SLOVENSKI STANDARD
oSIST prEN 16139:2010

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Pohištvo - Trdnost, trajnost in varnost - Zahteve za sedežno pohištvo, ki ni za domačo uporabo

Furniture - Strength, durability and safety - Requirements for non-domestic seating

Möbel - Festigkeit, Dauerhaltbarkeit und Sicherheit - Anforderungen an Sitzmöbel für den Nicht-Wohnbereich

Mobilier - Résistance, durabilité et sécurité - Exigences applicables aux sièges à usage non domestique

Ta slovenski standard je istoveten z: **prEN 16139**

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ICS

English Version

Furniture - Strength, durability and safety - Requirements for non-domestic seating

Mobilier - Résistance, durabilité et sécurité - Exigences applicables aux sièges à usage non domestique

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Foreword

This document (prEN 16139:2010) has been prepared by Technical Committee CEN/TC 207 “Furniture”, the secretariat of which is held by UNI.

This document is currently submitted to the CEN Enquiry.

1 Scope

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.

It does not apply to ranked seating, office work chairs, chairs for educational institutions, outdoor seating and to links for linked seating for which EN Standards or drafts exist. It does also not apply to work chairs for industrial use.

It does not include requirements for the durability of upholstery materials, castors, reclining and tilting mechanisms and seat height adjustment mechanisms.

The Standard does not include requirements for the resistance to ageing, degradation and flammability.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1022:2005, *Domestic furniture — Seating — Determination of stability*

EN 1335-1:2000, *Office furniture — Office work chair — Part 1: Dimensions — Determination of dimensions*

EN 1335-2:2009, *Office furniture — Office work chair — Part 2: Safety requirements*

EN 1335-3:2009, *Office furniture — Office work chair — Part 3: Test methods*

EN 1728:2000, *Domestic furniture — Seating — Test methods for the determination of strength and durability*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
accessible part
part to which access can easily be gained by the user when the seating is in its intended configuration of use and for which the probability of unintentional user contact is high

3.2
part accessible during setting up and folding
part to which access can only be gained when setting up and folding the furniture

3.3
shear and squeeze points
shear and squeeze points exist if the distance between two accessible parts moving relatively to each other is less than 25 mm and more than 8 mm for adults and children older than 3 years in any position during movement

3.4
castors
castors assembly comprising a housing, one or more wheels, an axle and, if required, accessories

3.5
leg rest
extension of the seat area intended to support the legs of the sitter

NOTE A leg rest may or may not be permanently attached to the seat.

3.6
foot rail
component intended as an occasional support for the feet or to assist getting on and off a high chair or stool

NOTE A foot rail may be a part of the structure of the underframe of a chair or stool.

3.7
visitor chair
seating for one person used in the office environment additional to the office work chair

NOTE It is used for meetings or consultations as well as for reading, writing, listening and waiting.

4 Test sequence

The safety tests shall be carried out in the numerical order as presented in 5.5. For all other tests there is no sequence specified.

5 Safety

5.1 General

The seating shall be so designed as to minimise the risk of injury to the user.

All parts of the seating with which the user comes into contact, during intended use, shall be so designed that physical injury and damage are avoided.

This requirement is met when:

— accessible corners are rounded with minimum 2 mm radius;

— the edges of the seat, back rest and arm rests which are in contact with the user when sitting in the chair are rounded with minimum 2 mm radius;

— the edges of handles are rounded with minimum 2 mm radius in the direction of the force applied;

— all other edges are free from burrs and rounded or chamfered;

— 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.

5.2 Shear and squeeze points

5.2.1 Shear and squeeze points when setting up and folding

Unless 5.2.2 or 5.2.3 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 5.1.

5.2.2 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.

5.2.3 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.

5.3 Stability

5.3.1 General

The seating shall not overturn under the following conditions:

a) by pressing down on the front edge of the seat surface in the median plane;

b) by applying a load on the seat surface via the front corner;

c) by leaning sideways on a with or without arm rests;

d) by leaning against the back rest;

e) by sitting on the front edge of the seat;

f) by loading the foot rail/foot rest.

5.3.2 Swivelling chairs

Requirements a) to e) are considered to be met if the seating complies with the relevant requirements of EN 1335-2.

The requirement f) is considered to be met if the seating complies with the requirement of EN 1022:2005, 6.3.

5.3.3 Non swivelling chairs

The seating shall fulfil the relevant requirements of EN 1022.

5.4 Rolling resistance of the unloaded chair

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:

— the rolling resistance is ≥12 N when tested in accordance with EN 1335-3:2009, 7.4;

— all castors are of the same type.

5.5 Safety of the construction

The following tests described in Clause 7, Table 1 are considered to be relevant to safety:

Test No.: 1, 2, 4, 7, 8, 9, 10, 11, 14, 15, 17.

Seating is considered to satisfy the safety requirements if, on completion of the tests, the chair satisfies all requirements of Clause 6.

6 Strength and durability requirements

The chair shall be constructed to ensure that it does not create a risk of injury to the user of the chair under the following conditions:

a) sitting on the seat, both centrally and off-centre;

b) moving forward, backwards, and sideways while sitting in the chair;

c) leaning over the arm rests;

d) pressing down on the arm rests while getting up from the chair.

The strength and durability requirements are fulfilled when during and after testing in accordance with Table 1:

e) there are no fractures of any member, joint or component;

f) there are no loosening of joints intended to be rigid;

g) no major structural element is significantly deformed;

h) the chair fulfils its functions after removal of the test loads;

i) the seating fulfils the stability requirements.

7 Test methods

Seating shall be tested for strength and durability according to Table 1 and following the order listed in Table 1.

The guidance for selecting level L1 or L2 with due respect for the end use of the product is given in Annex C (informative).

Table 1 — Strength and durability tests

Test	Reference	Loading	Level	
			L1	L2
1. Seat and back static load test[a]	EN 1728:2000, 6.2.1 and 6.3	Seat: force, N Back: force, N 10 times	1 600 560	2 000 700
2. Seat front edge static load test	EN 1728:2000, 6.2.2	Force, N 10 times	1 300	1 600
3. Vertical static load on back	Annex A.2	Force, N Seat load, N 10 times	600 1 300	900 1 800
4 Foot rail/foot rest and leg rest static load test	EN 1728:2000, 6.4	Force, N 10 times	1 300	1 600
5. Arm sideways static load test	EN 1728:2000, 6.5	Force, N 10 times	400	900
6. Wing sideways static load test	EN 1728:2000, 6.5	Force, N 10 times	Test to be cancelled	
7. Arm downwards static load test	EN 1728:2000, 6.6	Force, N 5 times	750	900
8. Vertical upwards static load on arm rests	Annex A.1	Seat load N Lift 10 times	250 or lift stack	1 200
9. Seat and back fatigue test[a]	EN 1728:2000, 6.7 and 6.9	Cycles Seat: 1 000 N Back: 300 N	100 000	200 000
			For tilting or reclining chairs test to be performed with half the cycles in an upright position and the other half in a tilted or reclined position.	
10. Seat front edge fatigue test	EN 1728:2000, 6.8	Cycles Force: 800 N	50 000	100 000
11. Arm fatigue test	EN 1728:2000, 6.10	Cycles Force: 400 N	60 000	60 000
12. Leg rest fatigue test	EN 1728:2000, 6.11	Cycles Force: 1 000 N	--	50 000
13. Foot rail fatigue test	Annex A.5	Force: 1 000 N	50 000	100 000
14. Leg forward static load test[a]	EN 1728:2000, 6.12	Force, N Seat load N 10 times	500 1 000	620 1 800
15. Leg sideways static load test[a]	EN 1728:2000, 6.13	Force, N Seat load, N 10 times	400 1 000	760 1 800