

Test Report

Report No.: 104848-22 rev 1



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Order no.: 104848
No. of appendices: 2

Item: Model: 3414 Plan Chair – The test also covers 3418 Plan Arm Chair

Type:	Chair				
Length:	495 mm	Width:	415 mm	Height:	770 mm
Weight:	6,42 kg				
Materials:	Steel tube frame, veneer seat and backrest with foam.				

Sampling: The test material was sampled by the client and received at the Danish Technological Institute 17-08-2022.

Method: ANSI/BIFMA X5.4-2020 American National Standard For Office Furnishings – Public and Lounge Seating

Period: The testing was carried out from 18-08-2022 to 14-09-2022.

Result: Model 3414 Plan Chair meets the requirements of ANSI/BIFMA X5.4-2020
Individual results appear from Appendix 1.

Storage: The test material will be destroyed after 1 month, unless otherwise agreed.

Terms: Accredited testing was carried out in compliance with international requirements (EN/ISO/IEC 17025:2005) and in compliance with Danish Technological Institute's General Terms and Conditions regarding Commissioned Work accepted by Danish Technological Institute. The test results apply to the tested products only. This report may be quoted in extract only if the laboratory has granted its written consent.

Note: Rev 1 is due to addition of "The test also covers 3418 Plan Arm Chair" under Item, page 1.

Date/place: Danish Technological Institute, Wood and Biomaterials, Taastrup

Signature: This document is only valid with a digital signature from Danish Technological Institute. The date of issue appears from the digital signature. This report replaces report dated 14-09-2022.

Jan Hansen
Technical assistant



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Testing of Model: 3414 Plan Chair

ANSI/BIFMA X5.4

Test		Result
5	Backrest Strength Test – Horizontal – Static (backrest height: >200 mm)	
	Functional load: 667 N x 1 min. Proof load: 1112 N x 10 sec.	Passed
6	Backrest Strength Test – Vertical – Static (backrest thickness. >50 mm)	
	Functional load: 890 N x 1 min. Proof load: 1334 N x Min. 10 sec.	N/A
7	Backrest Durability Test – Horizontal – Cyclic	
	Seat constant load: 109 kg Force on back: 334 N x 120,000 cycles	Passed
8	Backrest Durability Test – Vertical – Cyclic (backrest thickness: >50 mm)	
	Force on back: 890 n x 10,000 cycles	N/A
9	Arm Strength Test – Horizontal – Static (all units with arms)	
	Functional load: 445/592 N x 1 min. inward + outward Proof load: 667/890 N x 10 sec. inward + outward	N/A
10	Arm Strength Test – Vertical – Static	
	Functional load: 890/750 N x 1 min. Proof load: 1135/1125 N x Min 10 sec.	N/A
11	Arm Durability Test for Multiple Seating Units – Horizontal – Cyclic	
	Force on arm: 445 N x 50,000 cycles	N/A
12	Arm Durability Test for Multiple Seating Units – Vertical – Cyclic	
	Force on arm: 667 N x 10,000 cycles	N/A
13	Arm Durability Test for Single Seat Units – Angular – Cyclic	
	Force on (each) arm: 400 N x 60,000 cycles	N/A
14	Seating Durability Test – Cyclic	
	Impact test back: 57 kg x 100,000 cycles (Weight in seat(s) not being tested: 109 kg)	Passed
15	Drop Test – Dynamic	
	Functional load: 102 kg impact test bag – drop from 152 mm Proof load: 136 kg impact test bag – drop from 152 mm	Passed
16	Leg Strength Test	
16.3	Front Load Test	
	Functional load: 334 N x 1 min. Proof load: 503 N (max. 667 N) x Min. 10 sec.	Passed
16.4	Side Load Test	
	Functional load: 334 N x 1 min. Proof load: 503 N (max. 667 N) x Min. 10 sec.	Passed
17	Unit Drop Test – Dynamic	
	Unit weight	Drop height
	<45 kg (100 lbs)	180 mm (7.1 in.)
	45—90 kg (100-200 lbs)	120 mm (4.7 in.)
	90-136 kg (200-300 lbs)	60 mm (2.4 in.)
	>136 kg (300 lbs)	N/A
		Passed

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Test		Result
18	Caster/Unit Base Durability Test – Cyclic	
	Seat constant load: 122 kg On surface with obstacles: 500 cycles On surface without obstacles: 25,000 cycles Pull force on caster: 22 N x 1 min	N/A
19	Swivel Test – Cyclic	
	Seat constant load: 122 kg 90° rotation x 120,000 cycles	N/A
20	Tilt/rocker/glider Mechanism Test – Cyclic	
	Seat constant load: 109 kg Back tilt: 200,000 cycles	N/A
21	Stability Tests	
21.3 21.4 21.5 21.6	Rear stability: 6 discs (non-tilting unit) 13 discs (tilting unit) Force on back: $F = 0.1964 (1195-H)$ (H = seat height in mm) Front stability: Units <36.3 kg: Seat load: 600 N-pull force 20 N Units >36.3 kg: Pull force: 142 N-45° angle	Passed
22	Tablet Arm Load Ease Test – Cyclic	
	25 kg x 100,000 cycles	N/A
23	Tablet Arm Load Test – Static	
	68 kg downward x 1 min.	N/A
24	Structural Durability Test – Side-to-Side - Cyclic	
	Seat constant load: 109 kg Push/pull force: 334 N x 25,000 cycles	Passed
25	Cycle Test for Recliners – Backrest and/or Legrest Mechanism Durability	
	Backrest constant load: 56 kg Seat constant load: 56 kg Legrest constant load: 12 kg Legrest + back: 25,000 cycles each	N/A
26	Legrest Strength Test – Static Load	
	Seat constant load: 112 kg/56 kg Load on legrest: 13.6 kg (no retraction)	N/A
27	Footrest Static Load Test for Stools – Vertical	
	Functional load: 445 N x 1 min (in two opposite directions) Proof load: 1334N x 10 sec.	N/A
28	Footrest Durability Test for Stools – Vertical Cyclic	
	Force on footrest: 890 N x 50,000 cycles	N/A

N/A – Not applicable

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Photo

