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Pohišтво - Pogradi in visoke postelje - 2. del: Preskusne metode

Furniture - Bunk beds and high beds - Part 2: Test methods

Möbel - Etagenbetten und Hochbetten - Teil 2: Prüfverfahren

Meubles - Lits superposés et lits surélevés - Partie 2: Méthodes d'essai

Ta slovenski standard je istoveten z: **prEN 747-2**

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Pohišтво

Furniture

oSIST prEN 747-2:2022

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EUROPÄISCHE NORM

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English Version

Furniture - Bunk beds and high beds - Part 2: Test methods

Meubles - Lits superposés et lits surélevés - Partie 2:
Méthodes d'essai

Möbel - Etagenbetten und Hochbetten - Teil 2:
Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 207.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 747-2:2022) 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.

This document will supersede EN 747-2:2015.

In comparison with the previous edition, the following technical modifications have been made:

- Conditions of preliminary preparation;
- Improvement of description, addition of some test equipment;
- Alignment of the test method on holes, gaps and openings, to follow prEN 747-1;
- Addition of a horizontal static load test on safety barriers;
- Addition of strength tests on the safety barriers;
- Addition of static and impact tests for handrails, platforms and platform barriers.

EN 747 is divided into the following parts:

- EN 747-1, *Furniture — Bunk beds and high beds — Part 1: Safety, strength and durability requirements*;
- EN 747-2, *Furniture — Bunk beds and high beds — Part 2: Test methods*.

Introduction

This part of EN 747 describes a number of tests consisting of the application, to various parts of bunk beds and high beds, of loads or forces intended to represent one adult occupant per bed during normal functional use. It also deals with misuses that can be reasonably expected to occur.

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

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1 Scope

This document specifies test methods for the safety, strength and durability of bunk beds and high beds for domestic and non-domestic use. The tests apply to beds with an internal length greater than 1 400 mm and a maximum bed base width of 1 200 mm and with the upper surface of a bed base 600 mm or more above the floor.

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

The applicable safety requirements are given in prEN 747-1:2022.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

prEN 747-1:2022, *Furniture — Bunk beds and high beds — Part 1: Safety, strength and durability requirements*

EN ISO 2439:2008, *Flexible cellular polymeric materials — Determination of hardness (indentation technique) (ISO 2439:2008)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 747-1:2022 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 General test conditions

4.1 Preliminary preparation

For furniture that includes hygroscopic materials, at least one week in normal indoor conditions shall have elapsed between manufacturing (or assembly) and testing.

For all other furniture, at least 48 h in normal indoor conditions shall have elapsed prior to testing.

The bed shall be tested as delivered. Knock-down beds shall be assembled according to the manufacturer's instructions. If the instructions allow the bed to 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. Further tightening shall not take place unless specifically required by the manufacturer. If the configuration shall be changed to produce the worst-case conditions, this shall be recorded in the test report.

The tests shall be carried out in indoor ambient conditions at a temperature between 15 °C and 25 °C.

The tests shall be carried out on the same bed and following the order of the clauses of prEN 747-1:2022.

prEN 747-2:2022 (E)

If a test cannot be carried out as specified in this standard, e.g. because a loading pad cannot be used for the application of a force due to the design of the product, the test can be carried out as closely as possible to the specified procedure. Any modification to the test method shall be technically justified and recorded in the test report.

4.2 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 specified, static loads shall be maintained for (10 ± 2) s. Unless otherwise specified, durability loads shall be applied for (2 ± 1) s.

The forces may be replaced by masses. The relationship of $10 \text{ N} = 1 \text{ kg}$ shall be used.

4.3 Tolerances

Unless otherwise stated, the following tolerances are applicable to the test equipment:

- forces shall have an accuracy of $\pm 5 \%$ of the nominal force;
- masses shall have an accuracy of $\pm 1 \%$ of the nominal mass;
- dimensions less than 200 mm shall have an accuracy of $\pm 1 \text{ mm}$ of the nominal dimension;
- other dimensions shall have an accuracy of $\pm 0,5 \%$ of the nominal dimension;
- angles shall have an accuracy of $\pm 2^\circ$ of the nominal angle.

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

NOTE For the purposes of uncertain measurements, test results are not considered to be adversely affected when the above tolerances are met.

5 Test equipment

5.1 General

The test forces may, unless otherwise stated, be applied by any suitable device, as results only depend on correctly applied forces and loads and not on the apparatus.

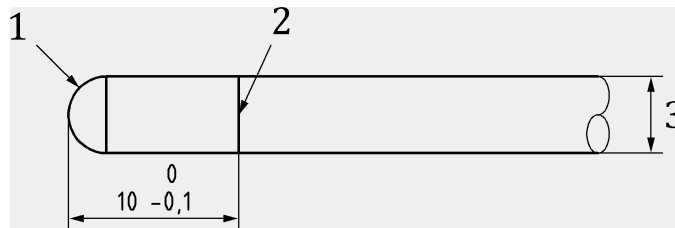
The equipment shall be capable of following the deformation of the unit/component during testing so that the loads are always applied at specified points and in specified directions.

5.2 Test probes

5.2.1 Finger probes with hemispherical end

Probes with hemispherical ends made of plastics or other hard, smooth material, mounted on a force-measuring device, see Figure 1.

Dimensions in millimetres



Key

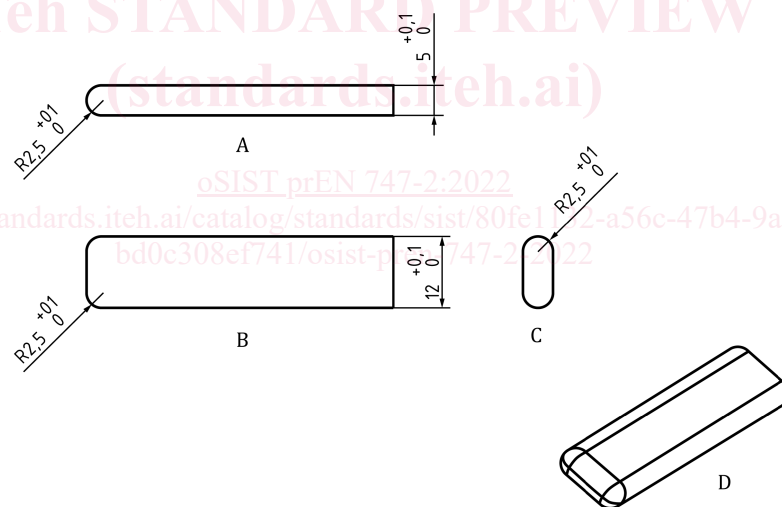
- 1 hemispherical end
- 2 line around circumference
- 3 $\varnothing 7^{+0}_{-0,1}$ mm and $\varnothing 12^{+0,1}_0$ mm

Figure 1 — Finger probe with hemispherical end

5.2.2 Shape assessment probe

Probe made of plastics or other hard smooth materials with the dimensions shown in Figure 2.

Dimensions in millimetres



Key

- A side view
- B top view
- C end view
- D isometric view

Figure 2 — Shape assessment probe

5.2.3 Other probes

Probes with the ends at an angle of $30^\circ \pm 0,5^\circ$ made of plastics or other hard, smooth material each with a diameter ($25^{+0,1}_0$) mm, ($60^{+0,1}_0$) mm and ($75^{+0,1}_0$) mm with rounded or conical ends, see Figure 3.

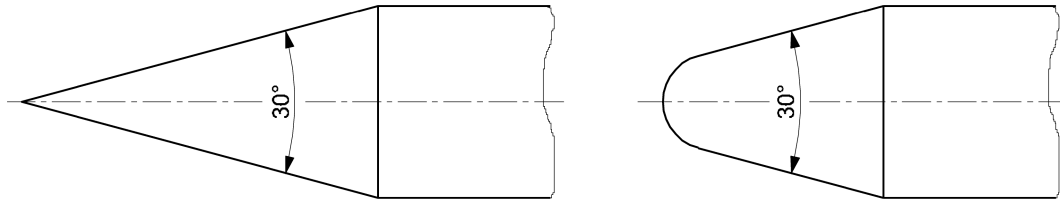


Figure 3 — Other probes

5.3 Bed base impactor

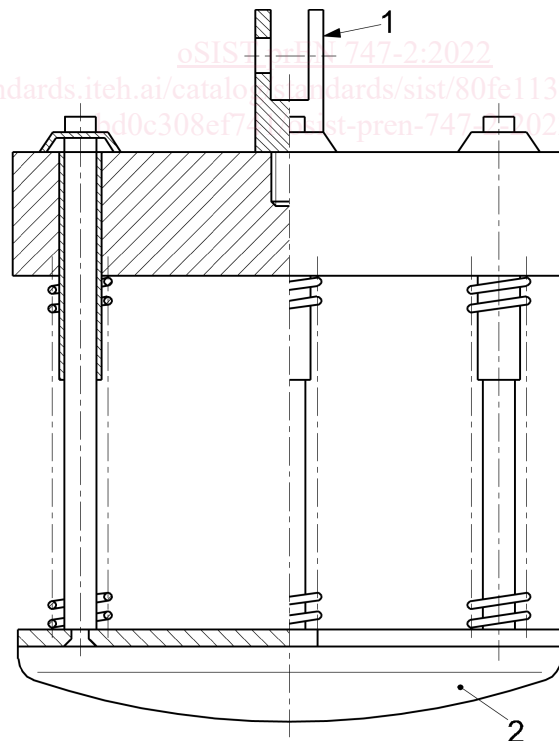
5.3.1 Circular body

The bed base impactor is shown in Figure 4. The impactor is comprised of the following elements. The circular body is 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.

5.3.2 Springs

Springs shall be such that the nominal spring rate of the combined spring system is (7 ± 2) N/mm and the total friction resistance of the moving parts is less than 1 N.

The spring system shall be compressed to an initial load of $(1\ 040 \pm 5)$ 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 not be less than 60 mm.



Key

- 1 joint for lifting device not inhibiting free fall
- 2 striking surface

Figure 4 — Bed base impactor

5.3.3 Striking surface

The striking surface shall be a rigid circular object, 200 mm in diameter, the face of which has a convex spherical curvature of a (300 ± 5) mm radius with a 12 mm front edge radius.

5.4 Loading pads

5.4.1 Loading pad, 200 mm in diameter, which is a rigid circular object the loading surface of which has a convex spherical curvature of a (300 ± 5) mm radius with a 12 mm front edge radius (see Figure 5).

Dimensions in millimetres

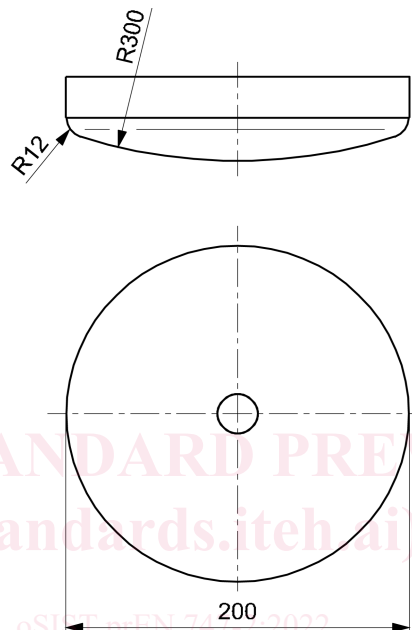


Figure 5 — Loading pad

5.4.2 Loading pad, 100 mm in diameter, which is a rigid circular object with a flat face and a 12 mm edge radius.

5.5 Test mattress

5.5.1 General

A foam sheet with a thickness of 100 mm, a bulk density of (35 ± 5) kg/m³ and an indentation hardness index of (170 ± 40) N HA_(40%/30s) in accordance with EN ISO 2439:2008.

The mattress shall be at least 700 mm x 700 mm.

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

- composition: 100 % cotton;
- mass per unit area: 120 ± 20 g/m²;
- cover make up: tight fit, but with no restrictions on the foam.

NOTE The above definition is according to CEN/TR 17538:2020.