INTERNATIONAL STANDARD

ISO 8124-4

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Safety of toys —

Part 4: Swings, slides and similar activity toys for indoor and outdoor family domestic use

Sécurité des jouets —

Partie 4: Balançoires, glissoires et jouets à activité similaire à usage domestique familial intérieur et extérieur

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 8124-4 was prepared by Technical Committee ISO/TC 181, *Safety of toys*.

ISO 8124 consists of the following parts, under the general title *Safety of toys*.

— *Part 1: Safety aspects related to mechanical and physical properties*

— *Part 2: Flammability*

— *Part 3: Migration of certain elements*

— *Part 4: Swings, slides and similar activity toys for indoor and outdoor family domestic use*

Introduction

This part of ISO 8124 is largely based upon existing standards in the European Union (EN 71-8) and in the United States (ASTM F1148).

However, it should not be construed that a toy manufactured in compliance with this part of ISO 8124 will be in full compliance with relevant national toy safety requirements in the market where the product is intended to be distributed. The user of this part of ISO 8124 is therefore advised to be aware of relevant national requirements.

Compliance with the requirements of this part of ISO 8124 will minimize potential hazards associated with toys resulting from their use in their intended play modes (normal use) as well as unintended play modes (reasonable foreseeable abuse).

This part of ISO 8124 will not, nor is it intended to, eliminate parental responsibility in the appropriate selection of toys. In addition, this part of ISO 8124 will not eliminate the need for parental supervision in situations where children of various ages may have access to the same toy(s).

Safety of toys —

Part 4:
Swings, slides and similar activity toys for indoor and outdoor family domestic use

1 Scope

See A.1.

This part of ISO 8124 specifies requirements and test methods for activity toys for domestic family use intended for children under 14 years to play on or in.

Products covered by this part of ISO 8124 include swings, slides, seesaws, carousels, rocking toys, climbing frames, fully enclosed toddler swing seats and other products intended to bear the mass of one or more children.

Products not included within the scope of this part of ISO 8124 are:

a) fitness and sporting equipment unless attached to the activity toy;

b) equipment intended for use in schools, day care centres, kindergartens, public playgrounds, restaurants, shopping centres and similar public places;

c) juvenile care products such as, but not limited to, infant swings, playpens/enclosures, beds or furniture including picnic tables, cradle rockers and products specifically designed for therapeutic use.

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 amendment) applies.

ISO 8124-1, *Safety of toys — Part 1: Safety aspects related to mechanical and physical properties*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 8124-1 and the following apply.

3.1
activity toy
toy intended for family domestic use, intended to bear the mass of one or more children, often attached to or incorporating a crossbeam and intended for children to play on or in

EXAMPLES Swings, slides, carousels and climbing frames (see Figure 1).

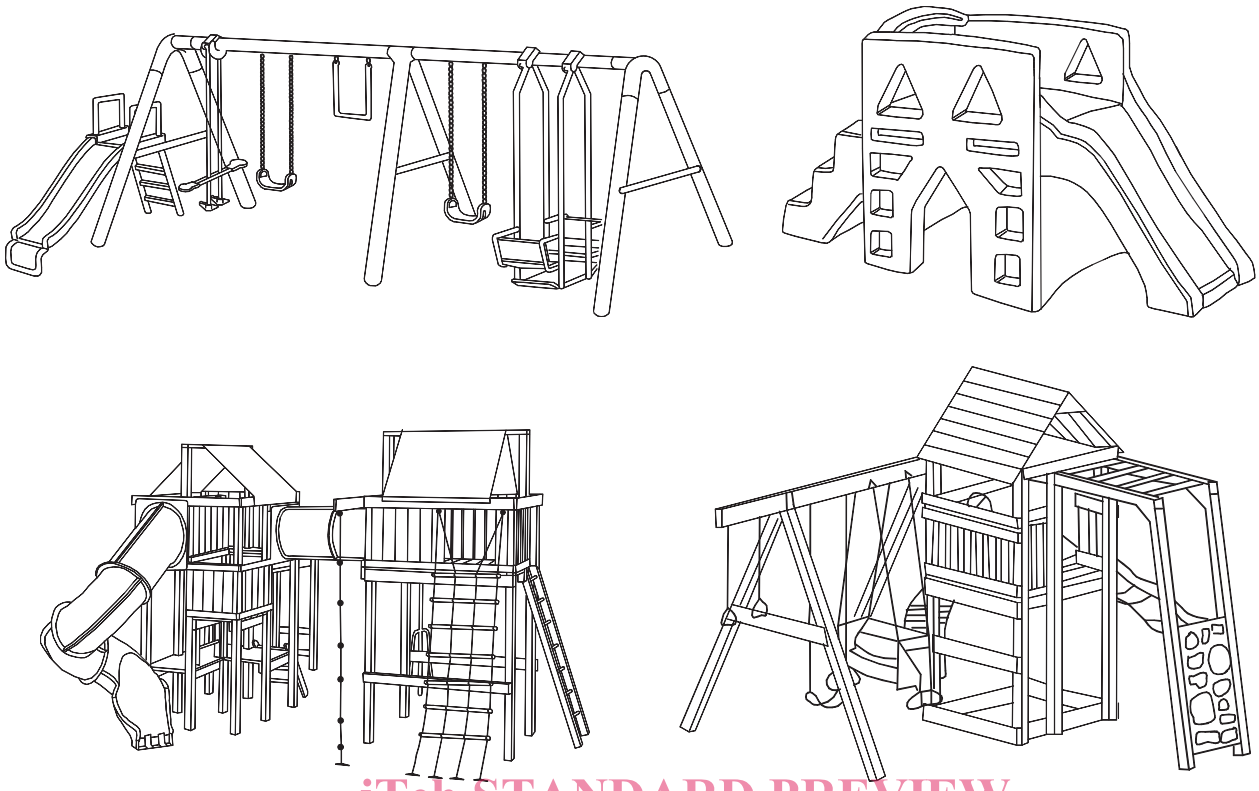


Figure 1 — Examples of activity toys (not to scale)

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

3.3
attachment slide
slide for which access to the starting section is possible only by passing via other equipment or parts of other equipment

3.4
barrier
device intended to prevent children from falling from elevated surfaces

3.5
crossbeam
bar or beam which forms a main load-bearing part of the toy

3.6
entrapment
condition in which a body, part of a body or clothing becomes caught and impedes withdrawal

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 or revolving

3.8
free height of fall
greatest vertical distance from the intended body support, for example from the seat of a swing 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 by the equipment, for example swinging, sliding, rocking or revolving

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

3.10
fully enclosed toddler swing seats
fully enclosed single occupancy swing intended for young children who can sit upright unaided

NOTE A seat is considered fully enclosed when a containment system is employed to support the child on all sides and in between the legs (see Figure 2).

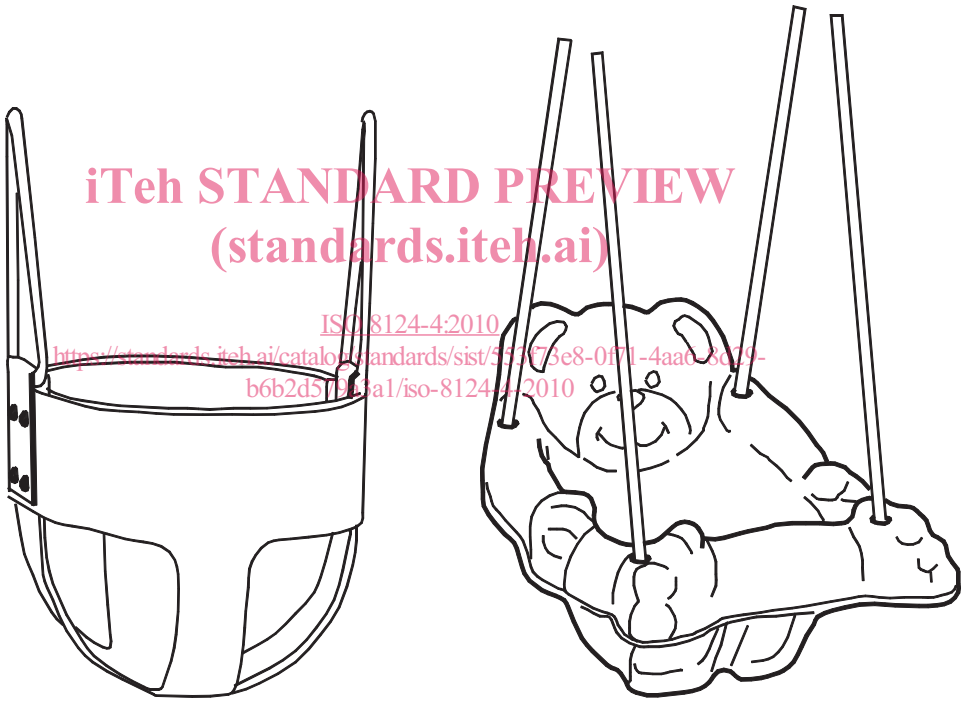


Figure 2 — Illustration of fully enclosed toddler swing seat

3.11
impact area
area of a swing element that comes into contact with the test mass during an impact test in accordance with 6.4.

3.12
infant swing
stationary unit with a frame and a powered mechanism enabling an infant to swing in a seated position

NOTE An infant swing is intended for use with infants from birth until the child is able to sit upright unassisted.

3.13
handrail
rail intended to assist the users to balance or steady themselves

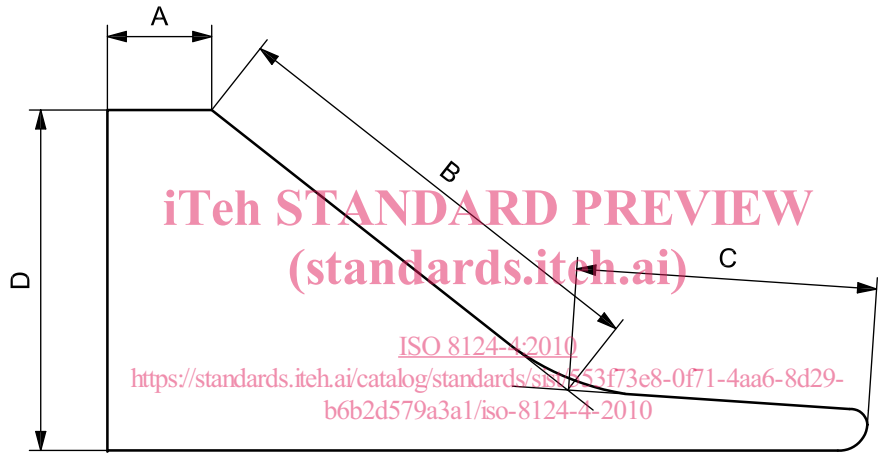
3.14
platform
any elevated substantially horizontal surface intended to be used by a child as a place for play or as a transition between components

NOTE Slide starting sections less than 129 000 mm^2 are not considered platforms.

3.15
slide
structure with inclined surface(s) on which the user slides in a defined track

See Figure 3.

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



Key

A	starting section
B	sliding section
C	run-out section
D	height of slide
B + C	slide length

NOTE The dimensions A, B, and C are measured 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 between the zones of the sliding surfaces.

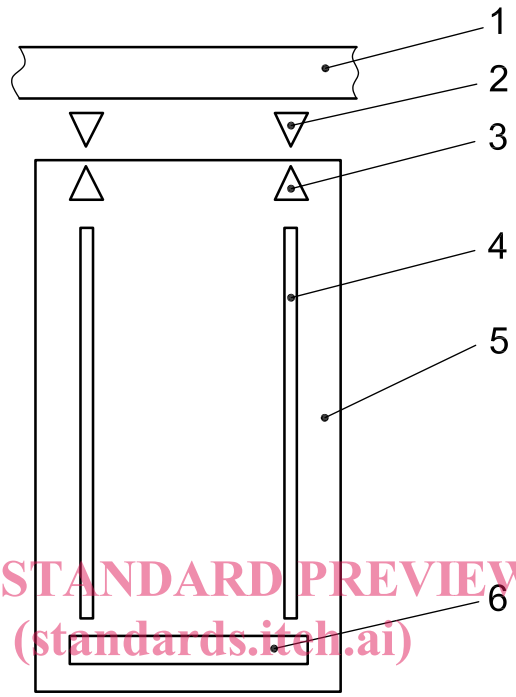
Figure 3 — Diagrammatic representation of a slide

3.16
suspension connector
device that forms the direct contact between a crossbeam and the swing device

See Figure 4.

3.17
swing
structure, normally intended to be attached to or incorporating a crossbeam, suspension connectors and a swing device with swing element, means of suspension and suspension coupling

See Figure 4.



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

Figure 4 — Diagrammatic representation of a swing

4 Requirements

4.1 General

See A.4.1.

4.1.1 Static strength

Activity toys, other than swings, shall not collapse when tested in accordance with 6.2.1. After testing, the toy shall continue to comply with the relevant requirements of this part of ISO 8124. Requirements for swings are given in 4.7.

4.1.2 Maximum height

See A.4.1.2.

There shall be no part of the activity toy designed to encourage the child to climb, sit on or stand on, with a height of 2 500 mm or more when measured from the ground.

This does not include barriers, roofs, etc., that are not intended to be climbed, sat on or stood on.

Barriers, roofs, etc., that are not intended to be climbed shall be designed in such a way that climbing is not encouraged.

4.1.3 Corners and edges

See A.4.1.3.

Exposed corners and edges shall be rounded.

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

4.1.4 Protruding parts

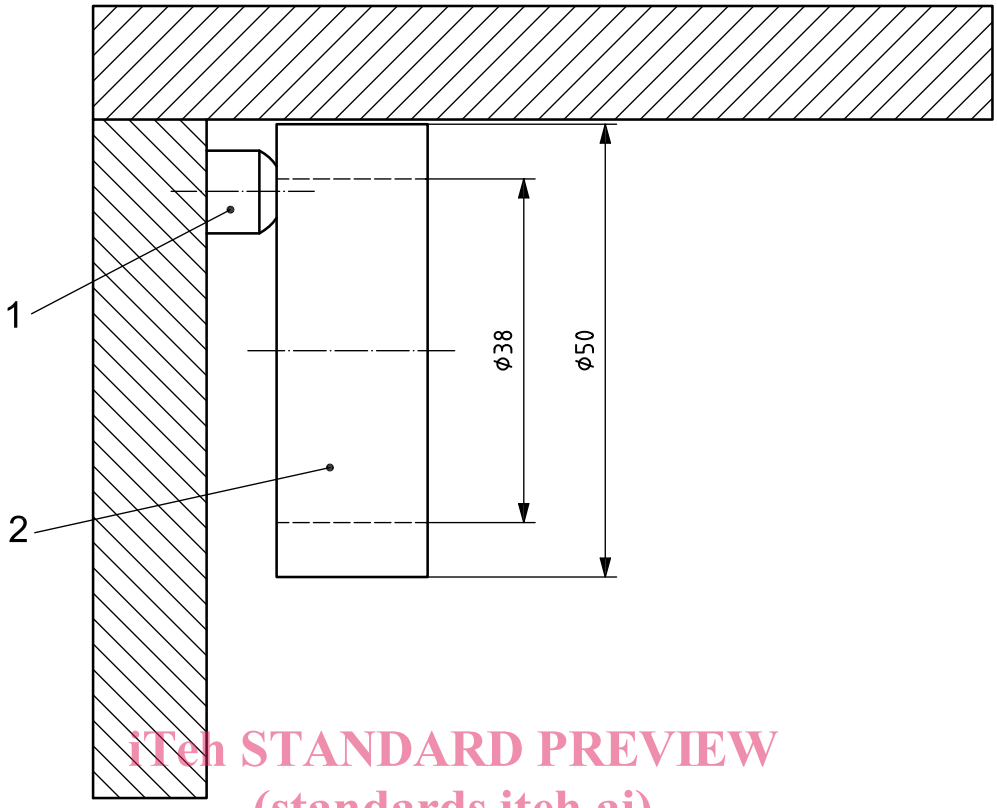
4.1.4.1 General

Protruding parts (such as bolt ends and nuts) shall be recessed or be protected in such a way that they do not constitute an entrapment hazard or other hazard to users.

If protrusions cannot be placed within the 50 mm outside diameter test gauge defined in 6.7.1, they are considered to be inaccessible and are exempted from these requirements (see Figure 5).

Rope protrusions are specifically exempted from the requirements of 4.1.4.

Dimensions in millimetres



Key

1 inaccessible protrusion (excluded)

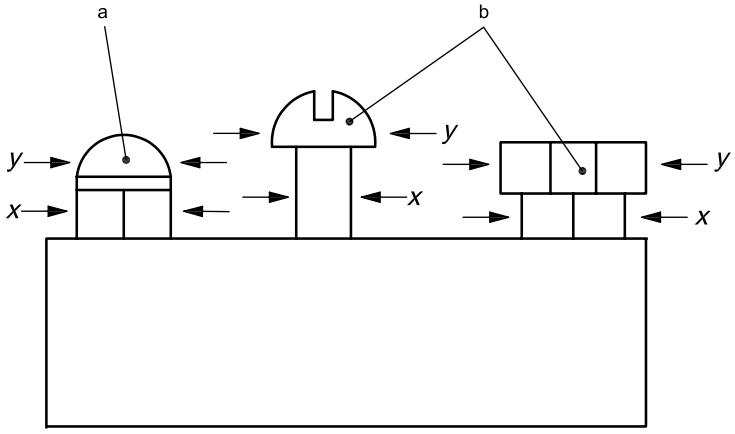
2 test gauge (50 mm diameter)

Figure 5 — Example of excluded protrusion

4.1.4.2 All protrusions

No protrusion shall extend beyond the full depth of the test gauges when tested in accordance with 6.7.1.

No protrusion may terminate in a dimension greater than that of the base dimension (see Figure 6). In the case of hardware, the base dimension shall be defined as the major dimension of the attachment nut or bolt head.



a Pass ($y \leqslant x$).

b Fail ($y > x$).

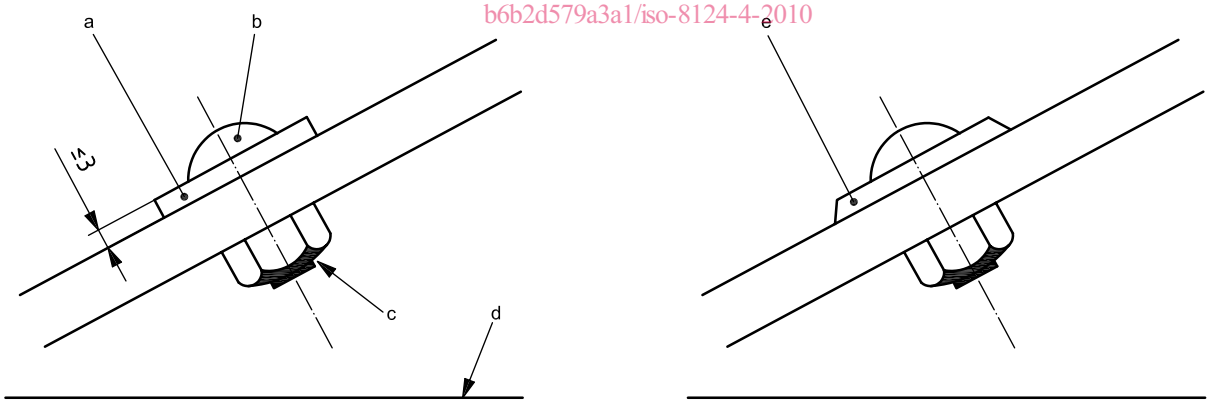
Figure 6 — Examples of protrusion configurations

4.1.4.3 Upright protrusions

Protrusions that fit within any of the gauges defined in 6.7.1 and that project upwards from a horizontal plane shall have no projection perpendicular or at an acute angle to the plane of the initial surface extending more than 3 mm in height (see Figure 7).

For example, the hemispherical ends of bolts are exempt from this requirement because they do not project perpendicular to the plane of the initial surface.

Dimensions in millimetres



a Protrusions that project perpendicular or at an acute angle to the plane of the initial surface with the axis inclined upward from the horizontal plane shall comply with the 3 mm maximum requirement.

b Hemispherical end exempted from the 3 mm maximum requirement.

c Protrusions with axis horizontal or below horizontal shall not extend beyond the face of the test gauges defined in 6.7.1.

d Horizontal plane.

e Protrusions that project at an obtuse angle to the plane of the initial surface are exempt from the 3 mm maximum requirement.

Figure 7 — Upright protrusion test

4.1.4.4 Motion rides

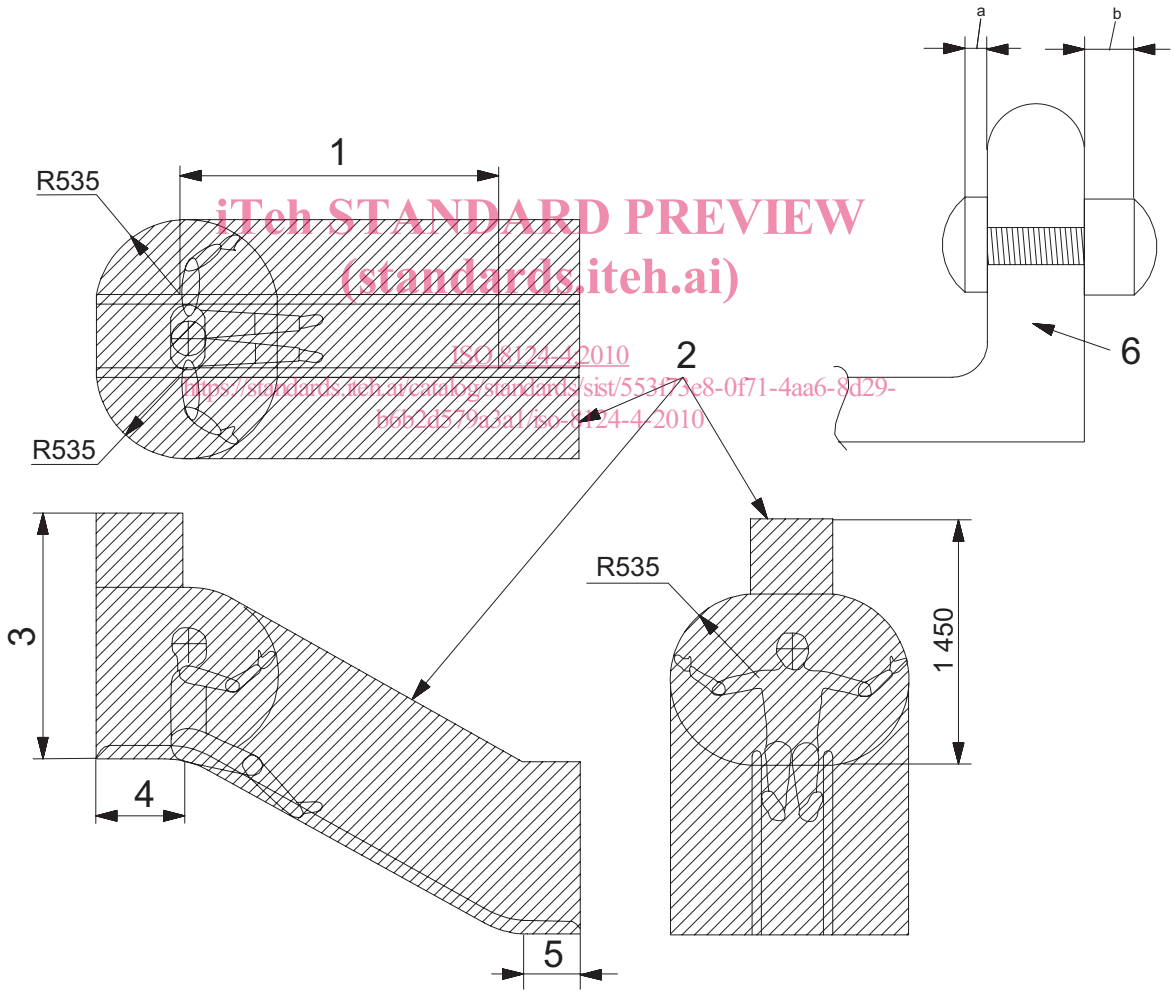
Protrusions on the front and rear surfaces of suspended members of swinging elements and those on the interior surface of slides shall not protrude beyond the full depth of the test gauge when tested in accordance with 6.7.2.

4.1.4.5 Slides

Slides, including protective barriers and their means of attachment, and transition areas pose a greater risk of entrapment than other areas of play equipment. Therefore, the following requirements apply to slides and sliding devices.

Any accessible protrusion that allows the 76 mm test gauge defined in 6.7.2 to pass over it shall have no projection perpendicular or at an acute angle to the plane of the initial surface extending more than 3 mm. The areas subject to this requirement are outlined in Figure 8. The outside surface of tunnel slides that are completely enclosed are exempt from this requirement.

Dimensions in millimetres



Key

1 sliding surface
2 shaded areas representing non-entrapment/protrusion zone
3 standing height
4 starting section
5 run-out section
6 slide side rail

[a] Pass (3 mm or less).
[b] Fail (more than 3 mm).

Figure 8 — Non-entrapment/protrusion zone and protrusion examples