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## Domestic furniture – Beds and mattresses – Safety requirements and test methods

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Swedish Standards corresponding to documents referred to in this Standard are listed in "Catalogue of Swedish Standards", issued by SIS. The Catalogue lists, with reference number and year of Swedish approval, International and European Standards approved as Swedish Standards as well as other Swedish Standards.

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ICS 97.140

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**EN 1725**

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Descriptors: Furniture, beds, mattresses, safety, specifications, accident prevention, tests, mechanical tests, impact tests, stability tests, durability, testing conditions, environment

English version

**Domestic furniture – Beds and mattresses – Safety requirements  
and test methods**

Meubles à usage domestique – Lits et  
matelas – Exigences de sécurité et  
méthodes d'essais

Wohnmöbel – Betten und Matratzen –  
Sicherheitstechnische Anforderungen und  
Prüfverfahren

This European Standard was approved by CEN on 4 December 1997.

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.

The European Standards exist 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.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 BRUSSELS

## Foreword

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

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of an identical text or by endorsement, at the latest by July 1998, and conflicting national standards shall be withdrawn at the latest by July 1998.

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

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## Introduction

This European Standard has been prepared in order to provide assurance that domestic beds complying with the requirements are reasonably safe.

It is intended to prevent serious injury through normal functional use, as well as misuse that might reasonably be expected to occur.

It should be understood that the tests do not ensure that structural failure will not eventually occur as a result of habitual misuse or after an excessively long period of use.

## 1 Scope

This European Standard specifies mechanical safety requirements and testing for all types of fully erected domestic adult beds including all component elements such as bed frame, bed base, mattress and mattress pads (when they form a unit with the mattress). It does not apply to foldaway beds, bunk beds, children's cots and adjustable beds for disabled persons where separate standards exist, as well as waterbeds and air beds.

Further tests may be applicable for test units that are multi-purpose, e.g. convertible sofa beds and power driven systems.

Assessment for ageing and degradation are not included.

## 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.

EN 1022, *Domestic furniture — Seating — Determination of stability.*

ISO 2439, *Flexible cellular polymeric materials — Determination of hardness (indentation technique).*

## 3 Definitions

For the purposes of this standard the following definitions apply.

### 3.1

#### unframed slat base

bed base consisting of separate slats flexibly held together normally by means of textile, rubber or plastic tape

NOTE When loading one slat, the load is transferred to the support by that slat only.

### 3.2

#### framed base

bed base consisting of slats, springs, etc., which are connected to a structural frame system

NOTE When loading one component only, e.g. a slat or a spring, the load is distributed by the frame to the support.

### 3.3

#### framed sprung mattress

upholstered bed base consisting of springs, topped with fillings, on a rigid frame to be used in a bed frame or freestanding

### 3.4

#### divan base

upholstered bed base used without the need of any framework. It may be constructed with a spring filling or a solid top and may include drawers or storage facilities

## 4 General test conditions

### 4.1 Preliminary preparation

Before any of the tests are commenced, the test unit shall be old enough to ensure that it has developed its full strength.

The test unit 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 or combined in different ways, the most adverse combination shall be used for each test. 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 test unit shall be stored in indoor ambient conditions for at least one week immediately prior to testing. Any deviation from this procedure shall be stated in the report.

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.

### 4.2 Test equipment

The forces in static load and durability tests shall be applied sufficiently slowly to ensure that negligible dynamic load is applied.

Test forces, unless otherwise stated, may be applied by any suitable device because results are not dependent upon the apparatus.

### 4.3 Tolerances

Unless otherwise stated:

- all forces shall have an accuracy of  $\pm 5\%$  of the nominal force;
- all masses shall have an accuracy of  $\pm 0,5\%$  of the nominal mass;
- all dimensions shall have an accuracy of  $\pm 1$  mm of the nominal dimension.

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

#### 4.4 Sequence of testing

All tests specified for a particular part shall be carried out on the same sample.

The tests shall be carried out in the sequence laid down in this standard.

### 5 Test environment and apparatus

#### 5.1 Floor surface

Rigid, horizontal and flat.

#### 5.2 Stops

Stops shall be used to prevent the bed from sliding but not tilting and shall be no higher than 12 mm except in cases where the design of the bed requires the use of higher stops; in which case the lowest that will prevent the bed from moving, shall be used.

#### 5.3 Standard test mattress

Flexible polyether foam with a thickness of 100 mm, a density of  $(30 \pm 2) \text{ kg/m}^3$  and an indentation hardness index of  $(170 \pm 20) \text{ N}$  in accordance with A40 in ISO/DIS 2439. The size of the mattress shall be such as to overlap the size of the loading pad by at least 100 mm all round.

The test mattress shall have a cover with the following characteristics:

- composition: pure cotton;
- weave in plain: 1/1;
- mass per unit area:  $100 \text{ g/m}^2$  to  $120 \text{ g/m}^2$ ;
- warp and weft: 20 threads/cm to 30 threads/cm;
- finishing: washed, no finishing agents;
- cover make up: tight fit, but no restriction on the foam.

Each test mattress shall be used for no more than five complete bed tests.

#### 5.4 Standard test bed base (unframed)

Slats made of wooden materials with a modulus of elasticity of  $(1000 \pm 200) \text{ N/mm}^2$ .

The cross section of the slats shall be  $20 \text{ mm} \times 95 \text{ mm}$  and the distance between the slats  $(60 \pm 2) \text{ mm}$ .

If the free span of the slats is  $> 1000 \text{ mm}$  support the slats along the centre line.

The length of the slats shall be 10 mm shorter than the nominal width of the bed frame.

#### 5.5 Standard test bed base (framed)

Slats as described in 5.4.

The slats shall be mounted on a frame made of wooden material defined in 5.4 with a cross section of  $45 \text{ mm} \times 20 \text{ mm}$  (see Figure 1).

The width of the bed base shall be 20 mm smaller than the nominal width of the bed frame.

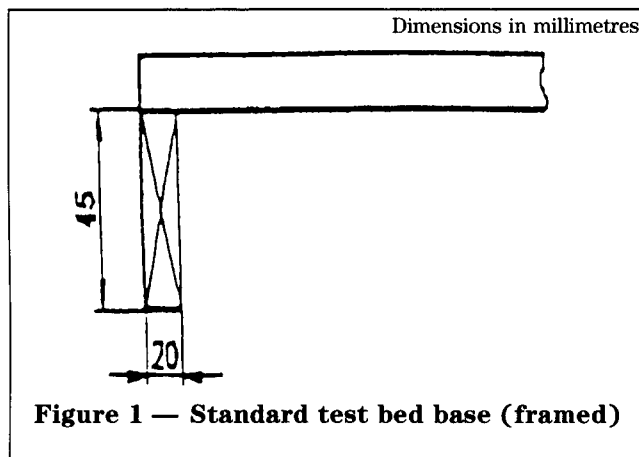


Figure 1 — Standard test bed base (framed)

#### 5.6 Standard test support (unframed bed bases)

The base shall be suitably supported along its whole length.

The total overhang on one side (see Figure 2) shall be  $(20 \pm 1) \text{ mm}$ .

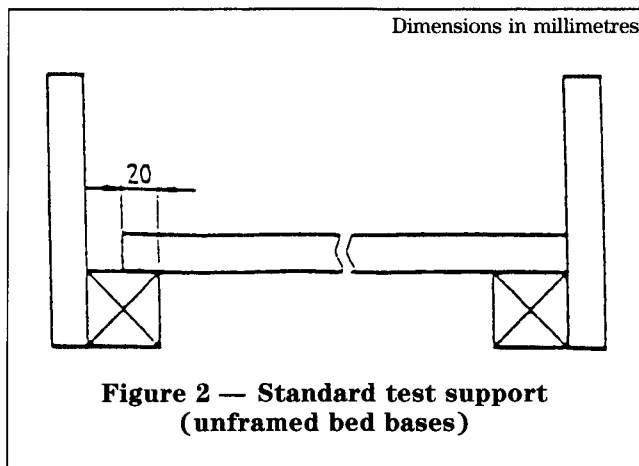


Figure 2 — Standard test support (unframed bed bases)

#### 5.7 Standard test support (framed bed bases)

Supports of 50 mm width, suitable to carry the bed base and the test loads, shall be placed 150 mm from the ends of the frame (see Figure 3).

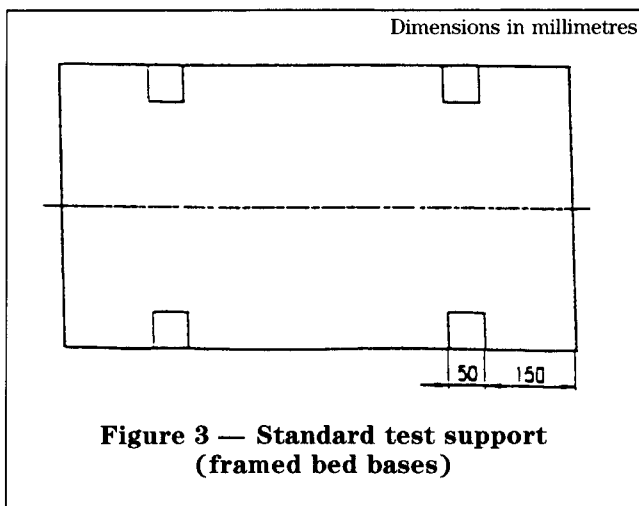


Figure 3 — Standard test support (framed bed bases)