SLOVENSKI STANDARD
SIST EN 1022:2006

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Pohiģtvo za domaļ o uporabo - Sedeǵno pohiģtvo - Ugotavljanje stabilnosti

Domestic furniture - Seating - Determination of stability

Wohnmöbel - Sitzmöbel - Bestimmung der Standsicherheit

Mobilier domestique - Sieges - Détermination de la stabilité

Ta slovenski standard je istoveten z: **EN 1022:2005**

ICS:

97.140	Pohištvo	Furniture

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EUROPEAN STANDARD

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English version

Domestic furniture - Seating - Determination of stability

Mobilier domestique - Sièges - Détermination de la stabilité

Wohnmöbel - Sitzmöbel - Bestimmung der Standsicherheit

This European Standard was approved by CEN on 26 May 2005.

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Contents

Foreword

This European Standard (EN 1022:2005) has been prepared by Technical Committee CEN/TC 207 “Furniture”, the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

This document supersedes EN 1022:1996.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard specifies test methods and requirements for the determination of the stability of all types of domestic seating for adults.

The European Standard does not apply to adjustable geometry seating where the backrest is at an angle of 10° or less to the horizontal.

Stability can be determined by either the experimental or the calculative method. Both methods are based on the same forces and points of application.

The calculative method does not apply to seating, which have variable geometry and to seating, which visibly flex under the applied loads.

If the result of the calculative method is uncertain or marginal the result shall be checked, if possible, by the experimental method.

2 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply:

2.1
stability
ability to withstand forces that tend to cause the loaded seating to overturn

2.2
load bearing structure
any part of a chair, which as its primary function supports a portion of the loads exerted by the sitter, e.g. the seat frame but not the upholstery

2.3
footrest
part of the structure of a chair intended to support the feet of the sitter

3 General test conditions

3.1 General

No prior conditioning is required.

The furniture shall be tested as delivered. The tests shall be carried out in the configuration most likely to cause overturning.

Knock-down furniture shall be assembled according to the instructions supplied with it. If the furniture can be assembled or combined in different ways, the most adverse configuration shall be used for each test. Knock-down fittings shall be tightened before testing.

Stools shall be tested for forwards overturning in all directions. The other stability tests are not applicable.

The test results are only valid for the tested seating. When the test results are intended to be applied to production models, the tested seating shall be representative of the production model.

In the case of designs not catered for in the test procedures, the tests shall be carried out as far as possible as described and deviations from the test procedure recorded in the test report.

3.2 Tolerances

Unless otherwise stated:

— all forces shall have an accuracy of ± 5 % of the nominal force.

— all masses an accuracy of ± 0,5 % of the nominal mass.

— all dimensions an accuracy of ± 1 mm of the nominal dimension.

— all angles an accuracy of ± 2° the nominal angle.

The tolerance for positioning of loading pads shall be ± 5 mm.

The tests are described in terms of the application of forces. Masses can however be used. The relationship 10 N = 1 kg may be used for this purpose.

4 Test equipment

4.1 General

Except otherwise specified, the tests may be applied by any suitable device, because results are dependent on correctly applied loads and not upon the apparatus.

The test equipment shall not hinder any deformation of the seating being tested.

All loading pads shall be capable of pivoting in relation to the direction of the applied force and the pivot point shall be as close as practically possible to the load surface.

4.2 Loading pad

Rigid circular object 200 mm in diameter with a face having a convex spherical curvature of 300 mm radius with a 12 mm edge radius. The loading pad shall be mounted on a device, which can apply a vertical force as specified.

4.3 Horizontal force application device

A device, which can apply a force either at a given value or at a gradually increasing value, e.g. a spring balance.

4.4 Loading discs

Discs with a mass of 10 kg each, diameter 350 mm and a thickness of 48 mm.

4.5 Support apparatus

An apparatus to support the main stack of the loading discs in reclining chair tests. It shall be as light as possible and not heavier than 2,5 kg. Figure 1 shows a basic design.

Dimensions in millimetres

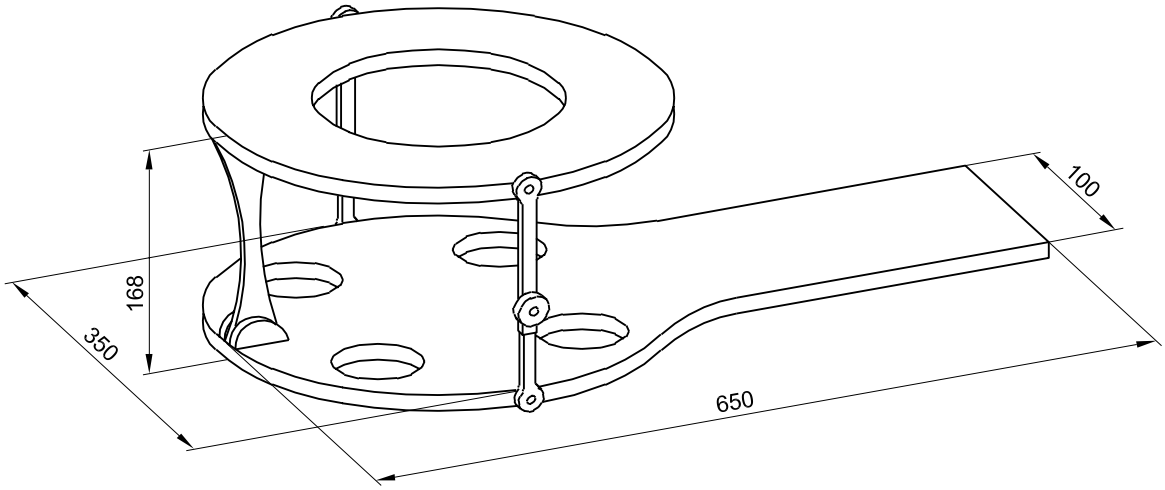


Figure 1 — Support apparatus

4.6 Loading point template

A template, which consists of two shaped members fastened together by a pivot at one end (Figures 2 and 3). The contours of the shaped surfaces are so devised as to sink into the upholstery. For this purpose the seat loading arm shall have a mass of 20 kg applied at the seat loading point.

The apparatus is marked as shown in Figure 3.

4.7 Stops

Stops shall be of the minimum height required to prevent sliding and shall not inhibit overturning.

4.8 Floor surface

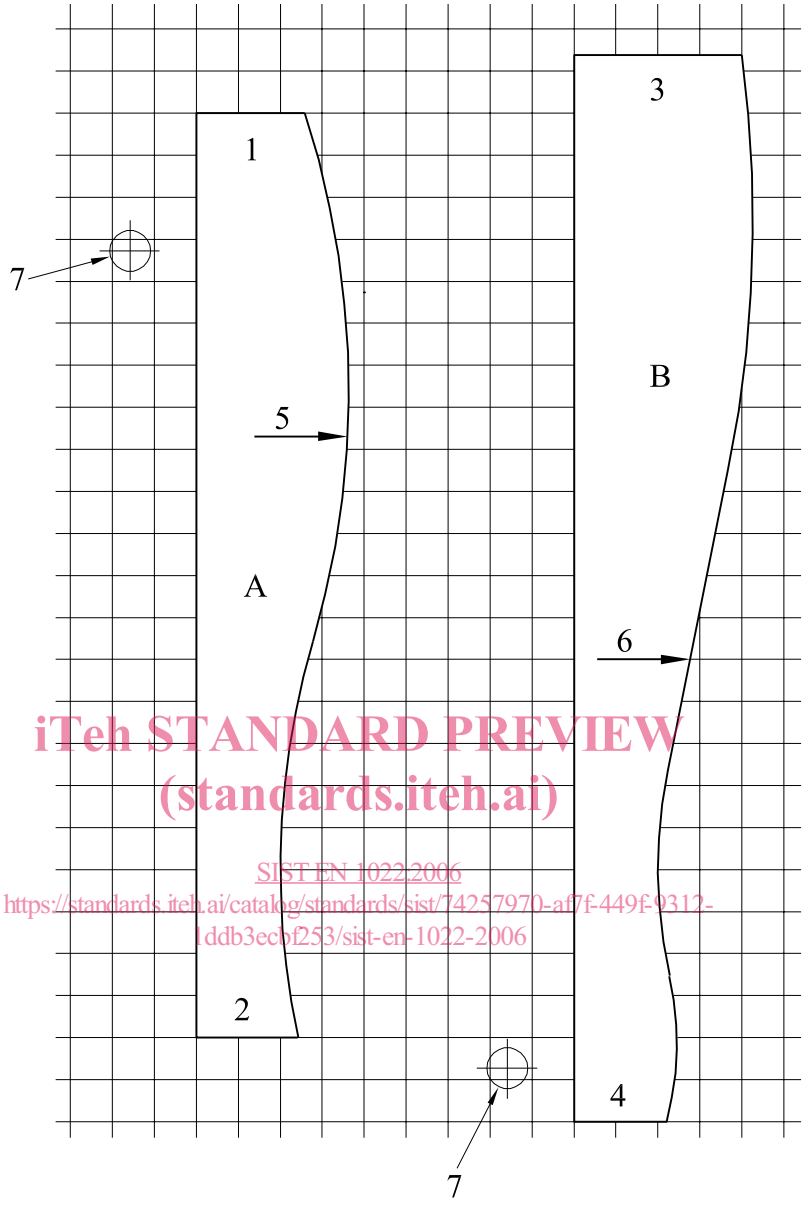
Horizontal, flat, rigid and with a smooth surface.

5 Determination of seat and back loading points

The seat and back loading points shall be determined using the loading point template (4.6) as specified below. In some cases it may not be possible to determine the loading points by means of the loading point template. In such cases, the loading points of 175 mm forward of the seat/back junction and 300 mm upward from the seat/back junction shall be used.

Position the loading point template (4.6) on the fore and aft centreline as far towards the rear as possible with its load applied at the seat loading point.

Scale: 1 square = 20 mm

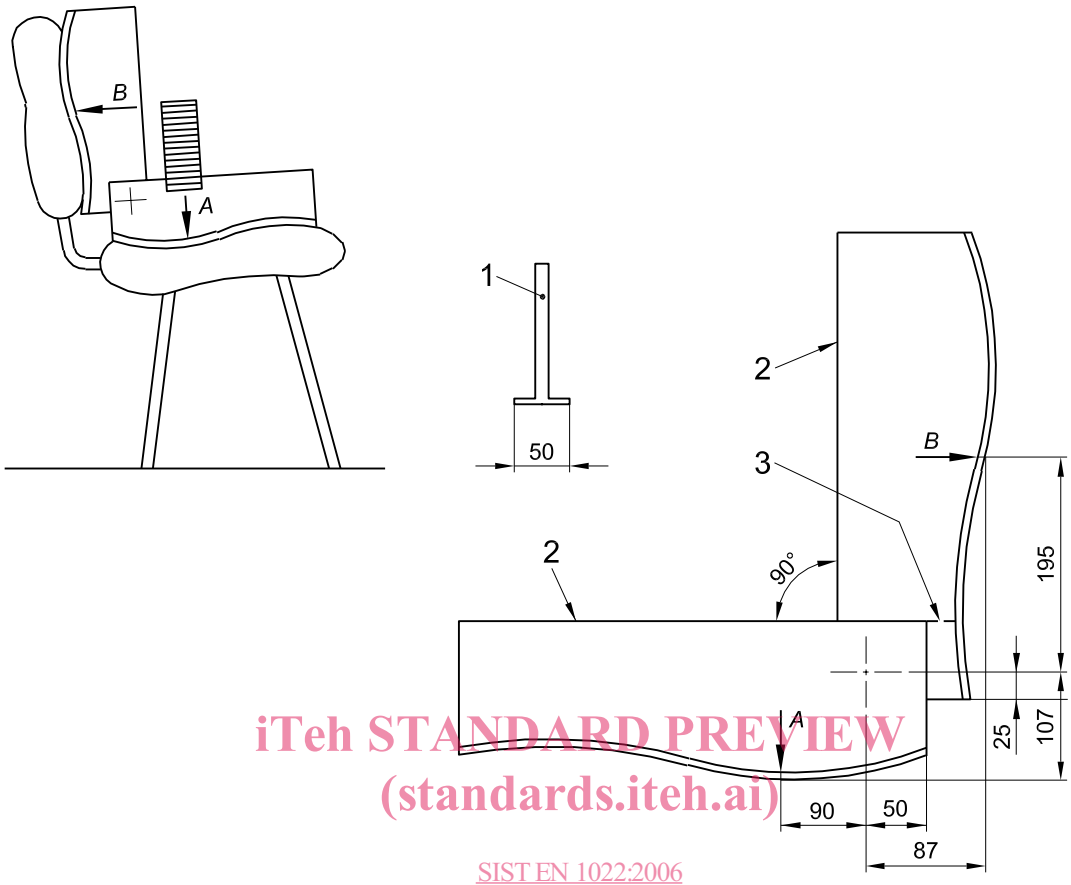


Key

1 Rear
2 Front
3 Top
4 Bottom
5 Seat loading point
6 Back loading point
7 Pivot point
A Seat portion
B Back portion

Figure 2 — Loading surface curves for seat and back loading point template

Dimensions in millimetres



Key

1 Typical section
2 Straight edge for determination of seat or back inclination
3 Mark to fix 90°
A Seat loading point (chairs)
B Back loading point (chairs)

Figure 3 — Loading point template

Adjust its position by pushing the back portion into the back, so levering the seat portion forwards until the shape of the loading point template correlates with that of the seat. In cases where the loading point template can be settled in more than one position, the position having the smallest angle between the seat and back portions of the loading point template shall be used.

The angle shall in no cases be less than 90°.

Mark the loading points from the loading point template.

When a seating has more than one sitting place, repeat the procedures on the other sitting places. If the number of sitting places in the seating is not obvious, divide the total seat length (in millimetres) by 600 and round to the nearest whole number to determine the number of places. Divide the total seat length into that number of places of equal length.

6 Test procedure and requirements, all seating: experimental method

6.1 Requirements

When tested according to Clause 6, the seating shall not overturn.

6.2 Forwards overbalancing, all seating

Position the seating on the floor surface (4.8) with the front legs or base restrained by stops (4.7).

Apply a force of 600 N vertically (for multiple sitting places to a maximum of 2 places) by means of the loading pad (4.2) acting at those points 60 mm behind the front edge of the load bearing structure most likely to result in overturning.

At each loaded position apply a force *F* of 20 N for at least 5 s horizontally outwards along a horizontal line extended forward from the point where the base of the loading pad meets the upper surface of the seat (Figure 4).

For calculative method see Clause 8.

6.3 Forwards overturning for seating with footrest

For seating with footrests repeat the procedure in 6.2 applying the vertical and horizontal loads to the footrests. For footrests of tubular construction the loads shall be applied along the centre line of the tube.

6.4 Sideways overbalancing, all seating without arms

Position the seating on the floor surface (4.8) with the side legs or base restrained by stops (4.7).

Apply a force of 600 N vertically by means of the loading pad at those points 60 mm behind the edge of the load bearing structure of the side nearest the stopped feet most likely to result in overturning.

Apply a sideways force *F* of 20 N horizontally outwards for at least 5 s along a line from the point where the base of the loading pad meets the upper surface of the seat (Figure 5).

For calculative method see Clause 8.

6.5 Sideways overbalancing, all seating with arms

Position the seating on the floor surface (4.8) with the side legs or base restrained by stops (4.7).

Apply a vertical force *F* of 350 N by means of the loading pad (4.2) at a position on the centre line of the arm up to a maximum 40 mm inwards from the outer edge of the arm structure at the most adverse position along its length.

Apply a vertical force of 250 N at a point 100 mm to the side of the fore and aft centre line of the seat (Figure 6) which is nearest the stopped feet and at the same distance from the backrest as the arm loads.

Apply a horizontal force *F* of 20 N outwards, and perpendicular to the line joining the stopped feet, for at least 5 s, at the upper surface of the armrest in line with the vertical arm force and on the side with stopped feet (Figure 6).

For calculative method see Clause 8.