

Test report **20-TA16126**

Article: Stool Roca

Test requested by: Jan Jismyr
Materia AB



Tests are carried out according to standard: **EN 16139:2013, 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

Discrepancies: None

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

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 2020-05-20



Approved by Daniel Landberg
Manager Kinnarps Test- & verification Center



Tested by Magnus Carlsson
Test technician

Item description

Date of

- **manufacture:** 2020-01-22
- **arrival:** 2020-01-29
- **test:** 2020-01-30 – 2020-02-10

Materials, construction

- Seat:** Upholstered Plywood
- Backrest:** -
- Armrest:** -
- Under frame:** Steel tubes Ø xxxx

Dimensions (mm)

- | | | | |
|----------------------|-----|-----------------------------------|-----|
| Total with: | 470 | Sitting height: | 465 |
| Total depth: | 470 | Seat width: | 365 |
| Total height: | 485 | Seat depth: | 365 |
| Seat height: | 485 | Height of armrest: | - |
| Weight (kg): | 4,1 | Distance between armrests: | - |

Test conditions

- Laboratory atmosphere:** (20 ± 5)° C Within limits during test

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.

Test and method	Requirements	Test results	Pass/Fail or N/A
SAFETY			
General			
Accessible parts in sitting position	EN 16139:2013 4.1 shall be rounded or chamfered and free from burrs	No remarks	Pass
End of hollow components	closed or capped	No remarks	Pass
Movable and adjustable parts designed so	injures and inadvertent operations shall be avoided	-	N/A
Adjustable/connection parts	no chance to come loose	-	N/A
Lubricated parts	not accessible	-	N/A
Shear and squeeze points			
movable parts			
- when setting up and folding	Acceptable	-	N/A
- created by powered mechanism	Not acceptable	-	N/A
- during normal use	Not acceptable	No remarks	Pass
STABILITY			
EN 1022:2005			
Front edge overbalancing, swivelling chair	4.3 4.3.2 no overturning	-	N/A
Forward Vertical force	6.2 horizontal min. 20 N no overturning	6N	Fail
Forwards overturning for seating with footrest	6.3 horizontal min. 20 N no overturning	-	N/A
Vertical force on the footrest	600 N		
Sideways without arm rests	6.4 horizontal min. 20 N no overturning	-	N/A
Vertical force	600 N		
Sideways with arm rests	6.5 horizontal min. 20 N no overturning	-	N/A
Vertical force on seat	250 N		
Vertical force on armrest	350 N		
Rearward, chair with backrest	6.6 horizontal min. N no overturning	-	N/A
Vertical force	600 N		
Rearward, swivelling chairs without backrest inclination	7.3 horizontal min. 192N no overturning	-	N/A
600 N			
Rearward, chair with backrest inclination	7.7 no overturning with 11 discs	-	N/A
Load x 10 kg			
Rolling resistance of the unloaded chair			
Rolling resistance	4.4 ≥ 12 N	-	N/A
Castors	of the same type	-	N/A

EN 16139: 2013 5. Safety, strength and durability requirements

These safety, strength and durability requirements are fulfilled when during and after testing:

- 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
		Level 1	Level 2		
STRENGTH AND DURABILITY					
Seat and back static load	vertical force horizontal force 10c	1 600 N 560 N (min. force 410)	2 000 N 700 N (min. force 410)	No remarks	Pass
Seat front edge static load	vertical force 10c	1 300 N	1 600 N	No remarks	Pass
Vertical static load on back.	vertical force seat load 10c	600 N 1300 N	900 N 1800 N	-	N/A
Foot rail / foot rest and leg rest static load	Force 10c	1 300 N	1 600 N	-	N/A
Arm sideways static load between armrests	horizontal force 10c	400 N	900 N	-	N/A
Arm downwards static load	vertical force 10c	750 N	900 N	-	N/A
Vertical upwards static load on armrests	10 c	Seat load 250 N or lift stack	Seat load 1 200 N	-	N/A
Seat and back fatigue	Cycles vertical force horizontal force	100 000 c 1 000 N 300 N	200 000c 1 000 N 300 N	No remarks	Pass
Seat front edge fatigue	Cycles vertical force	50 000 c 800 N	100 000c 800 N	No remarks	Pass
Arm fatigue	Cycles force	30 000 c 400 N	60 000c 400 N	-	N/A
Foot rest/foot rail fatigue	Cycles force	50 000 c 1000 N	1 00 000c 1000 N	-	N/A
Leg forward static load If the item tends to overturn, reduce the force to a magnitude that just prevents overturning	force seat load 10c	500 N 1 000 N	620 N 1 800 N	-	N/A
Leg sideways static load If the item tends to overturn, reduce the force to a magnitude that just prevents overturning	force seat load 10c	400 N 1 000 N	760 N 1 800 N	-	N/A
Seat impact test	Drop height 10c	240 mm	300 mm	No remarks	Pass

Test and method EN 1728:2012		Requirements EN 16139:2013		Test results	Pass/Fail or N/A
		Level 1	Level-2		
Backrest / stool seat edge impact test Test for chairs that tip rearward with force $\geq 30N$	Height of fall 10 c	210mm/38°	330 mm/48°	No remarks	Pass
Arm impact test	Height of fall 10 c	210mm/38°	330 mm/48°	-	N/A
Drop test (multiple seating)	Drop height 2x5 c	-	450mm	-	N/A
Auxiliary writing surface Static load test	Force 10 c	300 N	300 N	-	N/A
Auxiliary writing surface fatigue	Cycles Force	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	150 mm	200 mm	-	N/A
Backward fall test Test for chairs that tip rearward with force <30N	Times	5	5	-	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	600 mm	600 mm	-	N/A
Dimension requirements for office visitor chairs In accordance with EN 1335-1:2000		EN 16139:2013 Annex C (Informative)			
Seat height [a]	fixed height C.2.1 Adjustable height	Between 400mm and 500mm Minimum range 420-480 mm		-	N/A
Seat depth [b]	C.2.2	Between 380mm and 470mm		-	N/A
Seat Width [d]	C.2.3	Min 400 mm		-	N/A
Distance between arm rests [r]	C.2.4	Min 460 mm		-	N/A
<p>EN 16139:2013 7. Information for use 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:</p> <ul style="list-style-type: none"> a) Information regarding the intended use (see Annex B); b) If the chair is fitted with adjusting mechanisms: instruction for operating the adjusting mechanism; c) Assembly instructions, where applicable; d) Instruction for the care and maintenance of the chair; e) If the seating is fitted with castors: information on the choice of castors in relation to the floor surface. 					