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P301250H

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Testing of armchair Spira (1 appendix)

1 Introduction

On the instructions of Lammhults Möbel AB, a armchair Spira has been tested at SP in accordance with the requirements of Möbelfakta requirement specification 4.2.1 chairs for contract use issue 0201.

2 Test object

The armchair consisted of:

Frame: Steel tube $\varnothing 18 \times 2$ mm, quality Form 500
Seat/back: Moulded birch 9 mm
Varnish: Steel: none, Wood: clear varnish

The test object was selected by the party commissioning the test, and arrived at SP on 9 December 2003.

3 Test methods and performance of tests

Before testing commenced, the test object was conditioned for 1 week in a climate of $23^{\circ} \text{C} \pm 2^{\circ} \text{C}$ and $50 \% \pm 5 \%$ relative humidity as specified in the standards. All testing were carried out under these climatic conditions.

The test was carried out in accordance with requirements of Möbelfakta requirement specification 4.2.1 chairs for contract use, issue 0201. The methods used are explained in Appendix 1.

The test was carried out 19 December 2003 – 9 January 2004.

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4 Result

The result is reported in Appendix 1.

The test sequence was changed from SS-EN 1728. The test sequence is shown in the appendix.

After carrying out the tests, the tested piece of furniture did not demonstrate any ruptures, fractures or other damages that can affect the safe use of the article as per SS-ENV 12520.

After carrying out the tests, the tested piece of furniture did not demonstrate any damages or deformations that can affect the durability or appearance.

This test result only applies to the tested sample.

SP Swedish National Testing and Research Institute
Building Technology and Mechanics - Wood Materials and Structures



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Appendix
1 Test record (5 pages)

This is a translation from the Swedish original document. In the event of any dispute as to the content of the document, the Swedish text shall take precedence.

4 TEST RECORD FOR APPLICATION FOR MÖBELFAKTA CERTIFICATE

4.2. Contract use

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Appendix 1

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4.2.1 Seatings

1.	General requirements	Safety	Strength/ Durability (performance)	References: Requirements
1.1	Components or parts accessible during normal use shall have no burrs, sharp edges or sharp points.	x ✓	-	SS-ENV 12520. Clause 4.1
1.2	There shall be no open-ended tubes.	x ✓	-	SS-ENV 12520. Clause 4.1
1.3	Shear and squeeze points. The distance between moving parts accessible during normal use shall be kept to ≤ 8 mm or ≥ 25 mm in any position during movement with the exception of hinged or sliding elements.	x	-	SS-ENV 12520. Clause 4.2
1.3.1	Shear and squeeze points when setting up and folding. The requirements in 1.3 are not applicable when shear and squeeze points are created only when setting up and folding. (This exception does not apply to shear and squeeze points which may be accidentally produced by a user attempting to move fully erected seating).	x	-	SS-ENV 12520. Clause 4.2.1
1.3.2	Shear and squeeze points under the influence of powered mechanisms. The requirements in 1.3 are applicable to all moving parts created by parts operated by powered mechanisms, including springs.	x	-	SS-ENV 12520. Clause 4.2.2
1.3.3	Shear and squeeze points are not acceptable if unintentional movement of the parts may occur so that a hazard is created by the weight of the user.	x	-	SS-ENV 12520. Clause 4.2.3
1.4	All lubricated parts shall, when in normal use, be designed to protect from contact with the lubricant.	-	x	

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Technical Officer

4 Test record for application for möbelfakta certificate

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4.2.1 Contract use - Seatings

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Appendix 1

	Cont. general requirements	Safety	Strength/ Durability (performance)	References: Requirements
1.5	Knock-down furniture / assembly instructions. Parts or components being parts of a knock-down furniture shall be so prepared that the assembly can be done without any difficulties and in a reliable way. When the assembly requires an instruction it shall be easy to understand and instructive. The instruction shall by a list, a diagram or in an other way make it possible to control that all parts or components are supplied.	-	x	
2.	Stability The seating shall not overturn. The stability requirements shall be fulfilled before and after the tests specified in clause 3 - Safety and Strength and Durability (performance).	x	-	References: Tests SS-EN 1022
3.	Safety and strength / durability (performance)	Safety	Strength / Durability (performance)	References: Tests
3.5	Arm sideways static load test	x ✓	- 1)	SS-EN 1728. Clause 6.5
3.7	Arm downwards static load test	x ✓	- 1)	SS-EN 1728. Clause 6.6
3.1	Seat and back static load test	x ✓	- 1)	SS-EN 1728. Clause 6.2.1
3.3	Seat front edge static load	- ✓	x	SS-EN 1728 Clause 6.2.2

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Appendix 1

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4.2.1 Contract use - Seatings

3.	Cont. Safety and strength / durability (performance)	Cycles	Forces / loads	Safety	Strength / Durability (performance)	References: Tests
3.2	Additional seat and back static load test for tilting chairs, reclining chairs and loungers	10	According to formula: Seat 1600 N Back 560 N (max.)	x	- 1)	SS-EN 1728. Clause 6.3
3.4	Foot and leg rest static load test	10	1000 N (1300 N seat loading)	-	x	SS-EN 1728. Clause 6.4
3.6	Wing sideways static load test	10	300 N	x	- 1)	SS-EN 1728. Clause 6.5
3.8	Combined seat and back fatigue test	100 000	Seat 1000 N Back 300 N (max.)	x ✓	- 1)	SS-EN 1728. Clause 6.7
3.9	Additional seat and back fatigue test for tilting chairs, reclining chairs and loungers, inclination $\leq 70^\circ$ - backrest > 55° inclination - backrest < 55° inclination	50 000 50 000	According to formula: Seat 1000 N Back 300 N (max.)	x	- 1)	SS-EN 1728. Clause 6.9
3.10	Seat front edge fatigue test	50 000	1000 N	x ✓	- 1)	SS-EN 1728 Clause 6.8
3.11	Arm fatigue test	30 000	400 N	- ✓	x	SS-EN 1728. Clause 6.10
3.12	Leg forward static load test	10	620 N (max.) 1300 N (balancing load)	x ✓	- 1)	SS-EN 1728. Clause 6.12
3.13	Leg sideways static load test	10	490 N (max.) 1300 N (balancing load)	x ✓	- 1)	SS-EN 1728. Clause 6.13
3.14	Seat impact test	10	Drop height 240 mm.	- ✓	x	SS-EN 1728. Clause 6.15

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4.2.1 Contract use - Seatings

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Appendix 1

3.	Cont. Safety and strength / durability (performance)	Cycles	Forces / loads	Safety	Strength / Durability (performance)	References: Tests
3.15	Leg rest fatigue test	25 000	1000 N			SS-EN 1728. Clause 6.11
3.16	Diagonal static base load test	10	500 N			SS-EN 1728. Clause 6.14
3.17	Back impact test	10	Drop height 330 mm / 48°	-	x ✓	SS-EN 1728. Clause 6.16
3.18	Drop test	2 x 5	Drop height 200 mm	-	x ✓	SS-EN 1728. Clause 6.18

1) When assessing the test results the "Criteria of defects" accordance with "Strength and durability (function)", below, shall also be considered.

✓ The test has been completed without any remarks

* In clause , the force has been reduced to N in accordance with the standard

⊗ The requirement is not fulfilled

4 Test record for application for möbelfakta certificate

4.2.1 Contract use - Seatings

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Appendix 1

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Results

The test sequence was changed from SS-EN 1728. The test sequence is shown in the table.

Safety:

After carrying out the tests, the tested piece of furniture did not demonstrate any ruptures, fractures or other damage that can affect the safe use of the article as per SS-ENV 12520. This also implies that after the testing there shall be no burrs, sharp edges or sharp points. See clause 1.1.

Strength and durability (performance):

After carrying out the tests the tested piece of furniture did not demonstrate any ruptures, fractures or other damage that can affect the durability or appearance as:

- Fracture of any member, component or joint.
- Loosening of any joint intended to be rigid.
- Deformation or wear of any part or component such that its functioning is affected.
- Loosening of any means of fixing components.
- Any movable parts that no longer open or close freely, or catches that do not operate properly.
- Clearly audible noise.
- The height change of upholstery.

When tested according to clause 3.8 or 3.9 alternatively the height change of the seat shall not exceed 25 mm.

Assessment of the height change shall be carried out according to the method described in document CEN/TC207 N314 Domestic furniture – Seating – Test methods for the determination of durability of upholstery