

MAC CHAIRS AND COMPONENTS CO.,LTD
 AREA E03,DABA INDUSTRIAL ZONE, LONGJIANG TOWN, SHUNDE,
 FOSHAN CITY, GUANGDONG PROVINCE, CHINA

Sample Description : OFFICE CHAIR

Item No. : FN

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.

Sample Receiving Date : May 17, 2023

Sample Resubmission Date : Jun 28, 2023

Test Performing Date : May 18, 2023 to Jul 19, 2023

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

Test Result Summary

No.	Test(s) Requested	Result(s)	Comments
1	ANSI/BIFMA X5.1-2017 (R2022)	PASS	/
For further details, please refer to the following page(s)			

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

Marco Leung

Marco Leung
 Authorized Signatory

scan to see the report



SDHL2305008382FT



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TESTS AND RESULTS

Test Conducted:

ANSI/BIFMA X5.1-2017 (R2022) General-Purpose Office Chairs.

No. of Sample:

3 pieces of chairs & 1 piece of base. For more sample information and pictures, please refer to the following page.

Chair Type:

- Type I. Tilting chair
- Type II. Fixed seat angle, tilting backrest
- Type III. Fixed seat angle, fixed backrest

Test and Requirements	Test Results
5 Backrest Strength Test - Static - Type I and II	
Functional Load Force: 667 N (150 lbf.) for one minute. Acceptance level: There shall be no loss of serviceability to the chair.	PASS
Proof Load Force: 1001 N (225 lbf.) for one minute. Acceptance level: There shall be no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.	PASS
6 Backrest Strength Test - Static - Type III	
Functional Load Force: 667 N (150 lbf.) for one minute. Acceptance level: There shall be no loss of serviceability to the chair.	PASS
Proof Load Force: 1001 N (225 lbf.) for one minute. Acceptance level: There shall be no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.	PASS
7 Drop Test – Dynamic	
Functional Load Test A test bag weighting 102 kg (225 lb.) shall be raised 152 mm (6 in.) above the uncompressed seat and released one time (For chairs with seat height adjustment features, tested both in highest and lowest position). Acceptance level: There shall be no loss of serviceability.	PASS
Proof Load Test A test bag weighting 136 kg (300 lb.) shall be raised 152 mm (6 in.) above the uncompressed seat and released one time (For chairs with seat height adjustment features, tested both in highest and lowest position). Acceptance level: There shall be no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.	PASS
8 Swivel Test – Cyclic	
Load on seat: 122 kg (270 lb.) Cycles: 120,000 Rate: Between 5 and 15 rotations per minute. Acceptance level: There shall be no loss of serviceability.	PASS



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Test and Requirements	Test Results
9 Tilt Mechanism Test – Cyclic Load on seat: 109 kg (240 lbs.) Cycles: 300,000 Rate: Between 10 and 30 cycles per minute. Acceptance level: There shall be no loss of serviceability to the tilt mechanism.	PASS
10 Seating Durability Tests – Cyclic	
10.3 Impact Test Drop weight: 57 kg (125 lb.) Drop height: 36 mm (1.4 in.) above the uncompressed surface on the seat Cycles: 100,000 Rate: Between 10 and 30 cycles per minute. Acceptance level: There shall be no loss of serviceability to the chair.	PASS
10.4 Front Corner Load-Ease Test – Cyclic – Off-center Force: 890 N (200 lbf.) Cycles: 40,000 Rate: Between 10 and 30 cycles per minute. Acceptance level: There shall be no loss of serviceability to the chair.	PASS
11 Stability Tests	
11.3.1 Rear Stability Test for Type III Chairs Load the chair with 6 disks. • 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. Acceptance level: The chair shall not tip over.	PASS
11.3.2 Rear Stability Test for Type I and II Chairs Load the chair with 13 disks. Acceptance level: The chair shall not tip over.	PASS
11.4 Front Stability Load 61 kg (135 lb.) on 60 mm (2.4 in.) from the front center edge and a horizontal outward force of 20 N (4.5 lbf.) applied. Acceptance level: The chair shall not tip over as the result of the force application.	PASS
12 Arm Strength Test - Vertical – Static	
Functional Load Force: 750 N (169 lbf.) for one minute. Acceptance level: 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.	PASS
Proof Load Force: 1125 N (253 lbf.) for 15 seconds. Acceptance level: 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.	PASS
13 Arm Strength Test - Horizontal – Static	
Functional Load Force: 445 N (100 lbf.) for one minute in the outward direction. Acceptance level: A functional load applied once shall cause no loss of serviceability.	PASS



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Test and Requirements	Test Results
Proof Load Force: 667 N (150 lbf.) for 15 seconds in the outward direction. Acceptance level: 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
14 Backrest Durability Test - Cyclic - Type I Weight on seat: 109 kg (240 lbs.) Load on backrest: 445 N (100 lbf.) Cycles: 120,000 Rate: Between 10 and 30 cycles per minute. Acceptance level: There shall be no loss of serviceability.	PASS
15 Backrest Durability Test - Cyclic - Type II and III Weight on seat: 109 kg (240 lbs.) Load on backrest: 334 N (75 lbf.) Cycles: 120,000 Rate: Between 10 and 30 cycles per minute. Acceptance level: There shall be no loss of serviceability.	PASS
16 Caster/Chair Base Durability Test - Cyclic	
16.1 Caster/Chair Base Durability Test for Pedestal Base Chairs Load on chair: 122 kg (270 lb.) Stroke: 762±50 mm (30±2 in.) of travel Cycles: 2,000 cycles over the obstacles and then 98,000 cycles without obstacles. Rate: 10 ± 2 cycles per minute Acceptance level: There shall be no loss of serviceability. No part of the caster shall separate from the chair as a result of the application of the 22 N (5 lbf.) force.	PASS
16.2 Caster/Chair Frame Durability Test for Non-pedestal Chairs with Casters Load on chair: 122 kg (270 lb.) Stroke: 762±50 mm (30±2 in.) of travel Cycles: 2,000 cycles over the obstacles and then 98,000 cycles without obstacles. Rate: 10 ± 2 cycles per minute Acceptance level: There shall be no loss of serviceability. No part of the caster shall separate from the chair as a result of the application of the 22 N (5 lbf.) force.	N/A
17 Leg Strength Test - Front and Side Application	
17.3 Front Load Test	
Functional Load Test Force: 334 N (75 lbf.) for one minute. Acceptance level: Functional load(s) shall cause no loss of serviceability.	N/A
Proof Load Test Force: 503 N (113 lbf.) for one minute. Acceptance level: Proof load(s) shall cause no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.	N/A
17.4 Side Load Test	
Functional Load Test Force: 334 N (75 lbf.) for one minute. Acceptance level: Functional load(s) shall cause no loss of serviceability.	N/A
Proof Load Test Force: 503 N (113 lbf.) for one minute. Acceptance level: Proof load(s) shall cause no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.	N/A
18 Footrest Static Load Test - Vertical	



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Test and Requirements	Test Results
Functional load test F ₁ : 445 N (100 lbf.) / 890 N (200 lbf.) F ₂ : 445 N (100 lbf.) Time: One minute Acceptance level: There shall be no loss of serviceability or sudden loss of footrest height.	N/A
Proof load test Load: 1334 N (300 lbf.) for one minute Acceptance level: The load applied once shall cause no sudden and major change in the structural integrity of the unit. Loss of serviceability is acceptable.	N/A
19 Footrest Durability Test - Vertical – Cyclic Force: 890 N (200 lbf.) Cycles: 50,000 Rate: Between 10 and 30 cycles per minute. Acceptance level: There shall be no loss of serviceability. Adjustable footrests that move more than 25 mm (1 in.) in the first 500 cycles shall be considered to have lost their serviceability.	N/A
20 Arm Durability Test – Cyclic Force: 400 N (90 lbf.) to each arm initially at a 10 degrees ± 1 degree angle simultaneously Cycles: 60,000 Rate: Between 10 and 30 cycles per minute. Acceptance level: There shall be no loss of serviceability to the chair.	PASS
21 Out Stop Tests for Chairs with Manually Adjustable Seat Depth Mass on seat: 74 kg (163 lb.) Downward weight: 25 kg (55 lb.) Cycles: 25 Acceptance level: There shall be no loss of serviceability to the unit.	N/A
22 Tablet Arm Chair Static Load Test Load: 68 kg (150 lb.) for one minute Acceptance level: The load applied once shall cause no sudden and major change in the structural integrity of the chair. After performing the test, the tablet arm must allow egress from the unit; other losses of serviceability are acceptable.	N/A
23 Tablet Arm Chair Load Ease Test – Cyclic Load: 25 kg (55 lb.) Cycles: 100,000 Rate: 14 ± 6 cycles per minute. Acceptance level: There shall be no loss of serviceability to the unit.	N/A
24 Structural Durability Test – Cyclic Weight on seat: 109 kg (240 lb.) Horizontal force: 334 N (75 lbf.) Cycles: 25,000 Rate: Between 10 and 30 cycles per minute. Acceptance level: There shall be no loss of serviceability.	N/A



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Test and Requirements	Test Results
<p>Appendix C Base Test – Static A force of 11,120 N (2500 lbf.) shall be applied for one minute. Remove the force. Apply a second force of 11,120 N (2500 lbf.) for one minute. Acceptance level: 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.</p>	<p>PASS</p>

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: 14.50 kg

Overall Dimensions: 690 mm L x 658 mm W x (980~1078) mm H

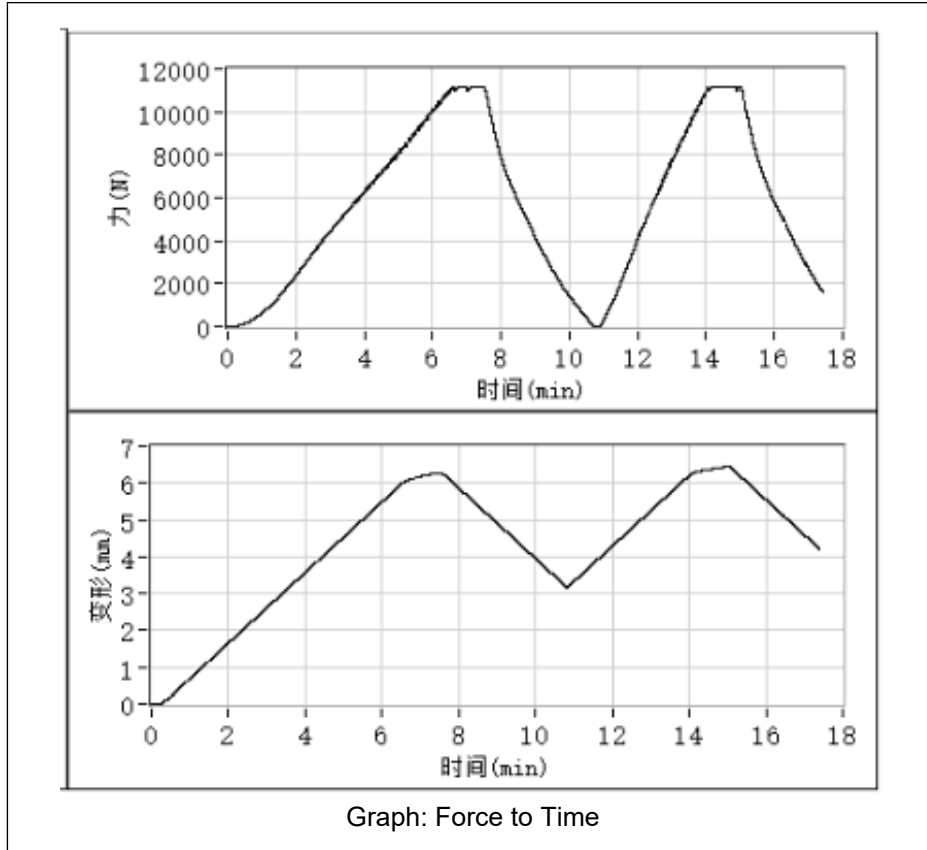
Other Dimensions: /

Sample as Received



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Test Pictures with Details



Graph: Force to Time

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.

End of Report



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