
**Furniture — Children's cots and
folding cots for domestic use —**

**Part 2:
Test methods**

*Ameublement — Lits fixes et lits pliants pour enfants à usage
domestique —*

Partie 2: Méthodes d'essai

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 136, *Furniture*.

This third edition cancels and replaces the second edition (ISO 7175-2:1997), which has been technically revised. The main change compared to the previous edition is as follows:

- the document has been aligned with EN 716-2:2017.

A list of all parts in the ISO 7175 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Furniture — Children's cots and folding cots for domestic use —

Part 2: Test methods

1 Scope

This document specifies test methods to assess the safety of children's cots and folding cots for domestic use with an internal length of between 900 mm and 1 400 mm.

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.

ISO 48-5, *Rubber, vulcanized or thermoplastic — Determination of hardness — Part 5: Indentation hardness by IRHD pocket meter method*

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

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

4 General test conditions

4.1 Preliminary preparation

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

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 test report.

Before testing, any fabrics intended to be removable shall be cleaned or washed twice in accordance with the manufacturer's instructions. If no instructions are supplied, the washing/cleaning shall be described in the test report.

The tests shall be carried out under 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 cot shall be tested as delivered. If the cot is a knock-down type, it shall be assembled according to the manufacturer's instructions supplied with the cot. If the cot can be assembled, combined or adjusted in different ways, the most adverse combination shall be used for each test.

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

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

4.2 Test equipment

Unless otherwise specified, test forces may be applied by any suitable device, because results are dependent only upon correctly applied forces and loads, and not upon the apparatus.

The equipment shall not inhibit the deformation of the cot during testing. It shall be able to move in order to follow the deformation of the cot during testing, so that the loads are always applied at the specified point and in the specified direction.

All loading pads shall be capable of pivoting in relation to the direction of the applied force. The pivot point shall be as close as practically possible to the load surface.

4.3 Application of forces

The forces in the static load tests shall be applied slowly enough to ensure that negligible dynamic force is applied.

The forces in durability tests shall be applied at a rate such that excessive heating does not occur.

4.4 Tolerances

Unless otherwise stated, the following tolerances apply:

- Forces: $\pm 5\%$ of the nominal force;
- Masses: $\pm 0,5\%$ of the nominal mass;
- Dimensions: nominal dimension $\pm 1,0$ mm;
- Angles: nominal angle $\pm 2^\circ$;
- Positioning of loading pads: ± 5 mm;
- Duration of forces: (2 ± 1) s for durability tests;
 (10 ± 2) s for static load tests, including tension, torque and bite tests.

The tests are described in terms of the application of forces. Masses can, however, be used. The relationship $10\text{ N} = 1\text{ kg}$ shall be used for this purpose.

4.5 Test sequence

The tests shall be carried out in the order laid down in this document and on the same cot.

4.6 Prevention of movement during test

If the cot tends to slide or roll during the tests specified in [Clause 6](#), it shall be restrained by stops ([5.6](#)).

5 Test apparatus

5.1 Measuring probes, made of plastics or other hard, smooth material mounted on a force-measuring device.

There shall be one probe with a diameter of $7^{+0}_{-0,1}$ mm; see [Figure 1 a\)](#).

There shall be five probes with an angle of $30^\circ \pm 0,5^\circ$ with diameters of $25^{+0,1}_0$ mm, $45^{+0,1}_0$ mm, $60^{+0,1}_0$ mm, $65^{+0,1}_0$ mm and $85^{+0,1}_0$ mm with conical ends; see [Figure 1 b\)](#).

There shall be four cylindrical probes with diameters of $5^{+0}_{-0,1}$ mm, $7^{+0}_{-0,1}$ mm, $12^{+0,1}_0$ mm and $18^{+0,1}_0$ mm with hemispherical ends; see [Figure 1 c\)](#).

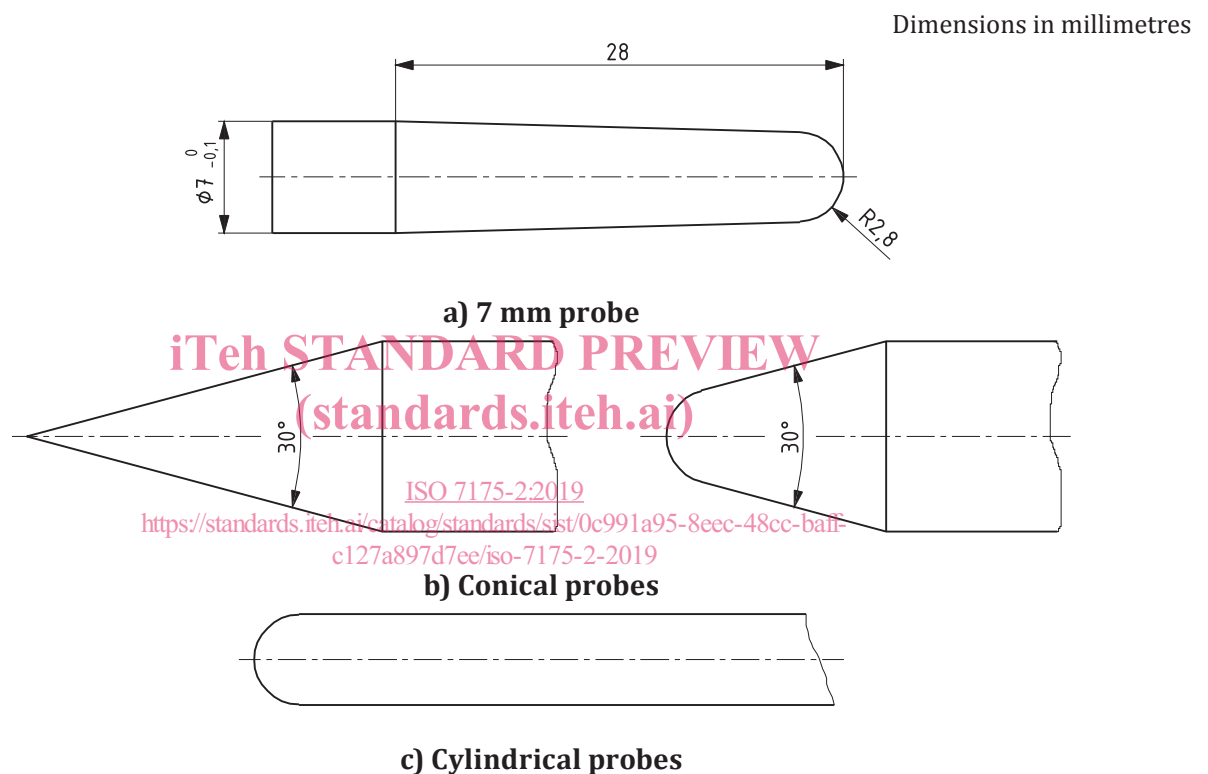


Figure 1 — Measuring probes

5.2 Bottom impactor with a total mass of 10 kg, of hardwood or equivalent material, with dimensions in accordance with [Figure 2](#).

The impactor shall be guided so that it is kept vertical and always falls on the impact point.

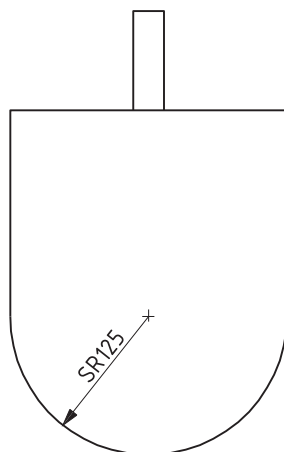


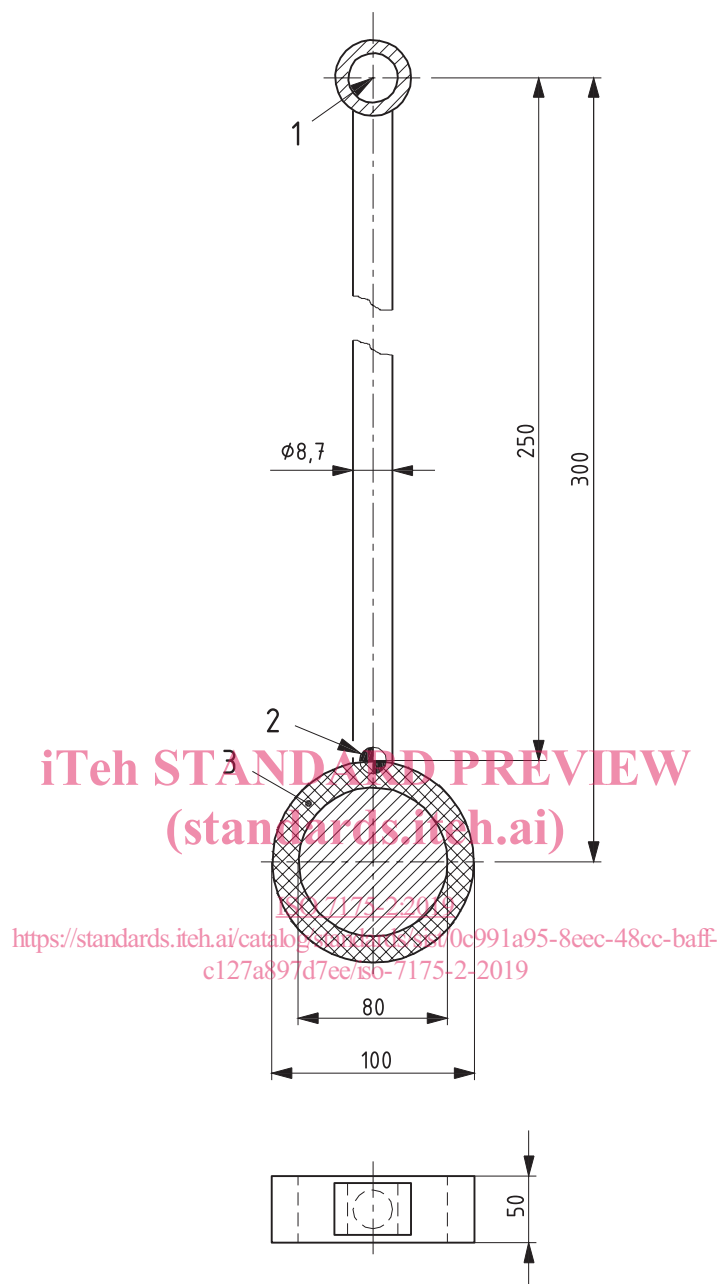
Figure 2 — Bottom impactor

5.3 Test mattress, consisting of a polyurethane foam sheet with a thickness of 60 mm, a bulk density of 35 kg/m³, with a tolerance of ± 10 %, or an indentation hardness index of (170 ± 40) N, which shall be in accordance with A_(40 %/30 s) of ISO 2439, and being at least 400 mm \times 800 mm in area but not larger than the mattress base of the cot under test. The test mattress shall have a light soft cotton cover with a mass not greater than 120 g/m².

5.4 Side impactor, consisting of a pendulum with a cylindrical head made of steel (Figure 3). The head of the pendulum shall be surrounded by a 10-mm thick layer of rubber of hardness 76 IRHD to 78 IRHD in accordance with ISO 48-5. The total mass shall be 2 kg.

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Dimensions in millimetres

**Key**

- 1 pivot point
- 2 centre of gravity
- 3 rubber 76 IRHD to 78 IRHD

Figure 3 — Side impactor

5.5 Loading pad, consisting of a rigid cylindrical object, 100 mm in diameter, having a smooth hard surface and rounded edge with radius of 12 mm.

5.6 Stops which prevent the article from sliding but not tilting, not higher than 12 mm except in cases where the design of the item necessitates the use of higher stops, in which case the lowest that will prevent the item from sliding shall be used.

5.7 Floor surface, consisting of a rigid, horizontal and flat surface.

5.8 Test chain and mass, consisting of a ball chain with a ball diameter of $(3,2 \pm 0,2)$ mm and a distance between ball centres of $(4,0 \pm 0,2)$ mm (Figure 4), fixed to a 2,5 kg spherical weight with a diameter of 115 mm forming a loop in accordance with Figure 5.

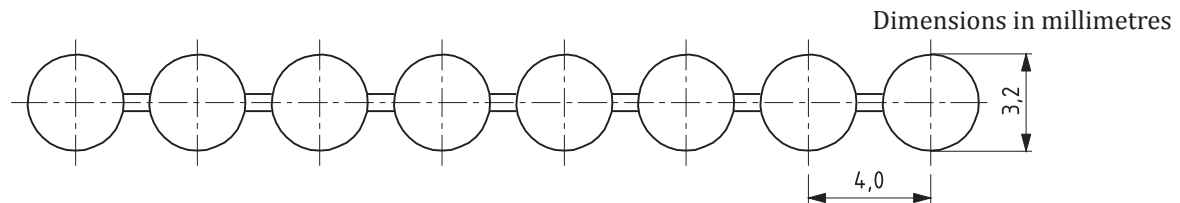
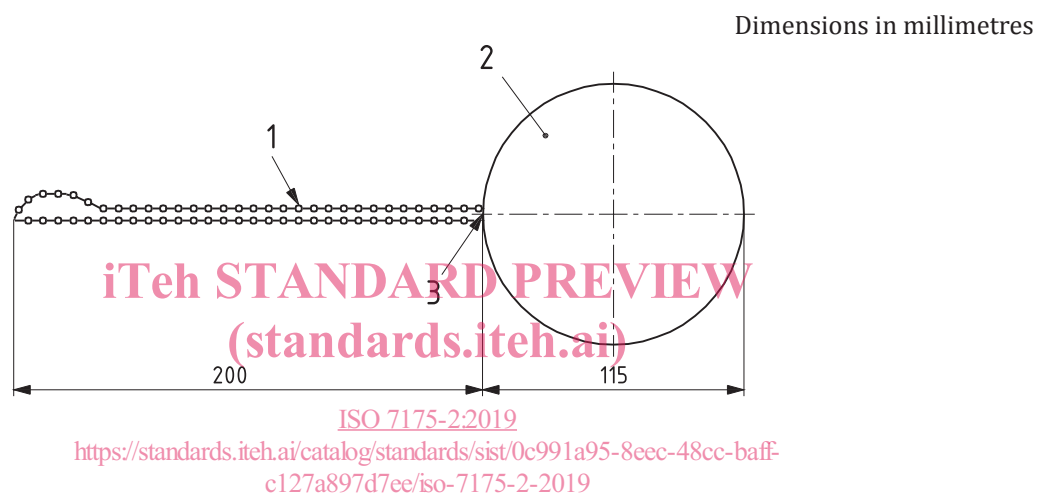


Figure 4 — Ball chain



Key

- 1 ball chain
- 2 weight, mass 2,5 kg
- 3 fixing point

Figure 5 — Test chain and mass

5.9 Small parts cylinder for assessment of small components, having dimensions in accordance with Figure 6.

NOTE The cylinder is identical to the one specified in ISO 8124-1.

Dimensions in millimetres

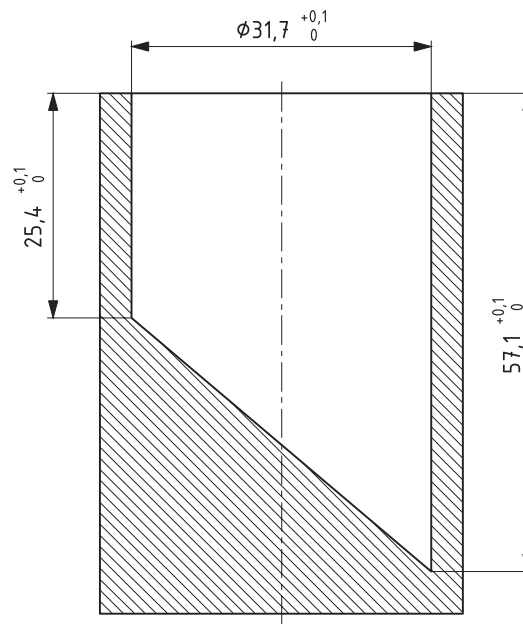


Figure 6 — Small parts cylinder

5.10 Test mass, consisting of a weight having a mass of 10 kg and a cross-section of 100 mm × 30 mm.

5.11 Bite tester, which is an apparatus (Figure 8), consisting of two sets of teeth (Figure 7), made from H13 high chrome tool steel or equivalent and hardened to 45 Rockwell C to 50 Rockwell C. There shall be two teeth at the top and two at the bottom of the bite tester, positioned so that the vertical centre line of one pair of teeth is $(1 \pm 0,1)$ mm in front of the centre line of the other set of teeth. In the fully closed position, the teeth shall overlap each other by $(1 \pm 0,1)$ mm. The outer most corners of the teeth shall have a radius of $(0,3 \pm 0,1)$ mm.

The teeth shall be mounted so as to pivot about a point (50 ± 1) mm from the rear most pair of teeth and positioned so that, when closed, the centre lines of the two pairs of teeth are parallel to each other. The bite tester shall be equipped with a stop to prevent the distance between the teeth from exceeding (28 ± 1) mm when fully opened. The closing force of the teeth shall be set at (50 ± 5) N.

The bite tester shall be provided with a guide to prevent items entering further into the fully opened jaws by more than (17 ± 1) mm. The bite tester shall be equipped with a means whereby a force of (50 ± 5) N can be applied along its centre line in a direction tending to pull the teeth off the sample.

Dimensions in millimetres

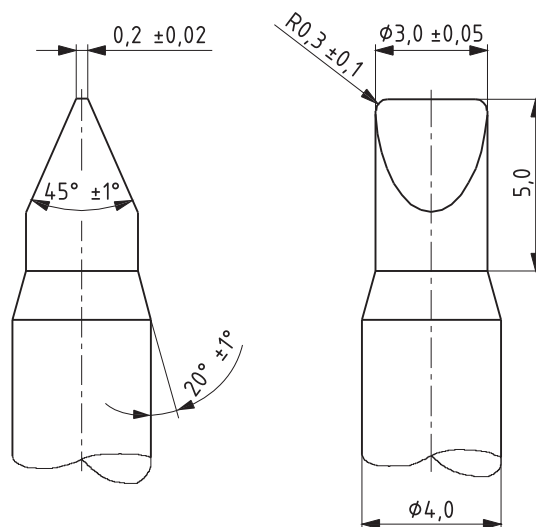
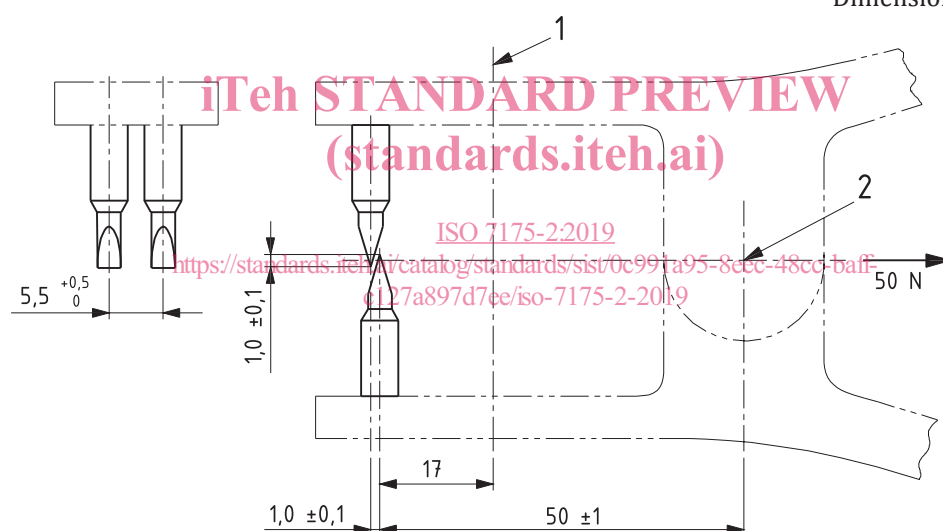


Figure 7 — Test teeth

Dimensions in millimetres

**Key**

- 1 position of guide
- 2 pivot point

Figure 8 — Bite tester

5.12 Two retaining blocks made of rigid material with a width of 50 mm and a radius of 5 mm at the front edges.

5.13 Foothold template, consisting of a strip of 10 mm thick transparent material cut to the shape as shown in [Figure 9](#), marked on one face with the pattern as shown.

The sides of the template shall be at a right angle to the faces. All edges and corners shall be without any radius.