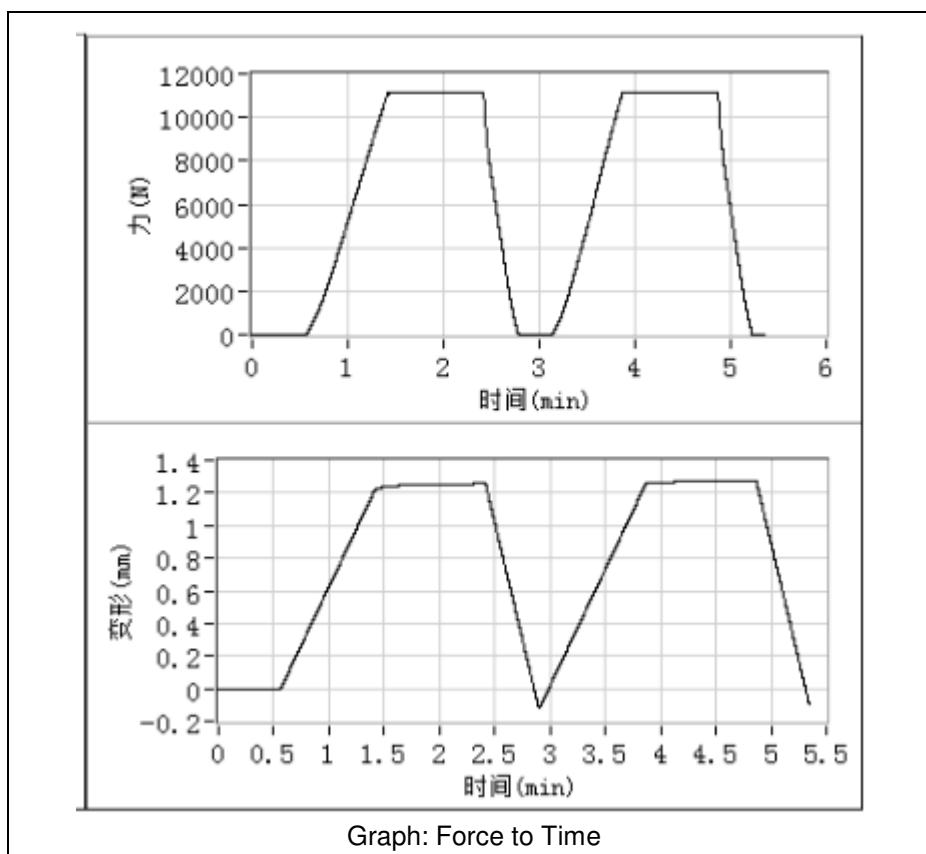
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Test Pictures with Details



Graph: Force to Time

End of Report

