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EUROPEAN STANDARD

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EN 1271

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ICS

Supersedes EN 1271:1998

English version

Playing field equipment - Volleyball equipment - Functional and safety requirements, test methods

Equipements de jeux - Equipements de volley-ball - Exigences fonctionnelles et de sécurité, méthodes d'essai

Spielfeldgeräte - Volleyballgeräte - Funktionelle und sicherheitstechnische Anforderungen, Prüfverfahren

This European Standard was approved by CEN on 24 June 2004.

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

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Foreword

This document (EN 1271:2004) has been prepared by Technical Committee CEN/TC 136 “Sport, 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of an identical text or by endorsement, at the latest by March 2005, and conflicting national standards shall be withdrawn at the latest by March 2005.

This document supersedes EN 1271:1998.

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

1 Scope

This document specifies the functional requirements (see Clause 3) and the safety requirements (see Clause 4) for volleyball equipment.

This document is applicable to 2 types and 3 classes of volleyball equipment (see 3.1) which are used indoors and outdoors.

This document is not applicable to beach volleyball.

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 913:1996, *Gymnastic equipment — General safety requirements and test methods*

EN ISO 1806, *Fishing nets — Determination of mesh breaking force of netting (ISO 1806:2002)*

prEN ISO 2307, Fibre *ropes — Determination of certain physical and mechanical properties (ISO/DIS 2307:2003)*

EN ISO 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method (ISO 13934-1:1999)*

ISO 3108, Steel wire ropes for general purposes — Determination of actual breaking load

3 Requirements

3.1 Classification

Volleyball equipment shall be classified by the design (types) and the intended level of the sport (classes) as shown in Tables 1 and 2.

Table 1 — Types

Type	Description	Example
1	with ground sockets/fixings	Figure 1
2	with floor fixings	Figure 2

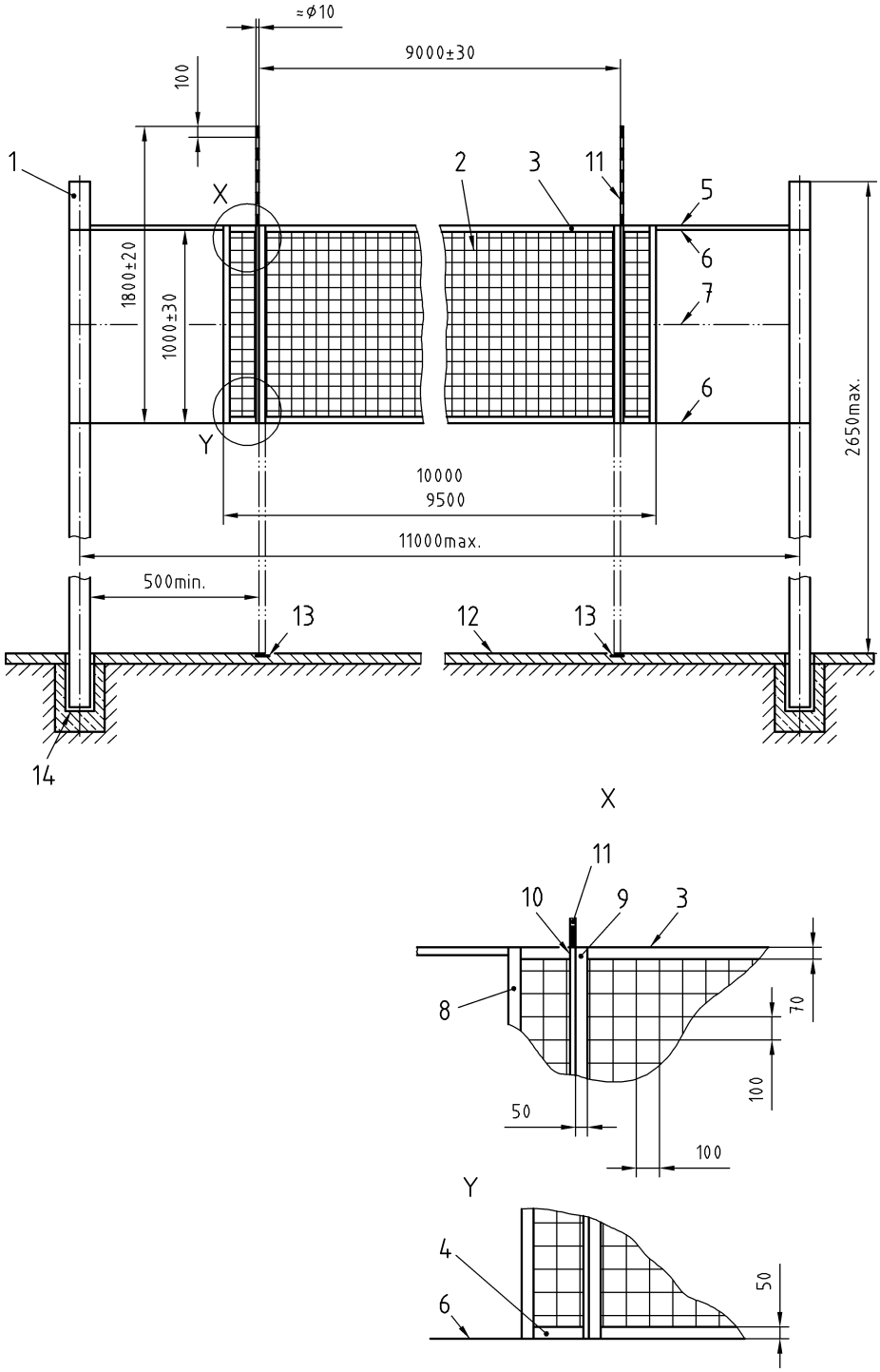
Table 2 — Classes

Class	Description
A	International competitions[a]
B	national competitions[b]
C	practice and school sports
[a] in line with the FIVB (Fédération Internationale de Volleyball) rules [b] in line with the rules of the national volleyball federations	

3.2 Dimensions

Volleyball equipment Classes A and B shall comply with the dimensions shown in Figure 1.

Dimensions in millimetres



Key

1 post
2 net
3 upper edge band
4 lower edge band
5 top net line
6 tension ropes
7 tension rope (optional)
8 edge reinforcement
9 side band
10 antenna pocket (alternative to 9)
11 antenna
12 sport surface
13 court line
14 ground socket

For example of foundations see Annex A.

NOTE The height of the net is specified by the International and/or national federation(s)

Figure 1 — Volleyball equipment Type 1

A complete volleyball equipment **Type 1** shall have the following components:

a) 2 posts (1 with tensioning device and 1 with rope attachment);

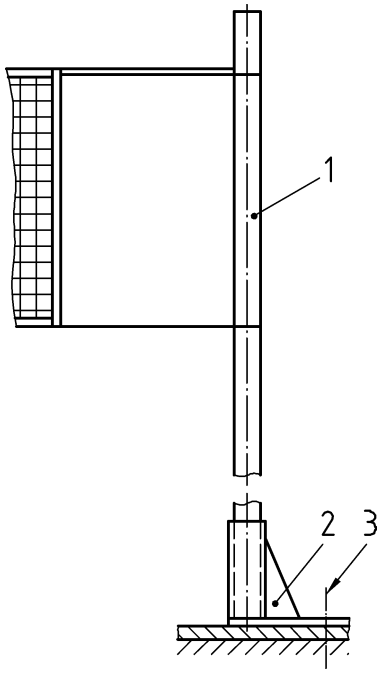
b) 2 post pads (Classes A and B);

c) 2 ground sockets;

d) 1 net;

e) 2 antennas (Classes A and B)

f) 2 side bands (Classes A and B)



Key
1 post
2 base assembly
3 floor fixing devices

Other dimensions and specifications as Type 1.

Figure 2 — Volleyball equipment Type 2

A complete volleyball equipment **Type 2** shall have the following components:

g) 2 posts (1 with tensioning device and 1 with rope attachment);

h) for class B 2 post pads;

i) 2 bases with floor fixing devices;

j) 1 net;

k) for Class B 2 antennas;

l) for Class B 2 side bands.

3.3 Material

3.3.1 Posts

The posts may be made of steel, light metal or synthetics, provided the requirements of this document are fulfilled.

Light metal shall be non-corrosive and steel protected against corrosion (e. g. hot-galvanized, powder coated or painted).

3.3.2 Net

The net shall be made from synthetic fibres.

The top net line shall be made from galvanised, corrosion-resistant steel wires, synthetics or equivalent material.

NOTE Plastic covering for steel wires is also acceptable.

All tapes bordering the net shall be made from synthetic materials.

3.3.3 Antenna

The antenna shall be made of glass-fibre reinforced plastics or similar material.

3.4 Design

3.4.1 Posts

In the installed position the height adjustment of the net between the posts shall be possible between at least 2 000 mm to 2 500 mm from the sport surface.

3.4.2 Net

The net of Classes A and B shall be black, the upper and lower edge bands and the side band shall be white.

The net meshes shall be square.

The top net line shall be inserted in the upper edge band.

The net shall be stretched horizontally at its upper and lower corners by means of the tension ropes so that the top net line and bottom net line are parallel and 1 000 mm apart.

Regarding the breaking forces of the net and its components the Classes of Tables 3 to 6 shall be selected as appropriate.

Table 3 — Mesh breaking strength

Class	N min.	Test method
A	1 800 (1 500)[a]	EN ISO 1806
B	1 080 (900)[a]	
C	792 (660)[a]	

[a] This corresponds to the breaking strength of the net yarn, tested in accordance with EN ISO 2062.

Table 4 —Breaking forces of ropes/net lines

Class	N min.	Test method
A	5 000	prEN ISO 2307
B	3 400	
C	1 100	

Table 5 — Breaking forces of top net line

Class	N min.	Test method
A	8 000	ISO 3108
B	6 000	
C	3 000	

Table 6 — Breaking forces of net tapes

Class	N min.	Test method
A	2 500	EN ISO 13934-1
B	1 250	
C	900	

3.4.3 Antennas

For Classes A and B antennas shall be provided. They shall be marked alternately white/red above the net.

The first section above the top tape shall be white (see Figure 1).

The removable antenna pockets shall be attached to both sides of the net vertically above the point of intersection between sideline and centre line of the play area.

3.4.4 Ground sockets

For outdoor volleyball equipment the ground sockets shall be resistant to corrosion and provided with a drainage hole.

4 Safety requirements

4.1 General

Exposed corners and edges shall be rounded with a radius of at least 3 mm.

4.2 Posts

When tested in accordance with 5.2, each post for Classes A and B shall not show any deflection of more than 80 mm and no permanent deformation after release of the test force.

The posts shall have the following mass:

— for Class C Type 1: a maximum of 20 kg;

— for Class C Type 2 equipped with wheels: a maximum of 30 kg.

NOTE For Class A and B, the maximum mass of the posts is what is indicated in the international federation's (FIVB) regulations.

4.3 Tensioning devices and rope attachment

When tested according to 5.2, the locking mechanism of the tensioning device shall not release unintentionally.

If handles are provided, e. g. the winch, they shall be removable, retractable or remain inside the post.

Tensioning devices and rope attachments of Classes A and B shall be outside the post side, i. e. away from the court, or fitted inside the post profile.

In Class C they can be fitted on the net side of the post with a maximum projection as specified in 5.1 of EN 913:1996.

4.4 Post pads (Classes A and B)

Post pads shall be provided and fitted up to a height of 2 000 mm.

When tested according to Annex C of EN 913:1996 with a drop height of 200 mm, the damping value of the padding shall be below 50 g.

4.5 Base assembly

The base assembly of the volleyball equipment Type 2 shall be outside the court (see Figure 2) and shall be protected because risk of hazards during the game, e. g. by padding with the damping characteristics of 4.4.

5 Test methods

5.1 General

Requirements of Clauses 3 and 4, for which no particular tests are indicated in the following, shall be appropriately verified, e.g. by measurement, visual inspection, tactile or functional testing.

5.2 Testing of posts and tensioning device

Place a force transducer within the top net line.

Set up the volleyball equipment for normal use.

Apply a force F of 1 200 N horizontally to the top net line at a height of 2 430 mm[1)] above the floor of the sports hall. Note the deflection of the posts at the test height.

Increase the tension up to $1{,}2 \times F$ by using the tensioning device and maintain the force for 1 min + 10s –0s.

Report any change in the position of the tensioning device.

Fully decrease the tension.

Report any permanent deformation of the posts and whether the locking mechanism of the tensioning device have released.

6 Instructions for use

Each volleyball equipment shall be accompanied by instructions for use including at least the following information:

a) correct fastening of the net;

b) handling of the tensioning device;

c) storage;

d) maintenance.

7 Marking

Volleyball equipment complying this document shall be marked with the following information:

a) the number of this document EN 1271[2)]

b) the name, trademark or other means of identification of the manufacturer, retailer or importer and the year of manufacture.

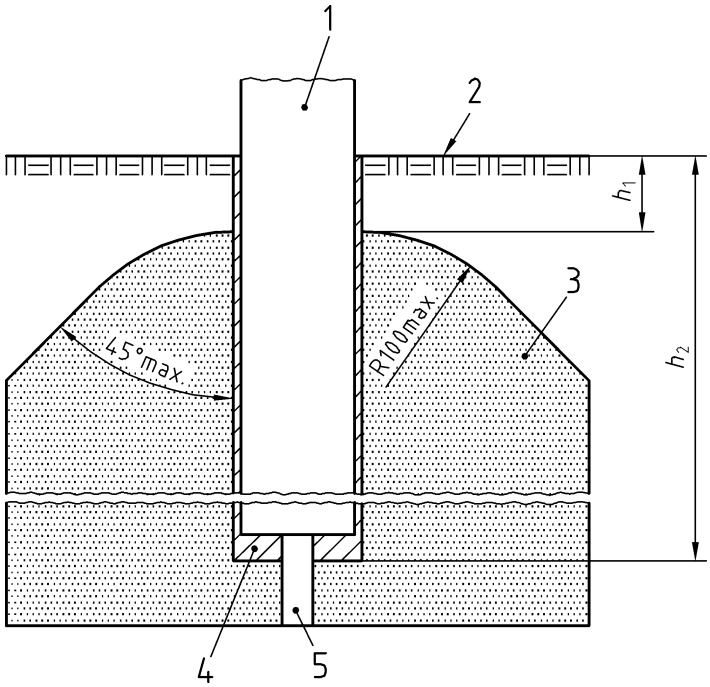
1) This is the competition height for men.

2) Marking EN 1271 on or in relation to a product represents the manufacturer's declaration of conformity, i. e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is therefore solely the responsibility of the person making the claim. Such a declaration should not be confused with third party certification of conformity, which may also be desirable.

Annex A
(informative)

Example of foundation

Dimensions in millimetres



Key
1 post
2 sport surface
3 concrete bock
4 ground socket
5 drainage hole

Figure A.1 — Foundation

Table A.1 — Heights

Dimensions in millimetres

Height	Post min.
h_1	40
h_2	350

Bibliography

EN ISO 2062, *Textiles — Yarns from packages — Determination of single-end breaking force and elongation at break (ISO 2062:1995)*

U p o z o r n ě n í : Změny a doplňky, jakož i zprávy o nově vydaných normách jsou uveřejňovány ve Věstníku Úřadu pro technickou normalizaci, metrologii a státní zkušebnictví.

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