

INTERNATIONAL  
STANDARD

**ISO**  
**9098-1**

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**Bunk beds for domestic use — Safety requirements and tests —**

**Part 1:**  
Safety requirements

*Lits superposés pour usage domestique — Spécifications de sécurité et essais —*

*Partie 1. Spécifications de sécurité*



Reference number  
ISO 9098-1:1994(E)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9098-1 was prepared by Technical Committee ISO/TC 136, *Furniture*, Subcommittee SC 5, *Domestic furniture*.

ISO 9098 consists of the following parts, under the general title *Bunk beds for domestic use — Safety requirements and tests*:

- Part 1: *Safety requirements*
- Part 2: *Test methods*

# Bunk beds for domestic use — Safety requirements and tests —

## Part 1: Safety requirements

### 1 Scope

This part of ISO 9098 specifies requirements relating to the safety of bunk beds for domestic use. It is in particular intended to minimize the risk of accidents happening to children. Only the sleeping function is considered.

This part of ISO 9098 also applies to single beds for use at a height of the bed base of 800 mm or more above floor level, irrespective of the use to which the space below is put.

### 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 9098. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9098 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 9098-2:1994, *Bunk beds for domestic use — Safety requirements and tests — Part 2: Test methods*.

### 3 Definitions

For the purposes of this part of ISO 9098, the following definitions apply.

**3.1 bunk bed:** Set of components that can be assembled as beds, one stacked upon the other, or any bed in which the upper surface of the bed base is 800 mm or more above floor level.

**3.2 bed end structures:** Upright unit at the head and foot of the bed, to which the side rails and bed base are attached.

**3.3 bed base:** Base or support structure for a mattress.

**3.4 safety barrier:** Component intended to prevent an occupant from falling out of the bed.

**3.5 side rail:** Longitudinal member attached to the bed end structure by which the bed base can be supported.

## 4 Safety requirements

### 4.1 Materials

Wood and wood-based materials shall be free from decay and insect attack.

### 4.2 Construction

Exposed edges and protruding parts shall be rounded and free from burrs or sharp edges. There shall be no open-ended tubes.

All assembly, fastening and pilot holes shall be drilled by the manufacturer.

### 4.3 Top bed safety barriers

Any bed which can be used as a top bed shall be equipped with four safety barriers.

The safety barriers shall be secured against accidental loosening. This requirement shall be considered fulfilled if the safety barriers do not become damaged or loosened when tested in accordance with ISO 9098-2:1994, subclause 5.4.2, with a vertical force of 200 N and a horizontal force of 500 N.

It shall not be possible to remove the safety barriers without the aid of a tool.

The distance between the upper edge of the safety barriers and the upper side of the bed base shall be at least 260 mm. The top of the mattress shall be at least 160 mm below the upper edge of the safety barriers. The maximum thickness of the mattress shall be marked permanently with a line on the bed, showing the maximum level of the mattress upper surface.

One long side of the safety barriers may be completely interrupted by a ladder. The interruption shall be a minimum of 300 mm and a maximum of 400 mm. The position of the ladder shall be indicated in the instructions for use.

The safety barrier shall be so designed that in one direction at least the clear space between two adjacent retaining elements, e.g. bands, filling bars, does not exceed 75 mm and is not less than 60 mm when tested in accordance with ISO 9098-2:1994, subclause 5.3.

After this test the permanent deflection of the retaining elements shall not exceed 2 mm.

### 4.4 Gaps

Requirements on specific gaps or spaces are given in

- 4.3 for the top bed safety barrier,
- 4.5 for the bed base, and
- 4.6.2 for the dimensions of treads.

All other accessible gaps or spaces of the bed construction shall be equal to or smaller than 25 mm but at least 12 mm, between 60 mm and 75 mm, or equal to or bigger than 200 mm.

### 4.5 Bed base

All gaps between the bed base and the sides or ends shall not exceed 25 mm, when measured in accordance with ISO 9098-2:1994, subclause 5.3.

When tested in accordance with ISO 9098-2:1994, subclauses 5.4.3 to 5.4.5, no element of the bed base shall break, fall down or become loose.

The bed base and/or its elements of the upper bed shall remain in place when tested in accordance with ISO 9098-2:1994, subclause 5.4.

The clear distance between the upper and lower bed bases shall be at least 750 mm.

The bed base shall allow for ventilation.

### 4.6 Ladder

#### 4.6.1 Attachment, deflection and strength of ladder and treads

The bed shall be provided with a ladder which is safely connected. This requirement is considered to be fulfilled if, when tested in accordance with ISO 9098-2:1994, subclause 5.6.1, with a downward static load of 1 000 N and a perpendicular static load of 500 N the ladder does not move.

Ladders and treads shall not deflect permanently by more than 5 mm; nor shall they break when tested in accordance with ISO 9098-2:1994, subclauses 5.6.1 and 5.6.2.

The ladder or the device that allows access to or leaving the upper bed shall have sufficient supports for the feet, and handgrips.

NOTE 1 The ladder may be an integral part of the bed construction.

#### 4.6.2 Dimensions of treads

The distance between the upper surfaces of two successive treads shall be  $250 \text{ mm} \pm 50 \text{ mm}$ .

The distance between the upper surfaces of the treads shall be equal, with a tolerance of  $\pm 2 \text{ mm}$ .

The clear distance between two successive treads shall be at least 200 mm and the usable width of the tread shall be at least 300 mm.

Any foothold shall comply with these requirements. The step depth and the gap between any treads and any part of the bed construction shall be as shown in figure 1.

Frame parts of the bed, situated in the vicinity of treads, may not interfere with the usable area of the tread.

The requirements apply both before and after testing.

#### 4.7 Strength of frame and fastenings

Supporting fastenings, e.g. between bedpost and bedframe, shall not be damaged or detached when tested in accordance with ISO 9098-2:1994, subclauses 5.4.3 and 5.5, with a force of 300 N.

#### 4.8 Stability

When tested in accordance with ISO 9098-2:1994, subclause 5.7, with a force of 120 N, not more than one leg or corner of the bed shall lift from the floor.

#### 4.9 Fastening of upper bed to lower bed

The upper bed shall be connected to the lower bed in such a manner that it does not disconnect, when tested in accordance with ISO 9098-2:1994, subclause 5.8, with a force of 500 N.

### 5 Instructions for use

Any bunk bed in accordance with this part of

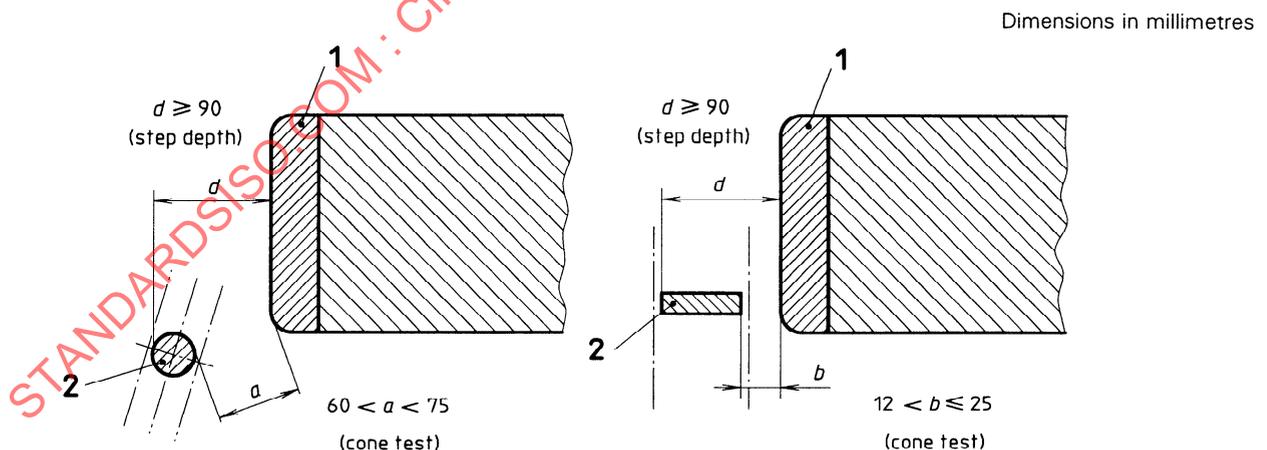
ISO 9098 shall be provided with instructions for use. The instructions shall contain:

- instructions that the top of the mattress shall not come above the line marked on the bed;
- assembly instructions;
- positioning and connection of the ladder;
- a list of the parts supplied and details of any tools required to assemble the bed;
- the sentence: **"Be aware of the danger of young children (under 6) falling from the upper bunk."**
- the number of this part of ISO 9098.

### 6 Marking

All beds for which claim for compliance with the requirements of this part of ISO 9098 is made shall be marked with the following information:

- the name, registered tradename or registered trademark of either the manufacturer, distributor or retailer;
- the line, permanently marked, that the top of the mattress may not exceed.



Key

- Frame part
- Tread

Figure 1 — Gap depth — Construction example

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