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1002
ISO/IEC 17025

Johanson Design AB
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Testing of Mind chair

(1 appendix)

Summary

Mind chair meet the requirements for strength and security according to EN 16139:2013, level 1.

1 Introduction

On behalf of Johanson Design AB, a Mind chair has been tested at SP in accordance with EN 16139:2013 Furniture - Strength, durability and safety - Requirements for non-domestic seating, level 1.

2 Test specimen

Figure 1 Mind chair

Dimension:	W=470 mm, D=510 mm, H=825 mm
Seat height:	450 mm
Legs:	Legs in steel tubes, Ø 16 mm
Frame:	Steel tubes, Ø 12 mm
Seat/Back rest:	In moulded and laminated veneer with upholstery
Functions:	-
Other info:	-

The test specimen was selected by the customer and arrived at SP 2014-03-19.

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3 Test methods and test procedure

The test was carried out according to EN 16139:2013 Furniture – Strength, durability and safety – Requirements for non-domestic seating, level 1 and EN 1022:2005 Domestic furniture – Seating – Determination of stability.

The test was carried out in a climate of 23±2ºC and 50 ±5% relative humidity.

The test methods are explained in table 1 – 3.

The test was carried out 2014-04-15 – 2014-05-12.

4 Results

Table 1

1.	General requirements	EN 16139	Req. fulfilled
1.1	Accessible corners shall be rounded or chamfered.	4.1	Passed
1.2	Edges of the seat, back rest and arm rests which are in contact with the user when sitting in the chair shall be rounded or chamfered.	4.1	Passed
1.3	Edges of handles shall be rounded or chamfered in the direction of the force applied.	4.1	N/A
1.4	All other edges shall be free from burrs and rounded or chamfered.	4.1	Passed
1.5	Ends of hollow components shall be closed or capped.	4.1	Passed
1.6	Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided.	4.1	N/A
1.7	It shall not be possible for any load bearing part of the seating to come loose unintentionally.	4.1	Passed
1.8	All parts which are lubricated to assist sliding shall be designed to protect users from lubricant stains when in normal use.	4.1	N/A
1.9	No shear and squeeze points when setting up and folding.	4.2.1	N/A
1.10	No shear and squeeze points under influence of powered mechanism.	4.2.2	N/A
1.11	No shear and squeeze points during use.	4.2.3	Passed

Table 2

2.	Stability	EN 1022	Req. fulfilled
2.1	Forwards overbalancing.	6.2	Passed
2.2	Forwards overturning for seating with footrest.	6.3	N/A
2.3	Sideways overbalancing, all seating without arms.	6.4	Passed
2.4	Sideways overbalancing, all seating with arms.	6.5	N/A
2.5	Rearwards overbalancing, all seating with backs.	6.6	Passed

Table 3

3.	Strength, durability	Reference EN 1728	Cycles	EN 16139 level 1	Req. fulfilled
3.1	Seat and back static load test.	6.4	10	Seat: 1600 N Back: 560[1] N	Passed
3.2	Seat front edge static load test.	6.5	10	1300 N	Passed
3.3	Vertical static load on back rests.	6.6	10	600 N Seat: 1300 N	Passed
3.4	Foot rest and leg rest static load test.	6.8 and 6.9	10	1300 N	N/A
3.5	Arm sideways static load test.	6.10	10	400 N	N/A
3.6	Arm downwards static load test.	6.11	5	750 N	N/A
3.7	Vertical upwards static load on arm rests.	6.13.1 and 6.13.2	10	250 N	N/A
3.8	Seat and back durability test.	6.17	100 000	Seat: 1000N Back: 300 N	Passed
3.9	Seat front edge durability test.	6.18	50 000	800 N	Passed
3.10	Arm durability test.	6.20	30 000	400 N	N/A
3.11	Foot rest durability test.	6.21	50 000	1000 N	N/A
3.12	Leg forward static load test.	6.15	10	500[2] N Seat: 1000 N	Passed
3.13	Leg sideways static load test.	6.16	10	400 N Seat: 1000 N	Passed
3.14	Seat impact test.	6.24	10	240 mm	Passed
3.15	Back impact test.	6.25	10	210/38 mm/°	Passed
3.16	Arm impact test.	6.26	10	210/38 mm/°	N/A
3.17	Drop test (multiple seating).	6.27.1	2x5		N/A
3.18	Auxiliary writing surface static load test.	6.14	10	300 N	N/A
3.19	Auxiliary writing surface durability test.	6.22	10 000	150 N	N/A

[1] Back load reduced to 500 N due to overturning
[2] Forward static load reduced to 400 N due to overturning

5 Conclusion

At the end of the test, the tested piece did not exhibit any faults, fractures or other damage judged to affect its safety and functions when used in accordance with EN 16139:2013 level 1.

The test results apply solely to the specimen tested.

SP Technical Research Institute of Sweden
Wood Technology

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Appendix

1. Pictures (1 page)

Appendix 1

Pictures

Figure 1 Mind chair, view underneath

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(1 appendix)

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2 Test specimen

Figure 1 Mind chair

Dimension:	W=470 mm, D=510 mm, H=825 mm
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Frame:	Steel tubes, Ø 12 mm
Seat/Back rest:	In moulded and laminated veneer with upholstery
Functions:	-
Other info:	-

The test specimen was selected by the customer and arrived at SP 2014-03-19.

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The test was carried out in a climate of 23±2ºC and 50 ±5% relative humidity.

The test methods are explained in table 1 – 3.

The test was carried out 2014-04-15 – 2014-05-12.

4 Results

Table 1

1.	General requirements	EN 16139	Req. fulfilled
1.1	Accessible corners shall be rounded or chamfered.	4.1	Passed
1.2	Edges of the seat, back rest and arm rests which are in contact with the user when sitting in the chair shall be rounded or chamfered.	4.1	Passed
1.3	Edges of handles shall be rounded or chamfered in the direction of the force applied.	4.1	N/A
1.4	All other edges shall be free from burrs and rounded or chamfered.	4.1	Passed
1.5	Ends of hollow components shall be closed or capped.	4.1	Passed
1.6	Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided.	4.1	N/A
1.7	It shall not be possible for any load bearing part of the seating to come loose unintentionally.	4.1	Passed
1.8	All parts which are lubricated to assist sliding shall be designed to protect users from lubricant stains when in normal use.	4.1	N/A
1.9	No shear and squeeze points when setting up and folding.	4.2.1	N/A
1.10	No shear and squeeze points under influence of powered mechanism.	4.2.2	N/A
1.11	No shear and squeeze points during use.	4.2.3	Passed

Table 2

2.	Stability	EN 1022	Req. fulfilled
2.1	Forwards overbalancing.	6.2	Passed
2.2	Forwards overturning for seating with footrest.	6.3	N/A
2.3	Sideways overbalancing, all seating without arms.	6.4	Passed
2.4	Sideways overbalancing, all seating with arms.	6.5	N/A
2.5	Rearwards overbalancing, all seating with backs.	6.6	Passed

Table 3

3.	Strength, durability	Reference EN 1728	Cycles	EN 16139 level 1	Req. fulfilled
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3.3	Vertical static load on back rests.	6.6	10	600 N Seat: 1300 N	Passed
3.4	Foot rest and leg rest static load test.	6.8 and 6.9	10	1300 N	N/A
3.5	Arm sideways static load test.	6.10	10	400 N	N/A
3.6	Arm downwards static load test.	6.11	5	750 N	N/A
3.7	Vertical upwards static load on arm rests.	6.13.1 and 6.13.2	10	250 N	N/A
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3.11	Foot rest durability test.	6.21	50 000	1000 N	N/A
3.12	Leg forward static load test.	6.15	10	500[2] N Seat: 1000 N	Passed
3.13	Leg sideways static load test.	6.16	10	400 N Seat: 1000 N	Passed
3.14	Seat impact test.	6.24	10	240 mm	Passed
3.15	Back impact test.	6.25	10	210/38 mm/°	Passed
3.16	Arm impact test.	6.26	10	210/38 mm/°	N/A
3.17	Drop test (multiple seating).	6.27.1	2x5		N/A
3.18	Auxiliary writing surface static load test.	6.14	10	300 N	N/A
3.19	Auxiliary writing surface durability test.	6.22	10 000	150 N	N/A

[1] Back load reduced to 500 N due to overturning
[2] Forward static load reduced to 400 N due to overturning

5 Conclusion

At the end of the test, the tested piece did not exhibit any faults, fractures or other damage judged to affect its safety and functions when used in accordance with EN 16139:2013 level 1.

The test results apply solely to the specimen tested.

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Appendix

1. Pictures (1 page)

Appendix 1

Pictures

Figure 1 Mind chair, view underneath

REPORT
issued by an Accredited Testing Laboratory

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Date 2016-12-19 | Reference 6F025054F | Page 1 (1)

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SWEDEN

Testing of seating furniture according to EN 16139:2013

(3 appendices)

Customer:	Johanson Design AB
Test object/ID:	Armchair/Mind 08
Test method:	EN 16139:2013 Furniture - Strength, durability and safety - Requirements for non-domestic seating. Test level 1
Scope:	Armrest test
Date of test:	2016-12-01 – 2016-12-09
Test result:	The tested object passed the test as far as tested
Reservation:	The test results in this report apply only to the particular Equipment Under Test (EUT)
Test environment:	23 ± 2ºC and 50 ± 5% relative humidity
Additional information:	-

SP Technical Research Institute of Sweden
Sustainable Built Environment - Wood Technological Assessment

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Appendices

1. Test result (3 pages)
2. Description of test object (1 page)
3. Pictures (1 page)

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Test result

Abbreviations: N/A = Not applicable
N/T = Not tested

Table 1

1.	Safety	EN 16139	Result
1.1	General requirements The seating shall be so designed as to minimise the risk of injury to the user. All accessible parts shall be so designed that physical injury and damage are avoided. This requirement is met when: a) accessible corners are rounded or chamfered; 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; c) the edges of handles are rounded or chamfered in the direction of the force applied; d) all other edges are free from burrs and rounded or chamfered; e) the ends of hollow components are closed or capped. 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. All parts which are lubricated to assist sliding shall be designed to protect users from lubricant stains when in normal use	4.1	N/T
1.2	Shear and squeeze points 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. There shall be no shear and squeeze points created by forces applied during normal use as well as during normal movements and actions Note! Shear and squeeze points that are created only during manually setting up and folding 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.	4.2	N/T
1.3	Rolling resistance of the unloaded chair ≥ 12 N when tested in accordance with EN 1335-3:2009, 7.4; and all castors are of the same type	4.4	N/A

Table 2

2.	Stability	EN 1022	Result
2.1	Forwards overbalancing	6.2	N/T
2.2	Forwards overturning for seating with footrest	6.3	N/A
2.3	Sideways overbalancing, all seating without arms	6.4	N/A
2.4	Sideways overbalancing, all seating with arms	6.5	Pass
2.5	Rearwards overbalancing, all seating with backs	6.6	N/T

Table 3

3.	Strength, durability	Reference EN 1728	Cycles	EN 16139 level 1	Result
3.1	Seat and back static load test	6.4	10	Seat: 1600 N Back: 560 N	N/T
3.2	Seat front edge static load test	6.5	10	1300 N	N/T
3.3	Vertical static load on back rests	6.6	10	600 N Seat: 1300 N	N/T
3.4	Foot rest and leg rest static load test	6.8 and 6.9	10	1300 N	N/A
3.5	Arm sideways static load test	6.10	10	400 N	Pass
3.6	Arm downwards static load test	6.11	5	750 N	Pass
3.7	Vertical upwards static load on arm rests for stackable seating	6.13.2	10	250 N	Pass
3.7 Annex B	Vertical upwards static load on arm rests for seating which may be moved when occupied	6.13.1	10	1200 N	N/A

3.	Strength, durability	Reference EN 1728	Cycles	EN 16139 level 1	Result
3.8	Seat and back durability test	6.17	100 000	Seat: 1000N Back: 300 N	N/T
3.9	Seat front edge durability test	6.18	50 000	800 N	N/T
3.10	Arm durability test	6.20	30 000	400 N	Pass
3.11	Foot rest durability test	6.21	50 000	1000 N	N/A
3.12	Leg forward static load test	6.15	10	500 N Seat: 1000 N	N/T
3.13	Leg sideways static load test	6.16	10	400 N Seat: 1000 N	N/T
3.14	Seat impact test	6.24	10x2	240 mm	N/T
3.15	Back impact test	6.25	10	210 mm/38°	N/T
3.16	Arm impact test	6.26	10	210 mm/38°	Pass
3.17	Auxiliary writing surface static load test	6.14	10	300 N	N/A
3.18	Auxiliary writing surface durability test	6.22	10 000	150 N	N/A

Appendix 2

Description of test Object

Test object/ID	Armchair/Mind 08

Dimensions

Width:	53 cm
Depth:	51 cm
Height:	81 cm
Seat height:	46 cm
Mass:	5.3 kg

Components

Frame/legs:	Metal tube 16 Ø mm
Seat:	Wood based with foam
Backrest:	Wood based with foam
Armrest:	Metal tube Ø 16 mm
Footrest:	-
Castors:	-
Upholstery:	-

Sampling:	The test object was selected by the customer
Date of arrival at SP test laboratory:	2016-11-18
Observed defects before testing:	No defects

Appendix 3

Pictures

Figure 1

Figure 2

Figure 3

Figure 4

ASSESSMENT

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Date 2016-12-29 | Reference 6F025054H | Page 1 (1)

Johanson Design AB
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Statement regarding seating furniture according to EN 16139:2013

Customer:	Johanson Design AB
Object/ID:	Arrmchair/Mind 08
Assessment according to:	EN 16139:2013 Furniture - Strength, durability and safety - Requirements for non-domestic seating. Test level 1
Assessment based on:	SP report 6F025054F, dated 2016-12-19 SP report 4F010271E, dated 2014-05-12
Assessment:	Meet the requirement for strength and safety according to EN 16139:2013
Reservation:	Design, material qualities, dimensions and other characteristics, which may affect the test results, must be identical to the tested object
Additional information:	-

SP Technical Research Institute of Sweden
Sustainable Built Environment - Wood Technological Assessment

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