

**Test Report No. S09MEC05100/OCS**  
dated 17 Sep 2009



PSB Singapore

Choose certainty.  
Add value.

**Note:** This report is issued subject to TÜV SÜD PSB's "Terms and Conditions Governing Technical Services".  
The terms and conditions governing the issue of this report are set out as attached within this report.

**Subject:**

Testing of Office Chair submitted by Merryfair Chair System Sdn Bhd on 16 Jul 2009.

**Tested For:**

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

**Date of Test:**

27 Jul 2009 to 16 Sep 2009

**Description of Sample:**

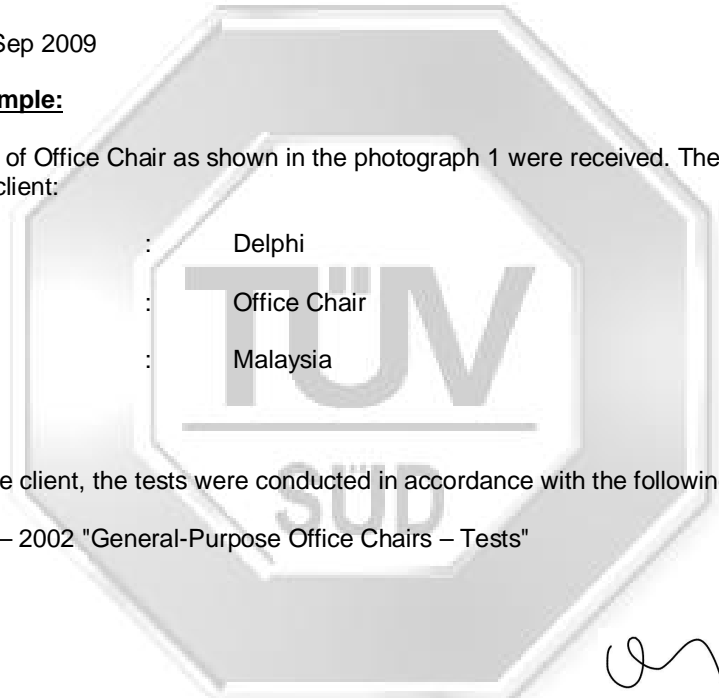
Two complete sets of Office Chair as shown in the photograph 1 were received. The following descriptions were given by the client:

Model : Delphi  
Product Type : Office Chair  
Country of Origin : Malaysia

**Method of Test:**

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

ANSI/BIFMA X5.1 – 2002 "General-Purpose Office Chairs – Tests"



Laboratory:  
TUV SUD PSB Pte. Ltd.  
Testing Services  
No.1 Science Park Drive  
Singapore 118221

Phone : +65-6885 1333  
Fax : +65-6776 8670  
E-mail: testing@tuv-sud-psb.sg  
www.tuv-sud-psb.sg  
Co. Reg : 199002667R

Regional Head Office:  
TUV SUD Asia Pacific Pte. Ltd.  
3 Science Park Drive, #04-01/05  
The Franklin, Singapore 118223  
TUV®

**Test Report No. S09MEC05100/OCS**  
dated 17 Sep 2009



PSB Singapore

**Results:**

Clause	Test	Parameters	Results	Requirement
5	Back Strength Test – Static – Type I	Functional load: 890N Proof load: 1334N Duration: 1 min	N/A	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 II	Functional load: 667N Proof load: 1112N Duration: 1 min	Passed	No sudden & major change in the structural integrity of the base.
7	Base Test – Static	Loading force: 11.1KN Duration: 1 min Cycles: 2	Passed	Functional load: No loss of serviceability Proof Load: No sudden & major change in structural integrity. Loss of serviceability is acceptable
8	Drop Test – Dynamic	Highest seat position: Functional load: 102kg Proof load: 136kg Drop ht: 152mm (6in)  Lowest seat position: Functional load: 102kg Proof load: 136kg Drop ht: 152mm (6in)	Passed	No loss of serviceability
9	Swivel Test – Cyclic	Seat load: 102kg Cycles: 60,000 highest position 60,000 lowest position Rate: 5-15 cycles/min	Passed	No loss of serviceability to the tilt mechanism
10	Tilt Mechanism Test – Cyclic	Seat load: 102kg Cycles: 300,000 Rate: 10-30 cycles/min	Passed	No loss of serviceability
11	Seating Durability test – Cyclic  - Impact Test  - Front Corner Load-Ease Test – Cyclic – Off Center	Seat load: 57kg Drop ht: 25mm (1in) Cycles: 100,000 Rate: 10-30 cycles/min  Seat load: 734N Cycle: 40,000 Rate: 10-30 cycles/min	Passed	No loss of serviceability



**Results:**

Clause	Test	Parameters	Results	Requirement
12	Stability Tests - Type II			
	a) Rear Stability 1. Locked 2. Unlocked	Seat weight: 79kg	Passed	Force required for front support to lift off shall be more than: - Type I & II : 89N - Type III : 156N
	b) Front Stability	Vertical Load: 600N Horizontal force: 20N		Chair shall not tip over
13	Arm Strength Test – Vertical – Static	Functional load: 890N Proof load: 1334N Duration: 1min	Passed	Functional load: No loss of serviceability Proof Load: No sudden & major change in structural integrity. Loss of serviceability is acceptable
14	Arm Strength Test – Horizontal – Static	Functional load: 445N Proof load: 667N Duration: 1min	Passed	
15	Back Durability Test – Cyclic – Type I	Seat weight: 102kg Loading force: 445N Cycles: 120,000 Rate: 10-30 cycles/min	N/A	No loss of serviceability
16	Back Durability Test – Cyclic – Type II	Seat weight: 102kg Loading force: 334N Cycles: 120,000 Rate: 10-30 cycles/min	Passed	
17	Caster / Chair Base Durability Test – Cyclic			
	- Pedestal Base Chairs	Seat weight: 102kg Cycles: 2 000 (Obstacles) 98 000 (No obstacles) Rate: 10±2 cycles/min	Passed	No loss of serviceability
	Caster Retention for Each Caster	Applied force: 22N		No part of castor shall separate from base

**Test Report No. S09MEC05100/OCS**  
dated 17 Sep 2009




PSB Singapore

**Results:**

Clause	Test	Parameters	Results	Requirement
18	Leg Strength Test – Front & Side Application			
	- Front Load Test	Functional load: 334N Proof load: 556N Duration: 1 min (each leg)	N/A	Functional load: No loss of serviceability
- Side Load Test	Functional load: 334N Proof load: 512N Duration: 1 min (front and rear leg)	Proof Load: No sudden & major change in structural integrity. Loss of serviceability is acceptable		
19	Footrest Durability Test – Vertical – Cyclic	Loading force: 890N Cycles: 50,000 Rate: 10-30 cycles/min	N/A	No loss of serviceability
20	Arm Durability Test – Cyclic	Applied force: 400N Cycles: 60,000 Rate: 10-30 cycles/min	Passed	Structural breakage or loss of serviceability shall constitute failure
21	Out Stop Tests for Chairs with Manually Adjustable Seat Depth	Seat weight: 70kg Loading weight: 25kg Cycles: 25	N/A	No loss of serviceability
22	Tablet Arm Static Load Test	Applied load: 68kg Duration: 5 min	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
23	Tablet Arm Load Ease Test – Cyclic	Applied load: 35kg Cycles: 100,000 Rate: 14±6 cycles/min	N/A	No loss of serviceability

**Remarks:**

1) N/A: Not applicable due to features not available on chair.

  
Gavin Ong  
Associate Engineer

  
Chin Fook Onn  
Product Manager  
Consumer & Safety Products  
Mechanical Centre



**Photograph 1 : Delphi**

A handwritten signature in black ink, appearing to be 'on le'.

**Test Report No. S09MEC05100/OCS**  
**dated 17 Sep 2009**



PSB Singapore

This Report is issued under the following conditions:

1. Results of the testing/calibration in the form of a report will be issued immediately after the service has been completed or terminated.
2. Unless otherwise requested, a report shall contain only technical results. Analysis and interpretation of the results and professional opinion and recommendations expressed thereupon, if required, shall be clearly indicated and additional fee paid for, by the Client.
3. This report applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are applicable to other similar items. In addition, such results must not be used to indicate or imply that TÜV SÜD PSB approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that TÜV SÜD PSB in any way "guarantees" the later performance of the product/equipment.
4. The sample/s mentioned in this report is/are submitted/supplied/manufactured by the Client. TÜV SÜD PSB therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture, consignment or any information supplied.
5. Additional copies of the report are available to the Client at an additional fee. No third party can obtain a copy of this report through TÜV SÜD PSB, unless the Client has authorised TÜV SÜD PSB in writing to do so.
6. TÜV SÜD PSB may at its sole discretion add to or amend the conditions of the report at the time of issue of the report and such report and such additions or amendments shall be binding on the Client.
7. All copyright in the report shall remain with TÜV SÜD PSB and the Client shall, upon payment of TÜV SÜD PSB's fees for the carrying out of the tests/calibrations, be granted a license to use or publish the report to the third parties subject to the terms and conditions herein, provided always that TÜV SÜD PSB may at its absolute discretion be entitled to impose such conditions on the license as it sees fit.
8. Nothing in this report shall be interpreted to mean that TÜV SÜD PSB has verified or ascertained any endorsement or marks from any other testing authority or bodies that may be found on that sample.
9. This report shall not be reproduced wholly or in parts and no reference shall be made by the Client to TÜV SÜD PSB or to the report or results furnished by TÜV SÜD PSB in any advertisements or sales promotion.
10. Unless otherwise stated, the tests are carried out in TÜV SÜD PSB Pte Ltd, No.1 Science Park Drive Singapore 118221.

March 2009