

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

03/2024

National Foreword

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**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 European Standard was approved by CEN on 12 February 2024.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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European foreword

This document (EN 747-2:2024) 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of an identical text or by endorsement, at the latest by September 2024, and conflicting national standards shall be withdrawn at the latest by September 2024.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 747-2:2012+A1:2015.

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 EN 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*.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

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.

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 are applicable 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 EN 747-1:2024.

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.

EN 747-1:2024, *Furniture — Bunk beds and high beds — Part 1: Safety, strength and durability requirements*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 747-1:2024 apply.

ISO and IEC maintain terminology 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

Unless otherwise specified by the manufacturer, the test item shall be stored in indoor ambient conditions for at least 24 h immediately 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 27 °C.

The tests shall be carried out on the same bed and following the order of the clauses of EN 747-1:2024.

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 uncertainty of measurement, 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).