BS EN 71-8:2011

BSI Standards Publication

Safety of toys

Part 8: Activity toys for domestic use

raising standards worldwide™

National foreword

This British Standard is the UK implementation of EN 71-8:2011. It supersedes BS EN 71-8:2003+A4:2009 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CW/15, Safety of toys.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

ISBN 978 0 580 71603 4

ICS 97.200.50

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2011.

Amendments issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 71-8

September 2011

ICS 97.200.50

Supersedes EN 71-8:2003+A4:2009

English Version

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

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

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

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

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

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.

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.

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.:

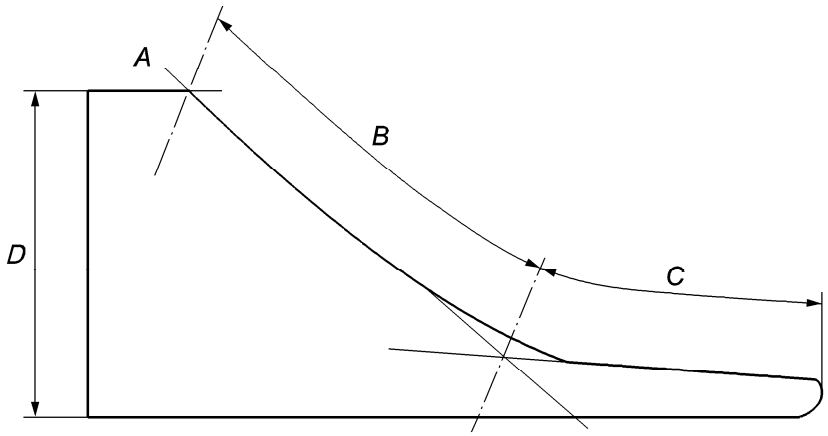
— reducing the surface area to restrict free movement and encourage holding on;

— incline the surface to encourage holding on;

— . introducing movement to the surface to encourage holding on.

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

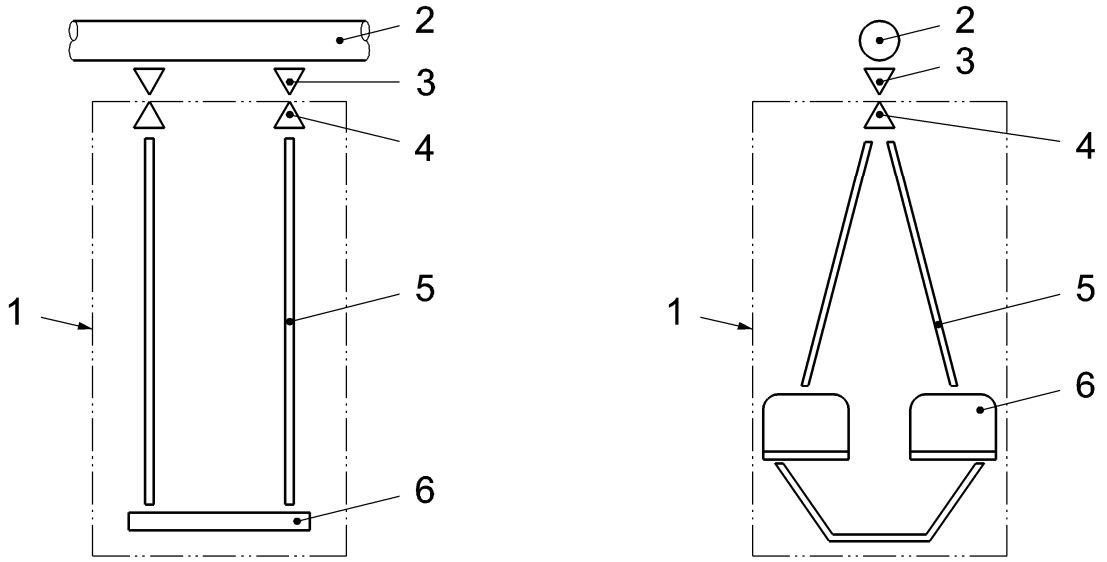
NOTE 2 The dimensions A, B, and C are taken at the centreline of the sliding surface. Each of these sizes represents one of the zones of the sliding surface. Each zone of the sliding surface is determined by the intersection of the curve of the sliding surface (taken at the bottom of the sliding surface) 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)

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).

4 Requirements[1]

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 toy*s 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;

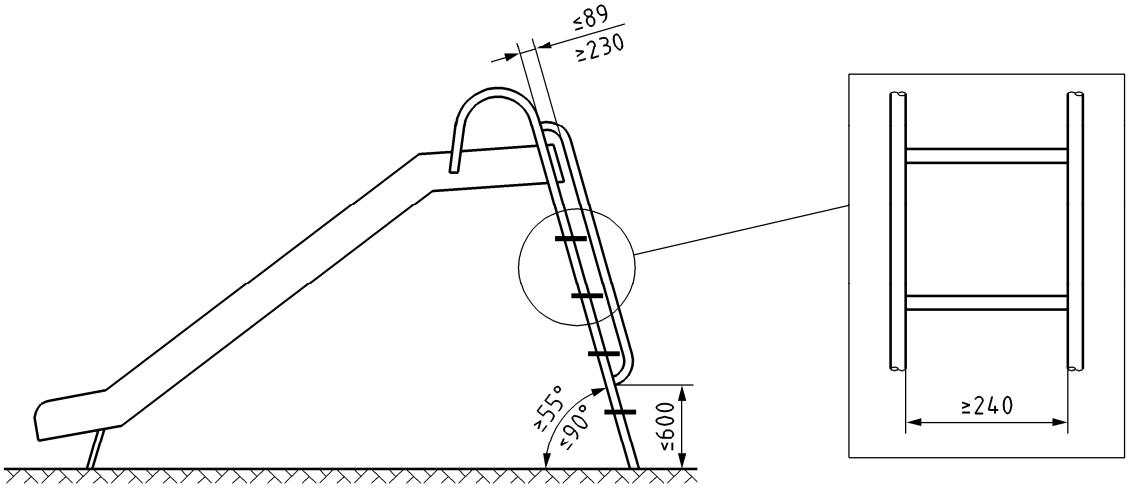
e) when ladders are provided with rungs, the cross-sectional dimension of the rungs shall be not less than 16 mm and not more than 45 mm;

f) the depth of treads on closed step ladders shall be 120 mm or more;

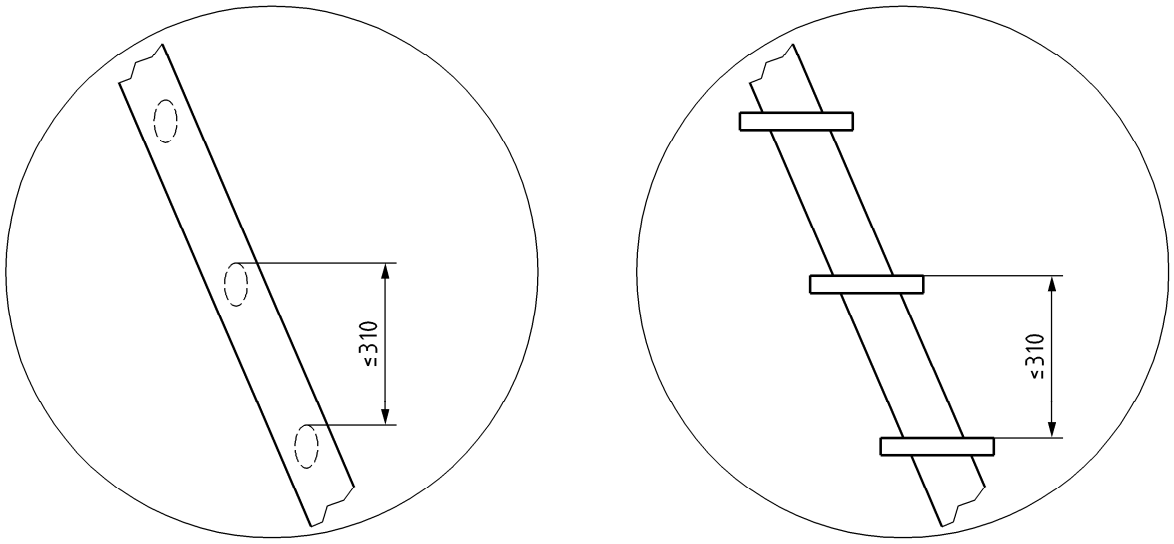
g) the inclination for ladders that are fixed to a toy shall be between 55° and 90° to the horizontal;

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.

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

Application of the toggle test, as described 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 according to 6.6 (toggle test).

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

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

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

4.3.3 Entrapment of feet

The requirement in 4.3.3 does not apply to nets for climbing or walking, or net bridges.

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

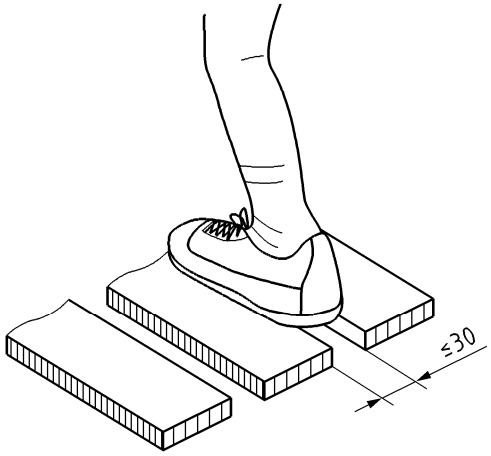


Figure 4 — Measurement of surface gap on running and walking levels

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* can occur are not created.

Holes, slots and gaps in any rigid material that are within the reach of a child during use of the toy, when the body of the child is in a *forced movement*, shall not allow a 7 mm diameter rod to be inserted to a depth of 10 mm or more, unless a 12 mm diameter rod can also be inserted. If an *activity toy* is intended for children under 36 months, the *accessible* holes, slots or gaps in any rigid material that are within the reach of a child during use of the toy, when the body of the child is in a *forced movement*, shall not allow a 5 mm diameter rod to be inserted to a depth of 10 mm or more unless a 12 mm diameter rod can also be inserted. Specific requirements for chains are given in 4.6.7 (suspension connectors and swing devices).

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

4.4.1 General

NOTE Stability requirements for *slides* are given in 4.5.1; for *swings* and other *activity toys* with *crossbeams* in 4.6.1; and for see-saws in 4.7.1.

Activity toys supplied with *anchors* which, according to the manufacturer's instructions, are intended to be permanently fixed (e.g. in concrete) when in use, shall not be subjected to stability tests.

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

Activity toys not supplied with *anchors* shall be subjected to stability tests.

4.4.2 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 6.2.1 (stability of activity toys with a free height of fall of 600 mm or less).

4.4.3 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 6.2.2 (stability of activity toys with a free height of fall of more than 600 mm).

4.5 Slides (see A.8)

4.5.1 Stability of slides

Slides supplied with *anchors* and intended to be permanently fixed (e.g. in concrete) when in use according to the manufacturer’s instructions, shall not be subjected to stability tests.

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

Slides not supplied with *anchors* shall be subjected to stability tests.

Slides shall not tip over when tested according to 6.2.3 (stability of slides).

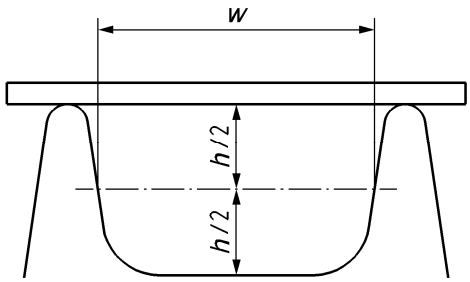
4.5.2 Retaining sides for slides (see A.9)

Retaining sides for *slides* shall comply with the following requirements (see Figure 5):

a) for *slides* with a starting section height of more than 1 000 mm measured from the ground, the height (*h*) of the retaining sides shall be 100 mm or more;

b) for *slides* with a starting section height of 1 000 mm or less measured from the ground, the height (*h*) of the retaining sides shall be 50 mm or more.

Retaining sides are not required for the run-out section of slides.



Key

h height of the retaining sides
w width of the *slide*

Figure 5 — Height of retaining sides

4.5.3 Starting, sliding and run-out sections on slides

NOTE For attachment *slides*, a *platform* may be regarded as the starting section.

The starting, sliding and run-out sections of *slides* shall comply with the following requirements (see Figure 6):

a) the starting section for *slides* with a starting section height of less than 1 000 mm measured from the ground shall have at least the same width as the sliding section; a length of 150 mm or more; and an inclination of between 0° and 10° to the horizontal. The width is measured as indicated in Figure 5;

b) the starting section for *slide*s with a starting section height of 1 000 mm or more measured from the ground shall have at least the same width as the sliding section; a length of 250 mm or more; and an inclination of between 0° and 10° to the horizontal. The width is measured as indicated in Figure 5;

c) the starting section shall be provided with *handrails* in order to provide assistance to the child coming from the stair/ladder into the sitting position:

   — for *slide*s with a starting section height less than 600 mm, the height of the *handrail* shall be 100 mm or more;

   — for *slide*s with a starting section height of 600 mm or more but less than 1 000 mm, the height of the *handrail* shall be 150 mm or more;

   — for *slide*s with a starting section height of 1 000 mm or more but less than 1 800 mm, the height of the *handrail* shall be 350 mm or more;

   — for *slide*s with a starting section height of 1 800 mm or more, the height of the *handrail* shall be 500 mm or more;

d) the run-out section of the *slide* shall have a length of 150 mm or more. The inclination of the run-out section shall be between 0° and 10° to the horizontal, and the height of the end of the run-out section shall be 300 mm or less from the ground;

e) the finishing end of the run-out section shall have a minimum radius of 25 mm. This requirement does not apply to *slide*s where the run-out section ends 50 mm or less from the ground;

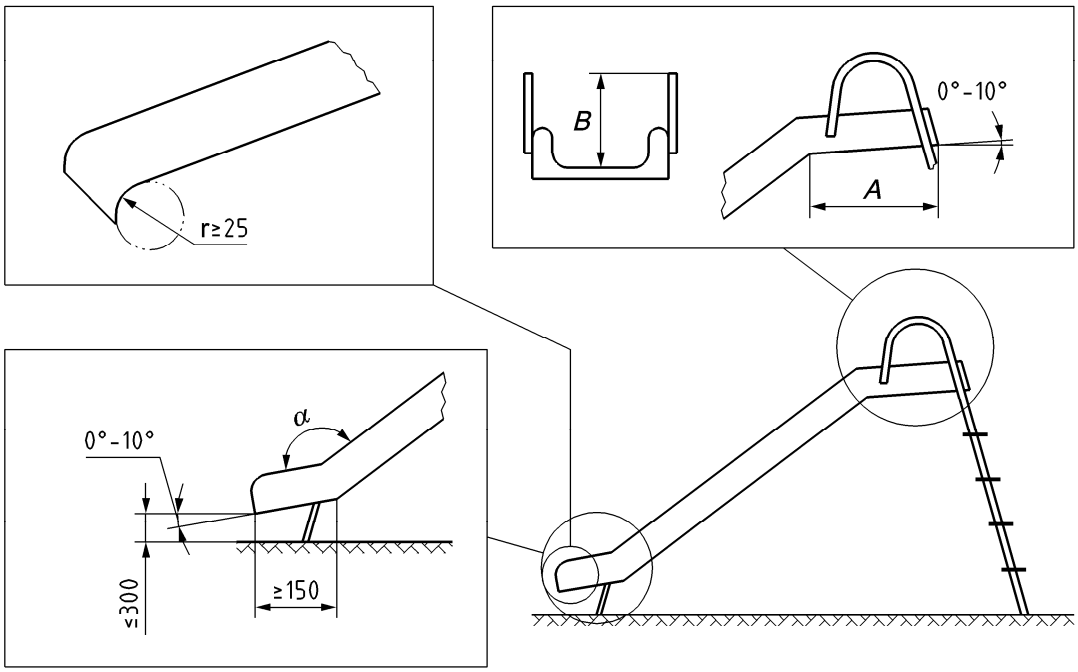
f) the sliding section of the *slide* shall not exceed an angle of inclination of 60° to the horizontal at any point when measured according to 6.7.1 (measurement of inclination of the sliding section on slides);

g) the minimum angle (α) between the sliding section and the run-out section shall not be less than the values given in Table 1, when measured according to 6.7.2 (measurement of the angle between the sliding section and the run-out section on slides).

Table 1 — Minimum angle (α) between the sliding section and the run-out section in relation to the height of the starting section

Height of the starting section	Minimum angle (α) between the sliding section and the run-out section
Less than 600 mm	120°
600 mm or more but less than 1 000 mm	130°
1 000 mm or more but less than 1 800 mm	140°
More than 1 800 mm	150°

Dimensions in millimetres



Key

A length of starting section:
- ≥ 150 mm for *slides* with a starting section height of less than 1 000 mm (see 4.5.3 a));
- ≥ 250 mm for *slides* with a starting section height of 1 000 mm or more (see 4.5.3 b)).

B height of *handrails* (see 4.5.3 c)):
- ≥ 100 mm for *slides* with a starting section height less than 600 mm;
- ≥ 150 mm for *slides* with a starting section height of 600 mm or more but less than 1 000 mm;
- ≥ 350 mm for *slides* with a starting section height of 1 000 mm or more but less than 1 800 mm;
- ≥ 500 mm for *slides* with a starting section height of 1 800 mm.

α minimum angle between the sliding section and the run-out section

Figure 6 — Requirements for slides

4.6 Swings (see A.10)

4.6.1 Stability of swings and other activity toys with crossbeams

4.6.1.1 General

Swings and other *activity toys* with *crossbeams* supplied with *anchors* which, according to the manufacturer's instructions, are intended to be permanently fixed (e.g. in concrete) when in use, shall not be subjected to stability tests.

Swings and other *activity toys* with *crossbeams* supplied with removable ground *anchors* shall be tested with *anchors* fixed to the standing surface according to the manufacturer's instructions.

Swings and other *activity toys* with *crossbeams* not supplied with *anchors* shall be subjected to stability tests.

4.6.1.2 Swings and other activity toys with crossbeams more than 1 200 mm above the ground

When tested according to 6.2.4.1 (stability of swings and other activity toys with crossbeams more than 1 200 mm above the ground), the *activity toy* shall not tip over.

4.6.1.3 Swings and other activity toys with crossbeams 1 200 mm or less above the ground

NOTE *Swings* and other *activity toys* with *crossbeams* 1 200 mm or less above the ground are intended for children of under 36 months.

When tested according to 6.2.4.2 (stability of swings and other activity toys with crossbeams 1 200 mm or less above the ground), the *activity toy* shall not tip over.

4.6.2 Static strength of crossbeams, swing devices and suspension connectors

When tested according to 6.3.2 (strength of swings), structures and/or *crossbeams* shall not collapse and swing devices and *suspension connectors* shall not become deformed, so that the *activity toy* does not comply with relevant requirements of EN 71-1.

4.6.3 Swings intended for children under 36 months

The seats of *swings* shall be provided with a back rest and a safety device preventing the child from falling off the seat.

— If the seat is provided with a T-bar or a protective bar with a crotch strap, the horizontal section of the T-bar or the protective bar shall be situated between 200 mm and 300 mm above the seat, measured as the distance between the lowest part of the sitting surface area of the seat and the upper surface of the bar.

— If the seat is provided with a device to fasten the child to the seat, the device shall comprise a crotch strap.

4.6.4 Minimum clearance between adjacent swing elements, and adjacent structures

The requirements in 4.6.4 do not apply to single swing elements in *swings* with a *crossbeam* height of 1 200 mm or less above the ground.

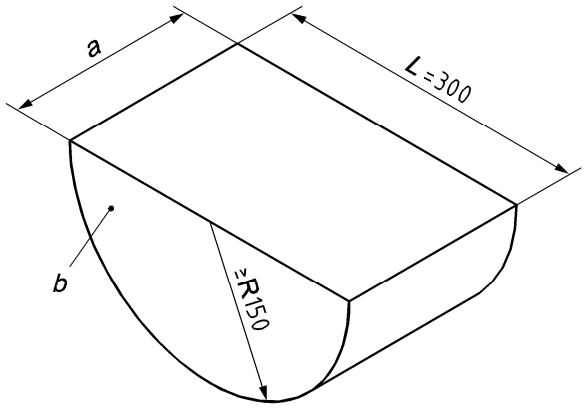
The minimum clearances between adjacent swing elements and between swing elements and adjacent structures shall be as given in Table 2.

Table 2 — Minimum clearances between adjacent swing elements and adjacent structures

Clearances in millimetres between:	**Free-swinging elements**	**Semi-flexible elements**	**With rigid means of suspension**	**Adjacent structure of swing device**
Free-swinging elements	450	450	450	300
Semi-flexible elements	450	300	300	300
Elements with rigid means of suspension	450	300	300	300

For adjustable means of suspension, the measurement shall be taken with the swing element adjusted to the most onerous height unless the manufacturer specifies a maximum height in the instructions. For a flexible swing element, the fixture shown in Figure 7 shall be used to simulate a typical load.

Dimensions in millimetres



Key

a dimension shall be not less than to the depth of the swing element
b mass of the load fixture shall be 12 kg
R radius of the load fixture
L width of the load fixture

Figure 7 — Typical load fixture for a flexible swing element

4.6.5 Lateral stability of swing elements

The requirement in 4.6.5 does not apply to *swings* with rigid means of suspension.

The minimum distance between the suspension points of a *swing* measured along the *crossbeam* shall be calculated as follows (see Figure 7):

$$A = 0{,}04\ h + B$$

where

A is the distance between the suspension points along the *crossbeam*;

B is the distance between the junction points of the swing element and the means of suspension;

h is the distance from the ground to the lower side of the *crossbeam*.

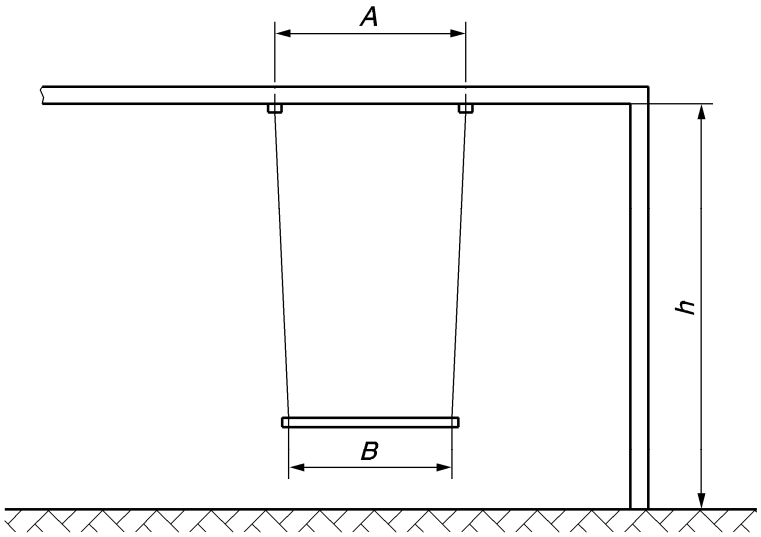


Figure 8 — Minimum distance between suspension points of swings

For a flexible swing element, the fixture detailed in Figure 7 shall be used to simulate normal use.

4.6.6 Minimum clearance between swing elements and the ground (see A.11)

The minimum clearance between swing elements and the ground shall be as follows:

swings with a *crossbeam* height of 1 200 mm or less 200 mm;

swings with a *crossbeam* height exceeding 1 200 mm 350 mm.

If a swing element has a footrest, the minimum clearance is measured between the footrest and the ground.

If the clearance between the swing elements and ground is adjustable, the minimum clearance shall be mentioned in the assembly and installation instructions.

For a flexible swing element, the fixture detailed in Figure 7 shall be used to simulate normal use.

4.6.7 Suspension connectors and swing devices

a) The suspension coupling(s) (see Figure 2, key 4) shall be prefixed to the means of suspension when supplied. This requirement does not apply to *swings* with rigid means of suspensions.

b) Methods of attachment requiring knots are not permitted. Only:

1) non disassembling systems, a forced disassembling causing the destruction of the product, and

2) inviolable systems, like weld or injection stop

are permitted.

c) *Suspension connectors* shall be of a design that will prevent unintentional disconnection.

NOTE Examples of such hooks are hooks wound over at least 540° or of a spring-hook type.

d) Chains shall have a maximum opening of 5 mm in order to prevent fingers from being trapped (see Figure 9).

Dimensions in millimetres

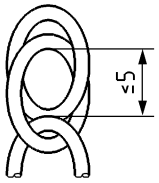


Figure 9 — Maximum opening in chains for swings

4.6.8 Impact, geometry and design of swing elements

4.6.8.1 General

The requirements in 4.6.8 do not apply to:

— *swings* intended for children under 36 months;

— *swings* intended to be mounted such that the bottom of the swing element is at a height of more than 1 000 mm from the ground.

4.6.8.2 Impact from swing elements

The requirements in 4.6.8.2 do not apply to:

— swing elements with a mass of less than 1,0 kg excluding the mass of the means of suspension unless the means of suspension is rigid;

— *swings* with double seats with falling protection on 3 sides of the seat.

When tested according to 6.9 (determination of impact from swing elements), swing elements shall not impart an average peak acceleration greater than 50 g.

4.6.8.3 Geometry and design of swing elements

Potential impact surfaces shall either fulfil the geometry requirements, or be made in resilient and flexible material (e.g. plastics, textile, ethylene vinyl acetate (EVA) or flexible rubber) and have a swing element that has a mass of less than 1,0 kg.

Footrests on swing elements shall be made in such a way that they have a resilient behaviour.

Potential impact surfaces of swing elements shall be designed with a repelling geometry and smooth surfaces in the direction of movement, having a width of at least 10 mm including a radius of at least 15 mm and edge radii of at least 3 mm and angles between adjacent surfaces of not less than 75° (see Figure 10).

For tubes of swing devices, the diameter shall be at least 25 mm.

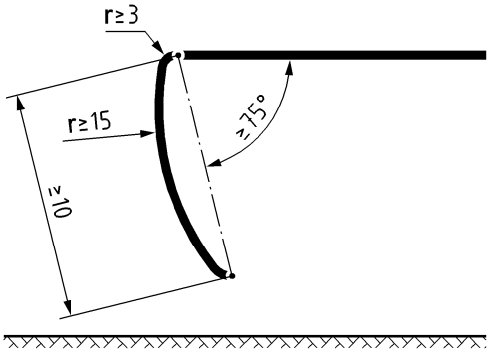


Figure 10 — Geometry requirements for impact surfaces of swing elements

NOTE The footrest is part of the swing element.

4.7 See-saws

4.7.1 Stability of see-saws

The requirements in 4.7.1 do not apply to see-saws supplied with *anchors* that are intended to be permanently fixed (e.g. in concrete).

See-saws supplied with removable ground *anchors* shall be tested with *anchors* fixed to the standing surface according to the manufacturer's instructions.

When tested according to 6.2.5 (stability of see-saws), see-saws supplied with removable ground *anchors* and see-saws not supplied with *anchors* shall not tip over.

4.7.2 Seat/stand height

The central point of the sitting or standing position of the see-saw shall not exceed a height of 1 200 mm. The sitting surface of the seats shall not swing out of the horizontal by more than 30°.

4.7.3 Restraint of motion

For see-saws where the central point of the sitting or standing position can reach a height of 1 000 mm or more, each end of the see-saw shall be provided with dampening material on the part that touches the ground or have a dampening device incorporated in the centre of the see-saw.

4.7.4 Pinching and crushing of fingers and toes

When one end of the beam is touching the ground, the space between the underside of the beam and its central pivot shall admit a 12 mm diameter rod.

4.7.5 Hand supports

Each seating position shall be provided with one hand support at least.

4.8 Carousels and rocking activity toys (see A.12)

The requirements in 4.8 do not apply to bow-mounted rocking horses and similar toys.

Carousels, rocking *activity toys* and similar toys shall comply with the following requirements:

a) when tested according to 6.2.1 (stability of activity toys with a free height of fall of 600 mm or less), *activity toys* shall not tip over;

b) when tested according to 6.3.1 (strength of activity toys other than swings and paddling pools), *activity toys* shall not collapse;

c) when measured from the ground and surface to any sitting or standing position, the *free height of fall* for carousels and rocking *activity toys* shall not exceed 600 mm.

4.9 Paddling pools

4.9.1 Static strength of paddling pools with non-inflatable walls

When tested according to 6.10 (static load test for paddling pools with non-inflatable walls), the structure shall not present any hazardous sharp edges or hazardous sharp points, or any small parts which fit entirely in the small parts cylinder specified in EN 71-1.

4.9.2 Paddling pools with inflatable walls

All air-inflation inlets on *paddling pools* with inflatable walls shall comply with the requirements for inflatable toys specified in EN 71-1.

5 Warnings, markings, and instructions

5.1 Warnings and markings

5.1.1 General

The *activity toy* or its packaging shall, where appropriate, carry warnings regarding the minimum and/or maximum user age, and minimum and/or maximum user weight, and whether the *activity toy* is intended for indoor or outdoor use.

These warnings shall be preceded by the word: “Warning” or “Warnings”, as appropriate, and be clearly visible to the consumer before the purchase.

The *activity toy* or its packaging shall carry the following warning to be marked on the toy or its packaging. The warning shall be clearly visible at the time of purchase:

"Warning. Only for domestic use."

5.1.2 Paddling pools

Paddling pools shall bear the following warning pictograms and warning text (see Figures 11 a) and b)).

a) Mandatory action pictogram

b) Prohibition pictogram

“Warning. Never leave your child unattended – drowning hazard"

Figure 11 — Warning pictograms and text

The height of the pictograms shall be not less than 40 mm.

The warning text of the pictograms on the *paddling pool* shall be indelible and easily legible and in a colour which contrasts with the body of the *paddling pool*. The warning text shall be placed below or to the side of the pictograms.

The colours of the pictogram on the *activity toy* shall be respected including the background white colour (see Figures 11 a) and b)).

The warning shall be clearly visible by the supervising adult during use of the *paddling pool.*

The packaging of *paddling pools* shall carry the following information:

— "Children can drown in very small amounts of water. Empty the pool when not in use".

— "Do not install the paddling pool over concrete, asphalt or any other hard surface".

5.2 Assembly and installation instructions

The warnings, markings and information specified in 5.1 shall be repeated in the assembly and installation instructions.

Any other purchase information or information provided on the labels of the *activity toys* shall be given in the installation instructions.

Activity toys that require assembly by the consumer shall be accompanied by appropriate assembly instructions including drawings which shall enable a consumer to correctly assemble the *activity toy*.

The assembly and installation instructions shall also, when appropriate, include the following:

a) a recommendation to place the *activity toy* on a level surface at least 2 m from any structure or obstruction such as a fence, garage, house, overhanging branches, laundry lines or electrical wires;

b) detailed instructions on how *anchors* are to be installed to prevent overturning or lifting of the support members when they are used as intended or in a foreseeable way, taking into account the condition of the soil normally encountered;

c) instructions that *anchors* shall be placed level with or under the ground in order to reduce tipping hazards;

d) the minimum clearance that needs to exist between the swing element(s) and the ground, and, where this is adjustable, instructions on how to achieve this minimum clearance;

e) instructions that *activity toys* (for example *paddling pools, swings, slides,* climbing frames) shall not be installed over concrete, asphalt or any other hard surface;

f) a recommendation on the orientation of the activity toy (e.g. *slides*) in relation to its exposure to the sun;

g) information to keep the assembly and installation instructions for further reference;

h) instructions that modifications made by the consumer to the original *activity toy* (for example the adding of an accessory) shall be carried out according to the instructions of the manufacturer. In particular, instructions shall be provided with a kit/accessory about the installation of rope/nets concerning the minimum diameter, the need for fixation at both ends, overall length, and positioning in relation to other structures.

5.3 Maintenance

Activity toys shall be accompanied by maintenance instructions drawing attention to the need of carrying out checks and maintenance of the main parts (*crossbeams*, suspensions, *anchors*, etc.) at regular intervals, pointing out that if these checks are not carried out the *activity toy* could overturn or otherwise become a hazard. Whenever practical, the instructions shall also be affixed to the *activity toy*.

The maintenance instructions shall, when appropriate, also include the following recommendations pointing out that it is of particular importance that they be followed at the beginning of each season as well as at regular intervals during the usage season:

a) to check all nuts and bolts for tightness and tighten when required;

b) to oil all metallic moving parts;

c) to check all coverings for bolts and sharp edges and replace when required;

d) to check swing seats, chains, ropes and other means of attachments for evidence of deterioration;

e) to replace defective parts in accordance with the manufacturer's instructions;

f) to change the water of *paddling pools* frequently (particularly in hot weather) or when noticeably contaminated.

6 Test methods

6.1 General

Except where otherwise specified, the stability and strength tests shall be performed with the number of users determined according to Table 3, unless the manufacturer indicates more users than this table.

If the manufacturer indicates more users than Table 3, load accordingly.

Table 3 — Number of users on activity toys

Position	Number of users
Swing device	1 per position
Slide with overall length ≤ 2 m	1 at the top
Slide with overall length > 2 m For *slides* where the starting section is a *platform* the overall length does not include the *platform* The overall length is measured along and over the surface the *slide*	1 at the top and 1 at midpoint of *slide*
Pole or rope	1 per pole or rope
Platform with a slope ≤ 60°	2 per m^2 For areas of less than 0,6 m^2 assume 1 user
Platforms and playing surfaces (see Figure 14) with a slope > 60°	1 per 2 m^2 This includes climbing walls, climbing nets and other means of access (See also Figure 14)
Areas of *platforms* with a slope ≤ 60° (see Figure 15) and where the headroom is less than 600 mm	1 per m^2 (See also Figure 15)
	Where values above 1 including decimals (e.g. 1,2, 1,8 or 2,1) are obtained in the calculation of each position, all values are to be rounded down to the previous whole number (e.g. 1,2 = 1, 1,8 = 1 and 2,1 = 2). Where values under 1 including decimals (e.g. 0,8 or 0,3) are obtained in the calculation of each position, all answers are to be rounded up to 1 (e.g. 0,8 = 1, 0,3 = 1).

6.2 Stability

6.2.1 Stability of activity toys with a free height of fall of 600 mm or less (see 4.4.2 and 4.8)

Place the *activity toy* on a (10 ± 1)° slope in the most onerous position with respect to stability.

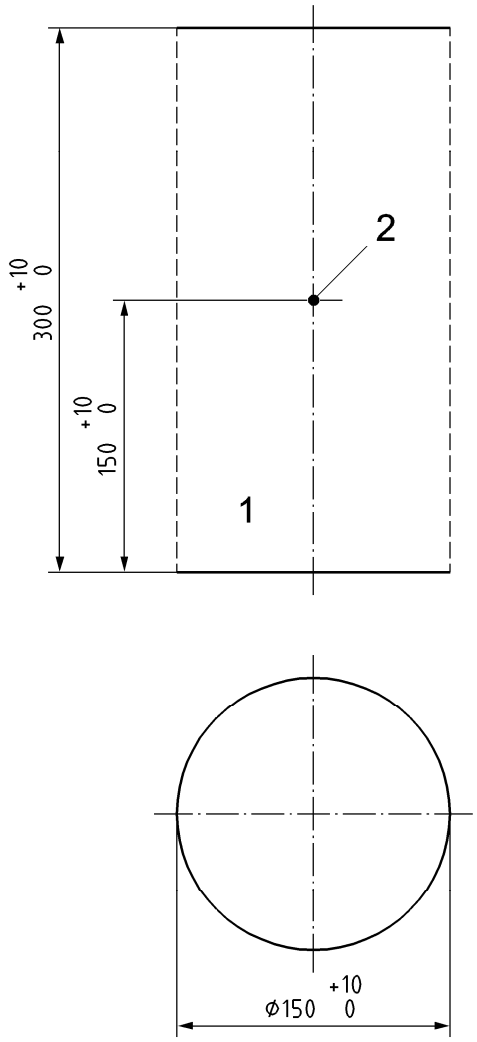
If the *activity toy* is intended to bear the mass of more than one child at a time, test every sitting or standing surface in the most onerous situation, calculating the number of users according to Table 3, based on a minimum surface for a child of 0,36 m².

For *activity toys* that are suitable for children of 36 months and over, load the *activity toy* in the most onerous position(s) with a mass of (50 ± 0,5) kg per user on each of its sitting or standing surface.

For *activity toys* that, due to their construction, strength, design or other factors, are not suitable for children of 36 months and over (see EN 71-1), load the toy in the most onerous position(s) with a mass of (25 ± 0,2) kg per user on each of its sitting or standing surfaces.

The dimensions of the load are given in Figure 12.

Dimensions in millimetres



Key

1 mass, < 36 months, 25 kg
mass, ≥ 36 months, 50 kg
2 centre of gravity

Figure 12 — Load for determination of strength and stability

When the *activity toy* is completely loaded, maintain the load for 5 min.

Observe whether the toy tips over.

6.2.2 Stability of activity toys with a free height of fall of more than 600 mm (see 4.4.3)

6.2.2.1 Principle

A horizontal force is applied at the top of the *activity toy* to simulate a child climbing on the *activity toy*.

6.2.2.2 Apparatus

— Suitable device(s) to apply a horizontal force of (120 ± 5) N.

— Stops, if needed.

6.2.2.3 Procedure

Assemble the *activity toy* according to the manufacturer's instructions and place the toy on a rigid horizontal flat surface.

For a free-standing *activity toy*, stops may be used to prevent its slipping on the surface. However, stops shall not prevent the *activity toy* from overturning.

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

Apply a force of (120 ± 5) N per user, calculating the number of users according to Table 3 (based on a minimum surface for a child of 0,36 m²), in the direction most likely to cause the *activity toy* to tip over. The force shall be applied at the outermost and highest gripable point(s). The highest gripable point is, however, limited to 1 500 mm above the highest surface of such a size that it will always support a child.

NOTE 1 1 500 mm is the maximum shoulder height of 95 % of children aged up to 14.

NOTE 2 The most onerous stability condition can occur when less than the maximum numbers of forces are applied on the *activity toy*.

Observe whether the toy tips over.

6.2.3 Stability of slides (see 4.5.1)

Place the *activity toy* on a (10 ± 1)° slope in the most onerous position with respect to stability.

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

Load the geometric centre of every sitting or standing surface simultaneously with a mass of (50 ± 0,5) kg per user, calculating the number of users according to Table 3, based on a minimum surface for a child of 0,36 m².

Observe whether the toy tips over.

6.2.4 Stability of swings and other activity toys with crossbeams (see 4.6.1)

6.2.4.1 Stability of swings and other activity toys with crossbeams more than 1 200 mm above the ground (see 4.6.1.2)

6.2.4.1.1 Principle (see A.13)

A horizontal force is simultaneously applied at each suspension point to simulate horizontal force created by pendulum effect.

6.2.4.1.2 Apparatus

— Suitable device(s) to apply a horizontal force from (125 ± 5) N to (2 000 ± 80) N.

— Stops, if needed.

6.2.4.1.3 Procedure

Assemble the *activity toy* according to the manufacturer's instructions and place or fix the toy on a rigid horizontal surface.

For a free-standing *activity toy*, stops may be used to prevent its slipping on the surface. However, stops shall not prevent the *activity toy* from overturning.

Swings and other *activity toys* with *crossbeams* supplied with the *anchors* shall be tested with *anchors* fixed to the standing surface according to the manufacturer’s instructions.

On the suspension point(s), apply gradually and simultaneously horizontal forces of (500 ± 20) N per user in the swinging direction. Where a swing element has multiple suspension points, distribute the forces equally between the points using Table 4 as a guide.

Observe whether the toy tips over.

Table 4 — Examples of horizontal forces

Number of children	Number of suspension points	Force in N (newton) per suspension point
1	1	500
1	2	250
1	4	125
2	1	1 000
2	2	500
2	4	250
3	1	1 500
3	2	750
3	4	375
4	1	2 000
4	2	1 000
4	4	500

6.2.4.2 Stability of swings and other activity toys with crossbeams 1 200 mm or less above the ground (see 4.6.1.3)

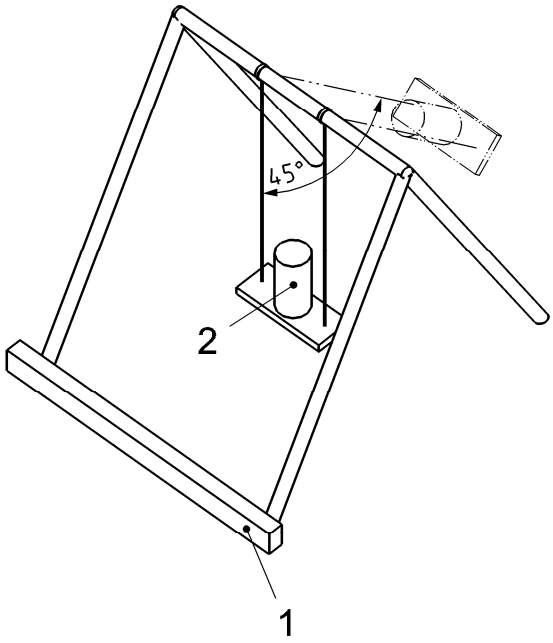
Place the *activity toy* on a horizontal surface. Stops shall be used to prevent the front legs from slipping on the surface. They shall, however, not prevent the *activity toy* from overturning.

Load the seat (or swing element) with a mass of (25 ± 0,2) kg and secure it. The dimensions of the load are given in Figure 12 (load for determination of strength and stability).

Raise the seat backwards to a position 45° from the vertical and release it (see Figure 13).

For *swings* where the seat cannot reach a position of 45° or more from the vertical, the seat shall instead be raised to the maximum possible angle from the vertical before it is released.

Observe whether the toy tips over.



Key

1 stop for the front legs of the *swing*
2 mass of 25 kg

Figure 13 — Testing stability of swings and other activity toys with crossbeams 1 200 mm or less above the ground

6.2.5 Stability of see-saws (see 4.7.1)

For see-saws that, due to their construction, strength, design or other factors, are not suitable for children of 36 months and over (see EN 71-1), load each seat, simultaneously, with a mass of (25 ± 0,2) kg. For all other see-saws, load each seat, simultaneously, with a mass of (50 ± 0,5) kg.

The dimensions of the load are given in Figure 12 (load for determination of strength and stability).

Fix the test mass vertically on the seating surface with straps or other negligible means in such a way it cannot slip.

Place the see-saw on a (10 ± 1)° slope in the most onerous position with respect to stability, and with the angle of the beam in the most onerous position.

Observe whether the see-saw tips over.

6.3 Static strength

6.3.1 Strength of activity toys other than swings and paddling pools (see 4.1.2 and 4.8)

The test method of 6.3.1 does not apply to *activity toys* that have only swing elements, refer to 6.3.2.

If the *activity toy* is intended to bear the mass of more than one child at a time, test every sitting or standing area or centre of a crossbeam simultaneously calculating the number of users according to Table 3, based on a minimum surface for a child of 0,36 m^2. For activity toys that are suitable for children of 36 months and over, load the activity toy in the most onerous position(s) with a mass of (50 ± 0,5) kg per user on each of its standing or sitting surfaces, including any swing device, and at the centre of a crossbeam, if present.

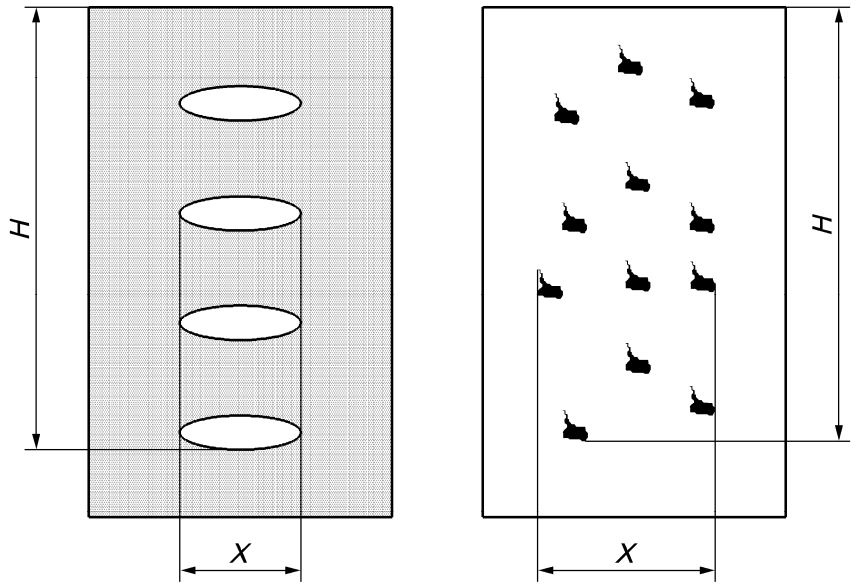
It is acceptable to use sandbags or similar or smaller masses to make up this load, and the most appropriate method to ensure health and safety shall be used.

NOTE 1 Furthermore loading should take place form the lowest to highest points for safety reasons.

For *activity toys* that, due to their construction, strength, design or other factors, not suitable for children of 36 months and over (see EN 71-1), load the toy with a mass of (25 ± 0,2) kg per user on each of its sitting or standing surfaces, including any swing device, and at the centre of a *crossbeam*, if present.

NOTE 2 The test masses are evenly distributed on each tested surface.

NOTE 3 When calculating the number of users on playing surfaces with a slope > 60° (e.g. climbing walls), only the width that enables play activity should be used to calculate the area.



a) Example of playing surface with holes b) Example of playing surface with climbing grips

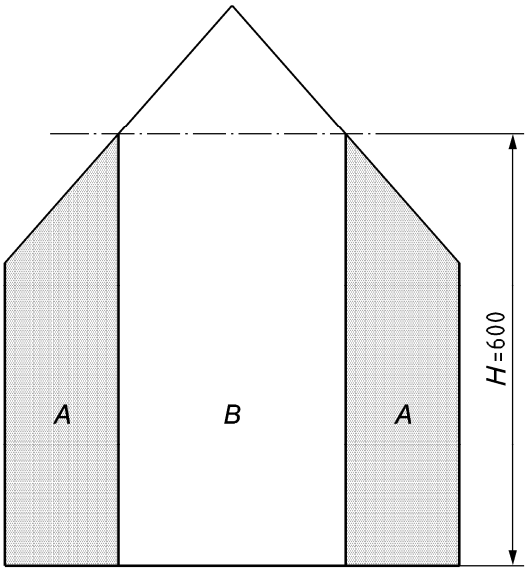
$S = X \times H$

where

X is the width of playing surface
H is the height of playing surface
S is the playing surface area

Figure 14 — Examples of playing surface

Dimensions in millimetres



Keys

A space above *platform* where the headroom is less than 600 mm (one user per square metre)
B space above *platform* where the headroom is 600 mm or more (two users per square metre)
H height of headroom above *platform*

Figure 15 — Example of varying headroom above a platform with a slope ≤ 60°

Activity toys which due to their design are inherently unstable shall be supported for the duration of the test.

For *activity toys* where, by design, the mass of the child is distributed over various positions on the *activity toy*, distribute the prescribed load consistent with the recommended use of the toy. In this case, apply other test loads where the number of distribution points has to be taken into account.

When the *activity toy* is completely loaded, maintain the load for 5 min. Determine whether the toy still complies with the relevant clauses of this European Standard.

Determine also whether the activity toy still complies with the relevant requirements of EN 71-1.

6.3.2 Strength of swings (see 4.6.2)

6.3.2.1 Strength of swings with crossbeams more than 1 200 mm above the ground

Assemble the *activity toy* according to the manufacturer's instructions and place or fix it on a rigid horizontal surface. For multi-*swings* and climbing frames with *swings*, calculate the number of users according to Table 3 based on a minimum surface for a child of 0,36 m². However, if the manufacturer indicates more users than Table 3, load accordingly.

Apply a load of (200 ± 10) kg on each swing device in turn for a period of 1 h.

For *swing*-boats and suspended see-saws (i.e. a swinging toy with two seats, but only one suspension point) ensure that the load is evenly distributed over each sitting or standing surface.

Test a centre swinging pole on a climbing frame as if it were a *swing*, using the appropriate load.

Then apply a load of (50 ± 2) kg on each sitting or standing surface simultaneously for 1 h.

Determine whether the toy still complies with the relevant requirements of EN 71-1.

6.3.2.2 Strength of swings with suspension points 1 200 mm or less above the ground

Swings with suspension points 1 200 mm or less above the ground shall be tested as follows:

Load the *swing* with a mass of (66 ± 3) kg for a period of 1 h.

Ensure that the load is spread evenly over the seat.

NOTE Several methods are possible by using either a framework or by hanging loads from the seat.

Determine whether the *swing* still complies with the relevant requirements of EN 71-1.

6.4 Dynamic strength of barriers and handrails (see 4.2.1)

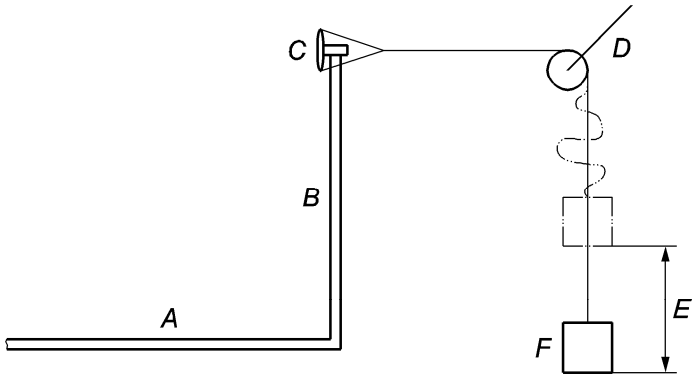
6.4.1 Principle

A sudden horizontal impact stress is applied to the *barrier* or *handrail* through a pad by a falling load.

6.4.2 Apparatus

— A pad with a minimum length of 200 mm and a minimum height of 50 mm made of textile, leather or similar material and stuffed with suitable material and with a shape able to be installed on top of a *barrier* or *handrail*.

— A device with a load with a mass of (25 ± 1) kg attached to a non-elastic rope with a pulley and able to give a vertical impact to the pad through free fall. An example is given in Figure 16.



Key

A *platform*
B *barrier*
C pad
D pulley
E falling height
F load

Figure 16 — Example of apparatus for dynamic test of barriers and handrails

6.4.3 Procedure

Assemble the *activity toy* according to the manufacturer's instructions and place or fix it on a rigid horizontal surface.

Place and secure the pad on the top of the *barrier* or *handrail* in the most onerous position and without any damage to the *activity toy*. Attach the free end of the rope to the pad.

Arrange the rope and the pulley so that the load hangs freely. Raise the load vertically (125 ± 10) mm and let it drop freely giving an impact force of (30 ± 1) J. Within 10 s remove all tension from the *barrier* or *handrail.*

Determine whether the *activity toy* still complies with the relevant requirements of EN 71-1.

6.5 Test for head and neck entrapment (see 4.3.1)

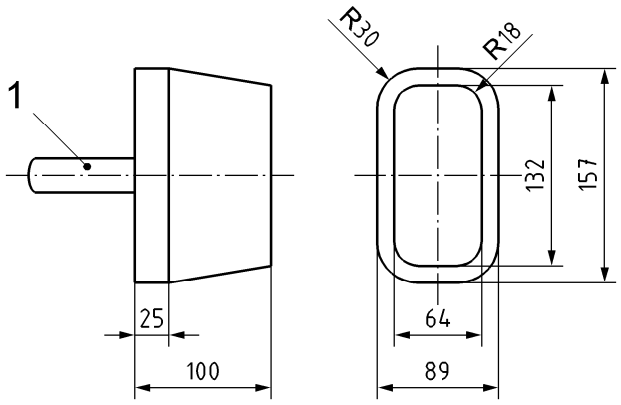
6.5.1 Head and neck entrapment in accessible completely bound openings (see 4.3.1 a) and 4.3.1 c))

Activity toys with accessible completely bound openings with a lower edge of 600 mm or more above the ground or any other surface which is of such a size that it will support a child, shall be assessed using probes made of any material and of sizes according to Figures 17 and 18.

First insert probe C and then probe D and examine whether they protrude more than 100 mm through the opening. Insert the probes in the most onerous orientation without changing the orientation during insertion.

Determine whether the *activity toy* still complies with the relevant requirements of EN 71-1.

Dimensions in millimetres



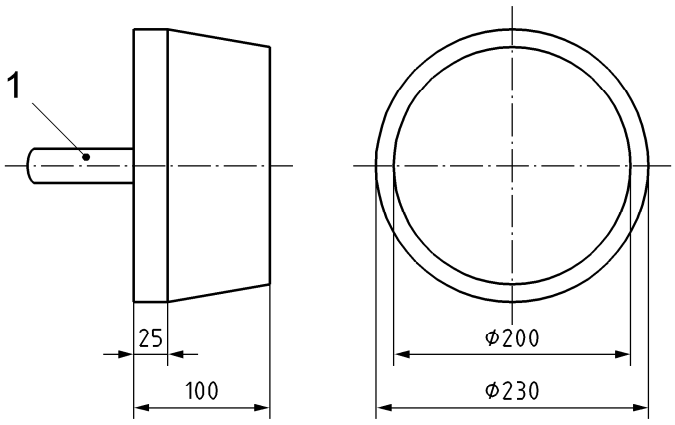
Key

1 handle

NOTE Unless stated otherwise, tolerances on measurements are ± 1 mm for dimensions and ± 1° for angles.

Figure 17 — Probe C (torso) for assessment of completely bound openings

Dimensions in millimetres



Key

1 handle

NOTE Unless stated otherwise, tolerances on measurements are ± 1 mm.

Figure 18 — Probe D (large head) for assessment of completely bound openings

6.5.2 Head and neck entrapment in partially bound and V-shaped openings (see 4.3.1 d))

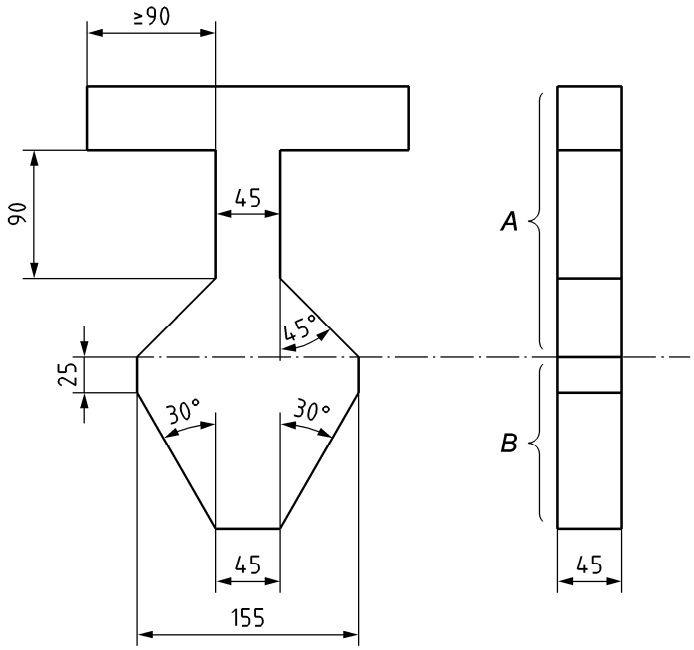
6.5.2.1 Principle

A test template is used for assessing partially bound and V-shaped openings for head and neck *entrapment*.

6.5.2.2 Apparatus

Test template made of any material and with dimensions as given in Figure 19.

Dimensions in millimetres



Key

A "A" portion of probe

B "B" portion of probe

NOTE Unless stated otherwise, tolerances on measurements are ± 1 mm for dimensions and ± 1° for angles.

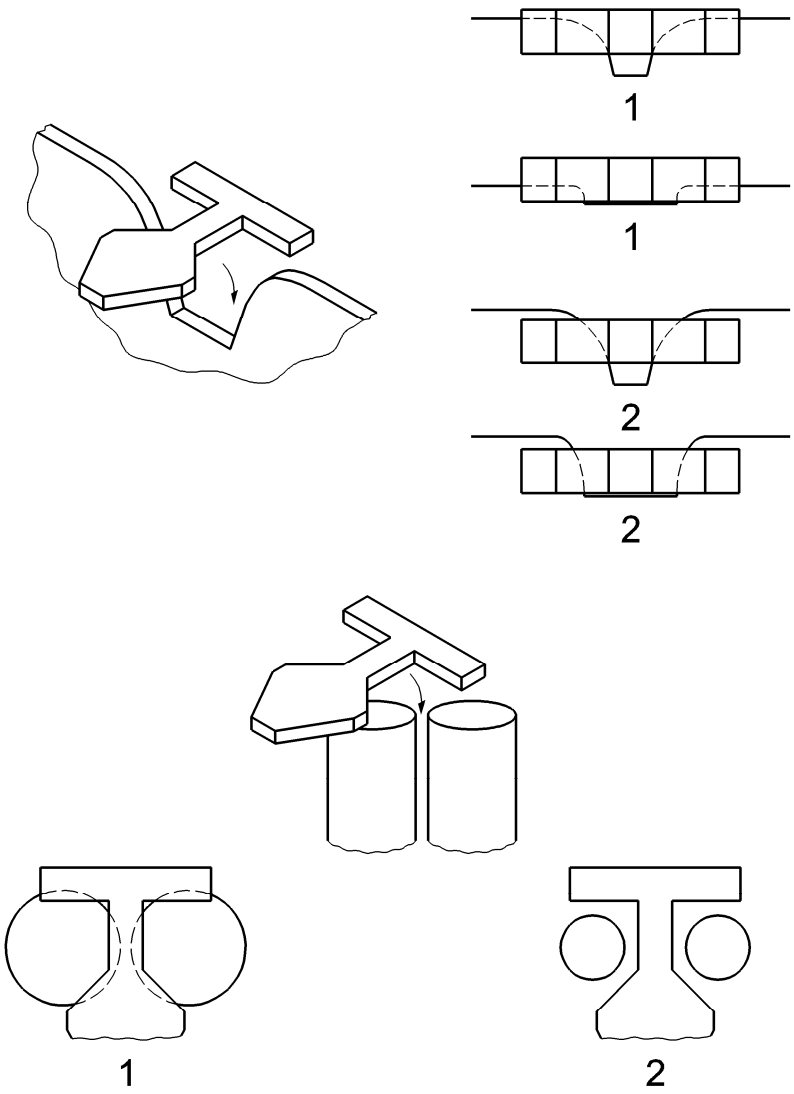
Figure 19 — Test template E for assessment of head and neck entrapment in partially bound and V-shaped openings

6.5.2.3 Procedure

a) Position the “B” portion of the test template E (see Figure 19) between and perpendicular to the boundaries of the opening, as shown in Figure 17.

Observe whether the template fits within the boundaries of the opening (accessible) or if it cannot be inserted to its full thickness (not accessible), as indicated in Figure 20.

Determine whether the *activity toy* complies with the requirements of this European Standard.



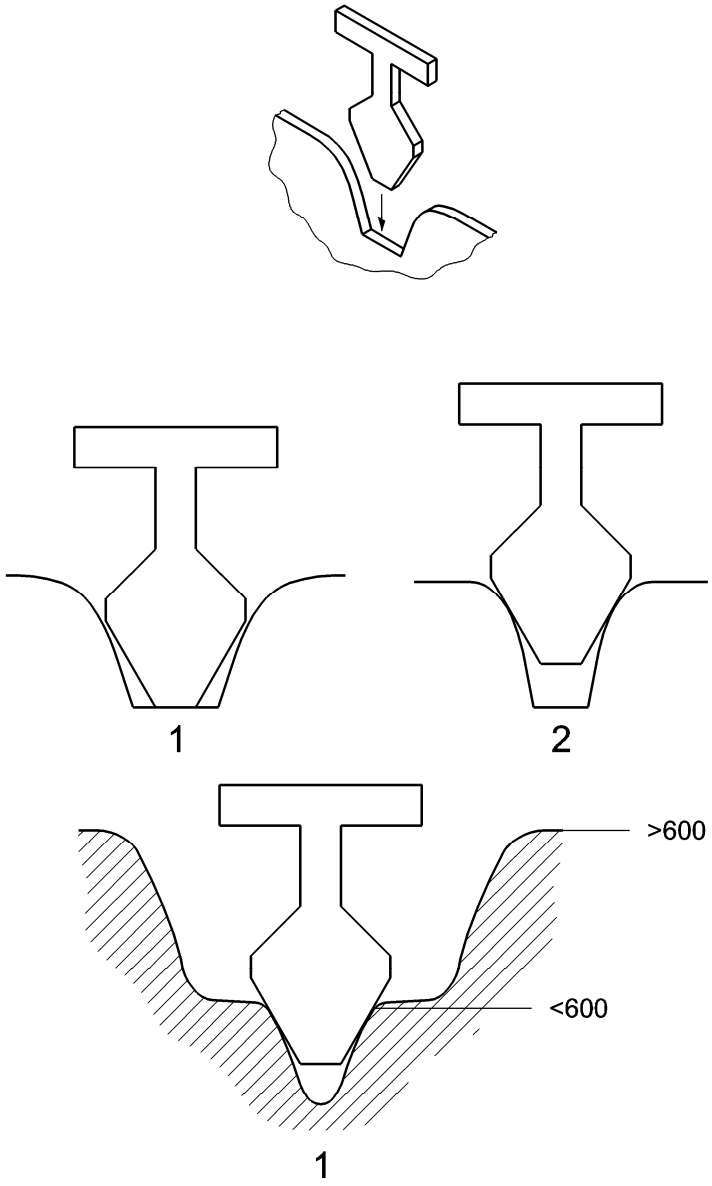
Key

1 not accessible
2 accessible

Figure 20 — Method of insertion of the "B" portion of the test template

b) If test template E can be inserted to a depth greater than the thickness of the template (45 mm) when tested according to 6.5.2.3 a), apply the “A” portion of the test template so that its centre line is in line with the centre line of the opening. Ensure that the plane of the test template is parallel and applied in line with the opening, as shown in Figure 21.

Dimensions in millimetres



Key

1 passes
2 fails

Figure 21 — Method of insertion of the “A” portion of the test template

Insert the test template along the centre line of the opening until its motion is arrested by contact with the boundaries of the opening or the tip of the template contacts the base.

Observe whether the tip of the template contacts the base of the partially bound or V-shaped opening as indicated in Figure 21.

Determine whether the *activity toy* complies with the requirements of this European Standard.

6.6 Toggle test (see 4.3.2)

6.6.1 Principle

A toggle test device is moved along the direction of a *forced movement* in order to establish if there is a potential *entrapment* hazard.

6.6.2 Apparatus

Toggle test device as shown in Figure 22 a) comprising of:

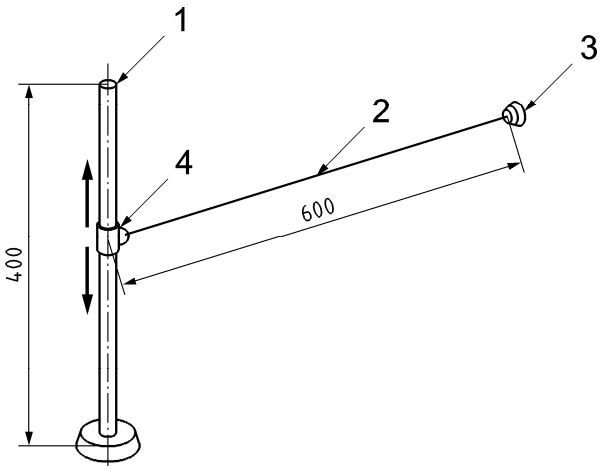
— toggle, as shown in Figure 22 b), made of polyamide (PA) (e.g. nylon) or polytetrafluoroethylene (PTFE), both of which have been found to be suitable materials;

— chain, as shown in Figure 22 c);

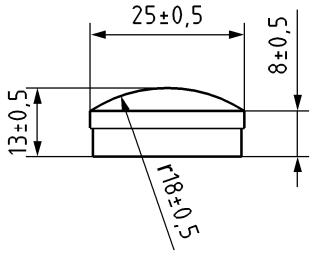
— collar, detachable and with good slip;

— pole.

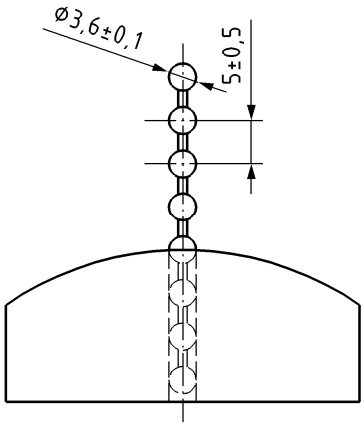
Dimensions in millimetres



a) Complete test device



b) Toggle



c) Chain

Key

1 pole
2 chain
3 toggle
4 collar

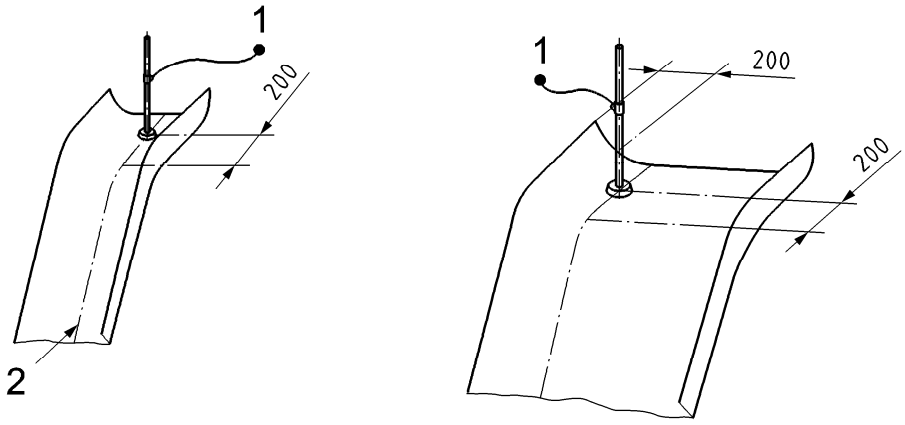
Figure 22 — Toggle test device

6.6.3 Procedure

6.6.3.1 Slides

Position the test device vertically, 200 mm from the transition point of the starting section of the *slide* and at the appropriate lateral location, as shown in Figure 23.

Dimensions in millimetres



a) Narrow *slide* b) Wide *slide*

Key

1 toggle test device
2 centre line

Figure 23 — Positioning of the test device on slides

Apply the toggle and chain to all positions within the range, as follows:

a) move the test device in the direction of the *forced movement*, ensuring that the pole of the test device remains vertical and that the application of the toggle/chain is influenced solely by its own mass. Do not apply any additional initial force to wedge the toggle or chain in an opening;

b) where a *slide* is wider than the width of the test device, carry out the test twice with the base positioned at both width extremities of the bed way, as shown in Figure 23;

c) carry out the test three times.

Observe whether *entrapment* of the toggle or chain occurs.

6.6.3.2 Fireman's poles

Conduct the test in two different ways as follows:

a) Position the complete test device vertically at the edge of the test platform (see Figure 24)at the point closest to the fireman's pole.

   Apply the test device to all positions within range ensuring that the application of the toggle or chain is influenced solely by its own mass. Do not use any additional initial force to wedge the toggle or chain in an opening. If a potential *entrapment* point is thus identified, move the test device in the direction of the *forced movement* of a user.

   Carry out the test three times.

   Observe whether *entrapment* of the toggle or chain occurs.

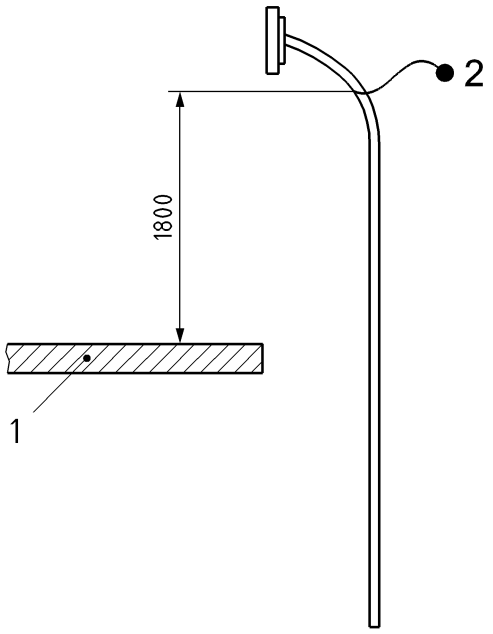
b) Detach the toggle and the chain from the complete test device and position it so that it is at a point 1 800 mm above the surface of the adjacent test platform, as shown in Figure 24.

Apply the toggle and chain to all positions along the entire length of the fireman's pole down to the point 1 000 mm above ground level ensuring that the application of the toggle and chain is influenced solely by its own mass. Do not use any additional initial force to wedge the toggle/chain in an opening. If a potential *entrapment* point is thus identified, move the toggle and chain in the direction of the *forced movement* of a user.

Carry out the test three times.

Observe whether *entrapment* of the toggle or chain occurs.

Dimensions in millimetres



Key

1 test platform
2 toggle test device

Figure 24 — Positioning of the test device on fireman's pole

6.6.3.3 Roofs

Apply the toggle or chain to any accessible opening at the apex or along the surface of the roof, ensuring that the application of the toggle or chain is influenced solely by its own mass. Do not use any additional initial force to wedge the toggle or chain in an opening.

Move the test device in the direction of any potential sliding movement of the user.

Carry out the test three times.

Observe whether *entrapment* of the toggle or chain occurs.

6.7 Measurements of sliding and run-out sections on slides (see 4.5.3)

6.7.1 Measurement of inclination of the sliding section on slides (see 4.5.3 f))

The angle of inclination shall be measured at the centreline of the sliding section.

Place a straight rod or bar of length 200 mm and a width of 30 mm along the centreline of the s*lide* and measure the angle of inclination.

Repeat this measurement by moving the rod or bar along the centre line of the sliding section.

Determine whether the angle of inclination is greater than 60° to the horizontal at any point on the sliding section of the *slide*.

6.7.2 Measurement of the minimum angle between the sliding section and the run-out section on slides (see 4.5.3 g))

Place the inclination device described in Figure 25 at the end of the centre line of the run-out section as shown in Figure 26 and move it towards the centre line of the sliding section until both rods of the inclination device give the smallest angle between the sliding section and the run-out section.

Measure the angle between both rods of the inclination device.

Determine whether this minimum angle exceeds the values given in Table 1.

Dimensions in millimetres

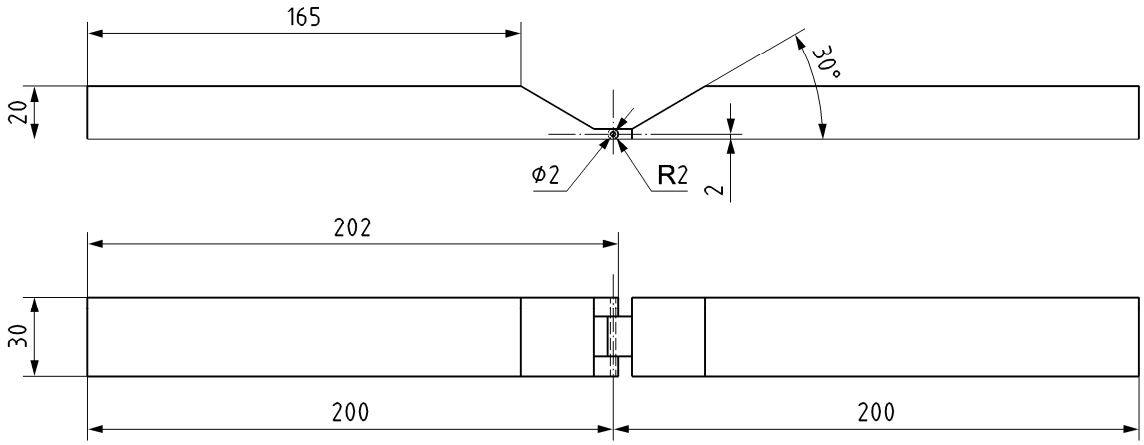
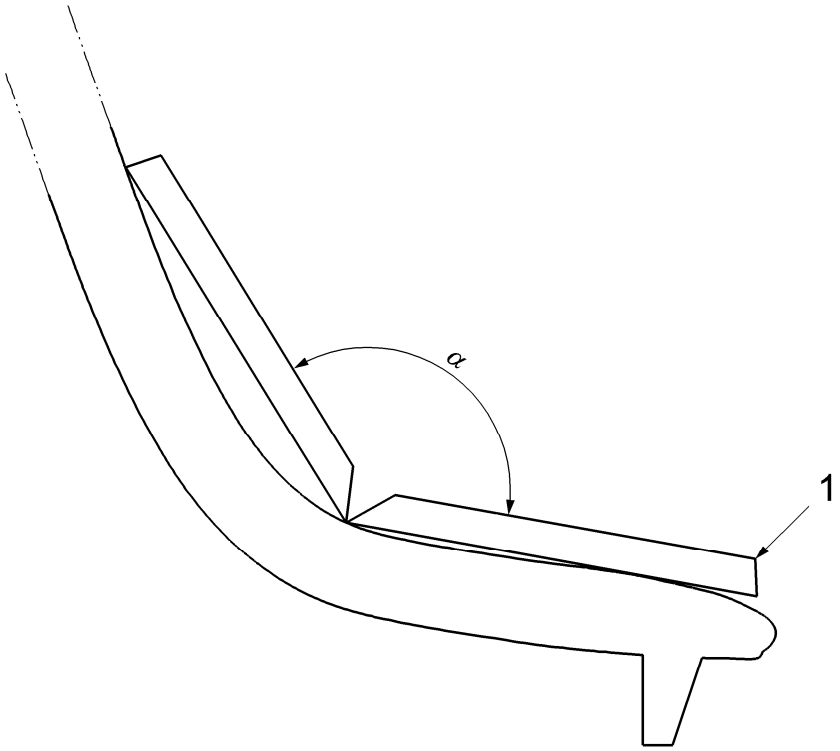


Figure 25 — Inclination device



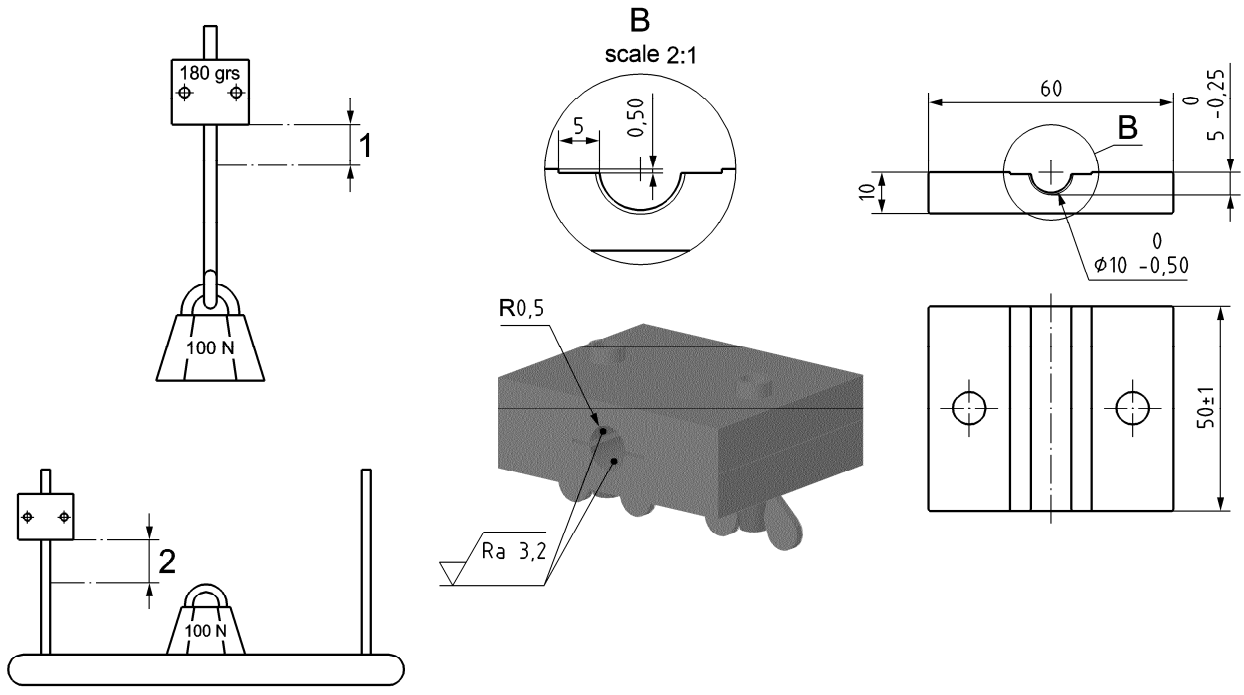
Key

1 inclination device

Figure 26 — Placement of inclination device

6.8 Diameter of ropes and other means of suspension (see 4.1.6)

Dimensions in millimetres



Key

R radius

Ra roughness

1 – 2: moving down distance of gauge under its own weight

Gauge mass: 180 g

Figure 27 — Device to measure ropes with a nominal diameter of 10 mm

For ropes with a nominal diameter of 10 mm, load the swing element or the free-end of the rope with a mass of 10 kg for at least 5 min and then, while loaded, clamp the device shown in Figure 27 on the rope.

Close the template carefully to avoid the pinching of the fibres (if any).

Determine whether the device moves down more than 50 mm under its own weight.

For a chain with a nominal diameter of 10 mm, determine whether its free end passes through the device in Figure 27.

NOTE The device in Figure 27 is applicable only to 10 mm diameter ropes and chains.

For all other ropes and chains (see 4.1.6), load the swing element or the free-end of the rope (or chain), as appropriate, with a mass of 10 kg for at least 5 min, and then, while loaded, measure the diameter of the rope (or the chain), without compression, at ten positions and calculate the arithmetic mean diameter.

6.9 Determination of impact from swing elements (see 4.6.8.2)

6.9.1 Principle

Swing elements are raised along their arc of travel and thereafter released such that they swing down and strike a test mass symbolizing a child's head. The signal emitted by an accelerometer during an impact is processed to determine the peak value of acceleration of the test mass.

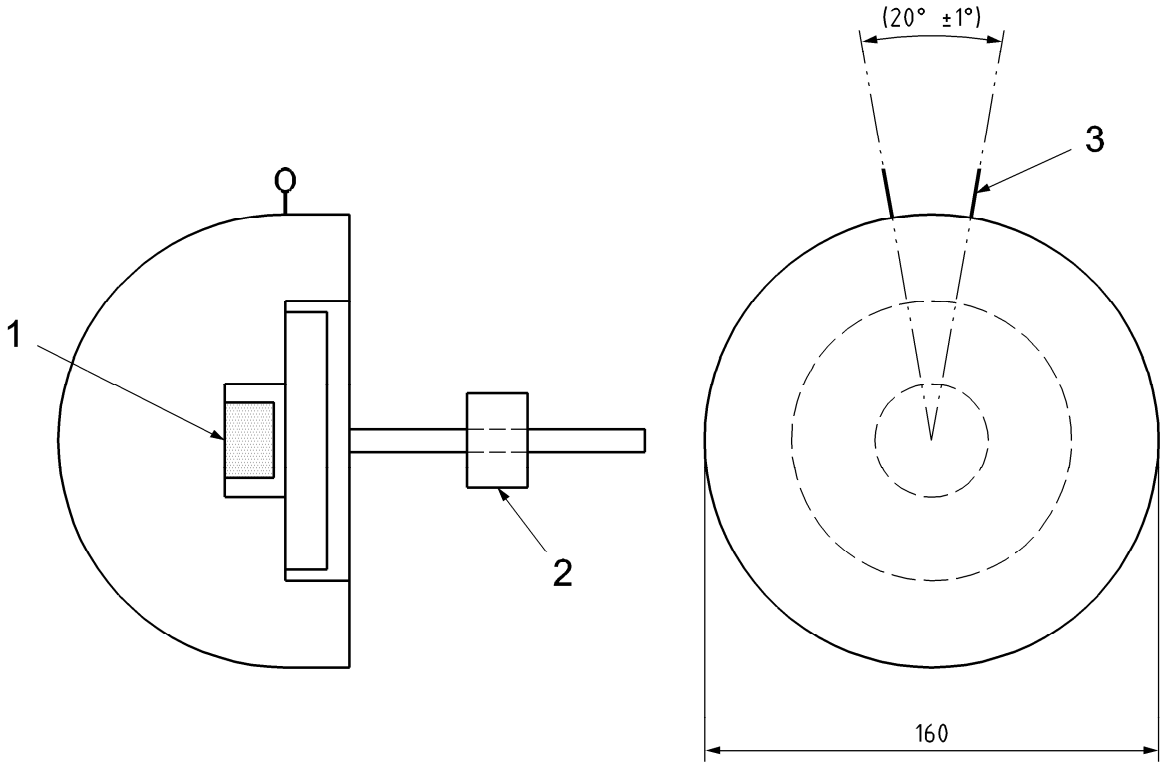
6.9.2 Apparatus

6.9.2.1 Testing device

The testing device shall consist of an aluminium sphere or semi-sphere of radius (80 ± 3) mm, and of a total mass (including the mass of the accelerometer and of the attachment devices for the means of suspension of the testing device) of (4,6 ± 0,05) kg.

The testing device shall be equipped with two points of attachment for the means of suspension. The two points of attachment shall form an angle of (20 ± 1)° to each other (see Figure 28).

Dimensions in millimetres



Key

1 accelerometer
2 balance weight
3 suspension

Figure 28 — Example of test device and connection points for chains

The impacting part between the surface struck and the accelerometer shall be homogeneous and free from voids. Cables connected to the accelerometer shall be placed in such a way that the effect on the mass of the test-mass is minimized.

6.9.2.2 Accelerometer

The accelerometer shall be mounted at the centre of gravity of the test mass assembly with the sensitivity axis aligned to within 2° of the direction of travel of the test mass. It shall be capable of measuring acceleration tri-axially in the range of ± 500 g with an accuracy of ± 0,1 g and with a frequency range from 0,3 Hz to 1 kHz with an error of less than 5 % of the true value.

6.9.2.3 Recording device

The recording device shall be capable of capturing and recording the acceleration time signals produced during an impact with a minimum sampling rate of 10 kHz and a cut-off frequency of 1 kHz. Signal conditioning and filtering shall be compatible with the accelerometer and the data channel specified.

6.9.2.4 Metal chains

For suspension of the test mass, two metal chains with chain links that have a thickness of material (diameter) of (6 ± 0,5) mm and an inner major dimension of (42 ± 2) mm shall be used.

The chains shall be of equal length suspended from pivots at the same height as the *suspension connectors* for the *swing*, such that the chains form an angle of (20 ± 1)° to each other.

NOTE The appropriate distance between the pivot points can be calculated using the length of the chains and the requested angle between the chains.

6.9.3 Preparations

6.9.3.1 Assembly and set-up

Assemble and install the swing element to be tested in accordance with the manufacturer's instructions.

NOTE The manufacturer's instruction may include advice on how to tighten devices that may reduce the speed with which the swing will "fall".

Suspend the swing element with the means of suspension that has been supplied with the *swing* and at the maximum length that these permit, or at the length specified by the manufacturer, whichever is the lesser. If a frame is supplied for the *swing*, the length of the means of suspension shall be adjusted such that the requirements for minimum clearance (see 4.6.6) are respected.

6.9.3.2 Tensioning of ropes or cables

If ropes or cables are the means of suspension they shall be stretched in order to allow smooth travel when the *swing* is released during the test. For this purpose the 200 kg load test specified in 6.3.2.1 shall be carried out prior to the swing impact test.

6.9.3.3 Adjustments and preparations

Adjust all parts of the set-up so that the suspending chains for the test mass are parallel to a vertical line through the pivot point.

Suspend and adjust the test device so that the intended point of impact of the swing element and the centre of the ball are in the same horizontal plane as the centre of gravity of the test mass. Ensure that the chains for the test mass are not twisted and that the test mass hangs in a vertical line.

Affix an index mark to the side of swing element that are supported by chains, ropes, cables, or other non-rigid suspending elements. The index mark may be on any part of the suspended member that aligns with a vertical line through the pivot point when the *swing* is in a free-hanging rest position.

6.9.4 Testing

6.9.4.1 General

Swing elements shall be raised along their arc of travel until the angle between the original position of the index mark and a straight line through the pivot point and the centre of the seat (i.e. the child which is in the highest position), is (60 ± 1)°, or until the angle is the maximum attainable, whichever is the lesser (see Figure 29).

Once the suspended member is raised to the test position, some curvature will be produced in the suspending elements.

Adjust the suspended member position to determine that curvature which provides a stable trajectory.

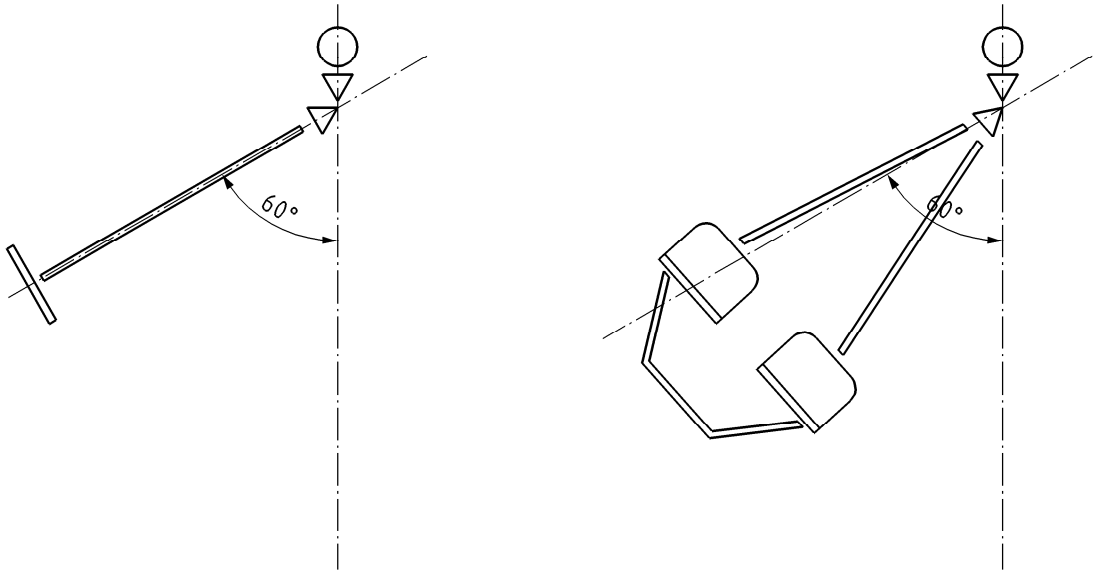


Figure 29 — Positions of swing element before release for a single-seat and a double-seat swing

NOTE Caution should be exercised to prevent damage to the test equipment. If an unusually heavy or hard swing element is to be tested, preliminary tests should be made at lower test angles (for example, 10°, 20°, 30°).

If the requirements are exceeded at a lower test angles than specified above, the *swing* fails and no further tests are necessary.

The swing element shall be supported in the test position by a mechanism that provides release without the application of external forces which would disturb the trajectory of the swing element. Prior to release, the swing element and means of suspension shall be motionless. Upon release, the assembly shall travel in a smooth downward arc without any visible oscillations or rotations of the swing element which will prevent it from striking the test mass at the impact point. If any obvious oscillations or rotations are noted the test result shall not be registered but another test shall be performed.

The intended point of impact is the geometrical centre of the impact surface of the swing element.

For asymmetrical swing elements the test shall be performed on both sides of the swing element.

Prior to the start of a series of measurement, it shall be secured that the intended point of impact is achieved:

Mark the centre of the test-mass, (+), with a chalk marker so that an imprint is obtained on the impact surface of the swing element. Check and, if necessary, make fine adjustments of the test mass in the vertical and horizontal directions. Repeat the procedure until repeatability has been obtained for the intended point of impact.

Some swing elements of a flexible nature will require a brace to maintain the swing element configuration during the test procedure. The mass of brace should not exceed 10 % of the mass of the swing element.

If a brace is used, the requirement for maximum 50 g may be increased by the same percentage as the mass increase caused by the brace (max. 10 %).

Ensure that the test-mass is at complete rest and that it is correctly 3-axially adjusted.

6.9.4.2 Test procedure for swing impact

Elevate the swing element and release it as specified above so that the swing element collides with the test mass.

Check that the imprint on the impact surface of the swing element lies within ± 5 mm (vertical direction) and ± 10 mm (horizontal direction) from the intended point of impact. If this is not the case the test shall not be counted and a new test shall be performed.

Collect data from 10 impacts (free from obvious oscillations or rotations). Measure the peak acceleration in g for each impact. The peak acceleration from one impact shall be calculated as shown in Equation (N), using the highest values in each direction of measurement. Note that the maximum value in each direction shall be measured regardless of at which time it occurs (max. X can occur at a different moment than max Y).

$$a_{peak} = \sqrt{(\max X)^2 + (\max Y)^2 + (\max Z)^2} \qquad \text{(N)}$$

Calculate the average peak acceleration, disregarding the two values that are furthest apart (i.e. the calculation is based on the eight “middle” values) and check whether the requirement is fulfilled.

If the swing element is visibly damaged during testing, a new sample shall be used for the remaining tests.

Determine whether the structure presents any hazardous sharp edges or hazardous sharp points, or any small parts which fit entirely in the small parts cylinder specified in EN 71-1.

6.10 Static load test for paddling pools with non-inflatable walls (see 4.9.1)

Apply, for a period of 5 min, a 25 kg load (see Figure 12) vertically to the least favourable point of the structure not intended to bear the mass of a child.

Determine whether the structure presents any hazardous sharp edges or hazardous sharp points, or any small parts which fit entirely in the small parts cylinder specified in EN 71-1.

Annex A
(informative)

Rationale

A.1 Activity toys (see scope)

Activity toys covered by this part of EN 71 have hazards in common with products intended as public playground equipment and there are sometimes difficulties in deciding whether they are *activity toys* or public playground equipment. As a general rule, products that are bought by individuals exclusively for family use fall under the scope of this standard. EN 1176 Parts 1 to 7 and 10 to 11 cover public playground equipment, and in case of uncertainty these standards should be closely studied.

Components and accessories for *activity toys* can be obtained separately on the market and are used on existing *activity toys*.

The same is true for construction kits for *activity toys* which allow the end user to build their own *activity toy* for domestic use.

A.2 General requirements (see 4.1)

This sub-clause gives basic requirements for all *activity toys*. It aims to reduce the hazard resulting from inadequate strength and falls from heights, and specifies certain hardware requirements.

A.3 General requirements (maximum height) (see 4.1.3)

Designs that prevent children climbing do not have any horizontal or vertical reach distances which provide hand-grips or foot-holds for a child to climb (see e.g. CEN/TR 13387).

A.4 Corners and edges (see 4.1.4)

The requirement for a 3 mm curvature radius on moving parts applies to *swings*, carousels and similar items involving a significant mass and speed. It does not apply to doors, lids and similar movable items. However, whenever possible, manufacturers are recommended to use generous radii in order to minimize hazards.

It should be noted that there are requirements in EN 71-1 which are intended to address the hazards associated with sharp edges.

A.5 Barriers (see 4.2)

The intention of *barriers* is to prevent children from falling down. However, they can at the same time invite children to climb up on them, causing a more severe fall. Flexible *barriers* can in some cases be a better solution. The nature of children's play on flexible *platforms* is such that the hazard of falling from the *activity toy* is minimised because the children do not experience a false sense of security at a raised height, as they do with rigid *platforms* such as those on wooden play sets. The fact that the *platform* moves, leads the child to either sit, kneel, or hold on to the framework of the *activity toy* for support.

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

A stair and ladder should provide the possibility to place both feet on one tread. Anthropometric data shows that even a 10-year-old child can fit both feet with shoes on a tread with a width of 240 mm (95th percentile foot width without shoes is 95 mm) (see e.g. CEN/TR 13387).

A.7 Entrapment (see 4.3)

Fatal accidents are known to have happened when a child’s head becomes entrapped causing strangulation. Openings therefore have to be either so small that the head cannot pass through or so wide that the head and the torso can pass. This hazard is further complicated by the fact that children sometimes wear bicycle or so-called play helmets.

Hoods and hood-strings on clothing also present a significant hazard, for example, when riding down a *slide*, and the toggle test given in 6.6 is intended to reduce the risk of *entrapment*.

The clause also includes requirements for *entrapment* of fingers as well as other parts of the body.

Entrapment of fingers can occur when one or more fingers are trapped in holes, slots or gaps of rigid materials, whilst the remainder of the body is moving or continues in *forced movement*.

Dimensions have been decided taking into account available anthropometric data on little finger’s breadth and length at the distal joint, and the age range considered appropriate for the use of the activity toy.

Not all holes or gaps on the activity toy present an entrapment hazard; examples of situations where there is no entrapment hazard are roofs which are not accessible to children and the part directly underneath the seating surface of a swing element or *slide*.

The accessibility of holes, slots or gaps should be assessed during use of the activity toy, considering the definition and test methods given in EN 71-1. In particular, holes inside larger holes should be considered as *accessible* if they can be reached by the accessibility probes.

A.8 Slides (see 4.5)

The requirement for *handrails* for the starting section as well as for ladders are intended to prevent children from falling when moving into a sitting position at the starting section.

A.9 Retaining sides for slides (see 4.5.2)

The purpose of retaining sides is to avoid falls and to enable *forced movement* without danger, taking into account different minimum heights of the retaining sides for different heights of starting sections of *slides*.

A.10 Swings (see 4.6)

These requirements are intended to reduce the risks resulting from inadequate frames and/or suspension arrangement and from children becoming entangled in the suspension ropes.

There are several types of *swings* on the market. The most common *swing*, used indoors, is for very young children who cannot walk and is often intended to be hung in, for example, a door opening. Such a *swing* is tested with a load of 200 kg as it can be expected that an older child will try to use the *swing*. However, if the *swing* is mounted in a separate structure with a *crossbeam* at a height of not exceeding 1 200 mm above the floor, the strength of the *swing* is tested with a load of 66 kg.

Accidents have been known to happen when young children have fallen down from such *swings* when the seat has tipped over. It is therefore important that the suspension ropes are attached in the four utmost corners of the seat in order to hold the centre of gravity of the child.

Swings intended for children of 36 months and over, and on which a child can climb, are tested with a mass of 200 kg. For multi-*swings*, each *swing*, T-bar or swing-boat is loaded in turn with 200 kg for 1 h and then simultaneously with 50 kg on each sitting or standing surface.

A centre swinging pole on, for example, a climbing frame is tested as if it were a *swing*, using a 200 kg load.

If ropes or textiles are used in the construction of *swings*, they have to be designed so that the risk of strangulation due to the child's head being entangled in the ropes is reduced. Consideration should be given to the use of plastic tubing covering the main part of the ropes, as appropriate.

The requirements for a maximum peak acceleration of 50 g, imparted by a swing element on a child´s head, is consistent with the requirements for *swings* that are playground equipment. It is considered to significantly reduce the risk of a severe head injury, should the child fall off the *swing* and be hit on the head by the empty swing seat when it swings back. The requirement does not apply to light *swings*, *swings* which prevent the child from falling off or to *swings* that are mounted so high that the returning *swing* will not hit the head of the child.

Requirements apply to the geometry of any part of the swing element that can hit the child (the potential impact surfaces) and also to the resilience of other impact surfaces of the *swing*. These requirements are considered to eliminate the need for a limitation for a maximum force per unit area (c.f. requirements for playground swings). The testing method accommodates for children being able to swing very high, namely to a point where their body is at an angle of 60 degrees to the vertical.

The specification for the testing equipment for the accelerometer and the recording device have as far as possible been aligned with EN 1177 “Impact attenuating playground surfacing - Determination of critical fall height”.

The impact surface on a flat swing element is the geometrical centre of the element. For seats with a backrest, the impact surface is normally the geometrical centre of the horizontal part of the swing element and for any other geometric form, the reasonably foreseeable impact surface has to be defined based on the normal use of the *swing*.

A.11 Clearance between swing elements and the ground for crossbeams with a maximum height of 1 200 mm (see 4.6.6)

For *swings* with a *crossbeam* height of 1 200 mm or less, a lower ground clearance is allowed because:

— the *swing* is intended to be used by young children who are not able to swing by themselves and are not likely to fall out because of the construction of the swing seat;

— the forces involved are very low; and

— a higher ground clearance would make the swing element too short to provide sufficient swinging.

Ground clearance is necessary for the leg not to hit the ground. Anthropometric data show that the lower leg length of a child aged between 12 months and 18 months is 200 mm (the 95th percentile popliteal height of a 12-to-18-months-old child is 200 mm) (see e.g. CEN/TR 13387).

A.12 Rocking activity toys and similar toys (see 4.8)

The intention of this requirement is to ensure the strength and the sideways and forwards and backwards stability of rocking *activity toys* so that they do not overturn unexpectedly.

A.13 Stability of swings and other activity toys with crossbeams (see 6.2.4.1.1)

The test procedure is intended to take into account the forces apparent on each suspension point with the maximum amount of users on the swing apparatus.

Annex B
(informative)

Significant technical changes between this European Standard and the previous version

Clause/paragraph/table/figure	Change
General	The standard has been revised to reflect new particular safety requirements in directive 2009/48/EC, in comparison to 88/378/EEC.
1	The exclusion in the Scope for “equipment intended for use in schools, kindergartens, public playgrounds etc.” has been replaced by an exclusion for “playground equipment intended for public use”, aligning with the exclusion made in directive 2009/48/EC. Additional exclusions from the Scope have been specified for toy trampolines and toy pools with a maximum depth of water greater than 400 mm.
3	A definition of “paddling pool” has been added.
3.1	The definition of “activity toy” has been amended in line with the wording used in directive 2009/48/EC.
3.11	The definition of “platform” has been further elaborated.
4.1	The requirement that an *activity toy* shall be assembled using a self-locking mechanism has been clarified.
4.3.4	The finger-entrapment requirements have been revised.
4.5.3	Requirements have been specified for the maximum steepness of a *slide* and the acuteness of the boundary between the sliding section and the run-out section.
4.6	A fixture has been specified to simulate the load on a flexible swing element.
4.6.8	Requirements have been introduced (a) for the geometry and design of swing elements and (b) to reduce the risk of a severe head injury from impact with a swing element.
4.9	Requirements have been introduced for *paddling pools*.

5.1.1	The warning requirements have been amended to state that all warnings shall be preceded by the word “Warning(s)” and be clearly visible to the consumer before purchase. The warning in the 2003 version of EN 71-8 that the *activity toy* is “For family domestic use only” has been amended to the wording used in Annex V, Part B.2 of directive 2009/48/EC. Where appropriate, warnings are required regarding the minimum and maximum user ages, and minimum and maximum user weights.
5.1.2	Warning pictograms and warning text: “Never to leave your child unattended” have been specified for *paddling pools*.
6.1 and 6.2	The stability and strength tests have been amended to take into account the maximum number of users on a sitting or standing surface. The tolerances for the test masses have been rationalized.
6.7	Methods have been introduced to measure the inclination of the sliding section on *slides* and the minimum angle between the sliding section and the run-out section on *slides*.
6.8	A device has been specified to measure the diameter of ropes and chains with a nominal diameter of 10 mm.
6.9	A method has been introduced to determine the average peak acceleration during the impact of a swing element.

NOTE The technical changes referred to include the significant technical changes from the EN revised but are not an exhaustive list of all the modifications from the previous version.

Annex ZA
(informative)

Clauses of this European Standard addressing essential requirements or other provisions of EU Directives

This European standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2009/48/EC.

Once this European Standard is cited in the Official Journal of the European Union under that Directive compliance with the clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this European Standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

Table ZA.1 — Relationship between this European Standard and the Essential Requirements of EU Directive 2009/48/EC

Clause(s)/sub-clause(s) of this Part of EN 71	Essential Requirements (ERs) of Directive 2009/48/EC	Qualifying remarks/notes
1; 4; 5	**Article 10, 2** (General)	
5.1	**Article 11** (General)	
4.1.1; 4.1.2; 4.2.1; 4.4; 4.5.1; 4.6.1; 4.6.2; 4.6.5; 4.6.7; 4.7.1; 4.8; 4.9.1	**Annex II, I, 1** (Particular)	
4.1.4; 4.1.5; 4.1.6; 4.3.2; 4.6.7; 4.6.8.3; 4.9.1	**Annex II, I, 2** (Particular)	
4.1.1; 4.6.4; 4.6.5; 4.6.6; 4.6.8; 4.7.2; 4.7.3; 4.7.4	**Annex II, I, 3** (Particular)	
1; 4.1.3; 4.2.1; 4.2.2; 4.3; 4.5.2; 4.5.3; 4.6.7 d); 4.6.8; 4.7.2; 4.7.4; 4.8 c); 4.9.1	**Annex II, I, 11** (Particular)	
Clause(s)/sub-clause(s) of this Part of EN 71	**Provisions of Directive 2009/48/EC**	
5.1	**Annex V, Part A** (Warnings)	
5.1.1; 5.2; 5.3	**Annex V, Part B, 2** (Warnings)	

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

Bibliography

[1] EN 1176-1, *Playground equipment and surfacing — Part 1: General safety requirements and test methods*

[2] EN 1176-2, *Playground equipment and surfacing — Part 2: Additional specific safety requirements and test methods for swings*

[3] EN 1176-3, *Playground equipment and surfacing — Part 3: Additional specific safety requirements and test methods for slides*

[4] EN 1176-4, *Playground equipment and surfacing — Part 4: Additional specific safety requirements and test methods for cableways*

[5] EN 1176-5, *Playground equipment and surfacing — Part 5: Additional specific safety requirements and test methods for carousels*

[6] EN 1176-6, *Playground equipment and surfacing — Part 6: Additional specific safety requirements and test methods for rocking equipment*

[7] EN 1176-7, *Playground equipment and surfacing — Part 7: Guidance on installation, inspection, maintenance and operation*

[8] EN 1176-10, *Playground equipment and surfacing — Part 10: Additional specific safety requirements and test methods for fully enclosed play equipment*

[9] EN 1176-11, *Playground equipment and surfacing — Part 11: Additional specific safety requirements and test methods for spatial network*

[10] EN 1177, *Impact attenuating playground surfacing — Determination of critical fall height*

[11] CEN/TR 13387, *Child use and care articles — Safety guidelines*

[12] ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs in workplaces and public areas*

This page deliberately left blank

This page deliberately left blank

British Standards Institution (BSI)

BSI is the independent national body responsible for preparing British Standards and other standards-related publications, information and services.
It presents the UK view on standards in Europe and at the international level.

It is incorporated by Royal Charter.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover.

Tel: +44 (0)20 8996 9001 Fax: +44 (0)20 8996 7001

BSI offers Members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Tel: +44 (0)20 8996 7669 Fax: +44 (0)20 8996 7001
Email: plus@bsigroup.com

Buying standards

You may buy PDF and hard copy versions of standards directly using a credit card from the BSI Shop on the website **www.bsigroup.com/shop.** In addition all orders for BSI, international and foreign standards publications can be addressed to BSI Customer Services.

Tel: +44 (0)20 8996 9001 Fax: +44 (0)20 8996 7001
Email: orders@bsigroup.com

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Knowledge Centre.

Tel: +44 (0)20 8996 7004 Fax: +44 (0)20 8996 7005
Email: knowledgecentre@bsigroup.com

Various BSI electronic information services are also available which give details on all its products and services.

Tel: +44 (0)20 8996 7111 Fax: +44 (0)20 8996 7048
Email: info@bsigroup.com

BSI Subscribing Members are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration.

Tel: +44 (0)20 8996 7002 Fax: +44 (0)20 8996 7001
Email: membership@bsigroup.com

Information regarding online access to British Standards via British Standards Online can be found at **www.bsigroup.com/BSOL**

Further information about BSI is available on the BSI website at **www.bsigroup.com/standards**

Copyright

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

Tel +44 (0)20 8996 9001
Fax +44 (0)20 8996 7001
www.bsigroup.com/standards

raising standards worldwide™