ZENITH INTERIORS PTE LTD
BUILDING 1/107 VANESSA STREET, KINGSGROVE 2208, NEW SOUTH WALES, AUSTRALIA

Sample Description : OFFICE CHAIR

Style No. : KHYN CHAIR

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 : OCT 15, 2024

Test Performing Date : OCT 15, 2024 to NOV 06, 2024

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

Test Result Summary

No.	Test(s) Requested	Result(s)
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. Anji Branch

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David Fan
Authorized Signatory

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Test Conducted: ANSI/BIFMA X5.1-2017(R2022) General-Purpose office chairs

Test Result:

Test Item	Test Principle & Requirement	Test Result
Backrest Strength Test - Static - Type I and II (Functional Load) (Clause 5)	There shall be no loss of serviceability when a force of 667N (150lbf.) is applied 70°± 10° to the back at 406mm (16in.) above the seat for 1 minute.	PASS
Backrest Strength Test - Static - Type I and II (Proof Load) (Clause 5)	There shall be no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a force of 1001N (225lbf.) is applied 70°± 10° to the back at 406mm (16in.) above the seat for 1 minute.	PASS
Backrest Strength Test - Static - Type III (Functional Load) (Clause 6)	There shall be no loss of serviceability when a force of 667N (150lbf.) is applied 90°± 10° to the back at 406mm (16in.) above the seat for 1 minute.	PASS
Backrest Strength Test - Static - Type III (Proof Load) (Clause 6)	There shall be no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a force of 1001N (225lbf.) is applied 90°± 10° to the back at 406mm (16in.) above the seat for 1 minute.	PASS
Drop Test - Dynamic (Functional Load) (Clause 7)	There shall be no loss of serviceability when a 102kg (225lb.) weight free falls from 152mm (6in.) height to the center of the seat one time (for the seat height is adjustable, test one time in its highest position then one time in its lowest position).	PASS
Drop Test - Dynamic (Proof Load) (Clause 7)	There shall be no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a 136kg (300lb.) weight free falls from 152mm(6in.) height to the center of the seat one time (for the seat height is adjustable, test one time in its highest position then one time in its lowest position).	PASS
Swivel Test – Cyclic (Clause 8)	There shall be no loss of serviceability after 120,000 cycles of rotation with a 122kg (270lb.) load on the seat (for the seat height is adjustable, test 60,000 cycles in its highest position then 60,000 cycles in its lowest position).	PASS
Tilt Mechanism Test – Cyclic –Type I & II (Clause 9)	There shall be no loss of serviceability after moving the mechanism between the front and back stops for 300,000 cycles with a 109kg (240lb.) load on the seat.	PASS
Seating Durability Tests – Cyclic (Impact Test) (Clause 10.3)	There shall be no loss of serviceability after a 57kg (125lbs.) weight free falls onto the seat from 36mm (1.4in.) height for 100,000 cycles.	PASS
Seating Durability Tests – Cyclic (Front Corner Load – Ease Test– Cyclic – Off-center) (Clause 10.4)	There shall be no loss of serviceability after loading two seat front corner with 890N (200lbf.) for 20,000 cycles respectively.	PASS

Test Item	Test Principle & Requirement	Test Result
Rear Stability Test for Type III Chairs (Clause 11.3.1)	The chair shall not tip over when applying a horizontal force to 6mm (0.25 in.) from the top of disk with 6 disks on the chair against backrest support fixture. 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 Type I and II Chairs (Clause 11.3.2)	The chair shall not tip over when applying 13 disks on the seat against backrest support fixture.	PASS
Front Stability (Clause 11.4)	The chair shall not tip over when applying a horizontal outward force of 20N (4.5lbf.) from the seat with a vertical load of 61kg (135lbf.) at a point 60mm (2.4in.) from the front center edge of the load bearing surface of the seat.	PASS
Arm Strength Test – Vertical – Static (Functional Load) (Clause 12)	There shall be no loss of serviceability when a force of 750N (169lbf.) is applied vertically to the armrest for 1 minute.	PASS
Arm Strength Test – Vertical – Static (Proof Load) (Clause 12)	There shall be no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a force of 1125N (253lbf.) is applied vertically to the armrest for 15s.	PASS
Arm Strength Test – Horizontal – Static (Functional Load) (Clause 13)	There shall be no loss of serviceability when a force of 445N (100lbf.) is applied horizontally outward to the armrest for 1 min.	PASS
Arm Strength Test – Horizontal – Static (Proof Load) (Clause 13)	There shall be no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a force of 667N (150lbf.) is applied horizontally outward to the armrest for 15s.	PASS
Back Durability Test – Cyclic –Type I (Clause 14)	There shall be no loss of serviceability when a force of 445N (100lbf.) is applied 90° ± 10° to the back at 406mm (16in.) above the seat for 120,000 cycles with 109kg (240lbs.) weight on the seat.	PASS
Back Durability Test – Cyclic–Type II & III (Clause 15)	There shall be no loss of serviceability when a force of 334N (75lbf.) is applied 90° ± 10° to the back at 406mm(16in.) above the seat for 120,000 cycles with 109kg (240lbs.) weight on the seat.	PASS
Caster/Chair Base Durability Test for Pedestal Base Chairs (Clause 16.1)	There shall be no loss of serviceability after cycling a travel of (762±50)mm ((30±2)in.) for 2,000 cycles over a surface with obstacles and then 98,000 cycles over a surface without obstacles with a 122kg (270lb.) load on seat. The caster should not separate under 22N (5lbs.) pulling force.	PASS
Caster/Chair Frame Durability Test for Non-pedestal Chairs with Casters (Clause 16.2)	There shall be no loss of serviceability after cycling a travel of (762±50)mm ((30±2)in.) for 2,000 cycles over a surface with obstacles and then 98,000 cycles over a surface without obstacles with a 122kg (270lb.) load on seat. The caster should not separate under 22N (5lbs.) pulling force.	NA

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Test Item	Test Principle & Requirement	Test Result
Leg Strength Test (Front Load Test) (Functional Load) (Clause 17.3)	There shall be no loss of serviceability when a horizontal rearward 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 17.3)	There shall be no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a horizontal rearward force of 503N (113lbf.) is applied inward to each front leg individually for 1 minute.	NA
Leg Strength Test (Side Load Test) (Functional Load) (Clause 17.4)	There shall be no loss of serviceability when a horizontal sideward force of 334N (75lbf.) is applied inward to each front and rear leg individually for 1 minute.	NA
Leg Strength Test (Side Load Test) (Proof Load) (Clause 17.4)	There shall be no sudden and major change in the structural integrity (loss of serviceability is acceptable) when a horizontal sideward force of 503N (113lbf.) is applied inward to each front and rear leg individually for 1 minute.	NA
Footrest Static Load Test – Vertical (Functional Load) (Clause 18)	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 – Vertical (Proof Load) (Clause 18)	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 1 minute.	NA
Footrest Durability Test (Clause 19)	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
Arm Durability Test-Cyclic (Clause 20)	There shall be no loss of serviceability when a force of 400N (90lbf.) is applied simultaneously to each arm at a 10° ±1° angle for 60,000cycles.	PASS
Out Stop Tests for Chairs with Manually Adjustable Seat Depth (Clause 21)	There shall be no loss of serviceability after releasing the seat for 25 cycles from its most rearward position to impact out stops under a 25kg (55lb.) weight attached downward with a 74kg (163lb.) mass loaded on seat.	NA
Tablet Arm Chair Static Load Test (Clause 22)	There shall be no sudden and major change after applying a load of 68kg (150lb.) at the surface of tablet arm for 1 minute.	NA
Tablet Arm Chair Load Ease Test - Cyclic (Clause 23)	There shall be no loss of serviceability after applying a force of 25kg (55lb.) to the surface of tablet arm for 100,000 cycles.	NA
Structural Durability Test – 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 midpoint of the seat frame structure for 25000 cycles with a 109 kg (240 lb.) on the center of the seat. One cycle shall consist of one outward force application and removal and one inward force application and removal.	NA

Test Item	Test Principle & Requirement	Test Result
Base Test – Static (Appendix C)	There shall be no sudden and major change in the structural integrity when a compression force of 11120N (2500lbf.) load is applied for 1 minute. The force is then removed and reapplied for 1 minute. The center column may not touch the test platform during load applications.	PASS

Remark:

1. Type of chair:
   Type I – tilt chair: A chair with a seat and backrest that tilt (either in unison or in synchronization) with a counterbalancing force. Chairs of this type are typically referred to as synchro-tilt, center-tilt, knee-tilt, etc.
   Type III–fixed seat angle, fixed backrest: A chair that provides a fixed seat angle with a fixed backrest. This may include chairs with legs, including sled base chairs.
2. NA = Not applicable
3. The results show in this test report refer only to the sample(s) tested.
4. 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.

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Photo Appendix

Sample as received - View 1

Sample as received - View 2

Sample as received - View 3

Sample as received - View 4

SGS authenticate the photo on original report only

End of Report

SGS-CSTC Standards Technical Services Co., Ltd. Anji Branch Hardlines
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