

Test Report No. 7191068569-MEC13/01-CSL
dated 12 Nov 2013



PSB Singapore

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SUBJECT:

Testing of Office Chair submitted by Merryfair Chair System Sdn Bhd on 16 Aug 2013, 30 Sep 2013 and 23 Oct 2013.

TESTED FOR:

Merryfair Chair System Sdn Bhd
No 2, Jalan Koporat 1/KU9,
Taman Perindustrian Meru,
42200 Klang, Selangor Darul Ehsan,
Malaysia.

Attn: Dato Ong Hooi Lim

DATE OF TEST:

21 Aug 2013 to 07 Nov 2013

DESCRIPTION OF SAMPLE:

One complete set of Office Chair as shown in the photograph was received. The following descriptions were given by the client:

Model	:	VELO
Product Type	:	Office Chair
Country of Origin	:	Malaysia
Classification	:	Type I (when tilt mechanism is unlocked) Type III (when tilt mechanism is locked)

METHOD OF TEST:

As requested by the client, the tests were conducted in accordance with the following standard:

ANSI/BIFMA X5.1-2011 "General-Purpose Office Chairs – Tests"

The tests were conducted at TÜV SÜD PSB furniture test laboratory, a FIRA (UK) Accredited Testing Laboratory, located at No.1 Science Park Drive. Singapore 118221.



Laboratory:
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Singapore 118221

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3 Science Park Drive, #04-01/05
The Franklin, Singapore 118223
TUV®

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RESULTS:

Clause	Test	Parameters	Results	Requirement
5	Back Strength Test – Static – Type I	Functional load = 890 N Proof load = 1,334 N Duration = 1 min	Passed	Functional load: No loss of serviceability Proof Load: No sudden & major change in structural integrity. Loss of serviceability is acceptable
6	Back Strength Test – Static – Type III	Functional load = 667 N Proof load = 1,112 N Duration = 1 min	Passed	
7	Base Test – Static	Loading force = 11.1 kN Duration = 1 min Cycles = 2	Passed	No sudden & major change in the structural integrity of the base.
8	Drop Test – Dynamic	Functional load = 102 kg Proof load = 136 kg Drop height = 152 mm	Passed	Functional load: No loss of serviceability Proof Load: No sudden & major change in structural integrity. Loss of serviceability is acceptable
9	Swivel Test – Cyclic	Seat load = 113 kg Total cycles = 120,000 Rate = 5 - 15 cycles/min	Passed	No loss of serviceability
10	Tilt Mechanism Test – Cyclic	Seat load = 102 kg Cycles = 300,000 Rate = 10 - 30 cycles/min	Passed	No loss of serviceability to the tilt mechanism
11	Seating Durability test – Cyclic - Impact Test	Seat load = 57 kg Drop ht = 30 mm Cycles = 100,000 Rate = 10 - 30 cycles/min	Passed	No loss of serviceability
	- Front Corner Load-Ease Test – Cyclic – Off Center	Seat load = 734 N Cycle = 40,000 Rate = 10 - 30 cycles/min	Passed	



RESULTS:

Clause	Test	Parameters	Results	Requirement
12	Stability Tests - a) Rear Stability i) Type I ii) Type III b) Front Stability	Loading = 13 disks Loading = 6 disks Seat height \leq 710 mm Force = $0.1964(1195 - 580)$ = 121 N Vertical Load = 600 N Horizontal force = 20 N	Passed Passed Passed	Chair shall not tip over.
13	Arm Strength Test – Vertical – Static	Functional load = 750 N Proof load = 1,125 N Duration = 1 min	Passed	Functional load: No loss of serviceability. For a height adjustable arm, it must hold the position within 6mm. Proof Load: No sudden & major change in structural integrity. For a height adjustable arm, it must not has a sudden drop in height of greater than 25mm. Loss of serviceability is acceptable
14	Arm Strength Test – Horizontal – Static	Functional load = 445 N Proof load = 667 N Duration = 1 min	Passed	Functional load: No loss of serviceability. Proof Load: No sudden & major change in structural integrity. Loss of serviceability is acceptable

Sen John

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RESULTS:

Clause	Test	Parameters	Results	Requirement
15	Back Durability Test – Cyclic – Type I	Seat weight = 102 kg Loading force = 445 N Cycles = 120,000 Rate = 10 - 30 cycles/min	Passed	No loss of serviceability
16	Back Durability Test – Cyclic – Type III	Seat weight = 102 kg Loading force = 334 N Cycles = 120,000 Rate = 10 - 30 cycles/min	Passed	
17	Caster / Chair Base Durability Test – Cyclic - Pedestal Base Chairs - Chairs with Legs	Seat weight = 113 kg Cycles: 2,000 (Obstacles) 98,000 (No obstacles) Rate = 10 ± 2 cycles/min	Passed N/A	
	Caster Retention for Each Caster	Applied force = 22 N	Passed	No part of castor shall separate from base
18	Leg Strength Test – Front & Side Application - Front Load Test	Functional load = Proof load = Duration =	N/A	Functional load: No loss of serviceability Proof Load: No sudden & major change in structural integrity. Loss of serviceability is acceptable
	- Side Load Test	Functional load = Proof load = Duration =	N/A	
19	Footrest Static Load Test – Vertical	Functional Load, Force, F1 =	N/A	Functional Load: No loss of serviceability or sudden loss of footrest height. Proof Load: No sudden & major change in structural integrity. Loss of serviceability is acceptable
		Footrest adjustment, Force F1 = Force, F2 = Duration =		
		Proof Load, Force = Duration =	N/A	

Signature



RESULTS:

Clause	Test	Parameters	Results	Requirement
20	Footrest Durability Test – Vertical – Cyclic	Loading force = Cycles = Rate =	N/A	No loss of serviceability. Adjustable footrest that move more than 25mm in the first 500 cycles shall be considered to have lost their serviceability.
21	Arm Durability Test – Cyclic	Applied force = 400 N Cycles = 60,000 Rate = 10 - 30 cycles/min	Passed	No loss of serviceability.
22	Out Stop Tests for Chairs with Manually Adjustable Seat Depth	Seat weight = Loading weight = Cycles =	N/A	
23	Tablet Arm Static Load Test	Applied load = Duration =	N/A	No sudden and major change in the structural integrity of the chair. After test, tablet arm must allow egress from the unit; other losses of serviceability are acceptable
24	Tablet Arm Load Ease Test – Cyclic	Force = Cycles = Rate =	N/A	No loss of serviceability

REMARKS:

1. N/A: Not applicable as features not available on chair.


Shareen Chan
Engineer


Wong Bee Hui
Product Manager
Mechanical Centre

APPENDIX:



Photograph : VELO Office Chair

Sen *Robert*

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July 2011

