
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: prEN 1176-5

ICS:

97.200.40	Igrišča	Playgrounds
-----------	---------	-------------

oSIST prEN 1176-5:2017

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 1176-5

May 2017

ICS 97.200.40

Will supersede 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 draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 136.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
European foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Safety requirements.....	9
4.1 General.....	9
4.2 Heights and impact area	9
4.3 Free space/falling space	9
4.4 Entrapment	10
4.5 User stations	10
4.6 Load capacity and stability	10
5 Type specific requirements.....	11
5.1 Carousel type A (rotating chairs)	11
5.2 Carousel type B (classic carousel).....	11
5.2.1 General.....	11
5.2.2 Rotating platform flush to the ground.....	11
5.2.3 Rotating platform not flush with the ground	12
5.3 Carousel type C (spinning mushrooms, hanging glides)	12
5.3.1 General.....	12
5.3.2 Structural integrity and impact attenuation.....	13
5.4 Carousel type D (track-driven carousels)	13
5.4.1 Drives.....	13
5.4.2 Drive wheels	13
5.4.3 Supporting structure	13
5.4.4 Tracks.....	13
5.5 Carousel type E (rotating discs, rotating rings)	13
5.6 Carousel type F (bowl)	14
5.7 Carousel type G (spinner)	14
6 Test reports.....	14
7 Marking.....	15
Annex A (normative) Method for the determination of attachment strength of supporting structure components to the rotating shaft	16
A.1 Principle	16
A.2 Procedure.....	16
Annex B (normative) Dynamic load test for suspension systems of type C carousels	17
B.1 Principle	17
B.2 Procedure.....	17

European foreword

This document (prEN 1176-5:2017) 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 1176-5:2008.

This European Standard consists of a number of parts as follows:

- EN 1176-1, *Playground equipment and surfacing — Part 1: General safety requirements and test methods*
- EN 1176-2, *Playground equipment and surfacing — Part 2: Additional specific safety requirements and test methods for swings*
- EN 1176-3, *Playground equipment and surfacing — Part 3: Additional specific safety requirements and test methods for slides*
- EN 1176-4, *Playground equipment and surfacing — Part 4: Additional specific safety requirements and test methods for cableways*
- EN 1176-5, *Playground equipment and surfacing — Part 5: Additional specific safety requirements and test methods for carousels*
- EN 1176-6, *Playground equipment and surfacing — Part 6: Additional specific safety requirements and test methods for rocking equipment*
- EN 1176-7, *Playground equipment and surfacing — Part 7: Guidance on installation, inspection, maintenance and operation*
- EN 1176-10, *Playground equipment and surfacing — Part 10: Additional specific safety requirements and test methods for fully enclosed play equipment*
- EN 1176-11, *Playground equipment and surfacing — Part 11: Additional specific safety requirements and test methods for spatial network*

This part of EN 1176 should not be used in isolation, but in conjunction with EN 1176-1, EN 1176-7 and EN 1177.

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:

- The requirement for speed of rotation is now limited to those carousels that use mechanical advantage to raise speed, whereas in the previous edition the requirement was generally applicable.
- The free space/falling space for type C carousels has been increased and requirements for adequate level of impact attenuation introduced.
- Requirements have been introduced for shock absorbing properties for seats of type A carousels.

prEN 1176-5:2017 (E)

1 Scope

This document is applicable to permanently-installed carousels that are used as playground equipment for children. Where the main play function is not only rotating, the relevant requirements in this document may be used, as appropriate.

NOTE The principal difference between rotating rocking equipment and oscillating carousel is the main play function, which in carousel is rotating and in rocking equipment is rocking.

This document is not applicable to motor-driven carousels, fairground carousels or climbing drums.

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.

prEN 1176-1:2016, *Playground equipment and surfacing — Part 1: General safety requirements and test methods*

prEN 1176-2:2016, *Playground equipment and surfacing — Part 2: Additional specific safety requirements and test methods for swings*

prEN 1176-3:2016, *Playground equipment and surfacing — Part 3: Additional specific safety requirements and test methods for slides*

prEN 1176-6:2016, *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 prEN 1176-1 and the following apply.

3.1 carousel

playground equipment with main function to rotate around a central axis

Note 1 to entry: Though a term “carousel” is not technically 100 % correct, it is widely used hence this standard uses it instead of generic, but technically more accurate term “rotating equipment”.

3.2 carousel type A

rotating chairs

carousels 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

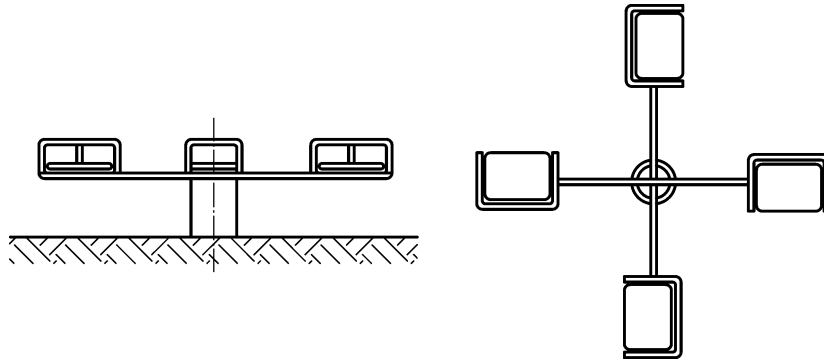


Figure 1 — Example of carousel type A (rotating chair)

3.3

carousel type B

classic carousel

carousels with a closed rotating platform $\geq \varnothing 500$ 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

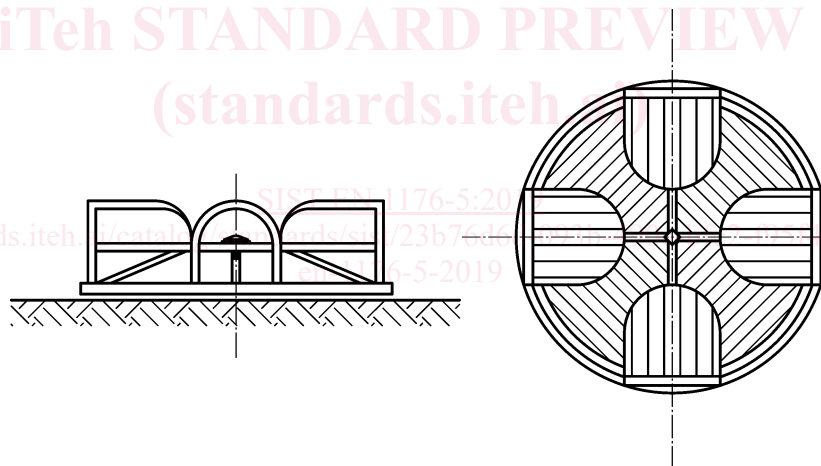


Figure 2 — Example of carousel type B (classic carousel)

3.4

carousel type C

spinning mushrooms, hanging glides

carousels whose user stations are rigidly (spinning mushrooms) or flexibly (hanging glides) fixed to the underside of the rotating supporting structure

Note 1 to entry: see Figure 3

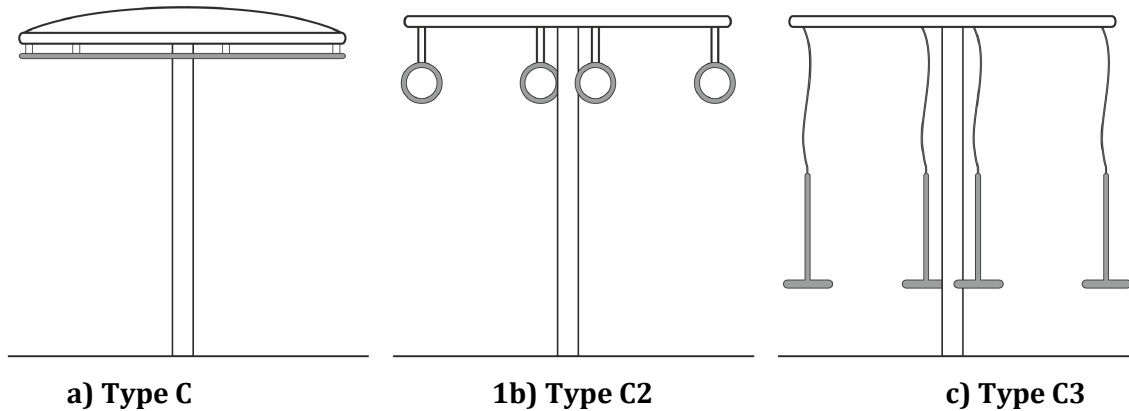


Figure 3 — Example of carousels of type C (spinning mushroom, hanging glide)

3.5

carousel type D

track-driven carousel

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

Note 1 to entry: see Figure 4

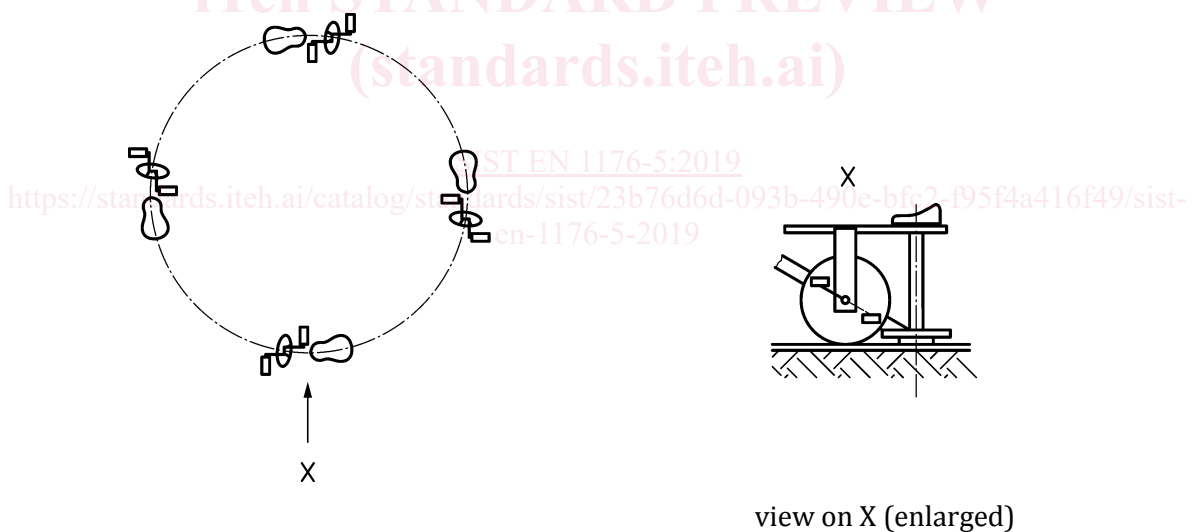


Figure 4 — Example of carousel type D (track-driven carousel)

3.6

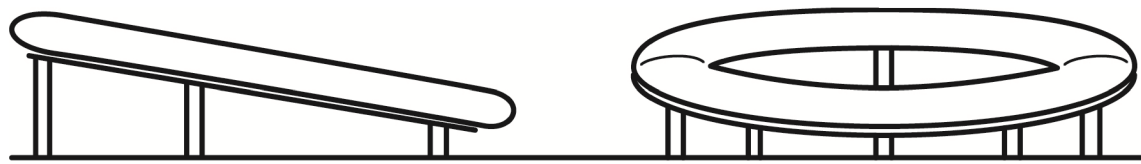
carousel type E

rotating discs, rotating rings

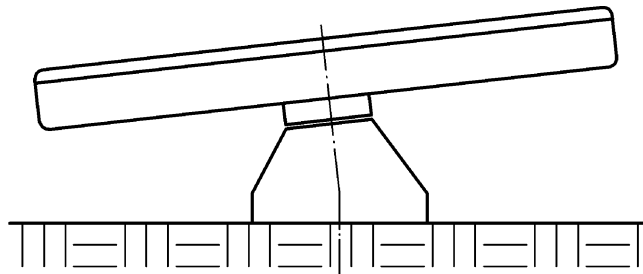
carousels having an inclined axis whose user stations are not clearly definable

Note 1 to entry: see Figure 5

Note 2 to entry: They can be set in rotation by the user's physical strength up to the running speed of the users and taking into account gravity.



a) Type E1



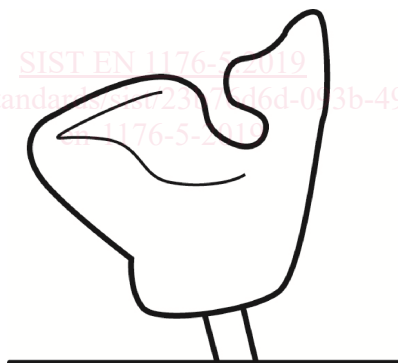
b) Type E2

Figure 5 — Example of carousel type E (rotating ring, rotating disc)**3.7****carousel type F**

bowl

carousels with a bowl retaining the user

Note 1 to entry: see Figure 6

**Figure 6 — Example of carousel type F (bowl)****3.8****carousel type G**

spinner

carousel with a closed rotating platform < Ø 500 mm with a supporting pole

Note 1 to entry: see Figure 7

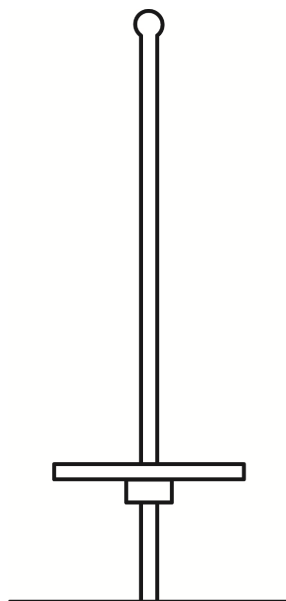


Figure 7 — Example of carousel type G (Spinner)

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

Note 1 to entry: The user stations are either rigidly connected to the supporting structure or are mounted on it so as to be mobile.

3.10 ground clearance
 H_2

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

Note 1 to entry: see Figure 6

3.11 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

3.12 carousel axis

vertical or inclined line around which the carousel rotates

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