



SLOVENSKI STANDARD
SIST EN 16232:2013+A1:2018

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Izdelki za otroke - Gugalnice za dojenčke (vključno z dopolnilom A1)

Child use and care articles - Infant swings

Artikel für Säuglinge und Kleinkinder - Babyschaukeln

Articles de puériculture - Balancelles suspendues pour enfant

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ICS:

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EUROPEAN STANDARD

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Child use and care articles - Infant swings

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Artikel für Säuglinge und Kleinkinder - Babyschaukeln

This European Standard was approved by CEN on 5 July 2013 and includes Amendment 1 approved by CEN on 16 April 2018.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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EN 16232:2013+A1:2018 (E)**European foreword**

This document (EN 16232:2013+A1:2018) has been prepared by Technical Committee CEN/TC 252 “Child care articles”, the secretariat of which is held by AFNOR.

A1 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of an identical text or by endorsement, at the latest by February 2019 and conflicting national standards shall be withdrawn at the latest by August 2019. **A1**

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

This document includes Amendment 1 approved by CEN on 16 April 2018.

This document supersedes **A1** EN 16232:2013 **A1**.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

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1 Scope

This European Standard specifies safety requirements and the corresponding test methods for infant swings intended for children up to a weight of 9 kg or unable to sit up unaided.

If an infant swing has several functions or can be converted into another function, the relevant European Standards apply to it.

Swings falling under the scope of EN 71-8 are excluded from the scope of this European Standard.

See rationale in A.1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 71-2:2011+A1:2014, *Safety of toys — Part 2: Flammability* ^{A1}

EN 71-3, *Safety of toys — Part 3: Migration of certain elements* ^{A1}

EN 71-10:2005, *Safety of toys — Part 10: Organic chemical compounds — Sample preparation and extraction* ^{A1}

EN 71-11, *Safety of toys — Part 11: Organic chemical compounds — Methods of analysis* ^{A1}

EN 622-1, *Fibreboards — Specifications — Part 1: General requirements* ^{A1}

EN 717-1, *Wood-based panels — Determination of formaldehyde release — Part 1: Formaldehyde emission by the chamber method* ^{A1}

EN 61558-2-7, *Safety of power transformers, power supplies, reactors and similar products — Part 2-7: Particular requirements and tests for transformers and power supplies for toys (IEC 61558-2-7)*

EN 61558-2-16, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V — Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units (IEC 61558-2-16)*

EN 61672-1, *Electroacoustics — Sound level meters — Part 1: Specifications (IEC 61672-1)*

EN 61672-2, *Electroacoustics — Sound level meters — Part 2: Pattern evaluation tests (IEC 61672-2)*

EN 62115:2005, *Electric toys — Safety (IEC 62115:2003, modified + A1:2004)*

EN ISO 3746:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:2010)*

EN ISO 14184-1, *Textiles — Determination of formaldehyde — Part 1: Free and hydrolysed formaldehyde (water extraction method) (ISO 14184-1)* ^{A1}

EN ISO 14184-1, *Textiles — Determination of formaldehyde — Part 1: Free and hydrolysed formaldehyde (water extraction method) (ISO 14184-1)* ^{A1}

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

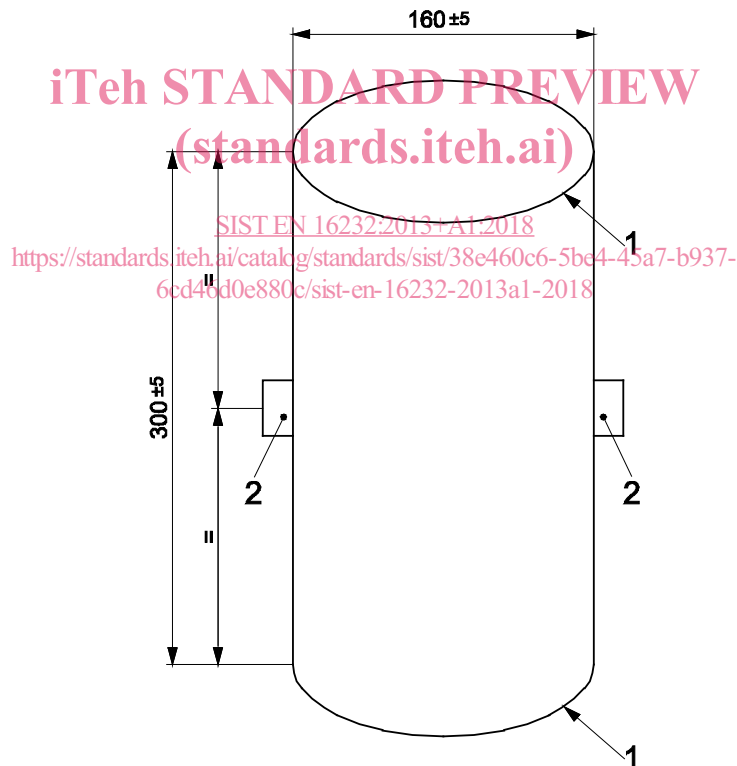
- E mass: $(4\,495 \pm 50)$ g
 F mass: $(4\,501 \pm 50)$ g
 G mass of hinge axle: $(17 \pm 0,5)$ g, length: 79,5 mm
 Mass tolerance: $(9 \pm 0,1)$ kg
 Dimensions tolerance: ± 2 mm
 All edges shall be chamfered.

Figure 1 — Articulated test mass

4.2 Test mass A

Test mass A is a rigid cylinder (160 ± 5) mm in diameter and (300 ± 5) mm in height, having a mass of $\left(9^{+0,01}_0\right)$ kg and with its centre of gravity in the centre of the cylinder. All edges shall have a radius of (5 ± 1) mm. Two anchorage points shall be provided. These shall be positioned $(150 \pm 2,5)$ mm from the base and at 180° to each other around the circumference (see Figure 2).

Dimensions in millimetres



Key

- 1 radius: (5 ± 1) mm
 2 two anchorage points

Figure 2 — Test mass A

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4.3 Test mass B

Test mass B is a (150 ± 30) mm by (200 ± 30) mm rectangular shaped sand bag with a mass of $(3 \pm 0,1)$ kg.

4.4 Small parts cylinder

Small parts cylinder for the assessment of small components, having dimensions in accordance with Figure 3.

Dimension in millimetres

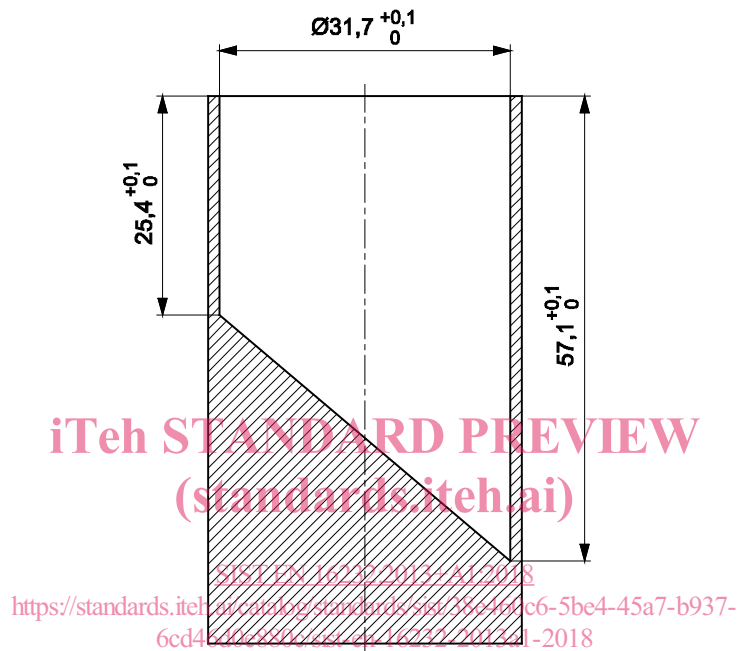


Figure 3 — Small parts cylinder

4.5 Feeler gauge

Gauge with a thickness of $(0,4 \pm 0,02)$ mm and an insertion edge radius of $(3 \pm 0,5)$ mm (see Figure 4).

Dimensions in millimetres

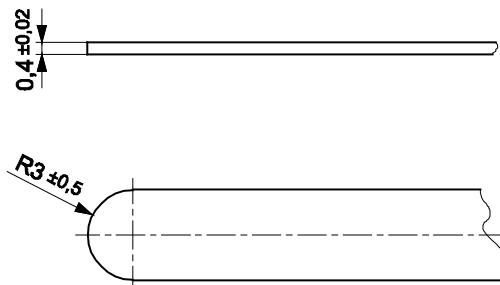


Figure 4 — Feeler gauge

4.6 Test probes for finger entrapment

4.6.1 Finger probes with hemispherical end

Probes made from plastic or other hard, smooth material of diameters $(7_{-0,1}^0)$ mm and $(12_0^{+0,1})$ mm with a full hemispherical end that can be mounted on a force-measuring device, see Figure 5a).

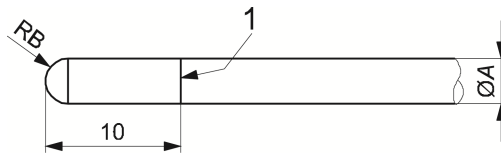
Mesh probe made from plastic or other hard, smooth material as shown in Figure 5b).

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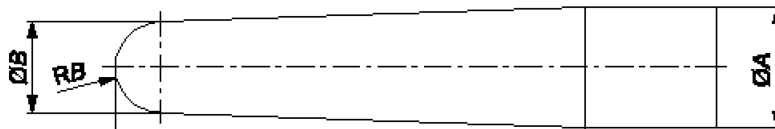
Dimensions in millimetres

**Key**

Probe type	7 mm probe	12 mm probe
Diameter A	$7^{0}_{-0,1}$	$12^{+0,1}_{0}$
Radius RB	half of diameter A	half of diameter A
1	Line scribed around circumference showing depth of penetration	

Figure 5a) — Test probes with hemispherical end

Dimensions in millimetres



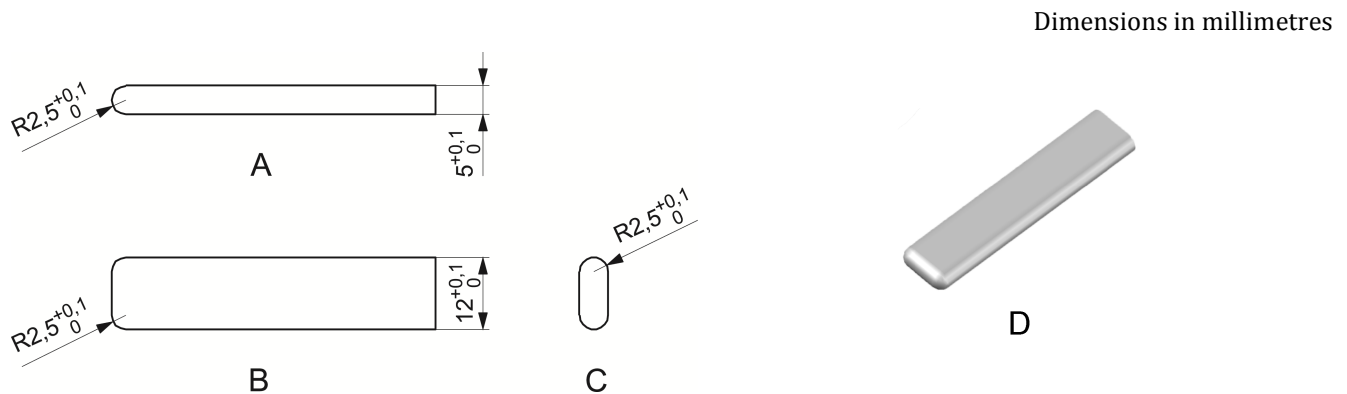
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Key

Probe type	Mesh probe	
Diameter A	$7^{0}_{-0,1}$	SIST EN 16232:2013+A1:2018
Diameter B	$5,6^{0}_{-0,1}$	https://standards.iteh.ai/catalog/standards/sist/38e460c6-5be4-45a7-b937-6cd46d0e880c/sist-en-16232-2013a1-2018
Radius RB	half of diameter B	

Figure 5b) — Test probe for mesh**Figure 5 - Test probes****4.6.2 Shape assessment probe**

Probe made from plastics or other hard, smooth material with the dimensions shown in Figure 6.

**Key**

- A front view
- B top view
- C side view
- D 3D view

Figure 6 — Shape assessment probe**4.7 Test surface for static slippage**

Rigid plane covered with uncoated tempered float glass with a smooth surface and thickness of $(6 \pm 0,5)$ mm, inclined at angle of $(12 + 0,5/0)^\circ$ to the horizontal.

4.8 Test surface for stability

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Test surface, inclined at $(15^\circ + 0,5/0)^\circ$ to the horizontal, covered with aluminium oxide paper of grade 80.

4.9 Test equipment for sound level measurement

The instrumentation system, including the microphone and cable, shall meet the requirements of a type 1 or type 2 instrument specified in EN 61672-1 and EN 61672-2.

When measuring high peak emission sound pressure levels, the microphone and the entire instrumentation system shall have the capability of handling linear peak levels at least up to 125 dB.

5 General requirements and test conditions**5.1 Product conditioning**

Before testing, any fabrics used shall be cleaned or washed and dried twice in accordance with the manufacturer's instructions.

5.2 Test conditions

The tests shall be carried out in ambient conditions of $(20 \pm 5)^\circ\text{C}$.

The tests are designed to be applied to infant swings that are fully assembled and ready for use in accordance with the manufacturer's instructions. If the infant swing can be assembled or adjusted in different ways, the most onerous combinations shall be used for each test.

If the infant swing has any battery-powered mechanism, it shall be tested using new non-rechargeable alkaline batteries; if the infant swing is supplied with its own rechargeable battery pack, it shall be tested with the battery pack fully charged in accordance with the instructions for use.

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The batteries used are those with the voltage and size specified on the infant swing or in the instructions. Lithium batteries or rechargeable batteries shall not be used unless their use is recommended in the instructions.

If the infant swing fails to withstand a test and this could be due to a defective battery, the test shall be repeated with a new set of batteries.

5.3 Application of forces

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

5.4 Tolerances

Unless otherwise stated, the accuracy of the test equipment shall be:

- Forces: $\pm 5\%$ of the nominal force;
- Masses: $\pm 0,5\%$ of the nominal mass;
- Dimensions: $\pm 0,5$ mm of the nominal dimension;
- Angles: $\pm 0,5^\circ$ of the nominal angle;

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

Unless otherwise specified, the test forces may be applied by any suitable device which does not adversely affect the results.

5.5 Order of tests

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Unless otherwise stated in the test methods, the tests shall be carried out on the same infant swing in the order listed in this standard.

6 A1 Chemical hazards**6.1 General**

If testing is required, a separate unconditioned sample may be used for the tests in Clause 6.

6.2 Migration of certain elements (see A.2)

The migration of elements from materials on exterior surfaces shall not exceed the limits listed in Table 1.

Table 1 — Limits for heavy metals migration

Element	mg/kg
Aluminium	70 000
Antimony	560
Arsenic	47
Barium	18 750
Boron	15 000
Cadmium	17
Chromium (III)	460
Chromium (VI)	0,2
Cobalt	130
Copper	7 700
Lead	23
Manganese	15 000
Mercury	94
Nickel	930
Selenium	460
Strontium	56 000
Tin	180 000
Organic tin	12
Zinc	46 000

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When testing is performed, the method described in EN 71-3 shall be used.

Materials on the back of the backrest and the surface under the sitting surface are excluded from these requirements.

6.3 Formaldehyde (see A.2)

Accessible textile components shall not contain free and hydrolysed formaldehyde in excess of 30 mg/kg.

When testing is performed, the method described in EN ISO 14184-1 shall be used.

Resin-bonded wood components shall not release formaldehyde in excess of 0,124 mg/m³ (class E1 according to EN 622-1).

When testing is performed, the method described in EN 717-1 shall be used.

6.4 Colorants and primary aromatic amines (see A.2)

When tested in accordance with EN 71-10:2005, Annex A, if the colour fastness to sweat of accessible textile components is lower than 3-4 on the grey scale as defined in EN 20105-A03, the part shall be tested for colorants with the methods described in EN 71-10 and EN 71-11 and the limits in Table 2 shall be fulfilled.