

**Test report**                      **20-TA16757**

**Article:**                              Stool Roca high

**Test requested by:**              Jan Jismyr



**Tests are carried out according to standard:**      **Parts of 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:**                      Only parts of applicable test according to 16139:2013 was tested according to order from client.

**Result and observations:**              The sample submitted for test fulfils the requirements in tested parts of 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 2020-11-22



Approved by Daniel Landberg  
Manager Kinnarps Test- & verification Center



Tested by Niklas Johansson  
Test technician

## Item description

### Date of

- **manufacture:** 02/09/2020
- **arrival:** 16/09/2020
- **test:** 05/10/2020-12/10/2020

### Materials, construction

- Seat:** Upholstered plywood
- Backrest:**
- Armrest:**
- Under frame:** Steel tubes 25mm

### Dimensions (mm)

- |                      |     |                                   |     |
|----------------------|-----|-----------------------------------|-----|
| <b>Total with:</b>   | 470 | <b>Sitting height:</b>            | 600 |
| <b>Total depth:</b>  | 475 | <b>Seat width:</b>                | 370 |
| <b>Total height:</b> | 620 | <b>Seat depth:</b>                | 370 |
| <b>Seat height:</b>  | 610 | <b>Height of armrest:</b>         | -   |
| <b>Weight (kg):</b>  | 4,3 | <b>Distance between armrests:</b> | -   |

### 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
<b>SAFETY</b> <b>General</b>	<b>EN 16139:2013</b> <b>4.1</b>		
Accessible parts in sitting position	shall be rounded or chamfered and free from burrs	No remarks	<b>Pass</b>
End of hollow components	closed or capped	-	<b>N/A</b>
Movable and adjustable parts designed so	injures and inadvertent operations shall be avoided	-	<b>N/A</b>
Adjustable/connection parts	no chance to come loose	-	<b>N/A</b>
Lubricated parts	not accessible	-	<b>N/A</b>
<b>Shear and squeeze points</b> <b>movable parts</b>	<b>4.2</b>		
- when setting up and folding	Acceptable	-	<b>N/A</b>
- created by powered mechanism	Not acceptable	-	<b>N/A</b>
- during normal use	Not acceptable	No Remarks	<b>Pass</b>
<b>STABILITY</b>	<b>EN 1022:2018</b>		
Forward Vertical force	7.3.1 horizontal min. 20 N no overturning	Not tested	-
Forwards overturning for seating with footrest – Non swivelling seat Vertical force on the footrest	7.3.2 horizontal min. 20 N no overturning	-	<b>N/A</b>
Forwards overturning for seating with footrest – Swivelling seat Vertical force on the footrest	7.3.2 horizontal min. 20 N no overturning	-	<b>N/A</b>
Corner stability	7.3.3 no overturning	Not tested	-
Sideways without arm rests Vertical force	7.3.4 horizontal min. 20 N no overturning	Not tested	-
Sideways all other seating Vertical force on seat Vertical force on armrest	7.3.5 horizontal min. 20 N no overturning	-	<b>N/A</b>
Rearward, seating with backrest Vertical force	7.3.6 horizontal min. ____ N no overturning	-	<b>N/A</b>
Rearward, tilting seating Non swivelling seat Load	7.4.2 no overturning	-	<b>N/A</b>
Rearward, tilting seating Swivelling seat Load	7.4.2 no overturning	-	<b>N/A</b>

Test and method	Requirements	Test results	Pass/Fail or N/A
<b>Rolling resistance of the unloaded chair</b>	<b>4.4</b>		
Rolling resistance	≥ 12 N	-	N/A
Castors	of the same type	-	N/A
<p><b>EN 16139: 2013 5. Safety, strength and durability requirements</b>                      These safety, strength and durability requirements are fulfilled when during and after testing:</p> <p>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.</p>			

Test and method EN 1728:2012	Requirements EN 16139:2013		Test results	Pass/Fail or N/A	
	Level 1	Level 2			
<b>STRENGTH AND DURABILITY</b>					
Seat and back static load	vertical force horizontal force 10c	<b>1 600 N</b> <b>560 N</b> (min. force 410)	<del>2 000 N</del> <del>700 N</del> (min. force 410)	No remarks	<b>Pass</b>
Seat front edge static load	vertical force 10c	<b>1 300 N</b>	<del>1 600 N</del>	No remarks	<b>Pass</b>
Vertical static load on back.	vertical force seat load 10c	<b>600 N</b> <b>1300 N</b>	<del>900 N</del> <del>1800 N</del>	-	<b>N/A</b>
Foot rail / foot rest and leg rest static load	Force 10c	<b>1 300 N</b>	<del>1 600 N</del>	-	<b>N/A</b>
Arm sideways static load between armrests	horizontal force 10c	<b>400 N</b>	<del>900 N</del>	-	<b>N/A</b>
Arm downwards static load	vertical force 10c	<b>750 N</b>	<del>900 N</del>	-	<b>N/A</b>
Vertical upwards static load on armrests	10 c	<b>Seat load</b> <b>250 N or lift</b> <b>stack</b>	<del>Seat load</del> <del>1 200 N</del>	-	<b>N/A</b>
Seat and back fatigue	Cycles vertical force horizontal force	<b>100 000 c</b> <b>1 000 N</b> <b>300 N</b>	<del>200 000c</del> <del>1 000 N</del> <del>300 N</del>	No remarks	<b>Pass<sup>1</sup></b>
Seat front edge fatigue	Cycles vertical force	<b>50 000 c</b> <b>800 N</b>	<del>100 000c</del> <del>800 N</del>	-	<b>N/A</b>
Arm fatigue	Cycles force	<b>30 000 c</b> <b>400 N</b>	<del>60 000c</del> <del>400 N</del>	-	<b>N/A</b>

Test and method EN 1728:2012		Requirements EN 16139:2013		Test results	Pass/Fail or N/A
		Level 1	Level 2		
Foot rest/foot rail fatigue	Cycles force	<b>50 000 c</b> <b>1000 N</b>	<del>100 000c</del> <del>1000 N</del>	-	<b>N/A</b>
Leg forward static load If the item tends to overturn, reduce the force to a magnitude that just prevents overturning	force seat load 10c	<b>500 N</b> <b>1 000 N</b>	<del>620 N</del> <del>1 800 N</del>	-	<b>N/A</b>
Leg sideways static load If the item tends to overturn, reduce the force to a magnitude that just prevents overturning	force seat load 10c	<b>400 N</b> <b>1 000 N</b>	<del>760 N</del> <del>1 800 N</del>	-	<b>N/A</b>
Seat impact test	Drop height 10c	<b>240 mm</b>	<del>300 mm</del>	-	<b>N/A</b>
Backrest / stool seat edge impact test Test for chairs that tip rearward with force ≥30N	Height of fall 10 c	<b>210mm/38°</b>	<del>330 mm/48°</del>	Not tested	-
Arm impact test	Height of fall 10 c	<b>210mm/38°</b>	<del>330 mm/48°</del>	-	<b>N/A</b>
Drop test (multiple seating)	Drop height 2x5 c	-	<del>450mm</del>	-	<b>N/A</b>
Auxiliary writing surface Static load test	Force 10 c	<b>300 N</b>	<del>300 N</del>	-	<b>N/A</b>
Auxiliary writing surface fatigue	Cycles Force	<b>10 000c</b> <b>150 N</b>	<del>20 000c</del> <del>150 N</del>	-	<b>N/A</b>
<b>Additional test for specific applications</b>		<b>EN 16139:2013 Annex A.1 (informative)</b>			
Drop test for stacking seating	Drop height 10 c	<b>150 mm</b>	<del>200 mm</del>	-	<b>N/A</b>
Backward fall test Test for chairs that tip rearward with force <30N	Times	<b>5</b>	<del>5</del>	-	<b>N/A</b>
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	<b>600 mm</b>	<del>600 mm</del>	-	<b>N/A</b>

