TEST REPORT

Mechanical & Hardgoods Laboratory

Report No. : HL70493/2015
Page : 1 of 7
Date : AUG. 12, 2015

RAYNOR MARKETING LTD.
525 Hempstead, Turnpike, West Hempstead, NY 11552, USA

The following merchandise was submitted and identified by the applicant as:

Product Description:	Mid Back Multifunctional Task Chair, with Adj arm
Style/Item No.:	LLR20977, LLR20978
Buyer/Order No.:	RAYNOR MARKETING LTD
Manufacturer/Vendor:	SONG LIN FURNITURE CO., Ltd.
Country of Origin:	China

We have tested the submitted sample(s) as requested and the following results were obtained:

Type of chair: TYPE I, Tilting chair (with tilt locks, locking the chair changes to type III, fixed seat angle, fixed backrest)

Test Requested:
1. For compliance with 16 CFR 1303 ban of lead-containing paint and certain consumer products bearing lead-containing paint.
2. For compliance with ANSI/BIFMA X5.1-2011 General-Purpose Office Chairs-Tests

Test Methods: According to test procedures of
1. CPSC–CH–E1003-09.1 method.
2. ANSI/BIFMA X5.1-2011

Test Results: --- See following sheet(s) ---

Date of Receipt: Jul. 23, 2015

Testing Period: Jul. 23, 2015 ~ Aug. 11, 2015

Conclusion: The submitted samples **comply with** ANSI/BIFMA X5.1-2011 General-Purpose Office Chairs-Tests.

Signed for and on behalf of
SGS Taiwan Ltd.

Lawrence Yang
Asst. Supervisor

Test Results:

1. Lead in paint / similar surface coating material
   Method: As per CPSC–CH–E1003-09.1 method.

Test item	NO.1	NO.2	Permissible Limit
Lead (Pb)	N.D.	N.D.	90
Conclusion	**Pass**	**Pass**	---

TEST PART DESCRIPTION:

PART NAME NO.1 : Gray coating (Backrest)
PART NAME NO.2 : Black coating (Cylinder)

Note: 1. mg/kg = ppm; 0.1wt% = 1000 ppm
2. N.D. = not detected (Less than Method Detection Limit)
3. Method Detection Limit = 2 ppm
4. With reference to Test Method CPSC-CH-E1003-09.1 dated February 25, 2011, the result is calculated using the minimum sample weight.
5. The chemical analysis test was conducted in SGS TW Ltd. Chemical lab – Taipei.

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

RESULT DETAILS:

See attached protocols:

Test Property	Test Method	Test Principle / Requirements	Rating
PHYSICAL CHARACTERISTICS			
Dimensions	Measurement	Report actual as below	LLR20977
Height	Measurement	Tolerance by Product Category: +3%, -1%	36.81 ~ 40.16 in
Width	Measurement	Tolerance by Product Category: +3%, -1%	25.98 in
Depth	Measurement	Tolerance by Product Category: +3%, -1%	22.36 ~ 31.50 in
Net Weight	Measurement	Tolerance by Product Category: +/-2%	17.05 kg
Seat Height	Measurement	Tolerance by Product Category: +3%, -1%	19.09 ~ 22.44 in
Seat Width	Measurement	Tolerance by Product Category: +3%, -1%	18.90 in
Seat Depth	Measurement	Tolerance by Product Category: +3%, -1%	18.11 ~ 20.08 in
Color	Visual Inspection	Report actual	Black & gray

Test Property	Test Method	Test Principle / Requirements	Rating
Full tests of ANSI BIFMA X5.1			
Backrest Strength Test -Static (Functional Load) (Type I Chair)	ANSI/BIFMA X5.1-2011 Clause 5.4.1	No structural breakage or loss of serviceability when 890 N (200 lb.) is applied for 1 min. Applied to 90° from back at 16 in above the seat. If the back is less than 17.8 in, the load is applied at the top of the back.	Pass (LLR20977)
Backrest Strength Test -Static (Proof Load) (Type I Chair)	ANSI/BIFMA X5.1-2011 Clause 5.4.2	No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 1334 N (300 lb.) is applied for 1 min. applied to 90° from back at 16 in above the seat. If the back is less than 17.8 in, the load is applied at the top of the back.	Pass (LLR20977)
Backrest Strength Test -Static (Functional Load) (Type II Chairs - Nontilt Or Adjustable Seat - Tilt Back)	ANSI/BIFMA X5.1-2011 Clause 6.4.1	[Nontilt or adjustable seat - tilt back] No structural breakage or loss of serviceability when 667 N (150 lb.) is applied for 1 min. applied to 90° from back at 16 in. above the seat. If the back is less than 17.8 in, the load is applied at the top of the back.	N/A
Backrest Strength Test -Static (Proof Load) (Type II Chairs - Nontilt Or Adjustable Seat - Tilt Back)	ANSI/BIFMA X5.1-2011 Clause 6.4.2	[Nontilt or adjustable seat - tilt back] No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 1112 N (250 lb.) is applied for 1 min. applied to 90° from back at 16 in above the seat. If the back is less than 17.8 in, the load is applied at the top of the back.	N/A
Backrest Strength Test -Static (Functional Load) (Type III Chairs -Nontilt Or Adjustable Seat - Fixed, Flex, Or Manually Adjustable Back)	ANSI/BIFMA X5.1-2011 Clause 6.4.1	[Nontilt or adjustable seat - fixed, flex, or manually adjustable back] No structural breakage or loss of serviceability when 667 N (150 lb.) is applied for 1 min. applied to 90° from back at 16 in. above the seat. If the back is less than 17.8 in, the load is applied at the top of the back.	Pass (LLR20977)
Backrest Strength Test -Static (Proof Load) (Type III Chairs - Nontilt Or Adjustable Seat - Fixed, Flex, Or Manually Adjustable Back)	ANSI/BIFMA X5.1-2011 Clause 6.4.2	[Nontilt or adjustable seat - fixed, flex, or manually adjustable back] No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 1112 N (250 lb.) is applied for 1 min. applied to 90° from back at 16 in above the seat. If the back is less than 17.8 in, the load is applied at the top of the back.	Pass (LLR20977)
Base Test Static (Pedestal Base)	ANSI/BIFMA X5.1-2011 Clause 7	No sudden and major change in the structural integrity after 11,120 N (2500 lb.) compression for 1 min. The weight is then removed and reapplied for 1 min. The center column may not touch the test platform during load applications.	Pass (LLR20977)
Drop Test - Dynamic (Functional Load)	ANSI/BIFMA X5.1-2011 Clause 8.4.1	No structural breakage or loss of serviceability when 102 kg (225 lb.) free falls from 6 In. height to the center of the seat.	Pass (LLR20977)
Drop Test - Dynamic (Proof Load)	ANSI/BIFMA X5.1-2011 Clause 8.4.2	No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 136 kg (300 lb.) free falls from 6 in. height to the center of the seat.	Pass (LLR20977)
Swivel Test - Cyclic	ANSI/BIFMA X5.1-2011 Clause 9	No structural breakage or loss of serviceability after 60,000 cycles of rotation (360 degrees) under a 113 kg (250 lb.) load on the seat at max. Height, seat shall then withstand another 60,000 cycles of rotation at its lowest seating position. Note: all chairs must withstand 120,000 cycles	Pass (LLR20977)
Tilt Mechanism Test - Cyclic (Type I & Type II Chair)	ANSI/BIFMA X5.1-2011 Clause 10	No structural breakage or loss of serviceability in 300,000 cycles under a 102 kg (225 lb.) load to the center of the seat	Pass (LLR20977)

Test Property	Test Method	Test Principle / Requirements	Rating
Seating Durability Test - Cyclic	ANSI/BIFMA X5.1-2011 Clause 11	This is a two-part test. The impact test and front corner load-ease tests must be run sequentially for this evaluation. No structural breakage or breakage or loss of serviceability after completion of both the impact and load-ease tests.	Pass (LLR20977)
Impact Test - Cyclic	ANSI/BIFMA X5.1-2011 Clause 11.3	100,000 cycles of 57 kg (125 lb.) weight drop from 1.2 in (30 mm) above the uncompressed surface of the seat.	Pass (LLR20977)
Front Corner Load Ease Test - Cyclic - Off Center	ANSI/BIFMA X5.1-2011 Clause 11.4	20,000 cycles to both front seat corners from a 734 N (165 lb.) load positioned flush to both outer edges applied without impact for a total of 40,000 cycles	Pass (LLR20977)
Stability Test - Rear	ANSI/BIFMA X5.1-2011 Clause 12.3	For type III chair: Load the chair with 6 disks (See Appendix B). As each disk is added to the stack assure that it is placed against the support as shown in Figure 12a, Apply a horizontal force to the highest disk. The location of the force application is 6 mm (0.25 in.) from the top of the disk Seat height < 710 mm: F = 0.1964 (1195 – H) N.(H in mm) Seat height > 710 mm: F= 93 N/20.9 lb. For type I & II chair: Load the chair with 13 disks (See Appendix B). As each disk is added to the stack, assure that it is placed against the support.	Pass (LLR20977: Type I; Type III: F=123.7 N)
Stability Test - Dynamic - Front	ANSI/BIFMA X5.1-2011 Clause 12.4	The chair is obstructed with a 1/2 in. obstruction to the chair casters or feet. A downward load of 600 N (135 lb.) is centered 2.4 in. from the seat front center edge. The seat shall withstand a 20 N (4.5 lb.). horizontally from the front seat edge without tipping	Pass (LLR20977)
Arm Strength Test - Vertical - Static (functional load)	ANSI/BIFMA X5.1-2011 (mod.) Clause 13.4.1	No structural breakage or loss of serviceability when 890 N (200 lb.) for 1 min. Is applied. The vertical load is uniformly applied through a 5 in. area at the apparent weakest point.	Pass (LLR20977)
Arm Strength Test - Vertical - Static (proof load)	ANSI/BIFMA X5.1-2011 (mod.) Clause 13.4.2	No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 1334 N (300 lb.) for 1 min. is applied. The vertical load is uniformly applied through a 5 in. area at the apparent weakest point.	Pass (LLR20977)
Arm Strength Test - Horizontal - Static (functional load)	ANSI/BIFMA X5.1-2011 Clause 14.4.1	No structural breakage or loss of serviceability when 445 N (100 lb) for 1 min. Is applied horizontally outward to the armrest at the most forward point of the armrest.	Pass (LLR20977)
Arm Strength Test - Horizontal - Static (proof load)	ANSI/BIFMA X5.1-2011 Clause 14.4.2	No sudden and major change in the structural integrity (loss of serviceability is acceptable) when 667 N (150 lb.) for 1 min. is applied horizontally outward to the armrest at the most forward point of the armrest.	Pass (LLR20977)

Test Property	Test Method	Test Principle / Requirements	Rating
Backrest Durability Test - Cyclic (Type I)	ANSI/BIFMA X5.1-2011 Clause 15	No structural breakage or loss of serviceability in 120,000 cycles with 102 kg (225 lb.) in the center of the seat and 445 N (100 lb.) applied to the chair back at 90° to the plane of the back. For chairs with a back width greater than 16 in at the height of loading perform 80,000 cycles. Reposition the load 4 in. to the right of the vertical centerline. If using a cable pulley system, 30 in. minimum from the attachment point to the pulley. Apply the load for 20,000 cycles. Then, reposition the load 4 in. to the left of the vertical centerline. If using a cable pulley system, 30 in. minimum from the attachment point to the pulley. Apply the load for 20,000 cycles. (For chairs with tilt mechanisms that lock see Sect. 4 for classification change.)	Pass (LLR20977)
Backrest Durability Test - Cyclic (Type II & III)	ANSI/BIFMA X5.1-2011 Clause 16	No structural breakage or loss of serviceability in 120,000 cycles with a 102 kg (225 lb.) in the center of the seat and 334 N (75 lb.) applied to the chair back at 90°to the plane of the back. For chairs with a back width greater than 16 in at the height of loading perform 80,000 cycles. Reposition the load 4 in. to the right of the vertical centerline. If using a cable pulley system, 30 in. minimum from the attachment point to the pulley. Apply the load for 20,000 cycles. Then, reposition the load 4 in. to the left of the vertical centerline. If using a cable pulley system, 30 in. minimum from the attachment point to the pulley. Apply the load for 20,000 cycles.	Pass (LLR20977) (Type III)
Caster / Chair Base Durability - Cyclic (Pedestal Base Chairs)	ANSI/BIFMA X5.1-2011 Clause 17.1.4	No structural failure or loss of service after 2,000 cycles over a hard surface with 3 obstacles and 98,000 cycles over a smooth hard surface without obstacles (30 in. forward / backward stroke min.) Under a 113 kg (250 lb.) load in the seat. After completion of the cycling, apply a 5 lb force to each caster, in line with the caster stem. The caster shall not separate.	Pass (LLR20977)
Caster / Chair Base Durability - Cyclic (Chairs With Legs)	ANSI/BIFMA X5.1-2011 Clause 17.2.4	No structural failure or loss of service after 2,000 cycles over a hard surface with 2 obstacles and 98,000 cycles over a smooth hard surface without obstacles (30 in. forward / backward stroke min.) Under a 113 kg (250 lb.) load in the seat. After completion of the cycling, apply a 5 lb. force to each caster, in line with the caster stem. The caster shall not separate.	N/A
Leg Strength Test - Front Load (Functional Load) (Chairs Without Pedestal Bases)	ANSI/BIFMA X5.1-2011 (mod.) Clause 18.3.2.1	No loss of serviceability when a force of 334 N (75 lb.) is applied to each front leg individually for a period of 1 minute.	N/A
Leg Strength Test - Front Load (Proof Load) (Chairs Without Pedestal Bases)	ANSI/BIFMA X5.1-2011 (mod.) Clause 18.3.2.2	No sudden and major change in the structural integrity of the chair shall occur (loss of serviceability is acceptable) when a force of 556 N (125 lb.) Is applied to each front leg individually for a period of 1 minute.	N/A

Test Property	Test Method	Test Principle / Requirements	Rating
Leg Strength Test - Side Load (Functional Load) (Chairs Without Pedestal Bases)	ANSI/BIFMA X5.1-2011 (mod.) Clause 18.4.2.1	No loss of serviceability when a force of 334 N (75 lb.) is applied once to the front and rear leg individually for a period of 1 minute.	N/A
Leg Strength Test - Side Load (Proof Load) (Chairs Without Pedestal Bases)	ANSI/BIFMA X5.1-2011 (mod.) Clause 18.4.2.2	No sudden and major change in the structural integrity of the chair shall occur (loss of serviceability is acceptable) when a force of 512 N (115 lb.) Is applied once to the front and rear leg individually for a period of 1 minute.	N/A
Footrest Static Load Test - Vertical	ANSI/BIFMA X5.1-2011 Clause 19	Functional load: Apply a force F1 of 445 N (100 lb.) uniformly along a 102 mm (4 in.) distance along the footrest but not greater than 51 mm (2 in.) from the outside edge at the apparent weakest point of the structure for one minute in the vertical downward direction. Proof load: Apply a force of 1334 N (300 lb.) uniformly along a 102 mm (4 in.) distance along the footrest but not greater than 51 mm (2 in.) from the outside edge at the apparent weakest point of the structure for one minute in the vertical downward direction.	N/A
Footrest Durability Test - Vertical - cyclic	ANSI/BIFMA X5.1-2011 Clause 20	A 890 N (200 lb.) force shall be applied uniformly along a 102 mm (4 in.) distance along the footrest but not greater than 51 mm (2 in.) from the outside edge at the apparent weakest point of the structure. The force shall be applied and removed for 50,000 cycles.	N/A
Arm Durability Test – Cyclic	ANSI/BIFMA X5.1-2011 Clause 21	No structural breakage or loss of serviceability when a force of 400 N (90 lb.) is applied to each arm at a 10 degree angle ± 1 degree for 60,000 cycles	Pass (LLR20977)
Out Stop Tests for Chair with Manually Adjustable Seat Depth	ANSI/BIFMA X5.1-2011 Clause 22	Place a 74 kg (163 lb.) rigid mass in the center of the seat. The opposite end of the cable shall extend in line forward from the seat and in line with the plane of the seat movement to a pulley and then downward to an attached weight of 25 kg (55 lb.). then released, permitting it to move forward rapidly and impact the out stops for 25 cycles.	Pass (LLR20977)
Table Arm Static Load Test	ANSI/BIFMA X5.1-2011 Clause 23	Apply a load of 68 kg. (150 lb.) through a 203 mm ±13 mm (8.0 in. ± 0.51 in.) diameter area at 25 mm (1 in.) from the edge of the surface at its apparent weakest point for one minute	N/A
Table Arm Load Ease Test - Cyclic	ANSI/BIFMA X5.1-2011 Clause 24	A 343 N (77 lb.) force applied through a 203 mm ± 13 mm (8.0 in. ± 0.51 in.) diameter area centered on the writing area of the tablet for 100,000 cycles.	N/A

Rating Key:

Pass
Fail
N/A: Not Applicable

– Picture(s) –

	
Photo A: Appearance of the sample – front LLR20977	Photo B: Appearance of the sample – side LLR20977
	
Photo C: Appearance of the sample – back LLR20977	Photo D: Type(s) of the chair LLR20977

---End of Report---