SLOVENSKI STANDARD
SIST ENV 13759:2002

01-maj-2002

Pohiġtvo za domaļ o uporabo - Sedeġno pohiġtvo ï Preskusne metode za ugotavljanje trajnosti postelje z mehanizmi za razstavljanje in sestavljanje

Domestic furniture - Seating - Test method for the determination of the durability of reclining and/or tilting mechanisms and operating mechanisms for convertible sofa beds

Wohnmöbel - Sitzmöbel - Prüfverfahren zur Bestimmung der Dauerhaltbarkeit von Neige - und Wippmechaniken und Funktionsmechaniken für Liegesofas

Mobilier domestique - Sieges - Méthodes d'essai pour la détermination de la durabilité des mécanismes de basculement et/ou d'inclinaison et des mécanismes de manoeuvre des
canapés convertibles

Ta slovenski standard je istoveten z: **ENV 13759:2000**

ICS:

97.140 Pohištvo Furniture

SIST ENV 13759:2002 **en**

EUROPEAN PRESTANDARD

PRÉNORME EUROPÉENNE

EUROPÄISCHE VORNORM

ENV 13759

October 2000

ICS 97.140

English version

Domestic furniture - Seating - Test method for the determination of the durability of reclining and/or tilting mechanisms and operating mechanisms for convertible sofa beds

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This European Prestandard (ENV) was approved by CEN on 30 September 2000 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Ref. No. ENV 13759:2000 E

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Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 207 "Furniture", the secretariat of which is held by IBN.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European test method has been developed in order that laboratories and manufacturers can carry out testing of functional mechanisms in the same systematic way and so that test results will be comparable.

When testing functional mechanisms, the practical use may differ as a consequence of the stature of the person using the seating.
A tall person may be able to recline the back of a chair only by leaning back (the weight of the upper body will recline the back) whereas a small person may need both the weight of the upper body and and additional force e.g. from pressing with the hands/arms.

The current test method, concequently, emphasizes this difference by carrying out the technical testing on the basis of a description of the practical use of two different persons. This may in many cases lead to two different tests.

1 Scope

This ENV specifies a test method for the determination of the durability of hand and power operated reclining and tilting mechanisms.

It also specifies test methods for the determination of durability of mechanisms for converting sofas and chairs into beds.

Test methods for strength and durability of the structure are not included, for which references shall be made to prEN 1728:1998 and to EN 1725.

It does not apply to testing electrical components except for their function as part of the mechanism under test, nor does it apply to seating which comes within the scope of the medical device directive.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 1725 "Domestic furniture - Beds and mattresses - Safety requirements and test methods"

prEN 1728:1998 "Domestic furniture - Seating - Test methods - Determination of strength and durability"

3 General test conditions

3.1 Preliminary preparation

Before testing is commenced, the test unit shall be old enough to ensure that it has developed its full strength. At least four weeks in normal indoor conditions shall have elapsed between manufacture and testing in the case of glued joints in timber and the like.

The furniture shall be tested as delivered. Knock-down furniture shall be assembled according to the instructions supplied with it. If the test unit can be assembled in different ways, the most adverse combination shall be used. Knock-down fittings shall be tightened before testing, if applicable. Further tightening shall not take place unless this is specifically required by the manufacturer.

The unit for test shall be stored in indoor ambient conditions for at least one week immediately prior to testing. Any deviation from this procedure shall be recorded in the test report.

The tests shall be carried out in indoor conditions, but if during a test the atmospheric temperature is outside the range 15 °C to 25 °C, the maximum and/or minimum temperature shall be recorded in the test report.

3.2 Tolerances

Unless otherwise stated:

- all forces shall have an accuracy of ± 5%
- all masses an accuracy of ± 0,5%
- all dimensions an accuracy of ± 1mm.

4 Test equipment

4.1 Test dummy,

consisting of three main parts (back part - seat part - lower leg part) and made of approx 30 mm rigid material with a density of 650 kg/m3 ±10 %, e.g. birch plywood. The dummy shall comply with the dimensions given in Figure 1, i.e.

	Length	Width
Back part	450 mm	350 mm
Seat part (incl. curve)	540 mm	350 mm
Lower leg part	460 mm	200 mm

All edges and corners which are in contact with the seating shall be rounded with a radius of approximately 30 mm.
The hinge points shall be as shown in Figure 1, and hinging shall be so that upholstery materials, e.g. textiles, leather and foam, are not trapped and/or torn by the moving parts of the dummy.

The weight of the dummy including pivots but excluding additional masses W_1, W_2 and W_3 (6.2) shall be 8,95 kg ± 10 %.

> Note Other materials may be used provided that the centres of gravity and the total masses are maintained.

The back part of the dummy shall be capable of rotating rearwards until it at least reaches horizontal, and it shall be restricted from rotating further forwards than 30° to the vertical, see Figure 1.

The lower leg part shall at least be capable of rotating from horizontal to vertical, see Figure 1.

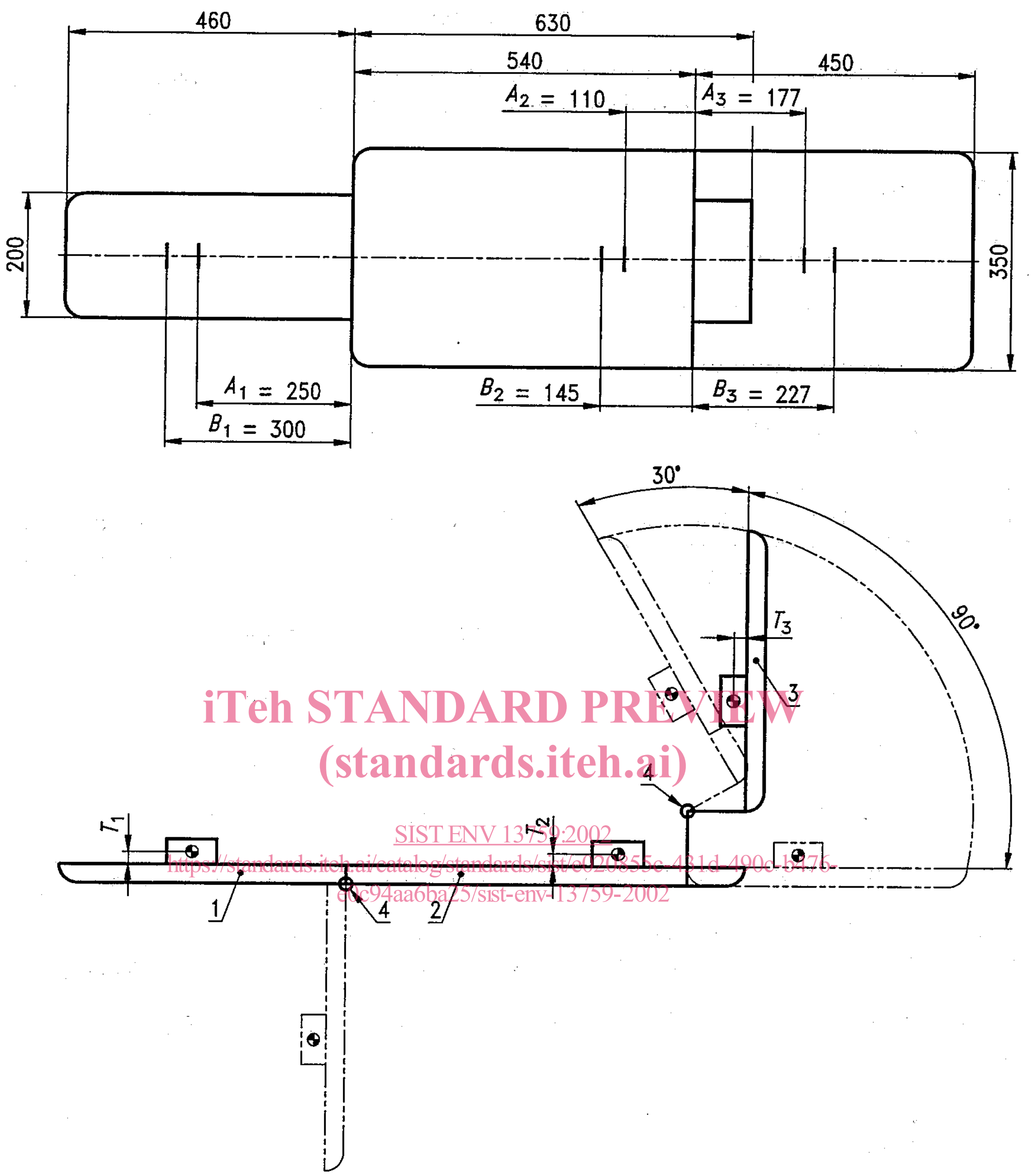
The dummy shall be fitted with attachment points on the longitudinal centreline so that the total mass can be adjusted as to the two types described in 6.2 (65 kg and 95 kg).

The attachment points (points A for the 65 kg type and points B for the 95 kg type and the centre of gravity of the masses shall be as specified in Figure 1.

4.2 Masses

which shall be attached to the dummy are specified in Figure 1.

Dimensions in millimeters



Key

A= 65kg type
B= 95kg type
W = masses
T= C.G. of masses
1 = Lower leg part
2= Seat part
3= Back part
4= Hinge

Lower leg part:		Seat part:		Back part:	
A1=250mm		A2=110mm		A3=177mm	
B1=300mm		B2=145mm		B3=227mm	
T1A=16mm	W1A=4,5kg	T2A=15mm	W2A=12,55kg	T3A=75mm	W3A=39,0kg
T1B=23mm	W1B=7,5kg	T2B=23mm	W2B=20,05kg	T3B=93mm	W3B=58,5kg

Figure 1 - Test dummy

5 Determination of the functional operation

5.1 In order to determine the appropriate test procedure(s) for the seating, the functional operation(s) shall be examined.

In the case of seating occupied during operation, the manner of operation shall be examined when the seating is used by two different persons as defined below:

one person of (165 ± 5) cm and (65 ± 5) kg, and

one person of (195 ± 5) cm and (95 ± 5) kg.

5.2 The examination shall be used to describe the manner of operation of the seating. The description shall include at least the following:

- means of operation (e.g. power, body movement),

- stages of operation,

- time taken to carry out operation(s), and

- whereever possible the forces exerted.

For seating:

actions required to recline/tilt the seating (incl the release of locking devices), e.g. pressing the arms and thereby reducing the load on the seat or other ways of moving the weight of the test person from one part of the seating to another. Actions required to bring the seating to the upright position including, e.g. extra load being applied to the foot rest or other ways of moving the weight of the test person from one part of the seating to another.

For convertible bed/settees:

- actions required to convert the bed into a sofa

- actions required to convert a sofa into a bed.

6 Test procedure

6.1 General

Testing shall be carried out as closely to the manner of operation described (see clause 5) as practically possible, and sufficiently slowly to ensure that kinetic heating does not occur.

With the seating in its most upright position and the dummy in the "sitting position" (i.e. back part and lower leg part approximately vertical), the back part of the dummy shall be positioned as far to the rear of the seat as possible.

In the case of seating occupied during operation, half the number of cycles shall be carried out using dummy type A and the manner of operation described for a 65 kg person and half the number using dummy type B and the manner of operation described for a 95 kg person.

Seating which can be operated both when the seating is occupied and when there is no one in the seating shall be tested as described for seating occupied during operation.