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Safety of toys - Part 8: Activity toys for domestic use

Sicherheit von Spielzeug - Teil 8: Aktivitätsspielzeug für den häuslichen Gebrauch

Sécurité des jouets - Partie 8: Jouets d'activité à usage familial

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English Version

Safety of toys - Part 8: Activity toys for domestic use

Sécurité des jouets - Partie 8: Jouets d'activité à usage
familialSicherheit von Spielzeug - Teil 8: Aktivitätsspielzeug für
den häuslichen Gebrauch

This European Standard was approved by CEN on 3 September 2011.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN 71-8:2011 (E)**Foreword**

This document (EN 71-8:2011) 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of an identical text or by endorsement, at the latest by March 2012 and conflicting national standards shall be withdrawn at the latest by March 2012.

This document supersedes EN 71-8:2003+A4:2009.

Annex B provides details of significant technical changes between this European Standard and the previous edition.

This European Standard 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 European Standard.

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 European Standard constitutes the eight part of the European Standard on safety of toys. It should be read in conjunction with Part 1.

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This European Standard for 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 7: Finger paints — Requirements and test methods*
- *Part 8: Activity toys for domestic use*
- *Part 9: Organic chemical compounds — Requirements*
- *Part 10: Organic chemical compounds — Sample preparation and extraction*
- *Part 11: Organic chemical compounds — Methods of analysis*

NOTE 1 In addition to the above parts of EN 71, the following guidance documents have been published: CEN Report, CR 14379:2002, *Classification of toys - Guidelines*, CEN Technical Report CEN/TR 15071:2005, *Safety of toys - National translations of warnings and instructions for use in EN 71*, and CEN Technical Report CEN/TR 15371:2009, *Safety of toys - Replies to requests for interpretation of EN 71-1, EN 71-2, and EN 71-8*.

NOTE 2 Different legal requirements may exist in non-EU countries.

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EN 71-8:2011 (E)**1 Scope (see A.1)**

This European Standard specifies requirements and test methods for activity toys for domestic use often attached to or incorporating a *crossbeam*, and similar toys intended for children under 14 years to play on or in and often intended to bear the mass of one or more children.

This European Standard also specifies requirements for:

- separately sold accessories for, and components of *activity toys*;
- separately sold swing elements that are ready for use on or in combination with an *activity toy*;
- construction packages for *activity toys* including components used to build *activity toys* according to a scheduled building instruction.

The scope of this European Standard excludes:

- playground equipment intended for public use dealt with in EN 1176;
- bow-mounted rocking *activity toys* such as rocking horses and similar toys, which are covered by specific requirements in EN 71-1;
- toy pools with maximum depth of water over 400 mm measured, between the overflow level and the deepest point within the pool;
- toy trampolines.

NOTE 1 Requirements for toy trampolines and non-aquatic inflatable toys are being elaborated.

NOTE 2 There is an enhanced risk of drowning in toy pools where the depth of water is in excess of 400 mm.

2 Normative references

The following referenced documents are indispensable for the application 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 71-1, *Safety of toys — Mechanical and physical properties*

3 Terms and definitions

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

3.1 activity toy
toy for domestic use, in which the support structure remains stationary while the activity is taking place and which is intended for the performance by a child of any of the following activities: climbing, jumping, swinging, sliding, rocking, spinning, paddling, crawling and creeping, or any combination thereof

NOTE Examples of such toys are *swings*, *slides*, carousels, climbing frames, playhouses and tents, *paddling pools*, non-aquatic inflatable toys. In contrast, ride-on vehicles are not considered as *activity toys*.

3.2**anchor**

device used to fix an *activity toy* to the standing surface

3.3**barrier**

device intended to prevent the user from falling and from passing beneath

3.4**crossbeam**

bar or beam which forms a main load bearing part of certain *activity toys* (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**exposed edge**

edge intended to be touched and/or gripped by a child during the use of an *activity toy*

NOTE *Exposed edges* are commonly found on doors, windows, shutters, ladders, steps, *handrails*, retaining sides for *slides* and seats.

3.7**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

3.8**free height of fall**

greatest vertical distance from the clearly intended body support to the impact area below

3.9**free space**

space in, on or around the *activity toy* that can be occupied by a user undergoing a *forced movement* caused by use of the equipment (e.g. swinging, sliding, rocking, revolving)

NOTE The definition of *free space* does not include the three-dimensional space in which a falling movement takes place.

3.10**handrail**

rail intended to assist the user to balance

3.11**platform**

raised surface where one or more users can stand without the need of hand support

NOTE The classification of a *platform* will vary depending on its function. Surfaces where the user is only able to stand with the aid of hand supports are not classified as *platforms*. Exclusion of surfaces from the definition can be achieved by a number of means, e.g.:

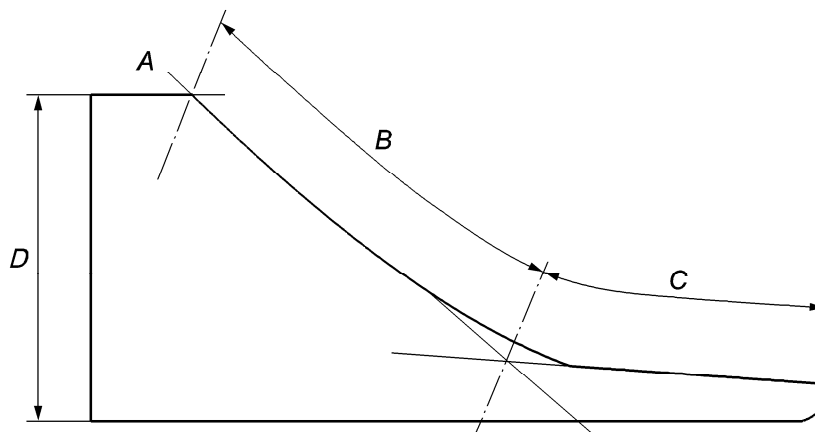
- reducing the surface area to restrict free movement and encourage holding on;
- incline the surface to encourage holding on;
- introducing movement to the surface to encourage holding on.

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3.12 slide

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

NOTE 1 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

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NOTE 2 The dimensions A, B, and C are 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

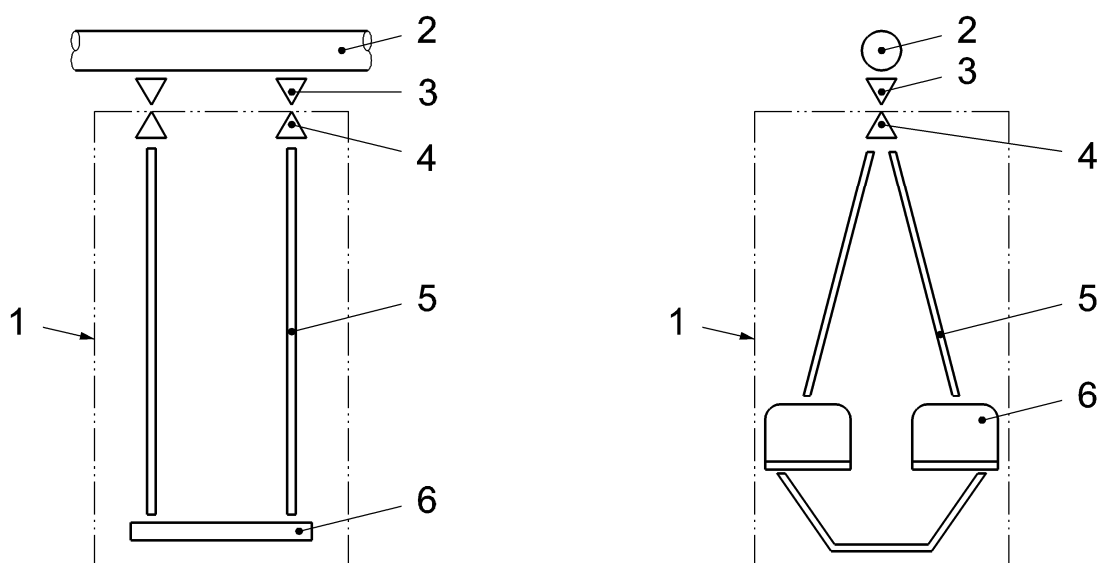
3.13 suspension connector

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

3.14 swing

structure incorporating a *crossbeam*, *suspension connectors* and a swing device with swing element, suspension coupling and means of suspension

NOTE Examples of *swings* are shown in Figure 2.



a) Example of a flat seat

b) Example of a gondola

Key

- 1 swing device
- 2 *crossbeam*
- 3 suspension connector
- 4 suspension coupling
- 5 means of suspension
- 6 swing element (e.g. seat, rings, bar, gondola)

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NOTE A swing device can include one or more footrests. Footrests are considered as parts of the swing elements.

Figure 2 — Diagrammatic representation of examples of swings**3.15****paddling pool**

toy pool with a maximum depth of water of 400 mm measured between the overflow level and the deepest point within the pool

NOTE Examples of typical *paddling pools* can be found in the guidance document on the application of the directive on the safety of toys (2009/48/EC).

EN 71-8:2011 (E)

4 Requirements¹**4.1 General (see A.2)****4.1.1 Assembly**

Activity toys shall be assembled using self-locking mechanisms which, to avoid unintentional disassembling due to dynamic forces during use, may include spring washers and/or self-locking nuts.

NOTE Self-taping screws or nails are considered as self-locking devices.

4.1.2 Static strength

Activity toys other than *swings* and *paddling pools*, when tested according to 6.3.1 (strength of activity toys other than swings and paddling pools), shall not *collapse* such that they do not continue to comply with the relevant requirements of EN 71-1.

NOTE Static strength requirements for *swings* are given in 4.6.2 and for *paddling pools* in 4.9.1.

4.1.3 Maximum height (see A.3)

When measured from the ground, there shall be no part of the *activity toy* where the child is able to climb, sit or stand above a height of 2 500 mm.

4.1.4 Corners and edges (see A.4)

Exposed edges shall be rounded.

Corners and *exposed edges* on moving parts shall have a minimum radius of 3 mm. This requirement does not apply to swing elements with a mass of 1 000 g or less, the corners and edges of which shall be rounded.

4.1.5 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 on accessible moving parts and in places where the user is running, sliding, climbing, sitting or lying down.

4.1.6 Diameter of ropes and other means of suspension

When measured according to 6.8 (diameter of ropes and other means of suspension), ropes and other means of suspension shall have the following diameters:

| | |
|---|----------------------------------|
| Ropes fixed at both ends | diameter between 16 mm and 45 mm |
| Ropes used in climbing nets and ladders | diameter between 10 mm and 45 mm |
| Free-hanging ropes fixed at upper end | diameter between 25 mm and 45 mm |
| Means of suspension for swing elements | minimum diameter/width 10 mm |

¹ Words in *italics* are defined in Clause 3 (terms and definitions). Additional information on the background and rationale for various requirements is given in Annex A.

4.2 Barriers, handrails and ladders and similar means of access to activity toys

4.2.1 Barriers and handrails preventing a child from falling down (see A.5)

Any *platform* 1 000 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 minimum height of the *barrier* shall be 600 mm.

For *barriers* with an uneven top design, a ruler of (200 ± 5) mm 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 to *slides* (see 4.5.2 and 4.5.3).

After testing according to 6.4 (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 71-1.

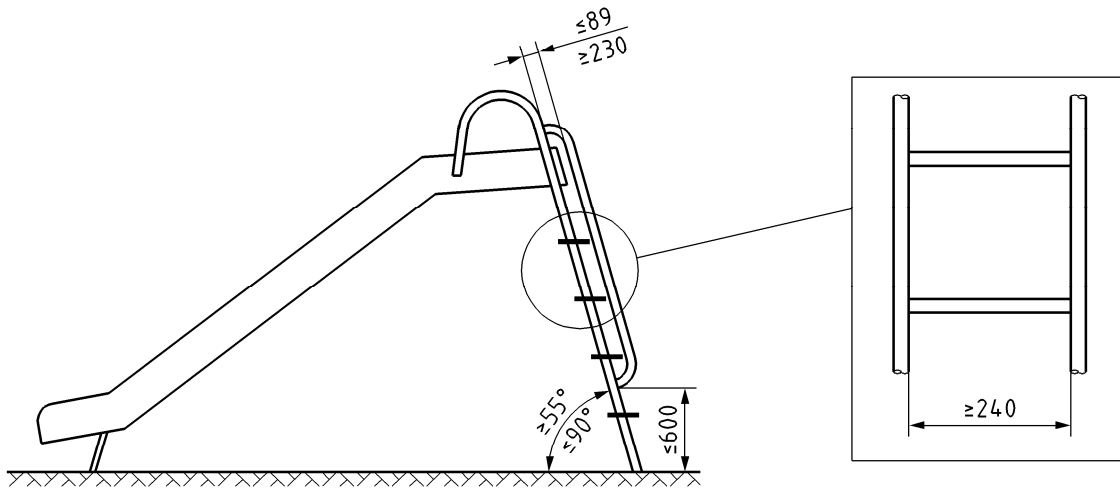
4.2.2 Ladders and similar means of access to activity toys (see A.6)

The requirements in 4.2.2 do not apply to *activity toys* with a *platform* height of 600 mm or less.

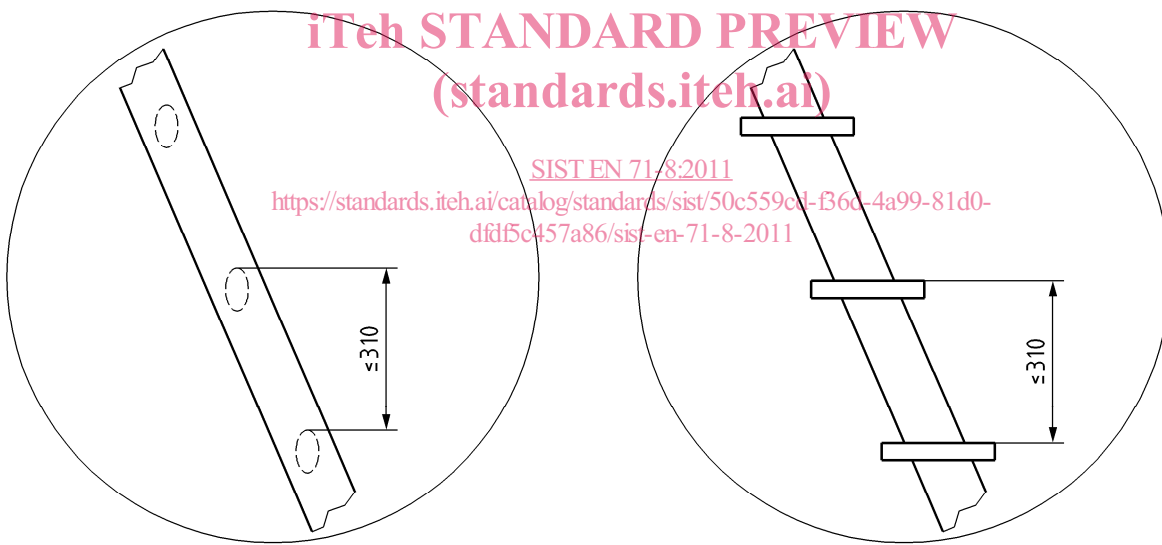
Ladders and similar means of access to *activity toys* shall comply with the following requirements:

- a) any opening shall comply with 4.3.1 (head and neck entrapment);
- b) where a ladder or a stair is used, the lateral width of the tread or rung shall be 240 mm or more (see Figure 3 a));
- c) the distance between the upper surfaces of the treads or rungs shall not exceed 310 mm when measured vertically as indicated in Figure 3 b). This requirement does not apply to the vertical distance between the ground and the upper surface of the first step;
- d) the surface of the tread shall not be slippery. This can be achieved by corrugation of the steps or by the use of non slippery types of materials;
- e) when ladders are provided with rungs, the cross-sectional dimension of the rungs shall be not less than 16 mm and not more than 45 mm;
- f) the depth of treads on closed step ladders shall be 120 mm or more;
- g) the inclination for ladders that are fixed to a toy shall be between 55° and 90° to the horizontal;
- h) ladders any part of which reaches a height of 1 200 mm or more from the ground shall be provided with *handrails* from a height of not more than 600 mm from the ground to the top of the *platform* (see Figure 3 a)). This requirement does not apply to ladders with rungs.

Dimensions in millimetres



a) Dimensions of ladders



b) Details of a step ladder

Figure 3 — Ladders

4.3 Entrapment (see A.7)

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) All 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 17), also allow passage of probe D (see Figure 18), when tested according to 6.5.1 (head and neck entrapment in accessible 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, that allow the free passage of probe C, 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 20, 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 template E (see Figure 19) 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 4.3.1 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 most onerous 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.