



SLOVENSKI STANDARD

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01-december-2019

Nadomešča:
SIST EN 1176-5:2008

Oprema in podloge otroških igrišč - 5. del: Dodatne posebne varnostne zahteve in preskusne metode za vrtiljake

Playground equipment and surfacing - Part 5: Additional specific safety requirements and test methods for carousels

Spielplatzgeräte und Spielplatzböden - Teil 5: Zusätzliche besondere sicherheitstechnische Anforderungen und Prüfverfahren für Karussells

Équipements et sols d'aires de jeux - Partie 5 : Exigences de sécurité et méthodes d'essai complémentaires spécifiques aux manèges

Ta slovenski standard je istoveten z: EN 1176-5:2019

ICS:

97.200.40 Igrišča Playgrounds

SIST EN 1176-5:2019 en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1176-5

October 2019

ICS 97.200.40

Supersedes EN 1176-5:2008

English Version

Playground equipment and surfacing - Part 5: Additional specific safety requirements and test methods for carousels

Équipements et sols d'aires de jeux - Partie 5:
Exigences de sécurité et méthodes d'essai
complémentaires spécifiques aux manèges

Spielplatzgeräte und Spielplatzböden - Teil 5:
Zusätzliche besondere sicherheitstechnische
Anforderungen und Prüfverfahren für Karussells

This European Standard was approved by CEN on 12 August 2019.

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.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 1176-5:2019) 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 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 April 2020, and conflicting national standards shall be withdrawn at the latest by April 2020.

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

This document supersedes EN 1176-5:2008.

This document is part of a series of standards dealing with playground equipment and surfacing which consists of:

- *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 will be used in conjunction with EN 1176-1, EN 1176-7 and EN 1177.

For inflatable play equipment see:

- EN 14960 (series), *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) the document covers equipment of all sizes where main function is rotating;
- b) information is presented in Table 1 to improve readability;
- c) entrapment requirements apply to all openings regardless to their heights;
- d) user stations are tested with protrusion ring;
- e) type-specific changes:
 - axis' maximum inclination requirement is given only to type B carousel;

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- tolerance is allowed for roundness of the carousel's platform edge;
 - requirements were added for bowl-like carousels;
 - requirements were added for free standing carousels with a diameter of less than 500 mm;
- f) changes concerning layouts:
- layout recommendation is given for type C carousel;
 - impact areas of carousel types D and F are allowed to overlap with other impact areas.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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1 Scope

This document specifies additional safety requirements for carousels intended for permanent installation for use by children.

Where the main play function is not rotating, the relevant requirements in this part of EN 1176 might be used, as appropriate. This document is not applicable to motor-driven carousels, fairground carousels or climbing drums.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1176-1:2017, *Playground equipment and surfacing — Part 1: General safety requirements and test methods*

EN 1176-2:2017, *Playground equipment and surfacing — Part 2: Additional specific safety requirements and test methods for swings*

EN 1176-6:2017+AC:2019, *Playground equipment and surfacing — Part 6: Additional specific safety requirements and test methods for rocking equipment*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1176-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

carousel

playground equipment where the main function is to rotate around a central axis

3.2

rotating chairs (type A)

carousel without a closed rotating platform whose user stations are defined by separate seats that are rigidly connected with the central axis via the supporting structure

Note 1 to entry: See Figure 1.

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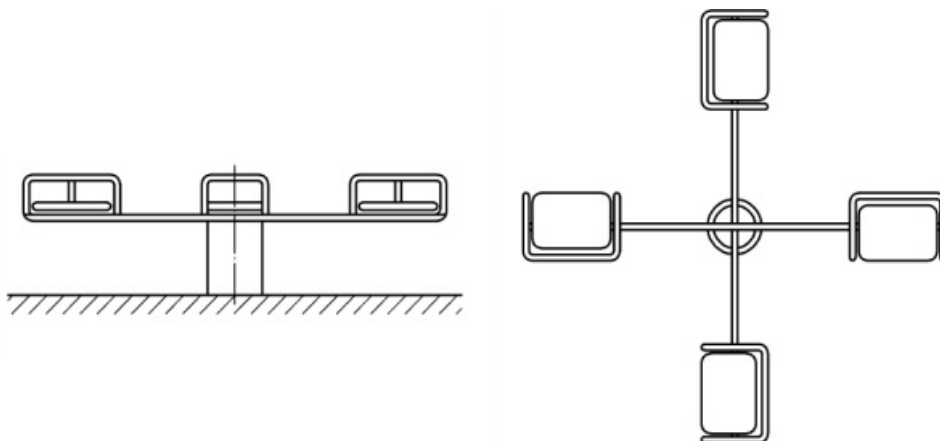


Figure 1 — Example of carousel type A

3.3

carousel with platform (type B)

carousel with a closed rotating platform $\geq \text{Ø}500$ mm whose user stations are defined by the upper side of the platform itself and/or by additional seats or handholds that are rigidly fixed on the platform and/or the central axis

Note 1 to entry: See Figure 2.

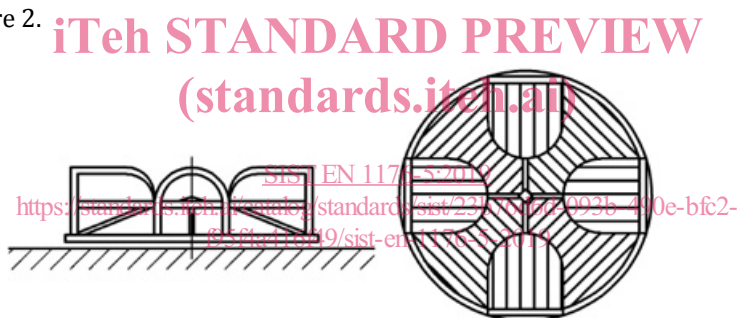


Figure 2 — Example of carousel type B

3.4

overhead carousel (type C)

carousel whose user stations are rigidly or flexibly fixed to the underside of the rotating supporting structure

Note 1 to entry: See Figure 3.

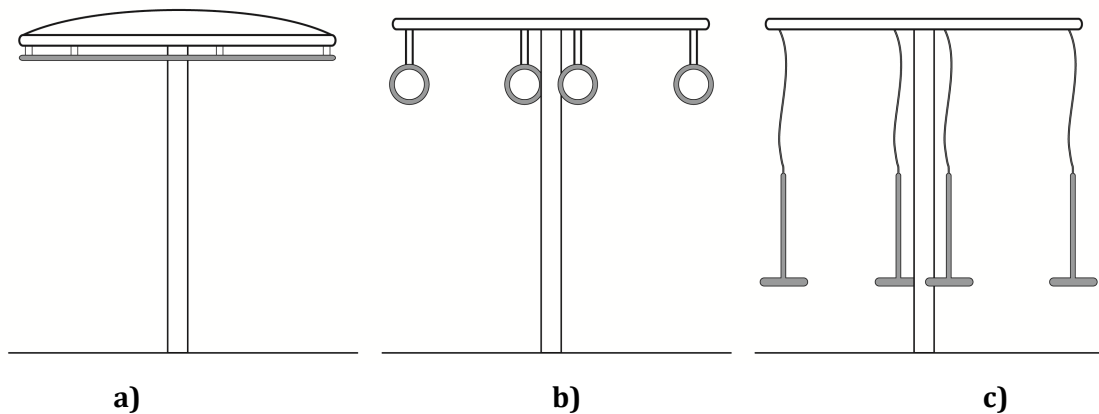


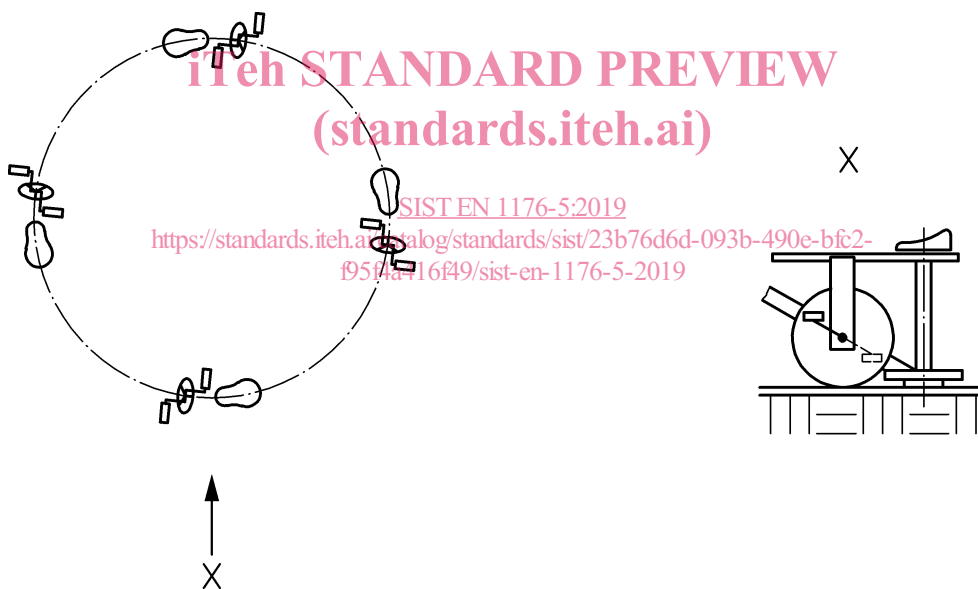
Figure 3 — Examples of carousel type C

3.5

track-driven carousel (type D)

carousel structure that is set in rotation around flat or undulating circular tracks by muscle power (from the hands or feet) transmitted to drive wheels

Note 1 to entry: See Figure 4.



View on X (enlarged)

Figure 4 — Example of carousel type D

3.6

inclined disc (type E)

carousel having an inclined axis whose user stations are not clearly definable

Note 1 to entry: See Figure 5.

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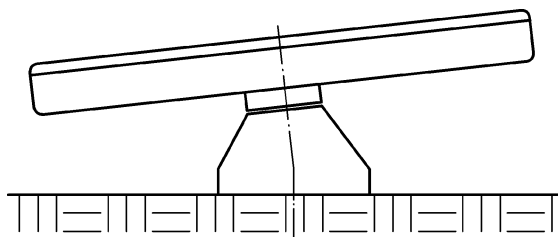


Figure 5 — Example of carousel type E

3.7 bowl-like carousel (type F)

carousel with a bowl-like profile retaining one or more users and not encouraging standing while in motion

Note 1 to entry: See Figure 6.

3.7.1 type F1

small in size, typically for one user

Note 1 to entry: See Figure 6.

3.7.2 type F2

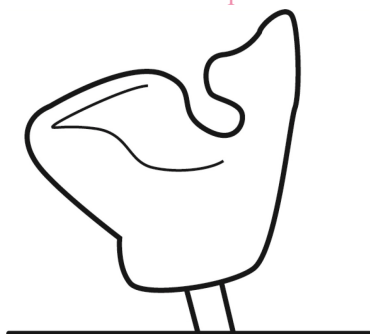
larger in size, typically for more than one user

Note 1 to entry: See Figure 6.

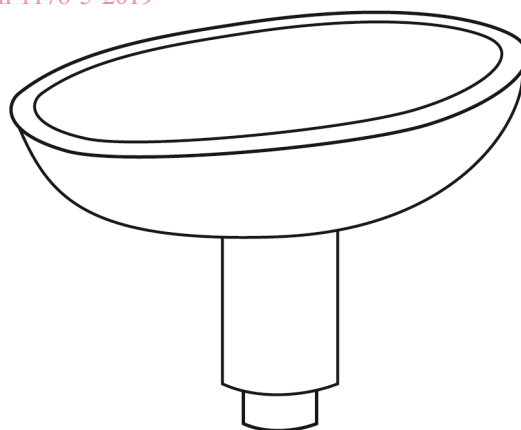
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a) type F1



b) type F2

Figure 6 — Examples of carousels of type F

3.8 user station

designated seat or platform and/or handholds on a carousel that allow the user to stay on or to propel the carousel

3.9 ground clearance

H_2

clear distance between the moving parts of the structure and the playing surface

Note 1 to entry: See Figure 7.

3.10 carousel diameter

d

diameter of the circle described by the construction element farthest away from the centre of the rotational axis when the carousel is in use

Note 1 to entry: See Figures 7 and 9.

3.11 carousel axis

vertical or inclined line around which the carousel rotates

Note 1 to entry: The carousel axis may oscillate in some designs.

4 Safety requirements

4.1 General

Carousels shall conform to EN 1176-1 unless otherwise specified in this part of EN 1176.

Carousels not clearly defined by any of the pre-defined types in this part should be evaluated based on a risk assessment and using the applicable requirements from each type together with the general requirements. Risk assessment should be based on comparison with the carousel type most similar to the new design.

NOTE Due to the way in which speed generated from centrifugal force affects impact, some types of carousels have increased attenuation and extent requirements for the impact area.

4.2 Free height of fall, height of user stations and impact areas

For each type of carousel, maximum heights of user stations shall not exceed the dimensions given in Table 1.

Impact areas around carousels shall have an adequate level of impact attenuation at least equivalent to the free height of fall (see Table 1) but always at least 600 mm.

The extent of impact area for each type of carousel is given in Table 1.