

IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**

## **TEST REPORT: 4788046313-002**

### **Applicant:**

**Supplier Name:** Comfordy Co., Ltd  
**Address:** No.22-1,BEISHIZHOU,MINGHE  
VILLAGE,SHANSHANG DIST.,TAINAN  
CITY 743,TAIWAN,R.O.C.  
**Contact Name:** Jerry Kang / jerry.kang@comfordy.com.tw

### **Product:**

**Article Name / Number:** Office Chair / KW-M128GAT (SYNC2)  
**Ratings:** N/A  
**Client ref. No.:** N/A  
**Order No.:** 11837402  
**Tests start:** 2017-09-19  
**Tests end:** 2017-10-17



**UL office:** UL Verification Services (Guangzhou) Co., Ltd.  
**Address:** Building A1, 5F, Nansha Science and Technology Innovation Center, No.25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China.

### **Reference Standard(s):**

**ANSI/BIFMA X5.1-2017 General-Purpose Office Chairs – Tests**

**NOTE: On client's request only the tests listed in this test report have been carried out.**

### **Test Results and Comments: P**

Note: see the legend in the last page of this report

Tested by:

Reviewed by:

Job Wang

(This is an electronically generated letter. Signatures are not required for this document to be valid.)

Job Wang  
Engineer

Dash

(This is an electronically generated letter. Signatures are not required for this document to be valid.)

Dash Li  
Reviewer

IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**

### **General Information**

Information conveyed by this Report applies only to the test sample(s) actually tested. UL Company did not witness the production of the test samples, or select the sample(s), determine whether the sample(s) was representative of production sample(s), nor was UL provided with information relative to the formulation or identification of component materials used in the test sample(s).

UL Company has not established a factory Follow-Up Service Program to determine the conformance of subsequently produced products, nor has any provision been made to apply any registered mark of UL to such product(s). The issuance of this Report in no way implies any Listing, Classification or Recognition by UL Company and does not authorize use of UL's marks, or other reference to UL, on the product or system. UL's name and marks cannot be used in any packaging, advertising, promotion or marketing relating to the product and data in this Report, without UL Company's prior written permission.

UL authorizes the above named company to reproduce this Report provided it is reproduced in its entirety.

The sole purpose of this investigation was to provide test data for the prototype samples submitted and tested in accordance with the requirements of REFERENCE STANDARD(S) which specified on the cover page. This data should not be considered representative of test results for other prototype samples.

UL Company's services are provided independently of UL's Conformity Assessment services such as preliminary product investigations, product certification, or field evaluation services. UL Company does not provide specific product design solutions, including prescriptive revisions to existing or prospective product designs. UL Company does not guarantee, warranty or provide an assurance (express or implied) that a positive test result, compliance report, or issuance of a UL certification mark will result from the testing performed or the information contained in this Report.

In no event shall UL be responsible to anyone for whatever use or non-use is made of the information contained in this Report and in no event shall UL Company, its employees, or its agents incur any obligation or liability for damages including, but not limited to, consequential damage arising out of or in connection with the use or inability to use the information contained in this Report.

"UL Company" means a UL Contracting Party or an entity controlled by, controlling, or under common control with a UL Contracting Party. "Control" means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of an entity, whether through ownership of more than 50% of the interests in such entity, by contract, or otherwise. The UL Company identified or referred to in a quotation or project confirmation or service agreement shall be referred to as "UL Contracting Party".

**List of Used Test Equipment**

<b>Test Equipment</b>	<b>UL Equipment No. / ID</b>
Electrical Balance(300kg/660lb)	148244
Measure Tape(3m)	148245
Swivel Cyclic Machine - 2	147918
Armrest/Seat Load-Ease Cyclic Machine - 1	147904
Armrest/Seat Load-Ease Cyclic Machine - 4	147907
Digital Angle Gauge (Absolute)	148283
Digital Timer (2 Phases)	148253
4-Stations Machine	147922
Impact Cyclic Machine - 2	147912
Digital Force Gauge(Max.500N)	148264
Stability Test Table(Single Seat)	151192

IAS Accreditation Number: TL-441

TEST REPORT: 4788046313-002

Issued on: 2017-10-25

Test Sample Identification

Sample Card No.	Sample No.	Date Received	Sample Quantity	Manufacturer, Product Identification and Ratings
1155459	1	2017-09-19	3	Office Chair / KW-M128GAT (SYNC2)

OVERALL DIMENSIONS:

Measured:	Depth:	712 mm;	Height:	1100 mm;
	Width:	742 mm;	Weight:	15.9 kg.
Nominal:	Depth:	-- mm;	Height:	-- mm
	Width:	-- mm	Weight:	-- kg

Sample conditioning before testing: No conditioning has been performed

The tests have been performed the following conditions: 20 ± 5 °C

Sample defects before the test: No Visible Defects

**Pictures of samples:**



Pic. 1: Front View



Pic. 2: Back View



Pic. 3: Side View



Pic. 4: Base View



Pic. 5: Seat depth adjustment



Pic. 6: Seat height adjustment and tilting mechanism lock

IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



**Pic. 7: Tilting mechanism tension adjustment**

Blank Area



IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



Pic. 8: Backrest strength functional test – Static Type I & II



Pic. 9: Backrest strength proof test – Static Type I & II



Pic. 10: Backrest strength functional test – Static Type III



Pic. 11: Backrest strength proof test – Static Type III

Clause	Test Item	Parameter / Observation				Result*	Remark**
			Functional	Proof	Other data		
5	Backrest strength test – Static Type I & II	<input checked="" type="checkbox"/> 406mm (H ≥ 452 mm)	667 N (150 lbf)	1001 N (225 lb)	1 min 70° ± 10° (stop position)	PASS	(H ≥ 200 mm)
		<input type="checkbox"/> Top loading (H < 452 mm)					
		<input type="checkbox"/> Pivoting point (>20° )					
6	Backrest strength test – Static Type III	<input checked="" type="checkbox"/> 406mm (H ≥ 452 mm)	667 N (150 lbf)	1001 N (225 lb)	1 min 90° ± 10°	PASS	
		<input type="checkbox"/> Top loading (H < 452 mm)					

IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



Pic. 12: Drop test – Dynamic – Functional



Pic. 13: Drop test – Dynamic – Proof

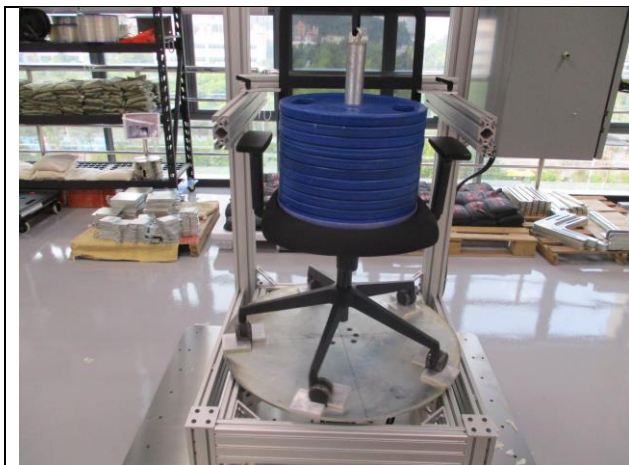
Clause	Test Item	Parameter / Observation				Result*	Remark**
			Functional	Proof	Other data		
7	Drop test - Dynamic <b>All Types</b>	13 mm $\pm$ 13 mm from most forward of backrest H = 152 mm(unloaded)	102 kg (225 lbf)	136 kg (300 lbf)	2 times Max height & Min height	PASS	



IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



Pic. 14: Swivel test – Cyclic – Highest seat position



Pic. 15: Swivel test – Cyclic – Lowest seat position

Clause	Test Item	Parameter / Observation			Result*	Remark**
			Functional	Proof	Other data	
8	Swivel test – Cyclic <b>All Types</b>	122 kg (270 lbf) on 51-64 mm forward rotational axis 360° ± 10° / cycle	60,000 cycles at Max height and 60,000 cycles at Min height		5-15 cycles/minute	PASS

IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



Pic. 16: Tilt mechanism test - Cyclic

Clause	Test Item	Parameter / Observation			Result*	Remark**
			Functional	Proof	Other data	
9	Tilt mechanism test - Cyclic Type I & II	109 kg (240 lbf) on center of seat		300,000 cycles	10-30 cycles/minute	PASS

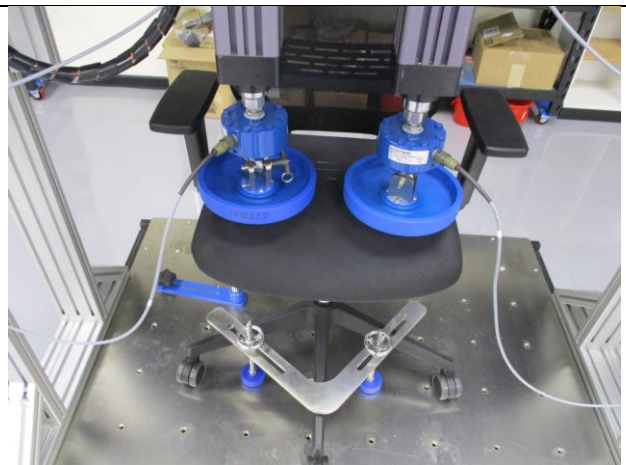
IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



Pic. 17: Seating durability test - Cyclic Impact Test



Pic. 18: Seating durability test Front corner load-ease test – Cyclic – off-center

Clause	Test Item	Parameter / Observation			Result*	Remark**
			Functional	Proof	Other data	
10.3	Seating durability test - Cyclic Impact Test <b>All Types</b>	13 mm $\pm$ 13 mm from most forward of backrest H = 36 mm (unloaded) 57 kg (125 lbf)	100,000 cycles		10-30 cycles/minute	PASS
10.4	Seating durability test Front corner load-ease test – Cyclic – off-center <b>All Types</b>	Flush to front edge 890 N (200 lbf)	20,000 + 20,000 cycles		10-30 cycles/minute	PASS

(If cushion < 44 mm, additional one should be added to 50 $\pm$ 6 mm)

IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



Pic. 19: Rear Stability – Type III



Pic. 20: Rear Stability – Type I & II



Pic. 21: Front stability

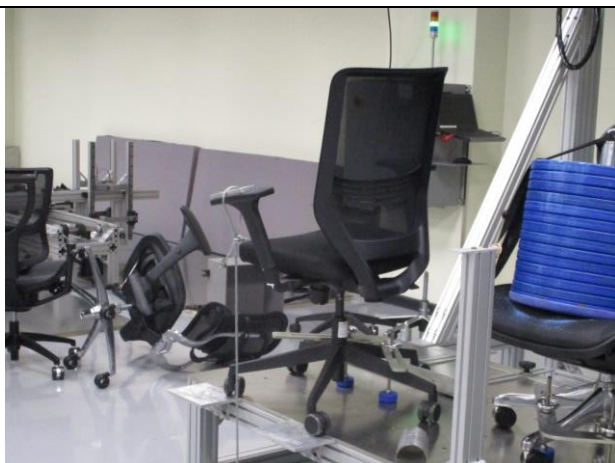
Clause	Test Item	Parameter / Observation				Result*	Remark**
			Functional	Proof	Other data		
11.3.1	Rear Stability <b>Type III</b>	Appendix G template <input type="checkbox"/> H <sub>seat</sub> ≥ 710 mm, F = 93 N <input checked="" type="checkbox"/> H <sub>seat</sub> < 710 mm, F = 133.2 N	6 disks		Least stable condition.	PASS	F = 0.1964 (1195 - H)
11.3.2	Rear Stability <b>Type I &amp; II</b>	Appendix G template Most rearward position <input type="checkbox"/> additional 11.3.1 needed	13 disks		Least stable condition.	PASS	
11.4	Front stability <b>All Types</b>	<input checked="" type="checkbox"/> with loading fixture <input type="checkbox"/> without, alternate methods F <sub>v</sub> = 61 kg, at 60 mm from edge	20 N (4.5 lbf)		Least stable condition.	PASS	



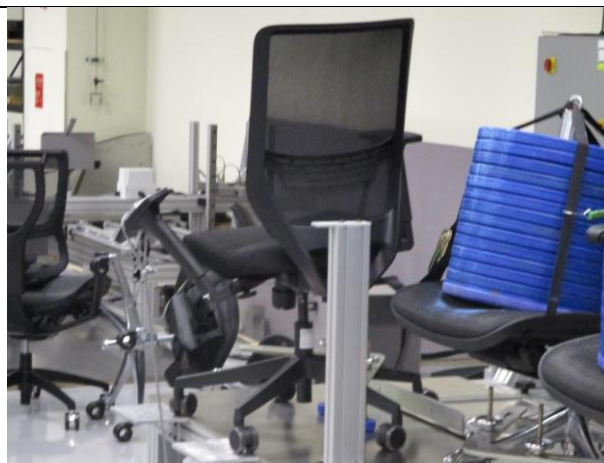
IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



Pic. 22: Arm Strength Test – Vertical – Static – Functional test



Pic. 23: Arm Strength Test – Vertical – Static – Proof test



Pic. 24: Arm Strength Test – Horizontal – Static – Functional test



Pic. 25: Arm Strength Test – Horizontal – Static – Proof test

Clause	Test Item	Parameter / Observation				Result*	Remark**
			Functional	Proof	Other data		
12	Arm Strength Test – Vertical - Static <b>All Types</b>	Loading adapter (weakest point along arm)	750 N (169 lbf) Max. 6 mm 1 min.	1125 N (253 lbf) Max. 25 mm 15 sec	/	PASS	
13	Arm Strength Test – Horizontal - Static <b>All Types</b>	< 25 mm loading point (weakest point along arm)	445 N (100 lbf) 1 min.	667 N (150 lbf) 15 sec	/	PASS	



Pic. 26: Backrest Durability test – Cyclic Type I



Pic. 27: Backrest Durability test – Cyclic Type II & III

Clause	Test Item	Parameter / Observation			Result*	Remark**
			Functional	Proof	Other data	
14	Backrest Durability test - Cyclic <b>Type I</b>	<input checked="" type="checkbox"/> 406mm (H ≥ 452 mm)	80,000 (center) + 20,000 (left) + 20,000 (right)		F <sub>seat</sub> = 109 kg F <sub>back</sub> = 556 N 90° ± 10° (stop position) 10-30 cycles/minute	PASS
		<input type="checkbox"/> Top loading (H < 452 mm)	120,000 cycles			
		<input type="checkbox"/> Pivoting point (>20° )	-			
15	Backrest Durability test - Cyclic <b>Type II &amp; III</b>	<input checked="" type="checkbox"/> 406mm (H ≥ 452 mm)	80,000 (center) + 20,000 (left) + 20,000 (right)		F <sub>seat</sub> = 109 kg F <sub>back</sub> = 334 N 90° ± 10° (stop position) 10-30 cycles/minute	PASS
		<input type="checkbox"/> Top loading (H < 452 mm)	120,000 cycles			
		<input type="checkbox"/> Pivoting point (>20° )	-			



IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



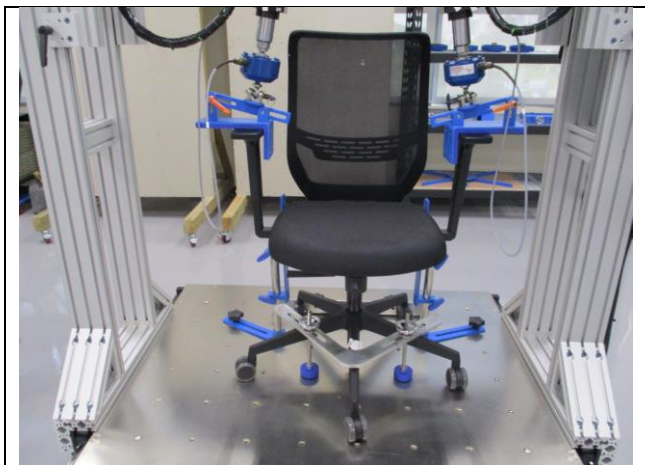
Pic. 28: Caster/Chair Durability test - Cyclic

Clause	Test Item	Parameter / Observation			Result*	Remark**
			Functional	Proof	Other data	
16.1	Caster/Chair Durability test - Cyclic <b>Pedestal base with casters</b>	1 stroke = 762 mm $\pm$ 50 mm 1 cycle = 1 forward + 1 backward $F_{\text{seat}} = 122 \text{ kg}$ $F_{\text{pull}} = 22 \text{ N/caster}$	2000 cycles (obstacle) + 98,000 cycles (smooth)		10 $\pm$ 2 cycles/minute	PASS

IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



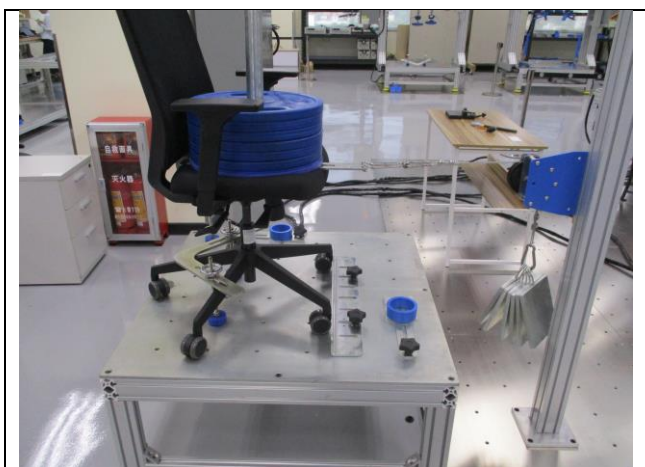
Pic. 29: Arm Durability Test - Cyclic

Clause	Test Item	Parameter / Observation			Result*	Remark**
			Functional	Proof	Other data	
20	Arm Durability Test - Cyclic	100 mm length arm pad F= 2 x 400 N (simultaneously)		60,000 cycles	10° ± 1° 10-30 cycles/minute	PASS

IAS Accreditation Number: TL-441

**TEST REPORT: 4788046313-002**

**Issued on: 2017-10-25**



**Pic. 30: Out stop Test for Chairs with Manually adjustable seat depth**

Clause	Test Item	Parameter / Observation				Result*	Remark**
			Functional	Proof	Other data		
21	Out stop Test for Chairs with <b>Manually adjustable seat depth</b>	25 kg attached weight 74 kg in the center of the seat		25 cycles	/	PASS	

**Pictures of Failures:**

Nil.

**Legend:**

- P** = PASS, the sample MEETS the standard requirement.
- F** = FAIL, the sample DOES NOT MEET the standard requirement.
- NA** = NON APPLICABLE, the requirement/test IS NOT APPLICABLE to the sample.
- NR** = NOT REQUESTED, On Customer request the test is NOT PERFORMED.
- NP** = General note (see details).
- ND** = NOT DECLARED.
- //** = The rating of test CANNOT BE EXPRESSED, see details in test report

**END OF REPORT**