T E S T – R E P O R T

1803-0194101R01

Client:	*Name:*	
	Street:	
	Place:	
	Country:	

Device:	*Test item:*	Camping Beach mat with Back rest		
	Color:	Cockatoo, Orange, Green		
	Style No.:			
	Order No.:			
	Article No.:	80336		
	Date of receipt:	2018-12-13	*Sample No:*	201812109

Test:	*Description:*	Mechanical tests for Camping Beach mat with Back rest		
	Standards:	EN 581-1:2017 Outdoor furniture – Seating and tables for camping, domestic and contract use – Part 1: General safety requirements EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating (except clause 8 Information for use)		
	Notes:	The test load and force was according to the client's claimed (maximum load: 150 kg)		
	Date of report:	2018-12-21	*Pages of report:*	34

Final result: **Pass**

Frank Chen Test Engineer	Kevon Kang Test Engineer
Approved by	Reviewed by

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1: Specification of Sample	
Rated information	-
Other information	-

2: Relevant Certification or Report (If the technical document is applicable)		
Document	Certification No. or Report No. / Issued by	Compliance or not
Safety report or license	N/A	N/A
National differences	N/A	N/A
CDF	N/A	N/A

3: Construction Data Form			
Item	**Dimension**	**Information about Dimension**	**Compliance or not**
1	Weight (kg):	1.3	Measured
2	Dimension of sample (cm):	52 x 159 x 2.3	Measured
Remark	All information in the table was found on the actual product. The dimension measured actually shall be within 5%		

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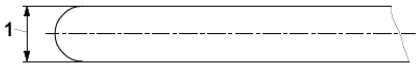
4: Purpose of examination – refer to EN 581-1:2017 Outdoor furniture – Seating and tables for camping, domestic and contract use – Part 1: General safety requirements			
Clauses	**Check points**	**Remark**	**Result**
1	Scope This part of EN 581 specifies the general safety requirements for outdoor seating and tables for camping, domestic and contract for use by adults, without regard to materials, design/construction or manufacturing processes. It does not apply to seating for spectator facilities. It does not include requirements for the durability of upholstery materials, castors, reclining and tilting mechanisms and seat height adjustment mechanisms. Mechanical safety requirements are covered by EN 581-2 for seating and EN 581-3 for tables. Annex A (informative) is a schematic presentation of requirements and conditions concerning shear and squeeze points. Annex B (informative) is a rationale concerning fingers injury.	The sample is a lounger for camping use. Maximum load: 150 kg	P
2	Normative references	-	-
3	Terms and definitions	-	-
4	Test probe There shall be three cylindrical probes with diameters of $7^{+0}_{-0.1}$ mm, $12^{+0.1}_{-0}$ mm and $18^{+0.1}_{-0}$ mm with hemispherical ends, see Figure 1  **Key** 1 Ø $7^{+0}_{-0,1}$ mm, Ø $12^{+0,1}_{-0}$ mm and Ø $18^{+0,1}_{-0}$ mm **Figure 1 — Measuring probes**	3 probes having diameters of 7 mm, 12 mm and 18 mm with hemispherical end	P
5	Safety requirements	Details see below results	P
5.1	General In order to avoid physical injury when the product is in its intended position of use, all edges and corners shall be rounded, chamfered or otherwise protected. This applies to: — Seating: Edges of the seat, back rest and arm rests and any part of the bottom surface of the seat at	No sharp edges and corners.	P

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4: Purpose of examination – refer to EN 581-1:2017 Outdoor furniture – Seating and tables for camping, domestic and contract use – Part 1: General safety requirements			
Clauses	**Check points**	**Remark**	**Result**
	a distance less than 120 mm from any edge, where a finger can commonly access; — Tables: Table tops, any part of the underside of the top surface at a distance less than 500 mm from any edge below the table, where a knee and/or an arm can commonly access. All other parts shall be free from burrs, sharp edges and sharp points. Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided. It shall not be possible for any load bearing part of the furniture to come loose unintentionally. All parts which are lubricated to assist sliding shall be designed to protect users from lubricant stains when in normal use.		
5.2	Tubular components There shall be no accessible holes in the ends of tubular components with a diameter between 7 mm to 12 mm and with a depth more or equal to 10 mm. The bottom of tubular legs in contact with the floor shall be closed or capped, however, holes in them are allowed as long as they are not between 7 and 12 mm. These requirements shall be assessed using the test probes (Clause 4).	All the ends of hollow components are closed or capped	P
5.3	Shear and squeeze points	Details see below results	P
5.3.1	Shear and squeeze points when setting up and folding Unless 5.3.2 or 5.3.3 are applicable, shear and squeeze points that are created only during erecting, adjusting or folding away are acceptable providing the user can be assumed to be in control of his/her movements and to be able to cease applying the force immediately on experiencing pain.	No shear and squeeze points accessible	P
5.3.2	Shear and squeeze points under the influence of powered mechanisms There shall be no accessible shear and squeeze points created by parts of the furniture operated by powered mechanisms, e.g. mechanical springs and	Not applicable as no powered mechanisms	N/A

4: Purpose of examination – refer to EN 581-1:2017 Outdoor furniture – Seating and tables for camping, domestic and contract use – Part 1: General safety requirements			
Clauses	**Check points**	**Remark**	**Result**
	gas lifts. This requirement shall be assessed using the test probes (Clause 4).		
5.3.3	Shear and squeeze points during use There shall be no accessible shear and squeeze points created by loads applied during normal use. Shear and squeeze points are not acceptable if there is a risk of injury 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. This requirement shall be assessed using the test probes (Clause 4). For loungers, the loads applied during normal use are the loads used for the following mechanical tests in Table 1 of EN 581-2:2015: — Test 2: Additional seat and leg rest static load; — Test 3: Seat and back durability; — Test 4: Additional seat durability; — Test 5: Durability on back rest mechanism. For other seating, the loads applied during normal use are the loads used for the following mechanical tests in Table 2 of EN 581-2:2015: — Test 2: Seat front edge static; — Test 3: Combined seat and back durability; — Test 4: Durability test on seating with a multi-position back. For tables, the loads applied during normal use are the loads used for the following mechanical tests in Table 1 of EN 581-3:2007: — Test 1: Vertical static load on main surface; — Test 4: Vertical static load on ancillary surface; — Test 5: Horizontal durability test.	The following test items were conducted For lounger: Seat and back durability No shear and squeeze points accessible during test	P

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5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating			
Clauses	**Check points**	**Remark**	**Result**
1	Scope This European Standard specifies the minimum requirements for the safety, strength and durability of all types of outdoor seating for adults, without regard to materials, design/construction or manufacturing processes. It does not apply to street furniture. It does not apply to removable upholstery and covering. It does not include requirements for the durability of castors/wheels and height adjustment mechanisms. It does not include requirements for electrical safety. It does not include requirements for the resistance to ageing and degradation caused by light, temperature and moisture. The test requirements contained within this standard are based on use by persons weighing up to 110 kg.	The sample was a lounger for camping use for adults Maximum load: 150 kg A coefficient *k* was introduced for testing: $k = \frac{150\ \text{kg}}{110\ \text{kg}} = 1.36$ the following test parameters were corrected according to this coefficient	P
2	Normative references	-	-
3	Terms and definitions Lounger seating intended for reclined posture with at least one backrest position with an “teta angle” between 0° and 45° and a leg rest which is integral part of the product and which is intended to support the full body weight of a user	The angle of backrest can be adjusted. The product can be considered to be a lounger	P
4	Testing Testing shall be carried out as specified in EN 1728 and EN 1022. With the exception of seating with a seat and back made of one piece of flexible material (e.g. textile), attached at the upper and lower edges only, seat and back loading points shall be determined according to EN 1728. For seating with a seat and back made of one piece of flexible material (e.g. textile), attached at the upper and lower edges only, the loading point shall be the lowest point when a rolling cylinder (Clause 5) is placed in the seating.	Testing was carried out as specified in EN 1728 and EN 1022.	P
5	Test equipment In derogation to EN 1728 and EN 1022, the loading position template for seating with seat and back made of one suspended or hanging piece of flexible material (e.g. textile) shall be a cylinder with a mass	The test equipment meet the requirement.	P

5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating			
Clauses	**Check points**	**Remark**	**Result**
	of (1 ± 0,5) kg and a diameter of (70 ± 10) mm. Axis of the cylinder shall be perpendicular to the median plane of the seat. Let the cylinder roll from the higher part of the top front of the flexible part. Where the cylinder stops the seat load shall be applied. NOTE A suitable length of the cylinder is 200 mm.		
6	Safety, strength and durability requirements for loungers	Details see below results.	P
6.1	General Before and after the strength, durability and stability tests are carried out; the EN 581-1 requirements shall be fulfilled.	All the requirements of EN 581-1 were fulfilled.	P
6.2	Stability, strength and durability	Details see below results.	P
6.2.1	Test sequence and parameters The lounger shall be tested following the order listed in Table 1.	All the test sequence and test parameters met the requirement	P

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Clauses	Check points	Remark	Result

Table 1 — Test sequence and test parameters for loungers

Test	References	Test parameters	Camping	Domestic	Contract
1. Seat and back static load test [a]	EN 1728:2012, 8.2	Specified seat load, N Specified backrest load, N Minimum specified force F2 (back), N Cycles Additional cycle 30 min ± 10 s	1 100 - - 10 1	1 600 410 360 10 1	2 000 560 500 10 1
AC1 2. Additional seat and leg rest static load test	EN 1728:2012, 8.3	Seat load on loading point, N Force applied on D-E point, N Cycles Additional cycle 30 min ± 10 s	750 600 10 1	750 900 10 1	750 900 10 1 AC1
3. Seat and back durability test	EN 1728:2012, 8.4.1	Specified seat load, N Specified backrest load, N Minimum specified force F4 (back), N Cycles	750 250 220 12 500	1 000 333 300 25 000	1 000 333 300 50 000
4. Additional seat durability test	EN 1728:2012, 8.4.2	Specified force, N Cycles	750 5 000	1 000 10 000	1 000 20 000
5. Durability test on back rest mechanism	EN 1728:2012, 8.5	Specified force, N Seat load, N Cycles	190 1 000 5 000	250 1 000 10 000	250 1 000 20 000
AC1 6. Arm rest static load test	EN 1728:2012, 8.6	Vertical specified Force, N Cycles	- 10	700 10	900 [b] 10 AC1
7. Arm rest durability test	EN 1728:2012, 8.7	Specified force, N Cycles	400 5 000	400 10 000	400 30 000
8. Impact test	EN 1728:2012, 8.8	Drop height, mm Cycles	140 10	180 10	240 10
9. Lifting test for mobile loungers	EN 1728:2012, 8.9	Load, N Cycles	1 000 500	1 000 1 000	1 000 2 000
10. Forward stability [c, d]	A.1.2				
11. Rearward stability [c]	EN 1022:2005, 6.6 for upright position and 7.5 for most reclined position				
12. Sideways stability [c, d]	A.1.1				

[a] If seat and back are of one piece of flexible material (e.g. textile), only the tests on seat shall be carried out.

[b] If armrest is less than 15 mm wide, carry out test with 700 N.

[c] In the case of seating which might not fulfil the stability requirements before carrying out any tests, the applicable stability tests may be carried out before starting the sequence of tests specified in this table.

[d] This test is not applicable for seating with a seat height < 200 mm and a mass < 5 kg. The height shall be determined by measuring from the floor to the upper seating area on the geometrical centre of the unloaded seat.

EN 1728: 2012, 8.2	Seat and back static load test This test shall be carried out as described in 6.4. 6.4 Seat static load and back static load test Seat static load and back static load test Only the vertical seat static force shall be applied to items without a back rest. The test shall be carried out at the following positions: a) on the seat of an item with a single seat; b) simultaneously on both positions for an item with two seats;	Angle of back rest inclination: 53.2° Seat Force : 825 x k = 1122 N 10 cycles Additional cycle 30 min No damage after test.	P

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5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating			
Clauses	**Check points**	**Remark**	**Result**
	c) simultaneously on two adjacent seats in most adverse combination for an item with three or more seats. If the most adverse position cannot be determined the test shall be carried out at a maximum of two locations. During the test, load the seat(s) that are not being tested with the specified seat load. For parts not undergoing the test, the load shall be applied at the seat loading position. Seating with a fixed back position, and seating with reclining mechanisms that cannot be locked into a fixed position, shall be tested for the number of cycles specified. Seating fitted with a spring rocking action base or tilting mechanism that has a tension adjustment, shall be tested with the tension adjusted to its maximum value. Seating with reclining mechanisms that can be set or locked in a number of positions shall be tested for half the number of cycles specified in the most upright position, and half the number of cycles specified in the most adverse reclined position. NOTE The most adverse position is normally considered to be 10° above the fully reclined position for fully adjustable mechanisms, or one position up from fully reclined position for seating with multi-position back rests. Prevent the item from moving rearwards by placing stops behind the rear legs, feet or castors. Position the seat loading pad(s) at the seat loading position(s) determined by the loading point template. If the item has a back, position the centres of the back loading pad(s), either at the back loading position as determined by the loading point template or at 100 mm below the top of the back, whichever is the lower. All adjustable backs shall be set in the most adverse position. The angle of back rest inclination Ø, in degrees shall be measured.		

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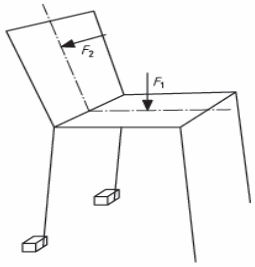
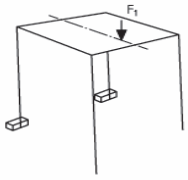
Clauses	Check points	Remark	Result
	Table 1 — Determination of seat and back force Angle of backrest inclination Ø | Seat force F_1 (N) | Back force F_2 (N) Back rest set to an angle 70° or more to the horizontal | Specified seat force | Specified back force Back rest set to an angle of less than 70°, but not less than 55° to the horizontal | Specified seat force x Sin (Ø) | ((Ø/60°) – 0,166 6) Specified seat force x Cos Ø Back rest set to an angle of less than 55° to the horizontal | 0,75 x Specified seat force | 0,75 x Specified seat force x Cos Ø Apply the downward force F1 (determined in Table 1) per seat loading pad to the seats (see a), b) and c) above). With the seat force maintained, apply the back force F2 (determined in Table 1) per back loading pad. When fully loaded, the back force shall act at (90 ± 10) º to the back rest plane. If the item tends to overturn, reduce F2 to a magnitude that just prevents rearwards overturning. F2 shall not be reduced below the minimum specified force. If the item tends to overturn at this force, the F1 shall be increased until this tendency ceases. Report the force(s) used. Remove the F2 and then the F1. This constitutes one cycle. F1 shall be maintained as long as necessary for the F2 to be applied. For designs where it is not possible to carry out the above test procedure, the seat and back test may be performed by carrying out the seat test followed by the back test with a static load on the seat.  a) Example for chairs  b) Example for stools		
EN 1728: 2012, 8.3	Additional seat and leg rest static load test Load the seat with the specified seat load at the seat loading point (6.2) and maintain the load for the duration of the test. Using the seat loading pad (5.4), apply the specified force at the most adverse position between point D	Not available for no leg equipped	N/A

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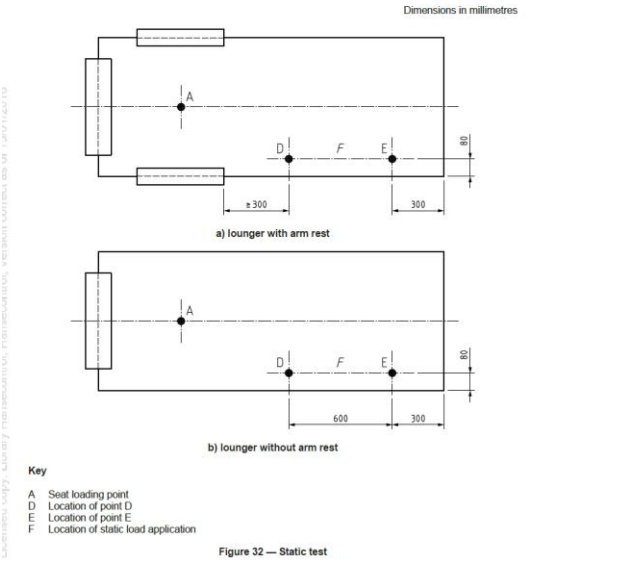
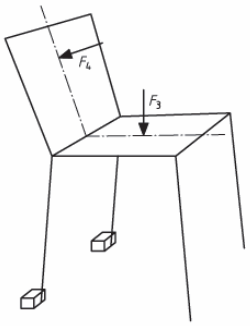
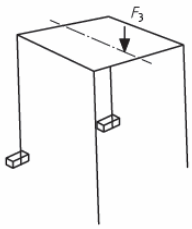
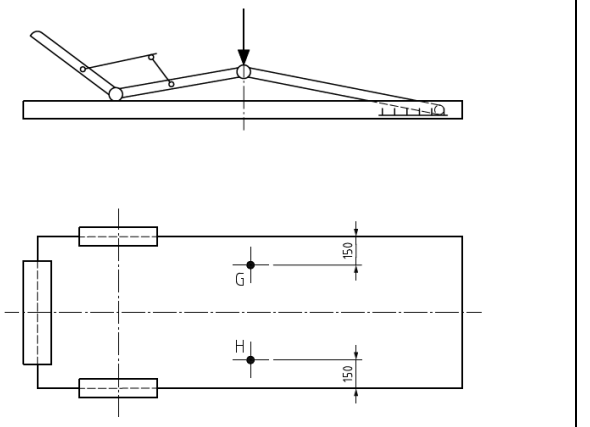
Clauses	**Check points**	**Remark**	**Result**
	and E specified in Figure 32. If the item tends to overturn, apply a load to the opposite side of to the most adverse load position, with a load just sufficient to prevent overturning.  Figure 32 — Static test		
EN 1728: 2012, 8.4.1	Seat and back durability test The test shall be carried out as described in 6.17. Combined Seat and back durability test Only the vertical seat durability force shall be applied to items without a back rest. The test shall be carried out on the same positions as used for the seat static load test During the test, load the seat(s) that are not being tested with the specified seat load for parts not undergoing test; the load shall be applied at the seat loading position. Seating with a fixed back position, and seating with reclining mechanisms that cannot be locked into a fixed position, shall be tested for the number of cycles specified. Seating fitted with a spring rocking action base or tilting mechanism that has a tension adjustment, shall be tested with the tension adjusted to its maximum value. Seating with reclining mechanisms that can be set or locked in a number of positions shall be tested for half the number of cycles specified in the most upright	The product is for camping use Stage 1: Angle of back rest inclination: 53.2° Seat Force = 0.75 x 750 x k = 764 N on point A Back Force = 0.75 x 750 x cos 53.2° x k = 470 N on point B 6250 cycles No fracture or breakage on any components Stage 2: Angle of back rest inclination: 58.3° Seat Force = 0.75 x 750 x k = 764 N on point A Back Force = 0.75 x 750 x cos 58.3° x k = 398 N on point B	P

5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating

Clauses	Check points	Remark	Result
	position, and half the number of cycles specified in the most adverse reclined position. NOTE The most adverse position is normally considered to be 10° above the fully reclined position for fully adjustable mechanisms, or one position up from fully reclined position for seating with multi-position back rests. Prevent the item from moving rearwards by placing stops behind the rear legs, feet or castors. Position the seat loading pad(s) at the seat loading position(s) determined by the loading point template. If the item has a back, position the centres of the back loading pad(s), either at the back loading position as determined by the loading point template or at 100 mm below the top of the back, whichever is the lower. All adjustable backs shall be set in the most adverse position. The angle of back rest inclination Ø, in degrees shall be measured. Table 2 — Determination of seat and back force Angle of backrest inclination Ø / Seat force F_3 (N) / Back force F_4 (N) Back rest set to an angle 70° or more to the horizontal / Specified seat force / Specified back force Back rest set to an angle of less than 70°, but not less than 55° to the horizontal / Specified seat force x Sin (Ø) / ((Ø/60°) – 0,166 6) Specified seat force x Cos Ø Back rest set to an angle of less than 55° to the horizontal / 0,75 x Specified seat force / 0,75 x Specified seat force x Cos Ø Apply the downward force F3 (determined in Table 2) per pad to the seats (see a), b) and c) defined in 6.4). With the seat force maintained, apply the back force F4 (determined in Table 2) per pad. When fully loaded, the back force shall act at (90 ± 10)° to the back rest plane. If the item tends to overturn, reduce F4 to a magnitude that just prevents rearwards overturning. F4 shall not be reduced below the minimum specified force. If the item tends to overturn at this force, the F3 shall be increased until this tendency ceases. Report the force(s) used. Remove the F4 and then the F3. This constitutes one cycle. F3 shall be maintained as long as necessary for the F4 to be applied. For designs were it is not possible to carry out the above test procedure the seat and back test may be	6250 cycles No fracture or breakage on any components	

5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating			
Clauses	**Check points**	**Remark**	**Result**
	performed by carrying out the seat test followed by the back test with a static load on the seat.  a) Example for chairs  b) Example for stools		
EN 1728: 2012, 8.4.2	Additional seat durability test Apply the vertical seat durability load specified using the smaller seat loading pad (5.5) alternately at points G and H (see Figure 33). Dimensions in millimetres  a) Lounger with adjustment	Not available for no leg equipped	N/A

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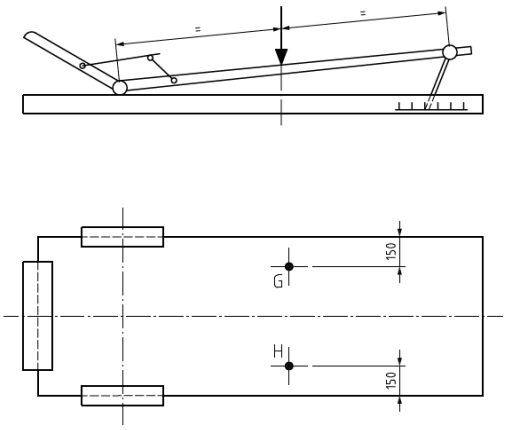
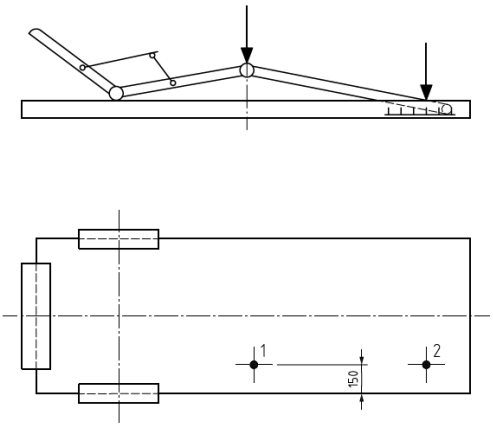
Clauses	**Check points**	**Remark**	**Result**
	 b) Lounger without adjustment Key G Loading point H Loading point Figure 33 — Seat fatigue test		
EN 1728: 2012,8.5	Durability test on back rest mechanism The test shall be carried out as described in 6.19. Durability test on seating with a multi-position back rest This test is only applicable to seating with three or more manually adjustable reclined positions of the back rest. Place the seating in normal use position, with the back rest in the most adverse position. If the most adverse position cannot be determined, carry out the test with the back rest in the mid position. Prevent the item of seating from moving rearwards by placing stops behind the rear feet, legs or castors. Apply the specified load to the seat loading point. The height of the back rest loading points shall be 100 mm above the back loading point. They shall be 50 mm from the right and left outer edges of the back rest. Apply rearwards alternating forces perpendicularly to the back rest, as specified. Carry out the test for the number of cycles specified. 1 cycle = 1 application of force on the right side and 1 application of force on the left side. NOTE This test is often used for testing outdoor reclining seating.	Not available for no back rest mechanism equipped	N/A

5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating			
Clauses	**Check points**	**Remark**	**Result**
EN 1728: 2012, 8.6	Arm rest static load test This test shall be carried out as described in 6.11. Arm rest static load test For seating which only has one arm rest, or which has two arm rests where the distance between the centre of the arm rests is more than 1000 mm, apply the specified vertical force 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. If the chair tends to overturn, apply a load on the side of the seat opposite to the arm rest under test large enough to prevent the chair from overturning. For seating with two arm rests, where the distance between the centre of the arm rests is 1 000 mm or less, apply the specified vertical force simultaneously to both arm rests at the points along the arm rest most likely to cause failure, but not less than 100 mm from either end of the arm rest structure. For seating with three or more arm rests, carry out the test on one pair of adjacent arm rests. All different arm rest designs shall be tested. Apply the force through the smaller seat loading pad or the local loading pad.	No applicable as no arm rest equipped	N/A
EN 1728: 2012, 8.7	Arm rest durability test This test shall be carried out as described in 6.20. Arm rest durability test Place the chair on the test floor with stops against the outside of the legs, feet or castors. The test forces shall be applied simultaneously 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. Using the arm rest durability test apparatus, adjust the apparatus so that with no load applied to arm rests the angle of load application arms is (10 ± 1)° to the vertical and the distance between the low friction pivots and the horizontal surface of the arm loading devices is (600 ± 10) mm. With the apparatus set as above, apply the specified load for the required number of cycles to both arm rests simultaneously for seating with only one seating position and to one arm rest only for seating with multiple seating positions.	No applicable as no arm rest equipped	N/A

5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating			
Clauses	**Check points**	**Remark**	**Result**
EN 1728: 2012, 8.8	Impact test With the exception of the application points specified below, the impact test procedure is performed in accordance in 6.24. The application points shall be: -- the most adverse point on the seat-leg rest section, -- 150 mm in from the edge of the lounger, and, --directly on the end support,150 mm from any edge of the lounger (see Figure 34) on the same side of the lounger as the first impact position. NOTE The most adverse point is normally over any adjustment mechanism, or the mid-point of the span between seat-leg rest section supports. Dimensions in millimetres  a) Lounger with adjustment	No applicable as no leg equipped	N/A

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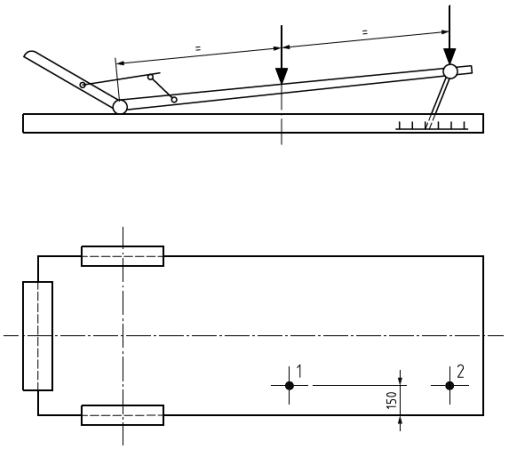
5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating			
Clauses	**Check points**	**Remark**	**Result**
	 b) Lounger without adjustment Key 1 Impact point – most adverse position 2 Impact point – end support Figure 34 — Impact test 6.24 Seat impact test Place one layer of 25 mm thick foam on the seat. Determine the height of fall from the position of the impactor when it is resting on the surface of that layer of foam. Place a second layer of 25 mm thick foam between the striking surface and the chair seat for the test. Allow the seat impactor to fall freely from the height specified onto the seat loading position, as specified by the loading point template. Repeat the test at one other position considered likely to cause failure, but not less than 100 mm from any edge of the seat. For multiple seating units, apply the test to one end seat and an intermediate seating position.		
EN 1728: 2012,8.9	Lifting test for mobile loungers This test is only applicable to mobile loungers that are designed to be moved whilst an occupant is seated. Load the seat with the specified seat load at the seat loading point (6.2) and maintain the load for the duration of the test. Lift the foot end of the lounger up to a height so that only the wheels are in contact with the floor surface for the specified number of cycles (see Figure 35).	Not applicable as no mobile component	N/A

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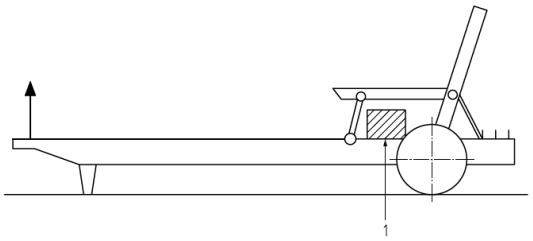
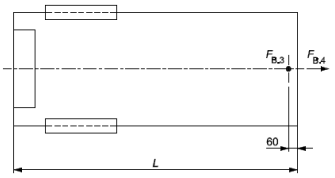
Clauses	**Check points**	**Remark**	**Result**
	Dimensions in millimetres  Key 1 Seat loading point (6.2) Figure 35 — Lifting test		
A.1.2	Forward stability Apply the downwards force FB.3 as specified in Table A.1 (see Figure A.2). Apply a force FB.4 horizontally outwards. Maintain both forces for at least 5 s. Dimensions in millimetres  Key *L* length of the lounger Figure A.2 — Forward stability Table A.1 — Forces value Force name / Force value N $F_{B.1}$ 600 $F_{B.2}$ 250 $F_{B.3}$ 600 AC1 $F_{B.4}$ 20 AC1	No applicable as no leg equipped	N/A
EN 1022: 2005, 6.6 & 7.5	Rearward stability 6.6 Rearwards overbalancing, all seating with backs This sub-clause only applies to seating with backs extending 50 mm or more above the unloaded seat. Position the seating on the floor surface (4.8) with the rear legs or base restrained by stops (4.7). All adjustable backs shall be set in their most upright position. Apply a vertical force of 600 N to the seat by means of the loading pad (4.2) at the seat loading point (A) determined by the loading point template. Determine the distance (H) in millimetres between the	No applicable as no leg equipped	N/A

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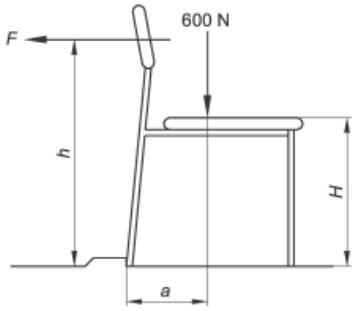
Clauses	**Check points**	**Remark**	**Result**
	loaded seat and the floor. For seating having a value of H 2 720mm use a force F of 80 N. For seating having a value of H < 720 mm calculate the force F, in newtons, required from the following formula: F = 0,2857 (1000-H) where: H is in millimetres F is in newtons. Apply the force F horizontally for at least 5 s in a rearward direction to the back of the seating at the point (B) determined by the loading point template, or at the top edge of the back rest, whichever is the lower (Figure 7) When the seating has more than one sitting place, carry out the procedure on two most adverse sitting places simultaneously. For calculative method see Clause 8.  Figure 7 — Rearwards overbalancing 7.5 Reclining chairs with footrest The test method applies to all values of 62 10 and less than 55° and values of y between 90° and 170°. With the chair in the fully reclined configuration, load the back of the chair with eight loading discs (4.4) by means of the support device (4.5) and place three loading discs onto the footrest (Figures 10a and 10b) at a distance Z from the intersection of the seat and back (Figure 11).		

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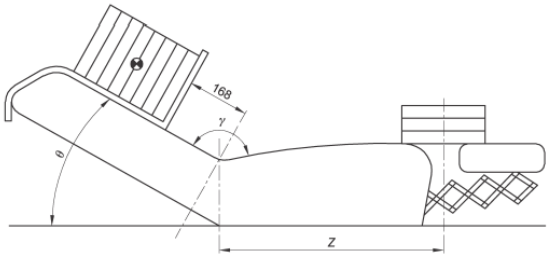
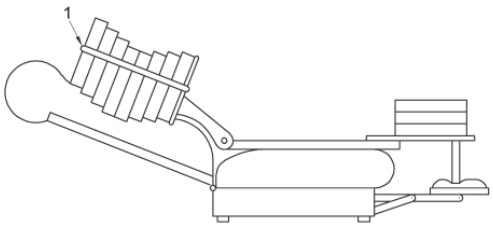
5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating			
Clauses	**Check points**	**Remark**	**Result**
	 a)  b) **Key** 1 Elastic cord a) Test for reclining chairs with footrest b) Practical example of test method: reclining chairs with footrest **Figure 10 — Test for reclining chairs with footrest with practical example**		

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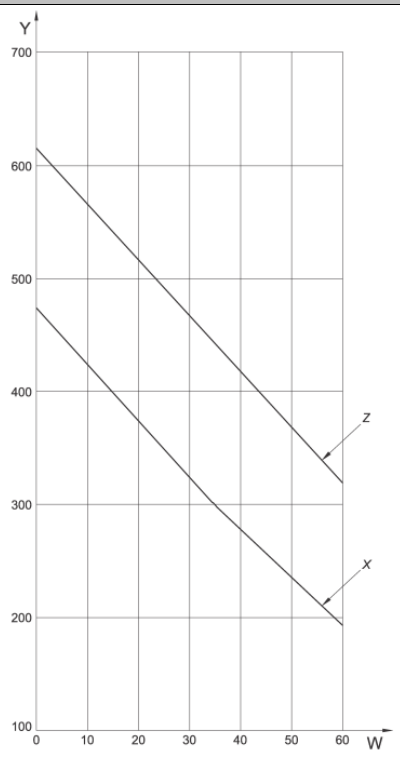
Clauses	**Check points**	**Remark**	**Result**
	 **Key** Y Values of Z and X in millimetres W θ in degrees **Figure 11 — Values of Z and X (mm)**		
A.1.1	Sideways stability The seat loading points shall be on a line 60 mm from the side edge and the first point shall be 300 mm from the front edge. The following loading points shall be placed at least 600 mm apart from each other and at least 300 mm from an armrest or the rear edge of the lounger. See Figure A.1. The forces shall be applied using the loading pad defined in EN 1022:2005, 4.2. If the arm rest is more than 400 mm in length apply additional vertical force FB.2 in the centre of it. Apply simultaneously the downwards forces FB.1 on seat as specified in Table A.1 and the load on the arm rest (see Figure A.1). Maintain forces for 5 s.	No applicable as no leg equipped	N/A

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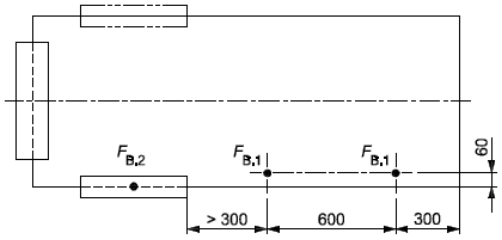
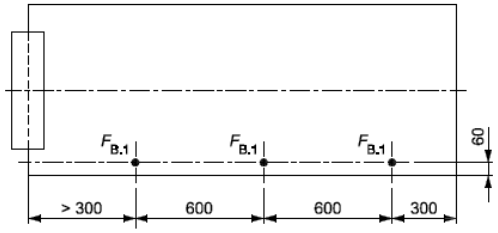
Clauses	**Check points**	**Remark**	**Result**
	 a) Lounger with arm rest  b) Lounger without arm rest Figure A.1 — Example of application points for sideway stability		
7	Safety, strength and durability requirements for other seating	Not applicable as the sample was a lounger	N/A
7.1	General Before and after the strength, durability and stability tests are carried out, the requirements of EN 581-1 shall be fulfilled.	Not applicable as the sample was a lounger	N/A
7.2	Stability, strength and durability	Not applicable as the sample was a lounger	N/A
7.2.1	Test sequence and parameters The seating shall be tested for strength, durability and stability following the order listed in Table 2.	Not applicable as the sample was a lounger	N/A

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Clauses	Check points	Remark	Result

Table 2 — Test sequence and test parameters for other seating

Test	Reference	Test parameters	Camping	Domestic	Contract
1. Seat static load and back static load test [a]	EN 1728:2012, 6.4	Specified seat load, N	1 100	1 600	2 000
		Load applied on seat not being tested, N	750	750	750
		Specified backrest load, N	-	410	560
		Minimum specified force F2 (back), N	-	360	500
		Cycles	10	10	10
		Additional cycle 30 min ± 10 s	1	1	1
2. Seat front edge static load	EN 1728:2012, 6.5	Specified force, N	1 100	1 300	1 300
		Seat load, N	750	750	750
		Cycles	10	10	10
3. combined Seat and back durability test [a]	EN 1728:2012, 6.17	Specified seat load, N	1 000	1 000	1 000
		Seat load, N	750	750	750
		Specified backrest load, N	250	333	333
		Minimum specified force F4 (back), N	220	300	300
		Cycles	12 500	25 000	50 000
4. Durability test on seating with a multi-position back rest	EN 1728:2012, 6.19	Seat load, N	750	750	750
		Specified force, N	190	250	250
		Cycles	5 000	10 000	20 000
[AS] 5. Arm rest static load test	EN 1728:2012, 6.11	Vertical specified Force, N	-	700	900 [b]
		Cycles	10	10	10 [AS]
6. Arm rest durability test	EN 1728:2012, 6.20	Specified force, N	400	400	400
		Cycles	5 000	10 000	30 000
7. Leg forward static load test	EN 1728:2012, 6.15	Seat load, N	750	1 000	1 000
		Horizontal specified forces, N	250	300	400
		Minimum specified force, N	150	175	250
		Cycles	10	10	10
8. Leg sideways static load test	EN 1728:2012, 6.16	Seat load, N	750	1 000	1 000
		Horizontal specified forces, N	200	300	300
		Minimum specified force, N	150	175	200
		Cycles	10	10	10
9. Seat impact test [c]	EN 1728:2012, 6.24	Drop height, mm	140	180	240
		Cycles	10	10	10
10. Foot rest static test [d]	EN 1728:2012, 6.8	Vertical specified force, N	-	1 000	1 200
		Cycles	10	10	10
11. Forward stability [a,f]	EN 1022				
12. Rearward stability [f]	EN 1022				
13. Sideways stability [a,f]	EN 1022				

EN 1728: 2012, 6.4	Seat static load and back static load test Seat static load and back static load test Only the vertical seat static force shall be applied to items without a back rest. The test shall be carried out at the following positions: a) on the seat of an item with a single seat; b) simultaneously on both positions for an item with two seats; c) simultaneously on two adjacent seats in most adverse combination for an item with three or more seats. If the most adverse position cannot be	Not applicable as the sample was a lounger	N/A

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Clauses	Check points	Remark	Result
	determined the test shall be carried out at a maximum of two locations. During the test, load the seat(s) that are not being tested with the specified seat load. For parts not undergoing the test, the load shall be applied at the seat loading position. Seating with a fixed back position, and seating with reclining mechanisms that cannot be locked into a fixed position, shall be tested for the number of cycles specified. Seating fitted with a spring rocking action base or tilting mechanism that has a tension adjustment, shall be tested with the tension adjusted to its maximum value. Seating with reclining mechanisms that can be set or locked in a number of positions shall be tested for half the number of cycles specified in the most upright position, and half the number of cycles specified in the most adverse reclined position. NOTE The most adverse position is normally considered to be 10° above the fully reclined position for fully adjustable mechanisms, or one position up from fully reclined position for seating with multi-position back rests. Prevent the item from moving rearwards by placing stops behind the rear legs, feet or castors. Position the seat loading pad(s) at the seat loading position(s) determined by the loading point template. If the item has a back, position the centres of the back loading pad(s), either at the back loading position as determined by the loading point template or at 100 mm below the top of the back, whichever is the lower. All adjustable backs shall be set in the most adverse position. The angle of back rest inclination Ø, in degrees shall be measured. Table 1 — Determination of seat and back force Angle of backrest inclination Ø / Seat force F_1 (N) / Back force F_2 (N) Back rest set to an angle 70° or more to the horizontal / Specified seat force / Specified back force Back rest set to an angle of less than 70°, but not less than 55° to the horizontal / Specified seat force x Sin (Ø) / ((Ø/60°) – 0,166 6) Specified seat force x Cos Ø Back rest set to an angle of less than 55° to the horizontal / 0,75 x Specified seat force / 0,75 x Specified seat force x Cos Ø		

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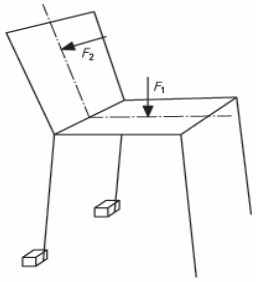
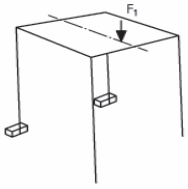
Clauses	**Check points**	**Remark**	**Result**
	Apply the downward force F1 (determined in Table 1) per seat loading pad to the seats (see a), b) and c) above). With the seat force maintained, apply the back force F2 (determined in Table 1) per back loading pad. When fully loaded, the back force shall act at (90 ± 10) º to the back rest plane. If the item tends to overturn, reduce F2 to a magnitude that just prevents rearwards overturning. F2 shall not be reduced below the minimum specified force. If the item tends to overturn at this force, the F1 shall be increased until this tendency ceases. Report the force(s) used. Remove the F2 and then the F1. This constitutes one cycle. F1 shall be maintained as long as necessary for the F2 to be applied. For designs where it is not possible to carry out the above test procedure, the seat and back test may be performed by carrying out the seat test followed by the back test with a static load on the seat.  a) Example for chairs  b) Example for stools		
EN 1728: 2012, 6.5	Seat front edge static load Apply the specified force using the seat loading pad at a point on the seat centre line 100 mm inwards from the front edge of the structure. If the seating tends to overturn, reduce the force(s) to a magnitude that just prevents overturning. Record the actual force(s) used.	Not applicable as the sample was a lounger	N/A
EN 1728: 2012, 6.17	combined Seat and back durability test Combined Seat and back durability test Only the vertical seat durability force shall be applied to items without a back rest. The test shall be carried out on the same positions as	Not applicable as the sample was a lounger	N/A

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Clauses	Check points	Remark	Result
	used for the seat static load test During the test, load the seat(s) that are not being tested with the specified seat load for parts not undergoing test; the load shall be applied at the seat loading position. Seating with a fixed back position, and seating with reclining mechanisms that cannot be locked into a fixed position, shall be tested for the number of cycles specified. Seating fitted with a spring rocking action base or tilting mechanism that has a tension adjustment, shall be tested with the tension adjusted to its maximum value. Seating with reclining mechanisms that can be set or locked in a number of positions shall be tested for half the number of cycles specified in the most upright position, and half the number of cycles specified in the most adverse reclined position. NOTE The most adverse position is normally considered to be 10° above the fully reclined position for fully adjustable mechanisms, or one position up from fully reclined position for seating with multi-position back rests. Prevent the item from moving rearwards by placing stops behind the rear legs, feet or castors. Position the seat loading pad(s) at the seat loading position(s) determined by the loading point template. If the item has a back, position the centres of the back loading pad(s), either at the back loading position as determined by the loading point template or at 100 mm below the top of the back, whichever is the lower. All adjustable backs shall be set in the most adverse position. The angle of back rest inclination Ø, in degrees shall be measured. Table 2 — Determination of seat and back force Angle of backrest inclination Ø / Seat force F_3 (N) / Back force F_4 (N) Back rest set to an angle 70° or more to the horizontal / Specified seat force / Specified back force Back rest set to an angle of less than 70°, but not less than 55° to the horizontal / Specified seat force x Sin (Ø) / ((Ø/60°) – 0,166 6) Specified seat force x Cos Ø Back rest set to an angle of less than 55° to the horizontal / 0,75 x Specified seat force / 0,75 x Specified seat force x Cos Ø Apply the downward force F3 (determined in Table 2)		

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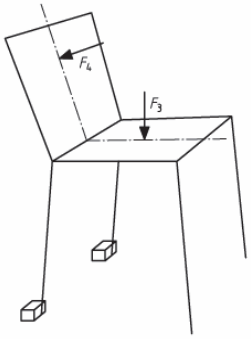
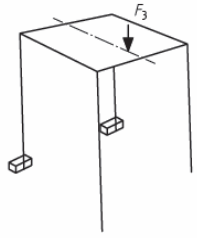
Clauses	**Check points**	**Remark**	**Result**
	per pad to the seats (see a), b) and c) defined in 6.4). With the seat force maintained, apply the back force F4 (determined in Table 2) per pad. When fully loaded, the back force shall act at (90 ± 10)° to the back rest plane. If the item tends to overturn, reduce F4 to a magnitude that just prevents rearwards overturning. F4 shall not be reduced below the minimum specified force. If the item tends to overturn at this force, the F3 shall be increased until this tendency ceases. Report the force(s) used. Remove the F4 and then the F3. This constitutes one cycle. F3 shall be maintained as long as necessary for the F4 to be applied. For designs were it is not possible to carry out the above test procedure the seat and back test may be performed by carrying out the seat test followed by the back test with a static load on the seat.  a) Example for chairs  b) Example for stools		
EN 1728: 2012, 6.19	Durability test on seating with a multi-position back rest This test is only applicable to seating with three or more manually adjustable reclined positions of the back rest. Place the seating in normal use position, with the back rest in the most adverse position. If the most adverse position cannot be determined, carry out the test with the back rest in the mid position. Prevent the item of seating from moving rearwards by placing stops behind the rear feet, legs or castors. Apply the specified load to the seat loading point. The height of the back rest loading points shall be	Not applicable as the sample was a lounger	N/A

5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating			
Clauses	**Check points**	**Remark**	**Result**
	100 mm above the back loading point. They shall be 50 mm from the right and left outer edges of the back rest. Apply rearwards alternating forces perpendicularly to the back rest, as specified. Carry out the test for the number of cycles specified. 1 cycle = 1 application of force on the right side and 1 application of force on the left side. NOTE This test is often used for testing outdoor reclining seating.		
EN 1728: 2012, 6.11	Arm rest static load test For seating which only has one arm rest, or which has two arm rests where the distance between the centre of the arm rests is more than 1000 mm, apply the specified vertical force 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. If the chair tends to overturn, apply a load on the side of the seat opposite to the arm rest under test large enough to prevent the chair from overturning. For seating with two arm rests, where the distance between the centre of the arm rests is 1 000 mm or less, apply the specified vertical force simultaneously to both arm rests at the points along the arm rest most likely to cause failure, but not less than 100 mm from either end of the arm rest structure. For seating with three or more arm rests, carry out the test on one pair of adjacent arm rests. All different arm rest designs shall be tested. Apply the force through the smaller seat loading pad or the local loading pad.	Not applicable as the sample was a lounger	N/A
EN 1728: 2012, 6.20	Arm rest durability test Place the chair on the test floor with stops against the outside of the legs, feet or castors. The test forces shall be applied simultaneously 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. Using the arm rest durability test apparatus, adjust the apparatus so that with no load applied to arm rests the angle of load application arms is (10 ± 1)° to the vertical and the distance between the low friction	Not applicable as the sample was a lounger	N/A

5: Purpose of examination – refer to EN 581-2:2015 Outdoor furniture — Seating and tables for camping, domestic and contract use – Part 2: Mechanical safety requirements and test methods for seating			
Clauses	**Check points**	**Remark**	**Result**
	pivots and the horizontal surface of the arm loading devices is (600 ± 10) mm. With the apparatus set as above, apply the specified load for the required number of cycles to both arm rests simultaneously for seating with only one seating position and to one arm rest only for seating with multiple seating positions.		
EN 1728: 2012, 6.15	Leg forward static load test Leg forward static load test Prevent the unit from movement by stops against the front legs. Apply the specified seat load at the seat loading position determined by the loading point template to all seat positions. For seating with a single seat, apply a horizontal force centrally to the rear of the seat, at seat level, in a forward direction, by means of the local loading pad. For seating with multiple seating positions, apply the horizontal force centrally to the rear of the most adverse seat position, at seat level, in a forward direction, by means of the local loading pad. For seating with only three legs, one foot on the fore and aft centre line of the item of seating and one other foot shall be restrained by stops. If the item tends to overturn before the specified force is reached, reduce the force to a magnitude that just prevents forward overturning, but not lower than the minimum specified force. Record the actual force used.	Not applicable as the sample was a lounger	N/A
EN 1728: 2012, 6.16	Leg sideways static load test Leg sideways static load test Prevent the unit from movement by stops placed against one pair of front and rear feet. Apply the vertical seat load specified at a suitable position across the seat but not more than 150 mm from the unloaded edge of the seat. Apply a horizontal force centrally to the unrestrained side of the seat, at seat level, in a direction towards the restrained feet. For seating with only three legs, one foot on the fore and aft centre line of the item of seating and one other foot shall be restrained by stops. If the item tends to tends to overturn with the vertical seat load in its furthermost position from the unloaded	Not applicable as the sample was a lounger	N/A

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Clauses	**Check points**	**Remark**	**Result**
	edge, reduce the horizontal force to a magnitude that just prevents sideways overturning, but not lower than the minimum specified force. Record the actual force used.		
EN 1728: 2012, 6.24	Seat impact test Place one layer of 25 mm thick foam on the seat. Determine the height of fall from the position of the impactor when it is resting on the surface of that layer of foam. Place a second layer of 25 mm thick foam between the striking surface and the chair seat for the test. Allow the seat impactor to fall freely from the height specified onto the seat loading position, as specified by the loading point template. Repeat the test at one other position considered likely to cause failure, but not less than 100 mm from any edge of the seat. For multiple seating units, apply the test to one end seat and an intermediate seating position.	Not applicable as the sample was a lounger	N/A
EN 1728: 2012, 6.8	Foot rest static test Apply the specified downward force to the seat at the seat loading point. Apply a vertical force by means of the local loading pad acting 80 mm from front edge of the load bearing structure of the foot rest at those points most likely to cause failure. For round cross section ring shaped footrests, the force shall be applied through the centre of the ring cross section. If the seating tends to overturn, increase the load on seat to a magnitude that just prevents overturning and record the load used.	Not applicable as the sample was a lounger	N/A
EN 1022: 2005, 6.2	Forward stability Forward stability Position the seating on the floor surface with the front legs or base restrained by stops. Apply a force of 600 N vertically (for multiple sitting places to a maximum of 2 places) by means of the loading pad acting at those points 60 mm behind the front edge of the load bearing structure most likely to result in overturning. At each loaded position apply a force F of 20 N for at least 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 the seat.	Not applicable as the sample was a lounger	N/A

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Clauses	**Check points**	**Remark**	**Result**
EN 1022: 2005, 6.5	Sideways stability Position the seating on the floor surface with the side legs or base restrained by stops. Apply a force of 600 N vertically by means of the loading pad at those points 60 mm behind the edge of the load bearing structure of the side nearest the stopped feet most likely to result in overturning. Apply a sideways force F of 20 N horizontally outwards for at least 5 s along a line from the point where the base of the loading pad meets the upper surface of the seat.	Not applicable as the sample was a lounger	N/A
EN 1022: 2005, 6.6.	Rearward stability This sub-clause only applies to seating with backs extending 50 mm or more above the unloaded seat. Position the seating on the floor surface with the rear legs or base restrained by stops. All adjustable backs shall be set in their most upright position. Apply a vertical force of 600 N to the seat by means of the loading pad at the seat loading point (A) determined by the loading point template. Determine the distance (H) in millimetres between the loaded seat and the floor. For seating having a value of H $\geqslant$ 720mm uses a force F of 80 N. For seating having a value of H < 720 mm calculate the force F, in newtons, required from the following formula: F = 0,2857 (1000 - H) where: H is in millimetres F is in newtons. Apply the force F horizontally for at least 5 s in a rearward direction to the back of the seating at the point (B) determined by the loading point template, or at the top edge of the back rest, whichever is the lower. When the seating has more than one sitting place, carry out the procedure on two most adverse sitting places simultaneously.	Not applicable as the sample was a lounger	N/A
8	Information for use	Details see below results.	N/T

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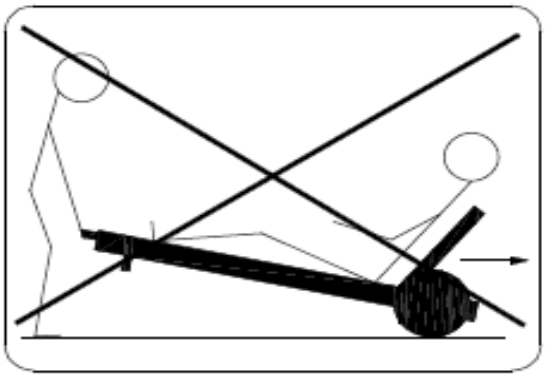
Clauses	**Check points**	**Remark**	**Result**
8.1	General Instruction for use shall be provided in the language(s) of the country where the seating are sold. These instructions shall be headed "IMPORTANT, RETAIN FOR FUTURE REFERENCE: READ CAREFULLY" in letters no less than 5 mm high, unless if the following information are permanently marked on the product. It shall contain at least the following details: a) name and address of the manufacturer / supplier / retailer; b) conditions for use of the product (domestic, camping or contract). If applicable: c) assembly instructions; d) instructions for the care and maintenance of the seating; e) 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.	Not conducted as not required by the client	N/T
8.2	Marking for loungers Loungers equipped with wheels, but not intended to be lifted and moved with a person in it shall be permanently marked with the pictogram as shown in Figure 2. The smallest dimension of the pictogram shall not be less than 25 mm.  Figure 2 — Pictogram	Not conducted as no mobile component	N/A

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6: Photos of Sample

Photo 1: Overview of sample

Photo 2: Overview of sample

Photo 3: Overview of sample

Photo 4: Overview of sample

Photo 5: Overview of sample

Photo 6: Details of sample

<End of the Report>

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