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Oprema in podloge otroških igrišč - 1. del: Splošne varnostne zahteve in preskusne metode

Playground equipment and surfacing - Part 1: General safety requirements and test methods

Spielplatzgeräte und Spielplatzböden - Teil 1: Allgemeine sicherheitstechnische Anforderungen und Prüfverfahren

Equipements d'aires de jeux et revêtements de surface d'aires de jeux - Partie 1 : Exigences de sécurité et méthodes d'essai générales

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**Playground equipment and surfacing - Part 1: General safety
requirements and test methods**

Équipements et sols d'aires de jeux - Partie 1: Exigences
de sécurité et méthodes d'essai générales

Spielplatzgeräte und Spielplatzböden - Teil 1: Allgemeine
sicherheitstechnische Anforderungen und Prüfverfahren

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (prEN 1176-1:2014) has been prepared by Technical Committee CEN/TC 136 "Sports, playground and other recreational facilities and equipment", the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1176-1:2008.

This European Standard EN 1176 "*Playground equipment and surfacing*" consists of a number of parts as follows:

- *Part 1: General safety requirements and test methods*
- *Part 2: Additional specific safety requirements and test methods for swings*
- *Part 3: Additional specific safety requirements and test methods for slides*
- *Part 4: Additional specific safety requirements and test methods for cableways*
- *Part 5: Additional specific safety requirements and test methods for carousels*
- *Part 6 : Additional specific safety requirements and test methods for rocking equipment*
- *Part 7: Guidance on installation, inspection, maintenance and operation*
- *Part 10: Additional specific safety requirements and test methods for fully enclosed play equipment*
- *Part 11: Additional specific safety requirements and test methods for spatial network*

This part of EN 1176 should be read in conjunction with:

- EN 1177:2008, Impact attenuating playground surfacing — Determination of critical fall height.
- CEN/TR 16467:2013, Playground equipment accessible for all children

For inflatable play equipment see EN 14960, *Inflatable play equipment — Safety requirements and test methods*.

The principal changes from the previous edition of this part of EN 1176 are as follows.

- a) This part of EN 1176 now includes requirements for surfacing based on those that were previously specified in EN 1177.
- b) The inclusion of additional requirements for barriers and steep play elements.
- c) The requirements relating to entrapment are now for all age groups and the test for partially bound openings has been clarified, with new requirements included dependent on the angle of insertion.

Introduction

It is not the purpose of the requirements of this standard to lessen the contribution that playground equipment makes to the child's development and/or play, which is meaningful from an educational point of view.

This standard acknowledges the difficulties of addressing safety issues by age criteria alone because the ability to handle risk is based on the individual users' level of skills and not by age. Also users other than the intended age range will almost certainly make use of the playground equipment.

Risk-taking is an essential feature of play provision and of all environments in which children legitimately spend time playing. Play provision aims to offer children the chance to encounter acceptable risks as part of a stimulating, challenging and controlled learning environment. Play provision should aim at managing the balance between the need to offer risk and the need to keep children safe from serious harm.

The principles of safety management are applicable both to workplaces in general as well as to play provision. However, the balance between safety and benefits is likely to be different in the two environments. In play provision exposure to some degree of risk may be of benefit because it satisfies a basic human need and gives children the chance to learn about risk and consequences in a controlled environment.

Respecting the characteristics of children's play and the way children benefit from playing on the playground with regard to development, children need to learn to cope with risk and this may lead to bumps and bruises and even occasionally a broken limb. The aim of this standard is first and foremost to prevent accidents with a disabling or fatal consequence, and secondly to lessen serious consequences caused by the occasional mishap that inevitably will occur in children's pursuit of expanding their level of competence, be it socially, intellectually or physically.

Refusal of admittance and access as a safety precaution is problematic due to, for example, breach in supervision or help by peers. Requirements of significant importance, such as, for example, head and neck entrapment and protection against inadvertent falls, have been written with this in mind. It is also recognised that there is an increasing need for play provision to be accessible to users with disabilities. This of course requires play areas to provide a balance between safety and the offer of the required level of challenge and stimulation to all possible groups of users. However, for the purposes of protection against head and neck entrapment, this standard does not take into account children with an increased size of the head (e.g. hydrocephalus or Downs Syndrome) or wearing helmets.

For further additional information about making play provision suitable for less able users a CEN Technical Report is available which discusses the challenges in provision and possible solutions that designers may consider. See the Foreword above for details of this document.

1 Scope

This part of EN 1176 specifies general safety requirements for permanently installed public playground equipment and surfacing. Additional safety requirements for specific pieces of playground equipment are specified in subsequent parts of this standard.

This part of EN 1176 covers playground equipment for all children. It has been prepared with full recognition of the need for supervision of young children and of less able or less competent children.

The purpose of this part of EN 1176 is to ensure a proper level of safety when playing in, on or around playground equipment, and at the same time to promote activities and features known to benefit children because they provide valuable experiences that will enable them to cope with situations outside the playground.

This part of EN 1176 is applicable to playground equipment intended for individual and collective use by children, but excluding adventure playgrounds. It is also applicable to equipment and units installed as children's playground equipment although they are not manufactured as such, but exclude those items defined as toys in EN 71 and the Toys Safety Directive.

NOTE Adventure playgrounds are fenced, secured playgrounds, run and staffed in accordance with the widely accepted principles that encourage children's development and often use self-built equipment with the exception of those items which have been commercially sourced.

This part of EN 1176 specifies the requirements that will protect the child from hazards that he or she may be unable to foresee when using the equipment as intended, or in a manner that can be reasonably anticipated.

2 Normative references

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

EN 335-2:2006, *Durability of wood and wood-based products — Definition of use classes — Part 2: Application to solid wood*

EN 350-2:1994, *Durability of wood and wood-based products — Natural durability of solid wood — Part 2: Guide to natural durability and treatability of selected wood species of importance in Europe*

EN 351-1:2007, *Durability of wood and wood-based products — Preservative-treated solid wood — Part 1: Classification of preservative penetration and retention*

EN 636, *Plywood — Specifications*

EN 1177:2008, *Impact attenuating playground surfacing — Determination of critical fall height*

EN 1991-1-2, *Eurocode 1: Actions on structures — Part 1-2: General actions — Actions on structures exposed to fire*

EN 1991-1-3, *Eurocode 1: Actions on structures — Part 1-3: General actions — Snow loads*

EN 1991-1-4, *Eurocode 1: Actions on structures — Part 1-4: General actions — Wind actions*

EN 13411-3, *Terminations for steel wire ropes — Safety — Part 3: Ferrules and ferrule-securing*

EN 13411-5, *Terminations for steel wire ropes — Safety — Part 5: U-bolt wire rope grips*

EN ISO 2307, *Fibre ropes — Determination of certain physical and mechanical properties (ISO 2307)*

EN ISO 9554, *Fibre ropes — General specifications (ISO 9554)*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025)*

ISO 1834, *Short link chain for lifting purposes — General conditions of acceptance*

3 Terms and definitions

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

3.1

playground equipment

equipment and structures, including components and constructional elements with, or on which, children can play outdoors or indoors, either individually or in groups, according to their own rules or own reasons for playing which can change at any time

3.2

climbing equipment

playground equipment that only allows the user to move on it or in it by the use of a hand and foot/leg support and requires a minimum of three points of contact with the equipment, one of these being a hand

Note 1 to entry: During movement it is possible to have only one or two points of contact but this is only during a transition from one rest position to the next.

3.3

impact area

area that can be hit by a user after falling through the falling space

3.4

playing surface

surface of a playground from which the use of the playground equipment commences and which comprises at least the impact area

3.5

free space

space in, on or around the equipment that can be occupied by a user undergoing a movement forced by the equipment

EXAMPLE Sliding, swinging, rocking

3.6

free height of fall

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

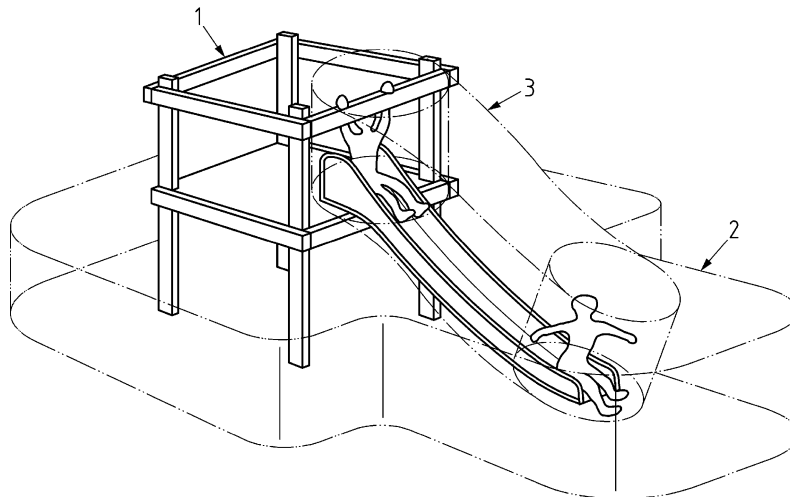
Note 1 to entry: The intended body support includes those surfaces to which access is encouraged.

3.7

falling space

space in, on or around the equipment that can be passed through by a user falling from an elevated part of the equipment (see Figure 1)

Note 1 to entry: The falling space commences at the free height of fall.

**Key**

- 1 space occupied by equipment
- 2 falling space
- 3 free space

Figure 1 — Spaces**3.8****minimum space**

space required for the safe use of equipment, comprising falling space, free space and space occupied by the equipment

3.9**collective use**

use by more than one user at the same time

3.10**crushing point**

place where parts of the equipment can move against each other, or against a fixed area so that persons, or parts of their body, can be crushed

3.11**shearing point**

place where part of the equipment can move past a fixed or other moving part, or past a fixed area so that persons, or parts of their body, can be cut

3.12**ladder**

means of access incorporating rungs or steps on which a user can ascend or descend with the aid of the hands (see Figure 2)

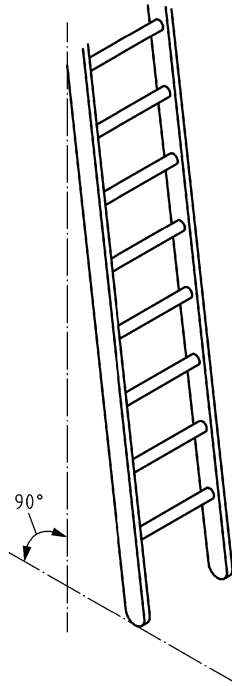


Figure 2 — Example of a ladder

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prEN 1176-1:2014 (E)**3.13
stairs**

means of access incorporating treads on which a user can ascend or descend (see Figure 3)

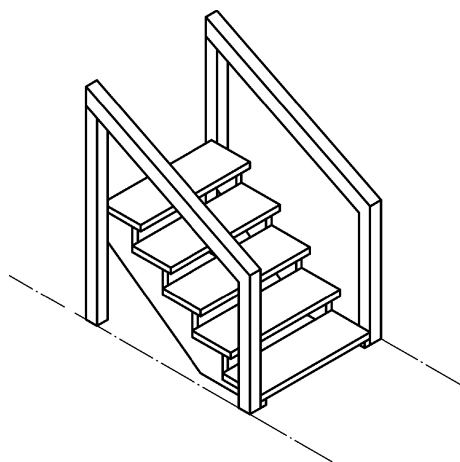


Figure 3 — Example of stairs

**3.14
ramp**

means of access incorporating an inclined surface on which a user can ascend or descend (see Figure 4 and 4.2.9.3 first sentence)

Note 1 to entry: For maximum inclination see 4.2.9.3.

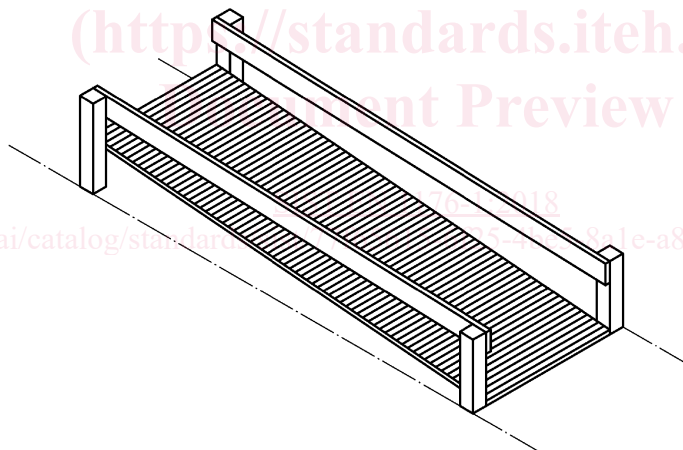


Figure 4 — Example of a ramp

3.15**grip**

holding of the hand round the entire circumference of a support (see Figure 5)

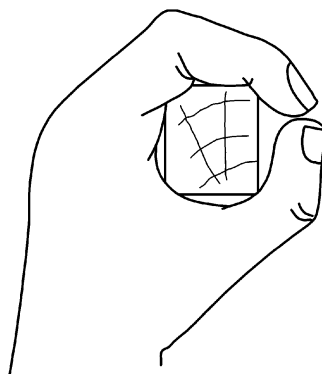


Figure 5 — Grip

3.16**grasp**

holding of the hand round part of the circumference of a support (see Figure 6)

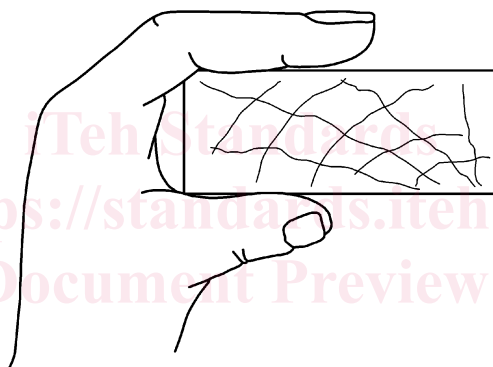


Figure 6 — Grasp

3.17**entrapment**

hazard presented by the situation in which a body, or part of a body, or clothing can become trapped

Note 1 to entry: This part of EN 1176 only considers certain types of entrapment where the user is not able to free him/herself and injury is caused by the entrapment.

3.18**obstacle**

object or portion of an object that protrudes inside the space occupied by equipment, the falling space or the free space of a user

Note 1 to entry: The risks associated with obstacles in playground equipment will vary according to its situation in, on or around the equipment e.g.

- in the free space, something in the path of a user undergoing a forced movement,
- in the falling space, something hard and sharp that a user can hit during a fall from an elevated position,
- for other types of movement, something unexpected with which a user might collide whilst moving in, on or around the equipment.

prEN 1176-1:2014 (E)**3.19****cluster**

two or more separate pieces of equipment designed to be installed in close proximity to each other to provide continuity in a sequence that is needed for the play activity, e.g. trail of stepping stones

3.20**platform**

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

Note 1 to entry: The classification of a platform will vary depending on the function of the playground equipment. Surfaces where the user is only able to stand with the aid of hand supports are not classified as platforms. This may 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.

3.21**handrail**

rail intended to assist the user to balance

3.22**guardrail**

rail intended to prevent a user from falling

3.23**barrier**

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

3.24**easily accessible**

requiring only basic skills to access the equipment, allowing users to move freely and quickly onto/within the equipment, without further considerations about the use of hands and feet.

Note 1 to entry: Basic skills should control the ability of a child to use a means of access. If the user needs to consider where or how to use their hands and feet when negotiating a means of access the access should generally be considered not easy as it slows down the movement and provides time for intervention.

3.25**routine visual inspection**

inspection intended to identify obvious hazards that can result from normal use, vandalism or weather conditions

Note 1 to entry: Typical hazards can take the form of broken parts or broken bottles.

3.26**operational inspection**

inspection, more detailed than routine visual inspection, to check the operation and stability of the equipment

Note 1 to entry: Typical checks include an examination for wear.

3.27**annual main inspection**

inspection intended to establish the overall level of safety of equipment, foundations and playing surfaces

Note 1 to entry: Typical checks include the effects of weather, evidence of rotting or corrosion and any change in the level of safety of the equipment as a result of repairs made, or of added or replaced components.