SLOVENSKI STANDARD

SIST EN 71-8:2003

01-oktober-2003

Varnost igraļ ï 8. del: Gugalnice, tobogani in podobne igraļ e za domaļ o uporabo v notranjih prostorih in na prostem

Safety of toys - Part 8: Swings, slides and similar activity toys for indoor and outdoor family domestic use

Sicherheit von Spielzeug - Teil 8: Schaukeln, Rutschen und ähnliches Aktivitätsspielzeug für den häuslichen Gebrauch (Innen- und Außenbereich)

Sécurité des jouets - Partie 8: Balançoires, toboggans et jouets d'activité similaires a usage familial en extérieur et en intérieur

Ta slovenski standard je istoveten z: EN 71-8:2003

ICS:

97.200.50 Igraļ e Toys

SIST EN 71-8:2003 **en**

EUROPEAN STANDARD

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English version

Safety of toys - Part 8: Swings, slides and similar activity toys for indoor and outdoor family domestic use

Sécurité des jouets - Partie 8: Balançoires, toboggans et jouets d'activité similaires à usage familial en extérieur et en intérieur

Sicherheit von Spielzeug - Teil 8: Schaukeln, Rutschen und ähnliches Aktivitätsspielzeug für den häuslichen Gebrauch (Innen- und Außenbereich)

This European Standard was approved by CEN on 5 March 2003.

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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 Management Centre has the same status as the official versions.

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Foreword

This document (EN 71-8:2003) has been prepared by Technical Committee CEN/TC 52 "Safety of Toys", the secretariat of which is held by DS.

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of an identical text or by endorsement, at the latest by December 2003, and conflicting national standards shall be withdrawn at the latest by December 2003.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

This standard is part 8 of the European Standard for Safety of toys. It should be read in conjunction with Part 1.

The European Standard EN 71 "Safety of toys" consists of the following parts:

- Part 1: Mechanical and physical properties;
- Part 2: Flammability;
- Part 3: Migration of certain elements;
- Part 4: Experimental sets for chemistry and related activities;
- Part 5: Chemical toys (sets) other than experimental sets;
- Part 6: Graphical symbol for age warning labelling;
- Part 7: Finger paints;
- Part 8: Swings, slides and similar activity toys for indoor and outdoor family domestic use.

This part of EN 71 includes clauses that have been moved from EN 71-1:1998 Part 1 *Mechanical and physical properties*.

1 Scope (see A1)

This part of EN 71 specifies requirements and test methods for *activity toy*s for domestic family use attached to or incorporating a *crossbeam*, and similar toys intended for children under 14 years of age to play on or in and to bear the mass of one or more children. The scope excludes equipment intended for use in schools, kindergartens, public playgrounds, restaurants, shopping centres and similar public places dealt with in EN 1176 parts 1 to 6.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 71-1:1998 *Safety of toys – Mechanical and physical properties*

3 Definitions

3.1
activity toy
toy intended for family domestic use, intended to bear the mass of one or more children, often attached to or incorporating a *crossbeam* and intended for children to play on or in. Examples of such toys are *swings*, *slides*, carousels and climbing frames

3.2
anchor
device used to fix the toy to the standing surface

3.3
barrier
guardrail to prevent a user passing beneath and through

3.4
crossbeam
bar or beam which forms a main load bearing part of the toy (see Figure 2)

3.5
entrapment
hazard presented by a situation in which a body, part of a body, or clothing is entrapped

3.6
forced movement
movement where the direction and the extent of the child's movement is determined by the operation of the equipment, for example swinging, sliding, rocking and revolving

3.7
free height of fall
the greatest vertical distance from the clearly intended body support to the impact area below

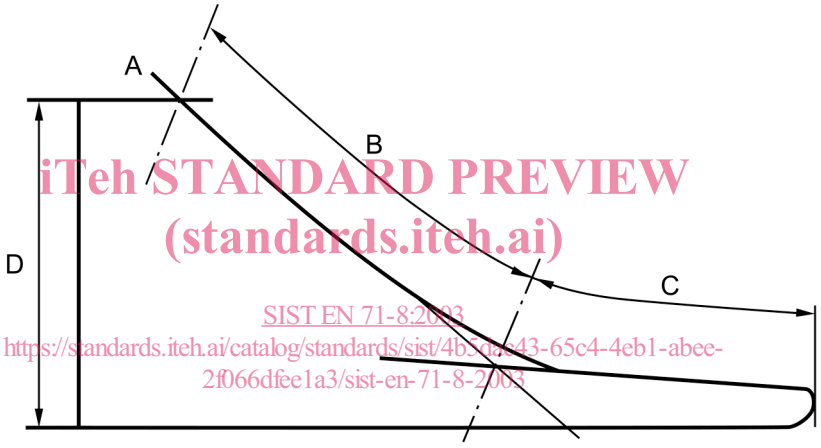
3.8
free space
space in, on or around the *activity toy* that can be occupied by a user undergoing a *forced movement* by the equipment (e.g., swinging, sliding, rocking, revolving). The definition of *free space* does **not** include the three-dimensional area in which a falling movement takes place

3.9
handrail
rail intended to assist the user to balance or climb

3.10
platform
raised level surface

3.11
slide
structure with inclined surface(s) on which the user slides in a defined track (see Figure 1)

NOTE Inclined planes, designed primarily for other purposes, such as roofs, do not constitute *slides*.



Key:

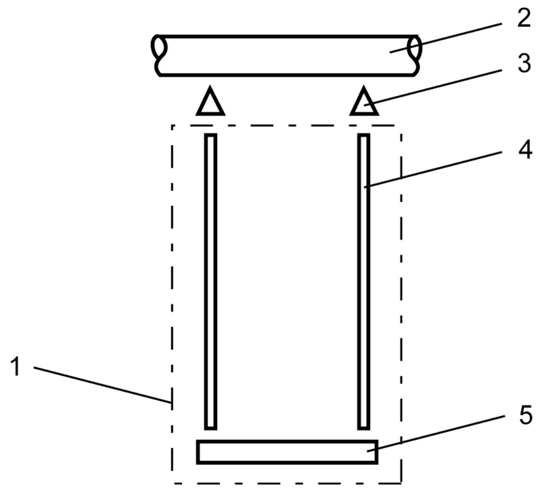
A	Starting section
B	Sliding section
C	Run-out section
D	Height of slide
B +C	Slide length

NOTE The dimensions A, B, and C shall be taken at the centreline of the sliding surface. Each of these sizes represents one of the zones of the sliding surface. Each zone of the sliding surface is determined by the intersection of the curve of the sliding surface (taken at the bottom of the sliding surface) and the bisecting line of the angle formed by the zones of the sliding surfaces between themselves.

Figure 1 — Diagrammatic representation of a slide

3.12
suspension connector
device which forms the direct contact between a *crossbeam* and the means of suspension (see Figure 2)

3.13
swing
structure incorporating a *crossbeam, suspension connectors* and a *swing* device with swing element and means of suspension (see Figure 2)



Key:

1 Swing device
2 Crossbeam
3 Suspension connector
4 Means of suspension
5 Swing element (e.g. seat, rings, bar, gondola)

Figure 2 — Diagrammatic representation of a swing

4 Requirements

NOTE Words in *italics* are defined in clause 3 of this part of the standard or in EN 71-1:1998.

4.1 General (see A.2)

4.1.1 Static strength

Activity toys, when tested according to 6.2.1 (strength of toys other than swings) shall not *collapse* such that they do not continue to comply with the relevant requirements of EN 71.

NOTE Additional requirements for *swings* are given in 4.6.2.

4.1.2 Maximum height

When measured from the ground, there shall be no part of the *activity toy* where the child is able to climb, sit or stand over a height of 2500 mm.

4.1.3 Corners and edges

Exposed *edges* shall be rounded and corners shall have a minimum radius of 3 mm.

Exposed *edges* on moving parts shall have a curvature radius of minimum 15 mm when measured in the direction of the movement.

4.1.4 Protruding parts

Protruding parts such as bolt ends, threaded bolt ends and other protrusions shall be recessed or be protected in such a way that they do not constitute a hazard to users of the equipment. This requirement is applicable when protrusions are situated in places where the user is running, sliding, climbing, sitting, laying down or on *accessible* moving parts.

Protective caps shall comply with relevant requirements in EN 71-1, clause 4.9 (protruding parts).

Spring washers, self-locking nuts, or other locking means shall be provided for all bolts.

4.1.5 Climbing and swinging ropes

Ropes used for climbing and swinging shall have the following diameters:

Ropes fixed at both ends	diameter between 18 and 45 mm
Free-hanging ropes fixed at upper end	diameter between 25 and 45 mm

4.2 Barriers, ladders etc (see A.3)

4.2.1 Barriers and handrails preventing the child from falling down

Any *platform* intended for sitting or standing 1000 mm or more from the ground shall be equipped with a *barrier* on all sides that face outwards from the toy.

Openings in the *barriers* to give access to *slides*, climbing structures and ladders are allowed.

The height of the *barrier* shall be 600 mm minimum.

For *barriers* with an uneven top design, a ruler of 200 mm ± 5mm shall be used for measuring minimum height. Place the ruler horizontally on top of the *barrier*. Measure the vertical distance between the *platform* and the bottom of the ruler. The distance shall in no place be less than 600 mm.

NOTE Special requirements apply for *slides* (see 4.5.2 and 4.5.3).

After testing according to 6.3 (dynamic strength of *barriers* and *handrails*), no part of the *barrier* or *handrail* shall *collapse*, so that the toy does not comply with the relevant requirements of EN 71.

4.2.2 Means of access to toys

These requirements do not apply for toys with a *platform* height of 600 mm or less.

Ladders and similar means of access to toys shall comply with the requirements in items a) to g). Additional requirements for *slides* are given in 4.5.4.

a) Any opening shall comply with 4.3.1 (head and neck *entrapment*, probes C and D and test template D).

b) The lateral width of the tread shall be 300 mm or more (see Figure 3).

c) The distance between the treads shall be not more than 280 mm (see Figure 3).

d) The surface of the tread shall not be slippery. This can be achieved by corrugation of the steps or by other types of materials.

e) When ladders are provided with rungs, the diameter of the rungs shall be at least 16 mm but not more than 45 mm.

f) The depth for treads on closed step ladders shall be 120 mm or more.

g) The inclination for ladders that are fixed to the toy shall be between 55° and 90° to the horizontal.

Dimensions in millimetres

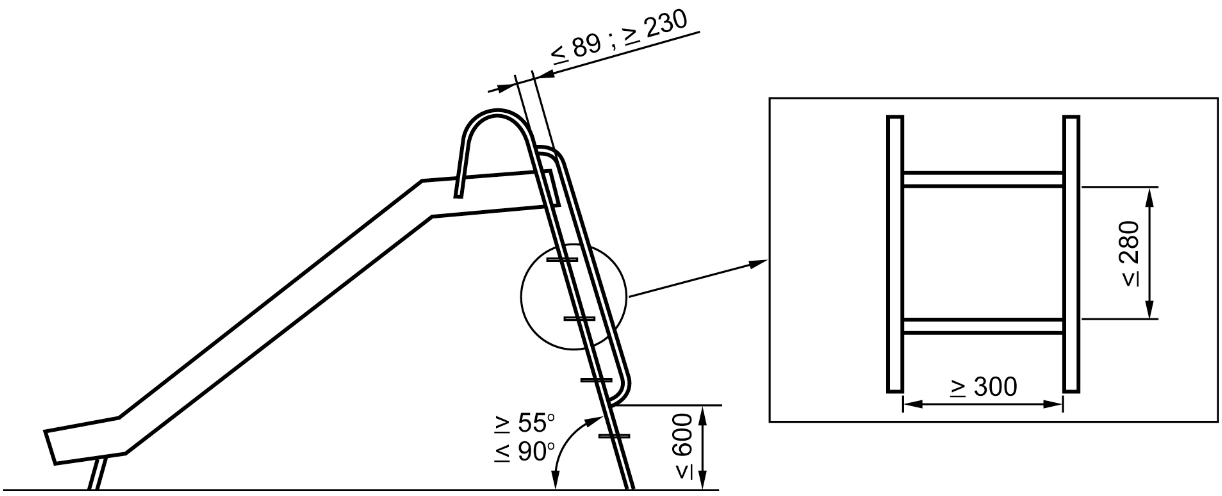


Figure 3 — Dimensions of ladders

4.3 Entrapment (see A.4)

4.3.1 Head and neck entrapment

Activity toys shall be constructed so that no openings create head and neck *entrapment* hazards either by head first or feet first passage.

NOTE Hazardous situations in which this type of *entrapment* can be encountered include the following:

— completely bound openings through which a user can *slide* head first or feet first;

— partially bound or V-shaped openings; and

— shearing and moving openings.

When choosing materials, the manufacturer shall take into account the *entrapment* hazards that can occur due to distortion of material during use.

a) *Accessible* completely bound openings with a lower *edge* of 600 mm or more above the ground, or above any other surface which is of such a size that it will support a child, shall, if they allow passage of probe C (see Figure 10), also allow passage of probe D (see Figure 11) when tested in accordance with 6.5.1 (head and neck *entrapment* in completely bound openings).

b) *Accessible* rigid circular openings with a lower *edge* of 600 mm or more above the ground, or above any other surface which is of such a size that it will support a child shall not have an internal diameter between 130 mm and 230 mm.

c) *Accessible* completely bound openings, when tested according to 6.5.1 shall have no parts that converge in the downward direction at an angle of less than 60° if the lower *edge* is 600 mm or more above the ground (V-shaped opening).

d) Partially bound and V-shaped openings with a lower *edge* of 600 mm or more above the ground, or above any other surface which is of such a size that it will support a child, shall be constructed so that either:

1) the opening is not *accessible* as defined in Figure 13 and when tested according to 6.5.2.3 a) (head and neck *entrapment* in partially bound and V-shaped openings), or

2) the tip of the template contacts the base of the opening when tested according to 6.5.2.3 b) (head and neck *entrapment* in partially bound and V-shaped openings).

e) Non-rigid members (for example ropes) shall not overlap if by doing so they create openings that do not comply with the requirements in a).

f) Openings between flexible parts of suspended bridges and any rigid side members shall not be less than 230 mm in diameter under the worst case condition of loading. Both loaded and unloaded situations shall be considered.

4.3.2 Entrapment of clothing and hair

a) *Slides*, fireman's poles and roofs shall be constructed so that hazardous situations in which clothing or hair can be *entrapped* are not created. Such situations may be created by:

1) gaps or V-shaped openings in which parts of clothing can become *entrapped* while or immediately before the user is undergoing a *forced movement;*

2) protrusions; and

3) spindles/rotating parts.

When tested according to 6.6 (toggle test), *entrapment* of the toggle or chain shall not occur.

The toggle test, as given in 6.6, is restricted to the *free space*, as practical experience has shown that natural material and connections between different parts can vary over time.

NOTE 1 When using elements of circular cross section, special consideration should be given to avoid clothing and hair entanglement. This can be achieved by using spacers or similar devices.

b) *Slides* and fireman's poles shall be constructed so that openings located within the *free space* do not *entrap* the toggle or chain when tested in accordance with 6.6 (toggle test).

c) Roofs shall be constructed so that they do not *entrap* the toggle or chain when tested in accordance with 6.6 (toggle test).

d) Spindles and rotating parts shall have means of preventing entanglement of clothing or hair.

NOTE 2 This can be achieved by use of suitable covering or shields.

4.3.3 Entrapment of feet

Surfaces intended for standing, running or walking shall not contain any gaps likely to cause foot or leg *entrapment*. There shall be no gaps greater than 30 mm measured in one direction (see Figure 4).

Dimensions in millimetres

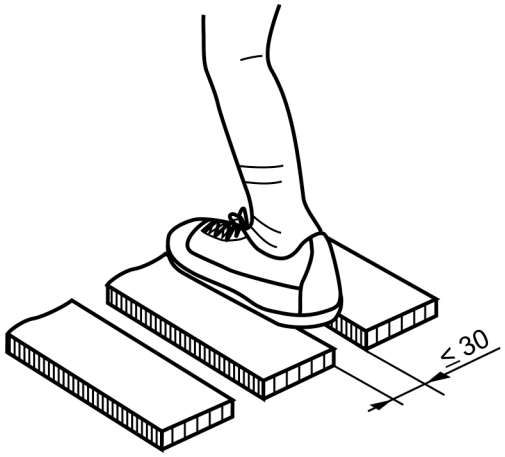


Figure 4 — Measurement of surface gap on running and walking levels

4.3.4 Entrapment of fingers

The requirements in 4.3.4 do not apply to weather induced dry cracks in solid wood.

Activity toys shall be constructed so that hazardous situations in which *entrapment* may occur are not created.

Accessible holes, slots and gaps in any rigid material, for example open ended tubes or pipes and variable gaps (excluding chains), where the body is in a *forced movement* and which can admit a 5 mm diameter rod to a depth of 10 mm or more shall also admit a 12 mm diameter rod.

4.4 Stability of activity toys other than slides, swings and toys with crossbeams

*Activity toy*s supplied with *anchors* shall be tested with *anchors* fixed to the standing surface according to the manufacturer's instructions.

NOTE Stability requirements for *slides* are given in 4.5.1 and for *swings* and other activity toys with *crossbeams* in 4.6.1.

4.4.1 Stability of activity toys with a free height of fall of 600 mm or less

Activity toys with a *free height of fall* of 600 mm or less shall not tip over when tested according to 6.1.1 (stability of *activity toy*s with a *free height of fall* of 600 mm or less).

4.4.2 Stability of activity toys with a free height of fall of more than 600 mm

Activity toys with a *free height of fall* of more than 600 mm shall not tip over when tested according to 6.1.2 (stability of *activity toy*s with a *free height of fall* of more than 600 mm).

4.5 Slides (see A.5)

4.5.1 Stability of slides

Slides supplied with *anchors* shall be tested with *anchors* fixed to the standing surface according to the manufacturer's instructions.

Slides shall not tip over when tested according to 6.1.3 (stability of *slides*).