



SLOVENSKI STANDARD
SIST EN 1176-5:2000
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Playground equipment - Part 5: Additional specific safety requirements and test methods
for carousels

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

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

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Ta slovenski standard je istoveten z: EN 1176-5:1998

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EUROPEAN STANDARD

EN 1176-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 1998

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Descriptors: playgrounds, recreation facilities, toys, carousels, communal equipment, safety requirements, accident prevention, specifications, classifications, characteristics, load capacity, stability tests, tensile strength, safety devices, marking

English version

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

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

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

This European Standard was approved by CEN on 1 October 1998.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

SIST EN 1176-5:2000

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 136 "Sports, playground and other recreational 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 1999, and conflicting national standards shall be withdrawn at the latest by April 1999.

This standard consists of a number of parts as follows:

- | | |
|-----------|----------------------------------------------------------------------------------------------------------------|
| EN 1176-1 | Playground equipment - Part 1: General safety requirements and test methods |
| EN 1176-2 | Playground equipment - Part 2: Additional specific safety requirements and test methods for swings |
| EN 1176-3 | Playground equipment - Part 3: Additional specific safety requirements and test methods for slides |
| EN 1176-4 | Playground equipment - Part 4: Additional specific safety requirements and test methods for runways |
| EN 1176-5 | Playground equipment - Part 5: Additional specific safety requirements and test methods for carousels |
| EN 1176-6 | Playground equipment - Part 6: Additional specific safety requirements and test methods for rocking equipment. |
| EN 1176-7 | Playground equipment - Part 7: Guidance on installation, inspection, maintenance and operation. |

This part of the standard should not be used in isolation, but in conjunction with parts 1 and 7 and EN 1177 - Impact absorbing playground surfacing - Safety requirements and test methods. It amends and supplements EN 1176-1 and EN 1177.

Where carousels are combined with other items of children's playground equipment, the relevant standards applying to the other items of equipment should also be consulted.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This part of EN 1176 specifies additional safety requirements for carousels of diameter greater than 0,5 m intended for permanent installation for use by children.

This standard is applicable to carousels that are used as playground equipment for children, as defined in 3.1.

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

2 Normative references

This European Standard incorporates by dated or undated references, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- EN 1176-1: 1998 Playground equipment - Part 1: General safety requirements and test methods
- EN 1176-2: 1998 Playground equipment - Part 2: Additional specific safety requirements and test methods for swings.

3 Definitions

For the purposes of this part of EN 1176, the definitions given in EN 1176-1 apply, together with the following:

3.1 carousel: Playground equipment with one or more user stations that rotate around a vertical axis, or inclined up to 5° (see 5.6).

NOTE: The plane of movement can either be above or level with the installation surface.

3.2 user station: Seat or platform and/or handholds on a carousel that allow the user to stay on or to propel the carousel.

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

3.3 carousel range: Space in which the user stations and their supporting structures move when the carousel is in use.

3.4 ground clearance, h_2 : Clear distance between the moving parts of the structure and the installation surface.

3.5 carousel diameter, d : Diameter of the circle described by the point farthest away from the centre of the rotational axis when the carousel is in use.

3.6 carousel axis: Central shaft on which the supporting structure is pivot-mounted and which is rigidly connected to the foundations or installation components.

NOTE: The carousel axis can also be a theoretical line when the carousel structure is mounted on a circular track.

4 Types of carousel

4.1 General

Carousels shall be classified according to table 1 and 4.2.

Table 1: Types

Type	Description	Typical example
A	Rotating chairs	Figure 1
B	Classic carousel	Figure 2
C	Spinning mushrooms, hanging glides	Figure 3
D	Track-driven carousel	Figure 4
E	Giant revolving disc	Figure 5

4.2 Description of types of carousel

4.2.1 Carousel type A (rotating chairs)

Carousels without a closed rotating platform whose user stations are defined by seats or handholds that are rigidly connected with the central shaft via the supporting structure.

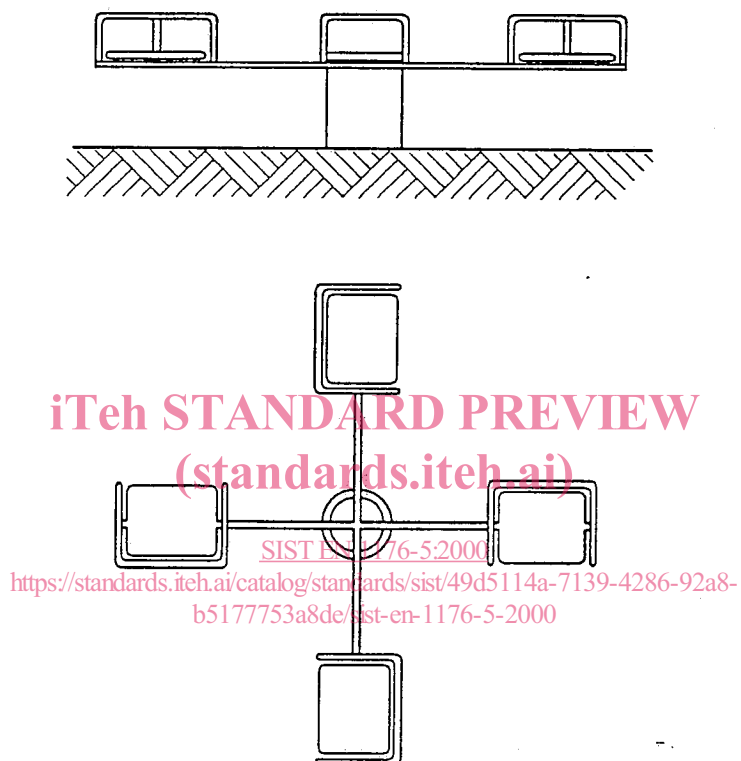


Figure 1: Example of carousel type A (rotating chair)

4.2.2 Carousel type B (classic carousel)

Carousels with a closed rotating platform. The 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 shaft.

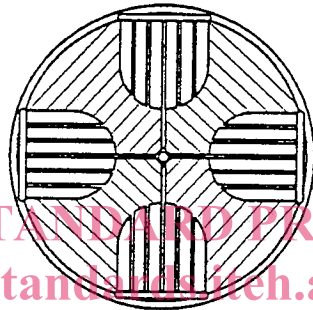
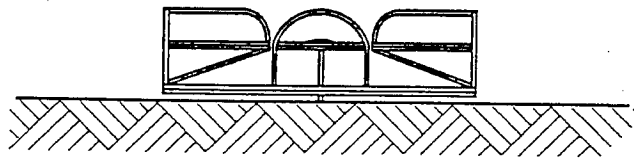


Figure 2: Example of carousel type B (classic carousel)

4.2.3 Carousel type C (spinning mushrooms, hanging glides)

Carousels whose user stations are rigidly (spinning mushrooms) or flexibly (hanging glides) fixed to the under side of the supporting structure.

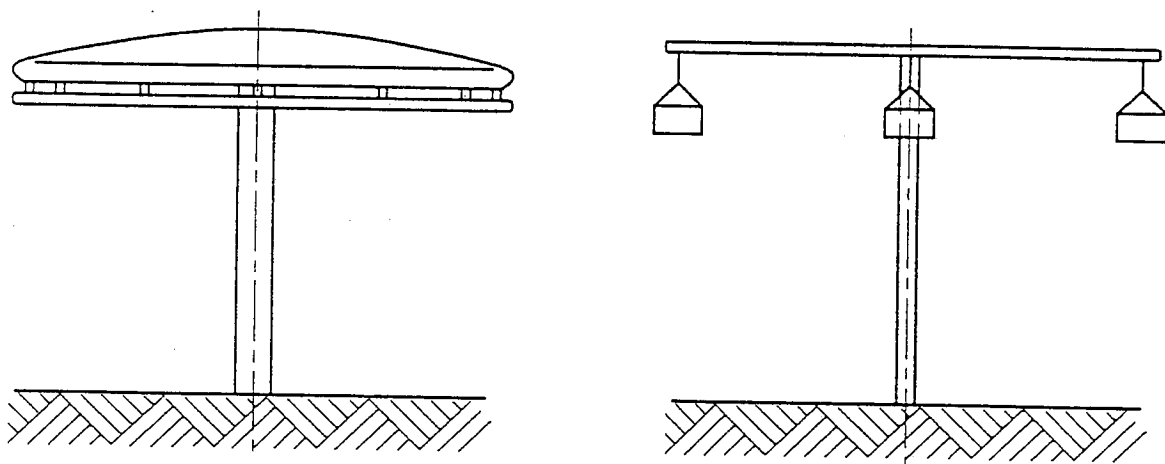


Figure 3: Example of carousel type C (spinning mushrooms, hanging glides)

4.2.4 Carousel type D track-driven

Carousel structures that are set in rotation round flat or undulating circular tracks by muscle power (from the hand or feet) that is transmitted to drive wheels.

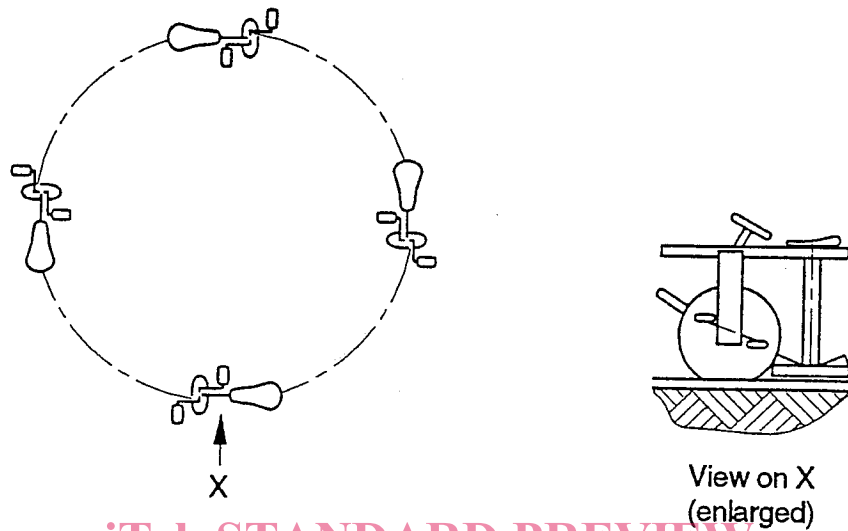


Figure 4: Example of carousel type D (track-driven carousel)
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4.2.5 Carousel type E giant revolving disk

Giant revolving disks are carousels having an inclined axis (as given in 5.6) whose user stations are not clearly definable. 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.

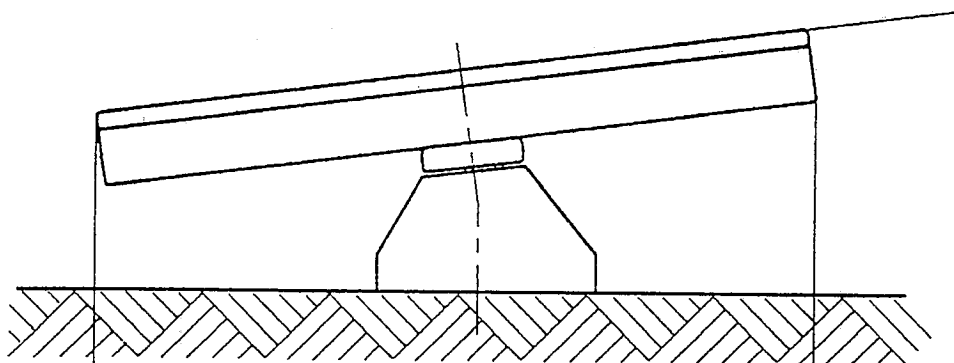


Figure 5: Example of carousel type E (giant revolving disk)

5 Safety requirements

5.1 General

Carousels shall comply with the requirements of EN 1176-1 except in so far as they are modified by this part of EN 1176.

NOTE: The characteristics of the risk connected with the use of carousels are mostly derived from the inertia generated and the effects of gravity on some products.

5.2 Free height of fall

The maximum free height of fall shall not be more than 1000 mm at any point.

5.3 Minimum space (see figures 6 and 7)

The free space shall be as follows:

- a) to the side of the carousel at least 2000 mm, and
- b) for the head clearance above the maximum height of the carousel at least 2000 mm.

NOTE: The dimensions of the free space as defined in EN 1176-1 have been altered for carousels because in addition to the forced movement (in this case circular) a centrifugal force acts on the user.

The principal risk relating to carousels results from the influence of inertia generated by the centrifugal force of the equipment. On inclined disks this is affected by gravity. For this reason the falling space and the free space are the same.