Annex A
(informative)

A–deviations

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN/CENELEC national member.

This European Standard does not fall under any Directive of the EU. In the relevant CEN/ CENELEC countries these A-deviations are valid instead of the provisions of the European Standard until they have been removed.

Deviation	
Country France	National Regulation Decree no. 94-699 of 10 August 1994 defining the safety requirements for community playgrounds
Sub-clause 4.2 The provisions of sub-clause 4.2 are completed in France as follows: For all slides, the entrance to the slide must be designed in such a way as to discourage any attempt to access it in an upright position.	Annex II, 3, a) This part of the decree indicates that “the entrance to the slide must be designed in such a way as to discourage any attempt to access it in an upright position".

Bibliography

[1] EN 1177, *Impact attenuating playground surfacing — Determination of critical fall height*

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1176-4

May 2008

ICS 97.200.40

Supersedes EN 1176-4:1998

English Version

Playground equipment and surfacing - Part 4: Additional specific safety requirements and test methods for cableways

Équipements et sols d'aires de jeux - Partie 4 : Exigences de sécurité et méthodes d'essai complémentaires spécifiques aux téléphériques

Spielplatzgeräte und Spielplatzböden - Teil 4: Zusätzliche besondere sicherheitstechnische Anforderungen und Prüfverfahren für Seilbahnen

This European Standard was approved by CEN on 25 April 2008.

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 Management Centre 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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 1176-4:2008: E

NOTES

Foreword

This document (EN 1176-4:2008) 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 November 2008, and conflicting national standards shall be withdrawn at the latest by May 2009.

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

This document supersedes EN 1176-4:1998.

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:

a) Revised requirements for the different types of grips and seats.

b) Revised requirements for seated and hanging types of equipment.

c) Test methods have been improved in the light of experience.

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

1 Scope

This document is applicable to cableways whereby children travel on or along a cable by the use of gravity.

This standard specifies additional safety requirements for cableways intended for permanent installation for use by children.

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 amendments) applies.

EN 1176-1:2008, *Playground equipment and surfacing — Part 1: General safety requirements and test methods*

EN 1176-2:2008, *Playground equipment and surfacing — Part 2: Additional specific safety requirements and test methods for swings*

EN 1176-6:2008, *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 1176-1:2008 and the following apply.

3.1
cableway
item of children's playground equipment whereby children can travel on or along a cable under the force of gravity (see Figure 1)

3.2
hanging type cableway
cableway equipped with a suspension assembly which includes a grip for hanging

3.3
seating type cableway
cableway equipped with a suspension assembly which includes a seat

3.4
starting point
area in which the user can reach the grip or seat and set the equipment in motion

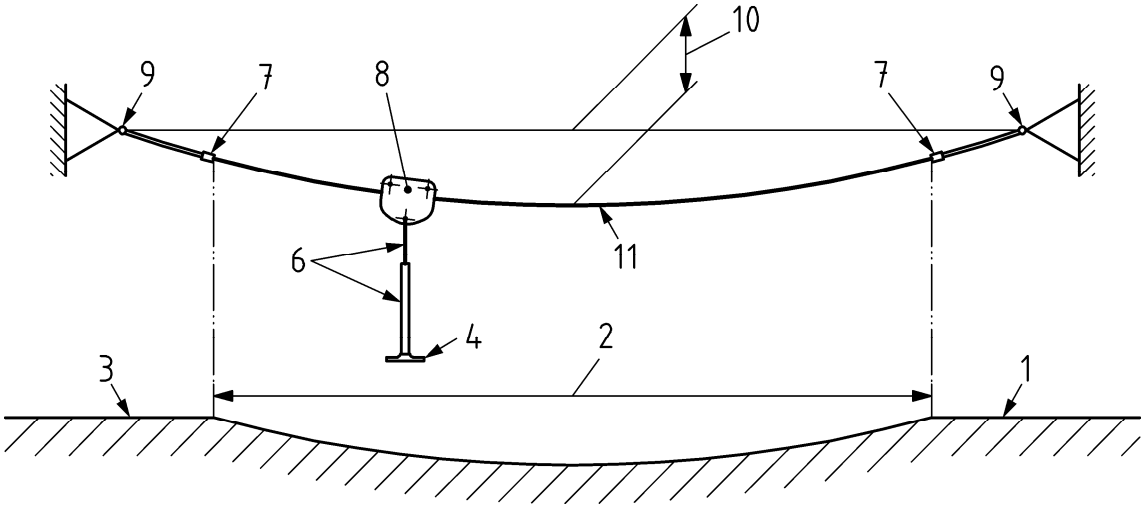
3.5
area of travel
area in which the user can travel freely

3.6
terminus
area furthest away from the starting point that the user can reach by travelling across the area of travel

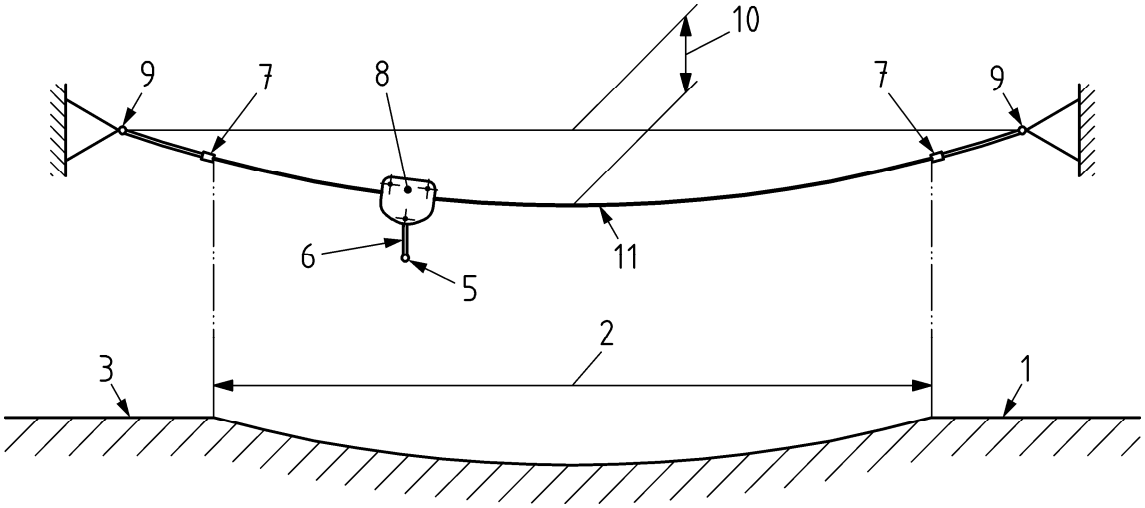
3.7
traveller
moving part that, by influence of gravity, moves the user along the cable (see Figure 1)

3.8
suspension element
part of the structure between the traveller and the seat or grip

3.9
suspension assembly
assembly of components hanging beneath the traveller, e.g. suspension elements, grips and/or seats



a) Cableway terms (seated)



b) Cableway terms (hanging)

Key

1 terminus/starting point
2 area of travel
3 terminus/starting point
4 seat
5 grip
6 suspension element
7 stop
8 traveller
9 cable fixing points
10 sag
11 cable

Figure 1 — Cableway terms

4 Safety requirements

4.1 General

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

4.2 Framework and fixing points for the cable

Framework and fixing points for the cable shall be designed to withstand the computed loads (static and dynamic) transmitted by the cable, in accordance with EN 1176-1.

There shall be an adjusting device so that the correct sag can be maintained for the life of the cable.

4.3 Calculation of forces acting on the cable of a cableway

The cable shall be designed so that it can withstand the forces acting upon it according to EN 1176-1:2008, Annex A.

4.4 Stops

When tested in accordance with Annex A, the stop at the terminus shall progressively slow down the traveller until it stops and the suspension element shall not swing through an angle of more than 45°, as shown in Figure 4.

NOTE This test includes an allowance for starting speed.

4.5 Traveller

The traveller shall be constructed so that it cannot slip out of place. Travellers shall be provided with means to prevent accidental access to the sheaves (e.g. by cladding them).

There shall be only one traveller on the same cable.

The traveller and suspension element shall be designed such that it does not cause damage to the cable during use.

4.6 Suspension assembly

For seating type cableways rigid suspension elements shall not be used.

If a flexible suspension element is used it shall be designed to prevent risk of strangulation.

If a pulling device for the traveller is provided it shall be designed to prevent risk of strangulation.

4.7 Cableways arranged in parallel

For cableways arranged in parallel, the distance between the cables shall be at least 2 000 mm.

4.8 Grips

For hanging type cableways the grip shall be constructed to ensure that the user can easily release their hold at all times. If the grip is an enclosed loop, it shall not be made from flexible material that could tighten around the user's arm or hand thus preventing the user from releasing their grip quickly. Enclosed loops shall conform to the entrapment requirements in EN 1176-1:2008, 4.2.7.

It shall not be possible to climb on the grip.

If the grip is rigid and does not form a loop, the ends of the grip shall conform to EN 1176-6:2008, Annex E.

NOTE This is to reduce the risk of eye injury from the ends of projecting hand supports.

Suspension type cableways from which users will hang by the hands shall conform to EN 1176-1:2008, 4.2.4.6.

4.9 Seats

Seats shall be designed so that the user can leave the cableway quickly and at all times. Seats which form loops or circular rings shall not be used.

When tested in accordance with EN 1176-2:2008, Annex C, peak values of acceleration shall be not greater than 50g and the average surface compression shall not exceed 90 N/cm^2.

4.10 Speed

When tested in accordance with Annex B the maximum speed of the traveller shall not exceed 7 m/s.

4.11 Free height of fall

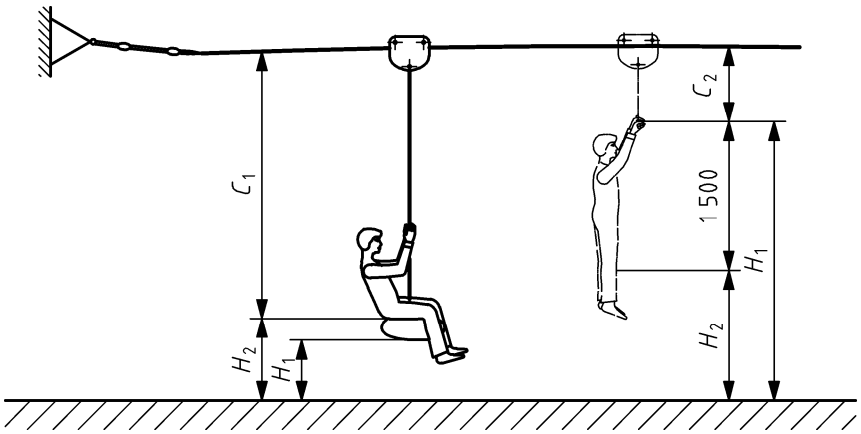
The free height of fall, for all cableway types, shall be measured unloaded.

In the sitting position the free height of fall, H_2, shall not exceed 2 000 mm.

In the hanging position the free height of fall shall be measured from the grip position minus 1 500 mm to the surface below, as the user should not be able to access the cable (see Figure 2). In the hanging position, the free height of fall, H_2, shall not exceed 1 500 mm (see Figure 2).

NOTE The sagging of the cable and thus the distance ground/cable, ground/grip and ground/seat are dependent on temperature. The minimum and maximum dimensions specified apply to a reference temperature of 15 °C.

Dimensions in millimetres



Key

C_1 cable height — seating type H_1 ground clearance
C_2 cable height — hanging type H_2 free height of fall

Figure 2 — Determination of cable height, ground clearance and free height of fall