

Test Report

No.: SHHL1908044519FT

Date: SEP. 29, 2019

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ZHEJIANG SUNON FURNITURE MANUFACTURE CO., LTD
NO.923 NINGDONG RD XIAOSHAN ECONOMY&TECHNOLOGY DEVELOPMENT ZONE,
HANGZHOU, ZHEJIANG, CHINA

Sample Description : SHIELD CHAIR
SGS Ref. No. : AJHL1908002289CW
P.O. No. : SQ201908138 SQ201908138
Manufacturer : LOHO FURNITURE
Supplier : SUNON

Sample Receiving Date : AUG. 13, 2019
Testing Period : AUG. 13, 2019 TO SEP. 29, 2019
Test Performed : SELECTED TEST(S) AS REQUESTED BY APPLICANT
Test Requested : ANSI/BIFMA X5.1-2017: GENERAL-PURPOSE OFFICE
CHAIR- AMERICAN NATIONAL STANDARD FOR
OFFICE FURNITURE (CLAUSE 5, 7, 8, 9, 10.3, 10.4,
11.3, 11.4, 12, 13, 14, 16.1, 20& APPENDIX C)
Test Result(s) : FOR FURTHER DETAILS, PLEASE REFER TO THE
FOLLOWING PAGE(S)
Conclusion : THE SUBMITTED SAMPLE MET THE TEST
REQUIREMENT.

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.



Melody Zhang
Authorized Signatory



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Test Conducted:

ANSI/BIFMA X5.1-2017: General-Purpose Office Chair– American National Standard For Office Furniture

Testing Condition : All the physical test is carry out in indoor ambient.

Nos. of Specimen : 4 pc(s).

Type of Chair : Tape I /III

Test Result : Pass

Test Property	Test Method	Test Principle / Requirements	Results
Back Strength Test - Static - Type I (Functional Load)	ANSI/BIFMA X5.1 -2017 Clause 5	No loss of serviceability when 667 N (150 lbs.) is applied for 1 min. Applied 70° to the back at 16 in. above the seat.	Pass
Back Strength Test – Static – Type I (Proof Load)	ANSI/BIFMA X5.1 -2017 Clause 5	No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 1001 N (225 lbs.) is applied for 1 min. Applied 70° to the back at 16 in. above the seat.	Pass
Drop Test – Dynamic (Functional Load)*	ANSI/BIFMA X5.1 -2017 Clause 7	No loss of serviceability when 102kg (225 lbs.) weight free falls from 6 in height to the center of the seat.	Pass
Drop Test – Dynamic (Proof Load)*	ANSI/BIFMA X5.1 -2017 Clause 7	No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 136kg (300 lbs.) weight free falls from 6 in height to the center of the seat.	Pass
Swivel Test – Cyclic	ANSI/BIFMA X5.1 -2017 Clause 8	No loss of serviceability after 60,000 cycles of rotation (360°) under a 122kg (270 lbs.) load on the seat at its max. height. Seat shall then withstand another 60,000 cycles of rotation at its lowest seating position. Total 120,000 cycles.	Pass
Tilt Mechanism Test – Cyclic – Type I & II	ANSI/BIFMA X5.1 -2017 Clause 9	No loss of serviceability after 300,000 cycles under a 109kg (240 lbs.) load to the center of the seat	Pass
Impact test	ANSI/BIFMA X5.1 -2017 Clause 10.3	No loss of serviceability in 100,000 cycles impact. A weight of 57kg (125 lbs.) free falls onto the seat from 1.4 in. height.	Pass
Front Corner Load Ease Test – Cyclic – Off Center	ANSI/BIFMA X5.1 -2017 Clause 10.4	No loss of serviceability after load each seat front corner with 890N (200 lbs.) for 20,000 cycles, total 40,000 cycles. Note: this test is done after “Impact test” on the same sample.	Pass



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Test Property	Test Method	Test Principle / Requirements	Results
Stability Test - Rear Stability for Type III Chairs	ANSI/BIFMA X5.1 -2017 Clause 11.3.1	Load the chair 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. For chairs with seat height less than 710 mm (28.0 in.), calculate the force as follows: <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. 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. The chair shall not tip over.	Pass
Stability Test - Rear Stability for Type I and II Chairs	ANSI/BIFMA X5.1 -2017 Clause 11.3.2	Load the chair with 13 disks, place the first disk on the seat so it touches the support fixture. The chair shall not tip over.	Pass
Stability Test – Front Stability	ANSI/BIFMA X5.1 -2017 Clause 11.4	The chair is obstructed with a 13mm (½ in.) obstruction to the chair casters/legs. A downward load of 61kg (135 lbs.) is centered 60mm (2.4 in.) from the seat front center edge. The seat shall withstand a 20N (4.5 lbf.) horizontally from the front seat edge without tipping.	Pass
Arm Strength Test Vertical – Static (Functional Load)	ANSI/BIFMA X5.1 -2017 Clause 12	No loss of serviceability when 750N (169 lbs.) is applied for 1 min. The vertical load is uniformly applied along a 127mm (5 in.) length at the apparent weakest point.	Pass
Arm Strength Test Vertical –Static (Proof Load)	ANSI/BIFMA X5.1 -2017 Clause 12	No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 1125N (253 lbs.) is applied for 15 seconds. The vertical load is uniformly applied along a 127mm (5 in.) length at the apparent weakest point.	Pass
Arm Strength Test Horizontal – Static (Functional Load)	ANSI/BIFMA X5.1 -2017 Clause 13	No loss of serviceability when 445N (100 lbs.) for 1 min. is applied horizontally outward to the armrest at the most forward point of the armrest.	Pass



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Test Property	Test Method	Test Principle / Requirements	Results
Arm Strength Test Horizontal – Static (Proof Load)	ANSI/BIFMA X5.1 -2017 Clause 13	No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 667N (150 lbs.) for 15 seconds. is applied horizontally outward to the armrest at the most forward point of the armrest.	Pass
Back Durability Test – Cyclic – Type I	ANSI/BIFMA X5.1 - 2017 Clause 14	No loss of serviceability in 120,000 cycles with a 109kg (240 lbs.) in the center of the seat and a 445N (100 lbf.) 90° to the center of the chair back. For chairs with a back width greater than 406mm (16 in.), test at the center of chair back for 80,000 cycles and then 102mm (4 in.) off-center 40,000 cycles, half to each side.	Pass
Caster / Chair Base Durability Test For Pedestal Base Chair	ANSI/BIFMA X5.1 - 2017 Clause 16.1	No loss of service after 2,000 cycles over a hard surface with 3 obstacles and 98,000 cycles over a smooth hard surface without obstacles under a 122kg (270 lbs.) load on the seat. Test stroke is 762mm (30 in.) minimum. The caster should not separate under 22N (5 lbs.) pulling force in line with the caster stem after the cycling test.	Pass
Arm Durability Test – Cyclic	ANSI/BIFMA X5.1 - 2017 Clause 20	No structural breakage or loss of serviceability when a force of 400N (90 lbf.) is applied to each arm at a 10° angle ±1° for 60,000 cycles	Pass
Informative - Base Test – Static*	ANSI/BIFMA X5.1 -2017 Appendix C	No sudden and major change in the structural integrity under 11,120 N (2500 lbs.) compression for 1 min. The weight is then removed and reapplied for 1 min. The center column may not touch the test platform during load applications.	Pass

The item with * means it has been retested.

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Sample Photo:

Received sample view 1



Received sample view 2



Received sample view 3



Received sample view 4



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End of Report



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