

**Test Report** No.: AJHL2404001303FT Date: MAY 09, 2024 Page 1 of 7

## SUNON TECHNOLOGY CO., LTD

BUILDING 6, NO.1666, ZHIXING ROAD, QIAONAN BLOCK, XIAOSHAN ECONOMIC & TECHNOLOGICAL DEVELOPMENT ZONE, XIAOSHAN ZONE HANGZHOU, ZHEJIANG, CHINA

: SS89.3.YP.LA SOFA Sample Description

Style No. : 155400059

Client Reference Information : 1900\*890\*820\*430MM

P.O. / Ref. No. : SQ202403337

: SUNON TECHNOLOGY CO., LTD Manufacturer : SUNON TECHNOLOGY CO., LTD Supplier

As above test item and its relevant information regarding to the submission are provided and confirmed by the applicant. SGS is not liable to either the test item or its relevant information, in terms of the accuracy, suitability, reliability or/and integrity accordingly.

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Sample Receiving Date : APR 01, 2024

**Test Performing Date** : APR 01, 2024 to MAY 07, 2024

**Test Performed** : Selected test(s) as requested by applicant

#### **Test Result Summary**

No.	Test(s) Requested	Result(s)
1	ANSI/BIFMA X5.4-2020	PASS
For further details, please refer to the following page(s)		

Signed for and on behalf of SGS-CSTC Standards Technical Services Co., Ltd. Anji Branch



**Authorized Signatory** 







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# Test Conducted: ANSI/BIFMA X5.4 -2020 Public and Lounge Seating - Tests

### **Test Result:**

Test Item	Test Requirement	Test Result
Backrest Strength Test - Horizontal -Static (Functional Load) (Clause 5)	Shall cause no loss of serviceability when a force of 667N (150lbf.) is applied to each backrest simultaneously for 1 minute. Apply the force 90°±10° to the backrest at 406 mm (16in.) above the seat.	PASS
Backrest Strength Test - Horizontal -Static (Proof Load) (Clause 5)	Shall cause no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a force of 1112N (250lbf.) is applied to each backrest simultaneously for 10 seconds. Apply the force 90°±10° to the backrest at 406 mm (16in.) above the seat.	PASS
Backrest Strength Test - Vertical -Static (Functional Load) (Clause 6)	Shall cause no loss of serviceability when a force of 890N (200lbf.) is applied vertically at the top of each backrest simultaneously for 1 minute.	PASS
Backrest Strength Test - Vertical -Static (Proof Load) (Clause 6)	Shall cause no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a force of 1334N (300lbf.) is applied vertically at the top of each backrest simultaneously for 10 seconds.	PASS
Backrest Durability Test - Horizontal – Cyclic (Clause 7)	Shall cause no loss of serviceability after a force of 334N (75lbf.) is applied to each backrest simultaneously for 120,000 cycles at a rate between 10 and 30 cycles per minute. Apply the force 90°±10° to the backrest at 406 mm (16in.) above the seat or on the top of backrest with a 109 kg (240 lb.) weight in the center of each seat.	PASS
Backrest Durability Test - Vertical – Cyclic (Clause 8)	Shall cause no loss of serviceability after a vertical downward force of 890N (200lbf.) is applied at the top of the each backrest individually for 10,000 cycles at a rate between 10 and 30 cycles per minute.	PASS
Arm Strength Test Horizontal –Static (Functional Load) (Clause 9)	Shall cause no loss of serviceability when a force is applied horizontally inwards and outwards to the armrest for 1 minute. Distance between arms < 889 mm (35 in.), force: 445 N (100 lbf.); Distance between arms ≥ 889 mm (35 in.), force: 592 N (133 lbf.)	PASS
Arm Strength Test Horizontal - Static (Proof Load) (Clause 9)	Shall cause no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a force of 667N/890N (150lbf. /200 lbf.) is applied horizontally inwards and outwards to the armrest for 10 seconds.  Distance between arms < 889 mm (35 in.), force: 667 N (150 lbf.); Distance between arms ≥ 889 mm (35 in.), force: 890 N (200 lbf.)	PASS
Arm Strength Test Vertical - Static (Functional Load) (Clause 10)	Shall cause no loss of serviceability (for a height adjustable arm, failure to hold its height position to within 6 mm (0.25 in.) from its original position is considered a loss of serviceability) when a force is applied vertically to the armrest for 1 minute.  Armrest width > 75 mm (3 in.), force: 890 N (200 lbf.)  Armrest width ≤ 75 mm (3 in.), force: 750 N (169 lbf.)	PASS



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Test Item	Test Requirement	Test Result
Arm Strength Test Vertical-Static (Proof Load) (Clause 10)	Shall cause no sudden and major change in the structural integrity (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.) when a force is applied vertically to the armrest for 10 seconds.  Armrest width > 75 mm (3 in.), force: 1335 N (300 lbf.)  Armrest width ≤ 75 mm (3 in.), force: 1125 N (253 lbf.)	PASS
Arm Durability Test for Multiple Seat Units- Horizontal – Cyclic (Clause 11)	Shall cause no loss of serviceability after a horizontal outward force of 445N (100lbf.) is applied to the armrest for 50,000 cycles at a rate between 10 and 30 cycles per minute.	PASS
Arm Durability Test for Multiple Seat Units – Vertical – Cyclic (Clause 12)	Shall cause no loss of serviceability after a vertical downward force of 667N (150lbf.) is applied to the arm for 10,000 cycles at a rate between 10 and 30 cycles per minute.	PASS
Arm Durability Test for Single Seat Units – Angular – Cyclic (Clause 13)	Shall cause no loss of serviceability after simultaneously applying a force of 400 N (90 lbf.) to each arm initially at a 10° ± 1° angle for 60,000 cycles with a rate between 10 and 30 cycles per minute.	NA
Seating Durability Tests – Cyclic (Clause 14)	Shall cause no loss of serviceability after a test bag weighing 57 kg (125 lb.) falls to each seat position individually for 100,000 cycles at a rate between 10 and 30 cycles per minute. The fall height shall not exceed 36 mm (1.4 in.) above the uncompressed surface on the seat. All seats not impacted shall be loaded with 109 kg (240 lb.) of weight per seat.	PASS
Drop Test – Dynamic (Functional Load) (Clause 15)	Shall cause no loss of serviceability when a 102 kg (225lb.) weight free falls once from 152mm (6in.) above the uncompressed seat on each seat position.	PASS
Drop Test Dynamic (Proof Load) (Clause 15)	Shall cause no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a 136 kg (300lb.) weight free falls once from 152mm (6in.) above the uncompressed seat on each seat position.	PASS
Leg Strength Test – Front Load Test (Functional Load) (Clause 16.3)	Shall cause no loss of serviceability when a horizontal force of 334N (75lbf.) is applied inward to each front leg individually for 1 minute.	NA
Leg Strength Test- Front Load Test (Proof Load) (Clause 16.3)	Shall cause no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a horizontal force of 503N (113lbf.) or a force equal to the weight of the unit, whichever is greater, but not to exceed 667 N (150 lbf.) is applied inward to each front leg individually for 10 seconds.	NA
Leg Strength Test – Side Load Test (Functional Load) (Clause 16.4)	Shall cause no loss of serviceability when a horizontal force of 334N (75lbf.) is applied inward to side of a front and rear leg individually for 1 minute.	NA



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Test Item	Test Requirement	Test Result
Leg Strength Test- Side Load Test (Proof Load) (Clause 16.4)	Shall cause no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a horizontal force of 503N (113lbf.) or a force equal to the weight of the unit, whichever is greater, but not to exceed 667 N (150 lbf.) is applied inward to side of a front and rear leg individually for 10 seconds.	NA
Unit Drop Test – Dynamic (Clause 17)	Shall cause no loss of serviceability after lifting one end of the unit to a specified height per Table 2 or to the balance point whichever comes first and allow it to drop freely. Repeat the test on the opposite end of the unit.	PASS
Caster / Unit Base Durability Test for Pedestal Base Units (Clause 18.1)	With a 122 kg (270 lb.) on the unit or base, move the unit or base for a forward and backward stroke of minimum 762mm (30in.). Cycle the unit or base for 500 cycles over obstacles and then 25,000 cycles on a smooth, hard surface without obstacles. Operate the test with a rate of 10 ± 2 cycles per minute. There shall be no loss of serviceability. The caster should not separate from the base under a 22N (5lbf.) pull force in line with the caster stem after the cycling.	NA
Caster/Unit Frame Durability Test for Units with Legs (Clause 18.2)	With a 122 kg (270 lb.) on the unit or base, move the unit or base for a forward and backward stroke of minimum 762mm (30in.). Cycle the single seating unit or base for 500 cycles over obstacles and then 25,000 cycles on a smooth, hard surface without obstacles. Cycle the multiple seating units 250 cycles over the obstacles. Operate the test with a rate of $10 \pm 2$ cycles per minute. There shall be no loss of serviceability. No part of the caster shall separate from the base under the 22 N (5 lbf.) force.	NA
Swivel Test – Cyclic (Clause 19)	Shall cause no loss of serviceability after rotating the unit for 120,000 cycles at a rate between 5 and 15 rotations per minute with a 122kg (270lb.) load on the seat.	NA
Tilt/rocker/glider Mechanism Test - Cyclic (Clause 20)	Shall cause no loss of serviceability after cycling the unit to front and back stops for 200,000 cycles at a rate between 10 and 30 cycles per minute with a 109 kg (240 lb.) load on the center of the seat	NA
Rear Stability for Non- tilting Units (Clause 21.3)	Load the seat with 6 disks against the support fixture. Apply a horizontal force to the highest disk at 6 mm (0.25 in.) from the top of the disk. The application of the force shall not cause the unit to tip over.  Determine the horizontal force:  H ≥710mm, F = 93N;  H < 710 mm, F = 0.1964 (1195-H)  where:  H is the seat height measured at the front of the bottom of the lowest disk when all disks are in the chair, in mm	PASS
Rear Stability Test for Tilting Units (Clause 21.4)	Load one seat position with 13 disks against the support fixture. The unit shall not tip over.	NA



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Test Item	Test Requirement	Test Result
Front Stability for Units Less than 36.3 kg (80 lbs.) (Clause 21.5)	Apply a vertical load of 600 N (135 lbf.) at a point 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. The force shall be coincident (in-line) with the side-to-side centerline of the seat.  The chair shall not tip over as the result of the force application(s).	NA
Front Stability for Units Greater Than or Equal to 36.3 kg (80 lbs.) (Clause 21.6)	Apply a 142 N (32 lbf.) downward force initially at 45° ± 5° to the test platform by a strap centered over the front portion of the seat.  The chair shall not tip over as the result of the force application.	PASS
Tablet Arm Load Ease Test – Cyclic (Clause 22)	Shall cause no loss of serviceability after applying a 25 kg (55 lb.) load 25 mm (1 in.) from the edge of the surface at its apparent weakest point for 100,000 cycles at a rate of $14 \pm 6$ cycles per minute.	NA
Tablet Arm Load Test - Static (Clause 23)	Shall cause no sudden and major change in the structural integrity when applying a load of 68kg (150lbf.) at the apparent weakest point of tablet for one minute. After performing the test, the tablet arm must allow egress from the unit; other losses of serviceability are acceptable.	NA
Structural Durability Test – Side-to-Side - Cyclic (Clause 24)	There shall be no loss of serviceability after applying a force of 334 N (75 lbf.) to the unit frame midway between front and rear of the seat at the height of the seat for 25000 cycles with a 109 kg (240 lb.) on the center of the seat. One cycle shall consist of one outward and one inward force application.	PASS
Cycle Test for Recliners - Backrest and/or Legrest Mechanism Durability (Clause 25)	There shall be no loss of serviceability after traveling the backrest and/or the legrest between 95 and 100% of its full range of motion between its fully extended and retracted positions for 25,000 cycles at a rate not to exceed 15 cycles per minute with a weight of 56 kg (124 lb.) on the center of the backrest, a weight of 56 kg (124 lb.) on the center of the seat, and a weight of 12 kg (27 lb.) on the center of the legrest.	NA
Legrest Strength Test  – Static Load  (Clause 26)	There shall be no loss of serviceability (legrest must hold the 13.6 kg. (30 lb.) and not retract.) after applying a 13.6 kg. (30 lb.) load 25 mm (1 in.) from the weakest edge of the legrest load-bearing structure at its apparent weakest point.	NA
Footrest Static Load Test for Stools – Vertical (Functional Load) (Clause 27)	There shall be no loss of serviceability or sudden loss of footrest height when applying two vertical forces of 445N (100lbf.) opposite to footrest for 1 minute firstly, then increase one force to 890N (200lbf.) for 1 minute.	NA
Footrest Static Load Test for Stools – Vertical (Proof Load) (Clause 27)	There shall be no sudden and major change in the structural integrity (loss of serviceability is acceptable) when applying a vertical force of 1334N (300lbf.) to footrest for 10 seconds.	NA



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Test Item	Test Requirement	Test Result
Footrest Durability Test for Stools - Vertical - Cyclic (Clause 28)	There shall be no loss of serviceability (adjustable footrests that move more than 25mm (1in.) in the first 500 cycles shall be considered to have lost their serviceability) after a force of 890N (200lbf.) is applied vertically on the footrest for 50,000 cycles.	NA

#### Remark:

- 1. NA = Not applicable
- 2. This declaration of conformity is only based on the result of this laboratory activity, the impact of the uncertainty of the results was not included.

### **Sample Information**

Overall dimension: 890 mm (L)×1908 mm (W)×830 mm (H)

Weight: 85.35 kg

# **Photo Appendix**







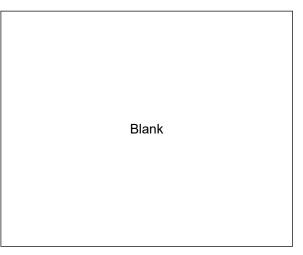
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