



# SLOVENSKI STANDARD

## SIST EN 13453-2:2004

01-december-2004

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Furniture - Bunk beds and high beds for non-domestic use - Part 2: Test methods

Büromöbel - Büroschränke - Teil 1: Maße

Ameublement - Lits superposés et lits surélevés a usage non-domestique - Partie 2 :  
Méthodes d'essais

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Ta slovenski standard je istoveten z: **EN 13453-2:2004**

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**ICS:**

97.140

Pohištvo

Furniture

**SIST EN 13453-2:2004**

**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13453-2**

June 2004

ICS 97.140

English version

## Furniture - Bunk beds and high beds for non-domestic use - Part 2: Test methods

Meubles - Lits superposés et lits en hauteur pour usage  
non-domestique - Partie 2: Méthodes d'essais

Möbel - Etagenbetten und Hochbetten für den  
Objektbereich - Teil 2: Prüfverfahren

This European Standard was approved by CEN on 8 April 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of 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.

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## Foreword

This document (EN 13453-2:2004) 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of an identical text or by endorsement, at the latest by December 2004, and conflicting national standards shall be withdrawn at the latest by December 2004.

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.

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**EN 13453-2:2004 (E)****Introduction**

This part of EN 13453 specifies tests consisting of the application to various parts of the item, of loads or forces simulating normal functional use, as well as misuse that can reasonably be expected to occur.

The tests are designed to evaluate properties without regard to materials, design/construction or manufacturing processes.

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## 1 Scope

This part of EN 13453 specifies test methods that assess the safety, strength and durability of bunk beds and high beds for non domestic use.

The corresponding safety requirements are given in EN 13453-1.[1]

## 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 747-1, *Furniture - Bunk beds for domestic use - Part 1 : Safety requirements.*

EN ISO 2439:2000, *Flexible cellular polymeric materials - Determination of hardness (indentation technique) (ISO 2439:1997)*

## 3 Test conditions

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### 3.1 General

The tests are designed to be applied to a bunk bed or high bed that is fully assembled and ready for use.

The test results are only valid for the article tested. When the test results are intended to be applied to other similar articles, the test specimen shall be representative of the production model.

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

### 3.2 Preliminary preparation

Before any of the test described in this part of EN 13453 are commenced, the bed 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 bed shall be tested as delivered. If a knock-down type it shall be assembled according to instructions supplied with the bed. If the bed can be assembled or combined in different ways, the most adverse combination shall be used for each test. In the case of bunk beds intended to be fastened together in pairs or attached to the structure of a building, they shall be tested as a single free standing bed unless the instructions specifically require attachment to another bunk bed or the building structure.

Knock-down fittings shall be tightened before testing. Further tightening shall not take place unless specifically required by the manufacturer.

The bed 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.

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The tests shall be carried out in indoor ambient 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.

The test shall be carried out on the same bed in the same order as listed in this part of EN 13453.

**3.3 Application of forces**

The test forces in durability and static load tests shall be applied sufficiently slowly to ensure that negligible dynamic load is applied. The forces in durability tests shall be applied sufficiently slowly to ensure that kinetic heating does not occur. Unless otherwise stated static loads shall be maintained for  $(10 \pm 2)$  s. Unless otherwise stated durability loads shall be applied for  $(2 \pm 1)$  s.

**3.4 Tolerances**

Unless otherwise stated:

All forces shall have an accuracy of  $\pm 5\%$  of the nominal force;

All masses shall have an accuracy of  $\pm 1,0\%$  of the nominal mass;

All dimensions shall have an accuracy of  $\pm 1,0$  mm of the nominal dimensions;

- All angles shall have an accuracy of  $\pm 2\%$  of the nominal angle.

- The tolerance for the positioning of loading pads shall be  $\pm 5$  mm.

The tolerance for positioning loading pads shall be  $\pm 5$  mm.

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**4 Test equipment and apparatus****4.1 General**

The tests may, unless otherwise stated, be applied by any suitable device because results are dependent only upon correctly applied forces and loads and not upon the apparatus.

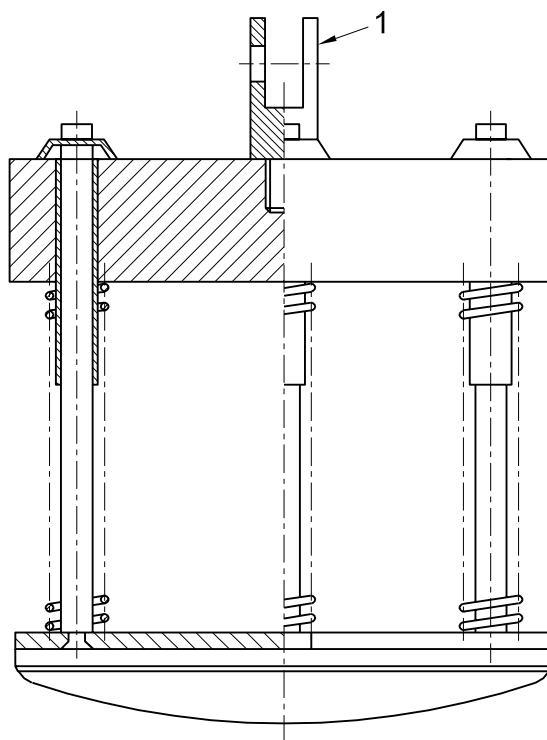
**4.2 Bed base impacter (see Figure 1)**

**4.2.1** Circular body, 200 mm in diameter separated from the striking surface by helical compression springs and free to move relative to it on a line perpendicular to the plane of the central area of the striking surface.

The body and associated parts minus the springs shall have a mass of  $(17 \pm 0,1)$  kg and the whole apparatus, including mass, springs and striking surface, shall have a mass of  $(25 \pm 0,1)$  kg.

**4.2.2** Springs, shall be such that the combined spring system has a nominal spring rate of  $(6,9 \pm 1)$  N/mm and the total friction resistance of the moving parts is between 0,25 N and 0,45 N.



**Key**

1 Joint of lifting device not inhibiting free fall

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**Figure 1 — Bed base impacter**

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The spring system shall be compressed to an initial load of  $(1040 \pm 5)$  N (measured statically) and the amount of spring compression movement available from the initial compression point to the point where the springs become fully closed shall be not less than 60 mm.

**4.2.3** Striking surface, shall be a rigid circular object 200 mm in diameter, the face of which has a convex spherical curvature of 300 mm radius within a 12 mm front edge radius.

**4.3 Loading pad**

Rigid circular object 200 mm in diameter; the face of which has a convex spherical curvature of 300 mm radius with a 12 mm front edge radius (see Figure 2).

**4.4 50 mm diameter loading pad**

Rigid circular object 50 mm in diameter with a flat face and a 12 mm edge radius.

**4.5 Test mattress**

Flexible polyether foam sheet with a thickness of 100 mm, a density of  $(30 \pm 2)$  kg/m<sup>3</sup> and indentation hardness index of  $(170 \pm 20)$  N in accordance with A 40 in EN ISO 2439:2000. The dimensions shall be such as to overlap the size of the loading pad by at least 100 mm all round. The test mattress shall not have any cover.

The same part of the test mattress shall not be re-used within two hours and the mattress shall be replaced after 5 tests.