

### DOREL HOME FURNISHINGS EUROPE LTD

ALPHASON HOUSE, 244 SWAN LANE, HINDLEY GREEN, WIGAN, WN2 4EY, UNITED KINGDOM

The following sample(s) was/were submitted and identified on behalf of the applicant as:

Product Description	LAGUNA CHAIR
Style/Item No.	W-175A
Supplier Name	LIANFENG
Manufacturer Name	LIANFENG
Buyer's Name	DOREL HOME FURNISHINGS EUROPE LTD
Country of Origin	CHINA
Country of Destination	UK
Sample Receiving Date	NOV 21, 2018
Test Performing Date	NOV 21, 2018 TO NOV 28, 2018

### Test Result Summary

Test(s) Requested	Result(s)
BS EN 12520:2015 Excluding Clause 6 information for use	PASS
<b>Summary:</b>	
1. For further details, please refer to the following page(s)	

Signed for and on behalf of  
SGS-CSTC Co., Ltd. Anji Branch

David Fan  
Approved Signatory



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**Test Conducted: BS EN 12520:2015 Furniture - Strength, durability and safety – Requirements for domestic seating**

**Test Result:**

Test Item	Test Method & Test Requirement	Test Result
<b>General requirements (BS EN 12520:2015, 5.1)</b>		
General requirements (BS EN 12520:2015, 5.1)	<p>All parts of the seating with which the user comes into contact, during intended use, shall be designed to ensure that physical injury and damage are avoided.</p> <p>These requirements are met when:</p> <p>a) edges of the seat, back rest and arm rests, which are in contact with the user when sitting are rounded or chamfered. All other edges accessible during use shall be free from burrs and/or sharp edges;</p> <p>b) ends of hollow components are closed or capped.</p> <p>Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided.</p> <p>It shall not be possible for any load bearing part of the seating to come loose unintentionally.</p> <p>All parts which are lubricated to assist sliding shall be designed to protect users from lubricant stains when in normal use.</p>	PASS
<b>Shear and squeeze points (BS EN 12520:2015, 5.2)</b>		
Shear and squeeze points when setting up and folding (BS EN 12520:2015, 5.2.1)	<p>Unless 5.2.2 or 5.2.3 are applicable, shear and squeeze points, as defined in 3.3, that are created only during setting up and folding, including tipping seat, are acceptable, because the user can be assumed to be in control of his/her movements and to be able to cease applying the force immediately upon experiencing pain.</p> <p>The edges of parts moving relative to each other and creating shear and squeeze points shall be as specified in 5.1.</p>	PASS
Shear and squeeze points under the influence of powered mechanisms (BS EN 12520:2015, 5.2.2)	<p>With the exception of tipping seats there shall be no shear and squeeze points created by parts of the seating under powered mechanisms e.g. springs and gas lifts.</p> <p>NOTE: Electrically operated seating is covered by EEC Directives for EMC, Machinery, Low Voltage or Medical Devices.</p>	PASS
Shear and squeeze points during use (BS EN 12520:2015, 5.2.3)	<p>There shall be no shear and squeeze points created by loads applied during normal use.</p> <p>The loads applied during normal use can be found in Table 1.</p> <p>Shear and squeeze points are not acceptable if a hazard is created by the weight of the user during normal movements and actions, e.g. attempting to move the seating by lifting the seat or by adjusting the backrest.</p> <p>NOTE: This hazard is best prevented by the use of automatic locking mechanisms.</p>	PASS



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Test Item	Test Method & Test Requirement	Test Result
<b>Stability (BS EN 12520:2015, 5.3)</b>		
The seating shall fulfil the relevant requirements of BS EN 1022.		
Test procedure and requirements, all seating: experimental method (BS EN 1022:2005, 6)		
Forwards overbalancing, all seating (BS EN 1022:2005, 6.2)	Apply a force of 600N vertically at a point 60mm in from the front edge of the seat. At each loaded position, apply a force of 20N for 5 s horizontally outwards along a horizontal line extended forward from the point where the base of the loading pad meets the upper surface of seat.	PASS
Forwards overbalancing, all seating with footrest (BS EN 1022:2005, 6.3)	For seating with footrest repeat the procedure in Clause 6.2 applying the vertical force 600N and horizontal force 20N to the footrest.	NA
Sideways overbalancing, all seating without arms (BS EN 1022:2005, 6.4)	Apply a force of 600N vertically at a point 60mm in from the edge of the seat nearest the stopped feet. Apply a sideways force of 20N horizontally outwards for at least 5s.	NA
Sideways overbalancing, all seating with arms (BS EN 1022:2005, 6.5)	Apply a vertical force of 350N at a position on the centerline of the arm up to a maximum 40mm inwards from the outer edge of the arm structure at a most adverse position along its length. Apply a vertical force of 250N at a position 100mm to the side of the fore and after center line of the seat which is nearest the stopped feet. Apply a horizontal force of 20N outwards, and perpendicular to the line joining the stopped feet for at least 5s.	PASS
Rearwards overbalancing, all seating with backs (BS EN 1022:2005, 6.6)	Apply a vertical force of 600N to the seat at seat loading position. Apply the horizontal force to the back of the chair at loading position for at least 5 s. Determine the horizontal force F (N): H ≥ 720mm, F = 80N; H < 720 mm, F = 0,2857 (1000-H) where: H is the distance between the loaded seat and the floor, in mm	PASS
Test procedures and requirements for seating with variable geometry: experimental method (BS EN 1022:2005, 7)		
Tilt chairs (BS EN 1022:2005, 7.3)	The test method applies to all values of $\theta \geq 10$ and values of $\gamma$ between $90^\circ$ and $170^\circ$ . Load the chair with 11 loading discs (10kg), so that the discs are firmly against the chair back.	PASS
Rocking chairs (BS EN 1022:2005, 7.4)	Load the chair with 8 loading discs (10 kg), so that the discs are firmly against the chair back. Rock the chair forwards as far as is practicable. Allow the chair to rock rearwards freely under gravity.	NA
Reclining chair with footrests (BS EN 1022:2005, 7.5)	The test method applies to all values of $\theta \geq 10$ and less than $55^\circ$ and values of $\gamma$ between $90^\circ$ and $170^\circ$ . Load the back of the chair with eight loading discs and place three loading discs onto the footrest at a distance Z from the intersection of the seat and back.	NA



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Test Item	Test Method & Test Requirement	Test Result
Footrest test (BS EN 1022:2005, 7.6)	In some cases the forward stability test cannot be carried out on a reclining chair because the footrest folds up. In this case, the forward stability test shall be applied with the footrest in the folded condition only. However, in those cases where the footrest does not fold as the sitter's weight is moved towards the footrest (e.g. lever operated chairs) the forward stability test shall be applied to the footrest in its fully extended position.	NA
Reclining chairs without footrest (BS EN 1022:2005, 7.7)	The test method applies to all values of $\theta \geq 10$ and less than $45^\circ$ and values of $\gamma$ between $90^\circ$ and $170^\circ$ . Load the back of the chair with eight loading discs and place three loading discs onto the front of the seat of the chair at a distance X from the intersection of the seat and back.	NA
<b>Strength and durability (BS EN 12520:2015, 5.4)</b> The strength and durability requirements are fulfilled when during and after testing in accordance with Table 1: <ul style="list-style-type: none"> <li>a) there are no fractures of any member, joint or component;</li> <li>b) there are no loosening of joints intended to be rigid;</li> <li>c) seating fulfils its functions after removal of the test loads;</li> <li>d) seating fulfils the stability requirements.</li> </ul>		
Seat static load and back static load test (BS EN 1728:2012, 6.4)	For seating without a back rest, only seat force shall be applied. Load seat not being tested with 750 N. Apply specified seat force 1300 N at the seat loading position. With the seat force maintained, apply specified back force 450N at back loading position or at 100 mm below the top of the back. When the back inclination $\theta$ is $\leq 55^\circ$ & $< 70^\circ$ to horizontal: Seat force $F_1$ (N) = $1300 \times \sin \theta$ Back force $F_2$ (N) = $(\theta/60^\circ - 0.1666) \times 1300 \times \cos \theta$ When the back inclination $\theta$ is $< 55^\circ$ to horizontal: Seat force $F_1$ (N) = $1300 \times 0.75$ Back force $F_2$ (N) = $1300 \times 0.75 \times \cos \theta$ Repeat the operation for 10 cycles, 10s each cycle. If the item tends to overturn, reduce $F_2$ (min. 410N) to prevent rearwards overturning.	PASS
Seat front edge static load test (BS EN 1728:2012, 6.5)	Load seat not being tested with 750 N. Apply the force 1300 N at a point on the seat centre line 100 mm inwards from the front edge of the structure. Repeat the operation for 10 cycles, 10s each cycle. If the seating tends to overturn, reduce the force to a magnitude that just prevents overturning.	PASS
Foot rest static load test (BS EN 1728:2012, 6.8)	Not apply to seating with a seat height $\leq 600$ mm. Apply a downward force 750N to seat at the seat loading point. Apply a vertical force 1000N acting 80 mm from front edge of the load bearing structure of the foot rest at the point most likely to cause failure. For round cross section ring shaped footrests, apply the force through the centre of the ring cross section. Repeat the operation for 10 cycles, 10s each cycle. If the seating tends to overturn, increase the load on seat to a magnitude that just prevents overturning.	NA



Test Item	Test Method & Test Requirement	Test Result
Arm rest sideways static load test (BS EN 1728:2012, 6.10)	Apply an outward force 300N to one arm rest or to each arm rest of the unit simultaneously at the points along the arm rest most likely to cause failure, but not less than 100 mm from the end of the arm rest structure. Repeat the operation for 10 cycles, 10s each cycle.	PASS
Arm rest downwards static load test (BS EN 1728:2012, 6.11)	Apply vertical force 700N to the arm rest or to both arm rests simultaneously at the points along the arm rest most likely to cause failure, but not less than 100 mm from the end of the arm rest structure. Repeat the operation for 10 cycles, 10s each cycle.	PASS
Combined seat and back durability test (BS EN 1728:2012, 6.17)	For seating without a back rest, only seat force shall be applied. Load seat not being tested with 750 N. Apply specified seat force 1000N at the seat loading position. With the seat force maintained, apply specified back force 300N at back loading position or at 100 mm below the top of the back. When the back inclination $\varnothing$ is $\leq 55^\circ$ & $< 70^\circ$ to horizontal: Seat force $F_3$ (N) = $1000 \times \sin \varnothing$ Back force $F_4$ (N) = $(\varnothing/60^\circ - 0.1666) \times 1000 \times \cos \varnothing$ When the back inclination $\varnothing$ is $< 55^\circ$ to horizontal: Seat force $F_3$ (N) = $1000 \times 0.75$ Back force $F_4$ (N) = $1000 \times 0.75 \times \cos \varnothing$ Repeat the operation for 25000 cycles. If the item tends to overturn, reduce $F_4$ to prevent rearwards overturning.	PASS
Seat front edge durability test (BS EN 1728:2012, 6.18)	Apply the vertical force 800N alternately on two points each 80mm from the front edge of the seat structure and as near as possible to either side of the seat but not less than 80mm from the edges. Repeat the test for 20000 cycles. If the item tends to overturn, reduce the force to a magnitude that just prevents overturning.	PASS
Arm rest durability test (BS EN 1728:2012, 6.20)	Apply the force of 400 N on each arm rest at the point most likely to cause failure, but not less than 100 mm from the front or rear edge of the arm rest length and through the centre of the width of the arm rest, but not more than 100 mm from the inner edge of the arm rest. Repeat the test for 10000 cycles.	PASS
Leg forward static load test (BS EN 1728:2012, 6.15)	Apply the seat load 1000N to all seat loading positions. Apply a horizontal force 400N centrally to the rear of the seat or to the rear of the most adverse seat position for seating with multiple seating positions, at seat level, in a forward direction. Repeat the operation for 10 cycles, 10s each cycle. If the item tends to overturn, reduce the force to a magnitude that just prevents overturning.	NA
Leg sideways static load test (BS EN 1728:2012, 6.16)	Apply the seat load 1000N at a suitable position across the seat but not more than 150 mm from the unloaded edge of the seat. Apply a horizontal force 300N centrally to the unrestrained side of the seat, at seat level, in a direction towards the restrained feet. Repeat the operation for 10 cycles, 10s each cycle. If the item tends to overturn, reduce the force to a magnitude that just prevents overturning.	NA



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Test Item	Test Method & Test Requirement	Test Result
Seat impact test (BS EN 1728:2012, 6.24)	Allow the seat impactor to fall freely from a height 180 mm onto the seat loading position. Apply the operation for 10 cycles. Repeat the test at one other position considered likely to cause failure, but not less than 100 mm from any edge of the seat.	PASS
Backwards fall test (BS EN 1728:2012, 6.28)	This test is only for single seating units where the back will be the first part of the structure to strike the floor and the force used to overturn the chair rearwards is less than 30 N. Apply a rearward horizontal load to a point 50 mm below the top of the back rest in the centre of the back rest. Push the top of the back rest rearwards and allow it to fall freely on its back onto the rubber faced test floor without initial force or velocity. Repeat the operation for 5 cycles.	PASS
Back impact test (BS EN 1728:2012, 6.25)	This test is for all seating not tested in accordance with Backwards Fall Test. With the front legs, feet or castors restrained by stops from moving forward, strike the structure of the centre of the top outside of the back with the impact hammer through a height 120 mm (or angle 28°). Repeat the operation for 10 cycles.	NA
<b>Information for use (BS EN 12520:2015, 6)</b>		
Information for use (BS EN 12520:2015, 6)	Information for use shall be available in the language of the country in which it will be delivered to the end user. It shall contain at least the following details: a) assembly instructions, where applicable; b) instructions for the care and maintenance of the seating; c) if the seating is fitted with seat height adjustments with energy accumulators, an additional note is required pointing out that only trained personnel may replace or repair seat height adjustment components with energy accumulators.	NP

### Remark:

1. NA = Not applicable; NP = Not provided
2. Sample overall dimension: 675mm (L)×685mm (W)×965mm-1044mm (H); Radius of base: 330  
Sample weight: 13.25kg



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**Photo Appendix**



Sample as received - View 1



Sample as received - View 2



Sample as received - View 3



Sample as received - View 4

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\*\*\*End of Report\*\*\*



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