

Test report **23-TA29114**

Article: Easy chair Yarn

Test requested by: Materia AB
Jan Jismyr



Requirements for this report are related to standard: **EN 16139:2013, EN 16139:2013/AC:2013, test severity level 1**

This European standard specifies requirements for the safety, strength and durability of all types of non-domestic seating intended to be used by adults with a weight of not more than 110 kg including office visitor chairs

Tests are carried out according to: **EN 1022:2018, EN 1728:2012**
(in the scope of the accreditation)

Discrepancies: None

Result and observations: The sample submitted for test
 fulfils the requirements in above mentioned standards.
 does not fulfil the requirements in above mentioned standards.

Used equipment: ID 7, 8, 11, 12, 13, 21, 22, 34, 35, 39, 50, 52, 57, 65, 66, 67, 116, 117, 122, 139, 153

Measurement: Detailed information about measurement uncertainty is provided on request by Kinnarps Test and Verification Center.

Decision rule: The measured result is directly compared to the requirement level. When reporting results, no account is taken to the measurement uncertainty

Report: This report relates to sample submitted for test and no other. The report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Kinnarp 2023-03-23



Approved by Jörgen Nilsson
Manager Kinnarps Test- & verification Center



Tested by Camilla Brandstedt
Test technician

Item description

Date of

- manufacture:	2023-01-03
- arrival:	2023-02-16
- test:	2023-02-20 – 2023-03-21

Materials, construction

Seat:	Plywood, seat padding with hairlock and needle felt.
Backrest:	Steel tube with braided hemp string. Cushion, padded with hairlock and wool.
Armrest:	Steel tube.
Under frame:	Steel tube frame.

Dimensions (mm)

Total width:	713	Seat height (front seat):	363
Total depth:	789	Sitting height (point A):	339
Total height:	795	Seat width (point A):	565
Weight (kg):	14,0	Seat depth (seat front to back):	490
		Height of armrest to seat (A-point):	297
		Distance between armrests (point A):	655
		Height of armrest to floor (point A):	636

Test conditions

Laboratory atmosphere:	(20 ± 5)° C	Within limits during test
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Test description

EN 16139:2013 Annex B (informative)

The table below shows the type of use that might be expected from furniture in relation to two test severities.

Test severity	Type of Use	Application
L1	General use	Areas in which seating is usually intended for mixed use (short-time and for a period of several hours, light to heavy load). Example of end-use: All kind of applications in office buildings, showrooms, public halls, function rooms, cafés, restaurants, canteens, banks, bars.
L2	Extreme use	Areas in which seating is occasionally or repeatedly subject to extremely high loads due to their specific types of use or due to improper use. Examples of end-use: Night -clubs, police stations, transport terminals, sport changing rooms, prisons, barracks (non-controlled areas).

It should be noted that some end uses may be covered by more than one requirement depending on the severity of the expected use.

This applies particularly to furniture in nursing homes and public areas in hospitals. These types of furniture are subject to test severity L1. But for seating fulfilling the requirements "Seating which may be moved when occupied", the test "Vertical upwards static load on arm rests" in accordance with Table 1 (Test 7) should be carried out with test severity L2.

Requirements and test EN 16139:2013	Test results	Pass/Fail or N/A
SAFETY 4.1 General		
<p>The seating shall be so designed as to minimise the risk of injury to the user. All accessible parts (3.1) shall be so designed that physical injury and damage are avoided. This requirement is met when:</p> <p>a) accessible corners are rounded or chamfered;</p> <p>b) the edges of the seat, back rest and arm rests which are in contact with the user when sitting in the chair are rounded or chamfered;</p> <p>c) the edges of handles are rounded or chamfered in the direction of the force applied;</p> <p>d) all other edges are free from burrs and rounded or chamfered;</p> <p>e) the 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. 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>	<p>No remarks</p> <p>No remarks</p> <p>No remarks</p> <p>No remarks</p> <p>No remarks</p> <p>-</p> <p>No remarks</p> <p>-</p>	<p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p> <p>N/A</p> <p>Pass</p> <p>N/A</p>
4.2 Shear and squeeze points		
<p>4.2.1 Shear and squeeze points when setting up and folding Unless 4.2.2 or 4.2.3 are applicable, shear and squeeze points that are created only during setting up and folding, including tipping seat actions, 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. The edges of parts moving relative to each other and creating shear and squeeze points shall be as specified in 4.1.</p>	-	N/A
<p>4.2.2 Shear and squeeze points under influence of powered mechanism With the exception of tipping seats there shall be no shear and squeeze points created by parts of the seating operated by powered mechanisms, e.g. springs and gas lifts.</p>	-	N/A
<p>4.2.3 Shear and squeeze points during use There shall be no shear and squeeze points created by forces applied during normal use as well as during normal movements and actions, see Table 1.</p>	No remarks	Pass
4.4 Rolling resistance of the unloaded chair		
<p>This subclause is only applicable to single seating units fitted with castors or wheels. The unloaded seating shall not roll unintentionally. This requirement is met when:</p> <ul style="list-style-type: none"> - the rolling resistance is ≥ 12 N when tested in accordance with EN 1335-3:2009, 7.4; and - all castors are of the same type. 	-	N/A
<p>EN 16139: 2013 5. Safety, strength and durability requirements These safety, strength and durability requirements are fulfilled when during and after testing:</p> <ul style="list-style-type: none"> a) There are no fractures of any member, joint or component; b) There are no loosening of joints intended to be rigid; c) No major structural element is significantly deformed; d) The chair fulfils its functions after removal of the test loads. 		

Test and method EN 1728:2012			Requirements EN 16139:2013		Test results	Pass/Fail or N/A
			Loading			
STRENGTH AND DURABILITY			Level 1	Level 2		
Seat and back static load test	vertical force horizontal force 10c	6.4	1 600 N 560 N (min. force 410)	2 000 N 700 N (min. force 410)	No remarks	Pass
Seat front edge static load test	vertical force 10c	6.5	1 300 N	1 600 N	No remarks	Pass
Vertical static load on back	vertical force seat load 10c	6.6	600 N 1300 N	900 N 1800 N	No remarks	Pass
Foot rest and leg rest static load test	Force 10c	6.8, 6.9	1 300 N	1 600 N	-	N/A
Arm sideways static load test	horizontal force 10c	6.10	400 N	900 N	No remarks	Pass
Arm downwards static load test	vertical force 5c	6.11	750 N	900 N	No remarks	Pass
Vertical upwards static load on arm rests	10 c	6.13.1, 6.13.2	Seat load 250 N or lift stack	Seat load 1 200 N	No remarks	Pass
Seat and back durability test	Cycles vertical force horizontal force	6.17	100 000 c 1 000 N 300 N	200 000c 1 000 N 300 N	No remarks	Pass
Seat front edge durability test	Cycles vertical force	6.18	50 000 c 800 N	100 000c 800 N	No remarks	Pass
Arm durability test	Cycles force	6.20	30 000 c 400 N	60 000c 400 N	No remarks	Pass
Foot rest durability test	Cycles force	6.21	50 000 c 1000 N	1 00 000c 1000 N	-	N/A
Leg forward static load test If the item tends to overturn, reduce the force to a magnitude that just prevents overturning	force seat load 10c	6.15	500 N 1 000 N	620 N 1 800 N	No remarks	Pass
Leg sideways static load test If the item tends to overturn, reduce the force to a magnitude that just prevents overturning	force seat load 10c	6.16	400 N 1 000 N	760 N 1 800 N	No remarks	Pass

Test and method EN 1728:2012			Requirements EN 16139:2013		Test results	Pass/Fail or N/A
			Level 1	Level 2		
Seat impact test	Drop height 10c	6.24	240 mm	300 mm	No remarks	Pass
Back impact test Test for chairs that tip rearward with force $\geq 30N$	Height of fall 10 c	6.25	210mm/38°	330 mm/48°	Tipping force: 80 N	Pass
Arm impact test	Height of fall 10 c	6.26	210mm/38°	330 mm/48°	No remarks	Pass
Drop test (multiple seating)	Drop height 2x5 c	6.27.1	-	450mm	-	N/A
Auxiliary writing surface static load test	Force 10 c	6.14	300 N	300 N	-	N/A
Auxiliary writing surface Durability test	Cycles Force	6.22	10 000c 150 N	20 000c 150 N	-	N/A
Additional test for specific applications			EN 16139:2013 Annex A.1 (informative)			
Drop test for stacking seating	Drop height 10 c	6.27.2	150 mm	200 mm	-	N/A
Backward fall test Test for chairs that tip rearward with force $< 30N$	Times	6.28	5	5	Tipping force: 80 N	N/A
Drop test from the height of a table 10 times(5 times on one front leg and 5 times on one rear leg)	Drop height	6.27.3	600 mm	600 mm	-	N/A

Test and method EN 1022:2018	Requirements EN 16139:2013	Test results	Pass/Fail or N/A
STABILITY	4.3		
Forwards overturning 7.3.1 Vertical force 600 N Horizontal force 20 N	No overturning	166 N	Pass
Forwards overturning for seating with footrest – Non swivelling seat 7.3.2 vertical force on the footrest 600 N Horizontal force 20 N	No overturning	-	N/A
Forwards overturning for seating with footrest – Swivelling seat 7.3.2 Vertical force on the footrest 1100 N Horizontal force 20 N	No overturning	-	N/A
Corner stability test 7.3.3 Vertical force 300 N	No overturning	No remarks	Pass
Sideways overturning, all sitting without arm rests 7.3.4 Vertical force 600 N Horizontal force 20 N	No overturning	-	N/A
Sideways overturning, all other seating 7.3.5 Vertical force on seat 250 N Vertical force on armrest 350 N Horizontal force 20 N	No overturning	132 N	Pass
Rearwards overturning, all seating with back rest 7.3.6 Vertical force 600 N Horizontal force 0,2857 (1 000-H) = 189 N	No overturning	>280 N	Pass
Tilting seating 7.4.2 Swivelling seats 13 discs x 10 kg All other seating 11 discs x 10 kg	No overturning	-	N/A

