BRITISH STANDARD

BS EN
1510 : 1997

Playing field equipment — Tennis equipment — Functional and safety requirements, test methods

The European Standard EN 1510 : 1996 has the status of a British Standard

ICS 97.220.40

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee SW/14, Gymnasium and sports equipment, upon which the following bodies were represented:

All England Women's Hockey Association
Association of County Councils
British Amateur Gymnastics Association
British Athletic Federation
British Sports and Allied Industries Federation
Central Council of Physical Recreation
Consumer Policy Committee of BSI
English Basketball Association
Home Office
Institute of Trading Standards Administration
Physical Education Association
Sports Hall and Fitness Equipment Association

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

Association of Consulting Scientists
Lawn Tennis Association

This British Standard, having been prepared under the direction of the Consumer Products and Services Sector Board, was published under the authority of the Standards Board and comes into effect on 15 May 1997

Amendments issued since publication

Amd. No.	Date	Text affected

The following BSI references relate to the work on this standard:
Committee reference SW/14
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Contents

National foreword

This British Standard has been prepared by Technical Committee SW/14 and is the English language version of EN 1510 : 1996 *Playing field equipment — Tennis equipment — Functional and safety requirements, test methods*, published by the European Committee for Standardization (CEN).

Cross-reference

Publication referred to	Corresponding British Standard
ISO 2062	BS EN 2062 : 1995 *Textiles — Yarns from packages — Determination of single-end breaking force and elongation at break*

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 8, an inside back cover and a back cover.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1510

September 1996

ICS 97.220.40

Descriptors: Sports equipment, sports, tennis, sport nets, columns, specifications, materials, design, safety, specifications, technical notices, marking

English version

Playing field equipment — Tennis equipment — Functional and safety requirements, test methods

Equipements de jeux —
Equipements de tennis —
Exigences fonctionnelles et de sécurité,
methodes d'essai

Spielfeldgeräte —
Tenniseinrichtungen —
Funktionelle und sicherheitstechnische
Anforderungen, Prüfverfahren

This European Standard was approved by CEN on 1996-07-04. 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.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 136, Sports, playground and other recreational equipment, of which the Secretariat is held by DIN.

Other types and sizes from those described in this standard are permissible, provided the safety requirements are taken into consideration.

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 1997, and conflicting national standards shall be withdrawn at the latest by March 1997.

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

Contents

1 Scope

This European Standard specifies the functional requirements (see clause **3**) and the safety requirements (see clause **4**) of tennis equipment, excluding rackets and balls.

This European Standard is applicable to 3 types of tennis equipment (see **3.1**) which are used indoors and outdoors.

2 Normative references

This European Standard incorporates, by dated or undated reference, 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.

ISO 2062	*Textiles — Yarns from packages — Determination of single-end breaking force and elongation at break*
ISO 3108	*Steel wire ropes for general purposes — Determination of actual breaking load*
ISO 5081	*Textiles — Woven fabrics — Determination of breaking strength and elongation (Strip method)*

3 Requirements

3.1 Classification

Tennis equipment shall be classified by the design (types) and the nets by the breaking force (classes) as shown in tables 1 and 2.

Table 1. Types

Type	Description	Example
1	with ground sockets	figure 1
2	with bases and ground fixings	figure A.1
3	freestanding	figure A.2

Table 2. Classes of nets

Class	Breaking force N min.		
	Net yarn	Top net line	Top tape
A	1 500	8 000	2 500
B	900	6 000	1 250
C	660	3 000	900

3.2 Dimensions

Tennis equipment shall conform to the dimensions shown in figure 1. For example for foundations see annex B.

Tennis equipment **type 1** shall have the following components:

a) 2 posts (1 with tensioning device, 1 without);

b) net with top net line;

c) centre net adjuster;

d) 2 singles sticks (optional);

e) 2 ground sockets.

Tennis equipment **type 2** shall have the following components:

a) 2 posts with bases and ground fixings (1 with tensioning device, 1 without);

b) 1 net;

c) 1 centre net adjuster.

An example of tennis equipment type 2 is shown in annex A.

Tennis equipment **type 3** shall have the following components:

a) 2 posts (1 with tensioning, 1 without);

b) 1 net;

c) 1 centre net adjuster;

d) bottom structure.

An example of tennis equipment type 3 is shown in annex A.

3.3 Materials

3.3.1 *Posts, singles sticks and bottom structure of type 3 and ground fixings*

These may be made of steel, light metal, synthetics or wood, provided the requirements of this standard 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.

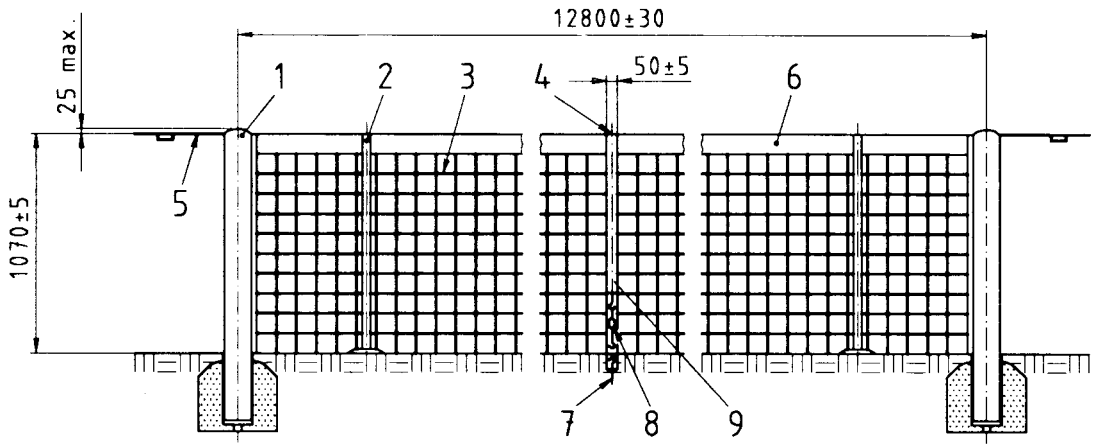
3.3.3 *Top net line*

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

NOTE. Plastics covering is acceptable.

3.3.4 *Top tape and net centre strap*

These can be made from synthetic or natural fibres.



All dimensions are in millimetres

1 post	6 top tape
2 single stick	7 floor anchorage (to secure the centre net adjuster)
3 net	8 adjuster
4 centre net adjuster	9 net centre strap
5 top net line	

Figure 1. Tennis equipment type 1

3.4 Design

3.4.1 *Net posts*

The net posts shall be not more than 150 mm square or not more than 150 mm in diameter.

The construction of the net posts shall be such that the top net line can be supported or guided at a height of 1 070 mm. One net post shall be provided with a tensioning device for the top net line, the other net post shall be provided with a guiding and fixing system for the top net line.

When tested in accordance with **5.2**, after removal of the test force, the net posts shall not be deformed permanently or show a deflection of more than 10 mm.

3.4.2 *Net*

The top tape shall be white. It shall have a folded depth of between 50 mm and 63 mm.

The top tape shall be sewn into the net by one of the following methods:

a) at least twice with synthetic thread of 50 N breaking force; or

b) once with synthetic thread of 100 N breaking force; or

c) it shall be provided with a fastening device, which is of at least equivalent strength.

The top net line shall have a diameter of not more than 8 mm.

The top net line shall be inserted into the top tape. The ends of the top net line shall be designed in such a way that they do not fray and so that they fit the appropriate tensioning and fixing devices.

The net shall be designed to completely fill the space between the posts, the top tape and the court surface. The net shall not be tensioned.

The mesh width shall be sufficiently small to prevent the ball from passing through.

Regarding the breaking forces of the net and its components the classes of table 2 shall be selected as appropriate.

3.4.3 *Centre net adjuster*

The centre net adjuster shall consist of the following components:

a) 1 net centre strap;

b) 1 adjuster;

c) 1 floor anchorage (for types 1 and 2; for type 3 appropriate to the bottom structure).

The net centre strap shall be white.

The adjuster shall be capable of adjusting the height of the net from 1 070 mm to 914 mm.

3.4.4 *Singles sticks*

Where a doubles net is used for singles play the net can be supported by two freestanding posts called singles sticks.

The single sticks shall maintain the top net line at the required height, while supporting the doubles net, when placed according to the rules of the game (see figure 1). A singles stick shall be not more than 75 mm square or in diameter. The height shall be not more than that of the posts.

3.4.5 *Ground sockets*

All ground sockets shall be resistant to corrosion.

4 Safety requirements

4.1 General

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

The floor anchorage shall not protrude to the court surface.

4.2 Tensioning devices

The tensioning devices shall be constructed in such a way that, when tested in accordance with **5.2**, they cannot start without control.

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

4.3 Net hooks

The open end of net hooks (if any) shall not be directed towards the court. The net hooks shall be constructed in such a way that they are not dangerous to the players.

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 Posts and tensioning devices

Set up the posts in position of use.

Place a steel wire (5 mm diameter) with a force transducer placed within into the position of use of the top net line.

Increase the tension of the tensioning device up to a force of 2 290 N.

Apply the force for 10 min at a temperature of (23 ± 2) °C.

5.3 Net

The components of the net shall be tested in accordance with table 3.

Table 3. Testing of net

Component	Test method
Net yarn	ISO 2062
Top net line	ISO 3108
Top tape	ISO 5081

6 Instructions for use

The tennis equipment shall be accompanied by instructions for use including at least the following information:

a) installation details;

b) assembly details covering method of adjustment and tensioning device;

c) correct fastening of the net;

d) maintenance details.

7 Marking

Tennis equipment according to this European Standard shall be marked with the following information:

a) the number of this European Standard EN 1510[1)];

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

c) type (net post);

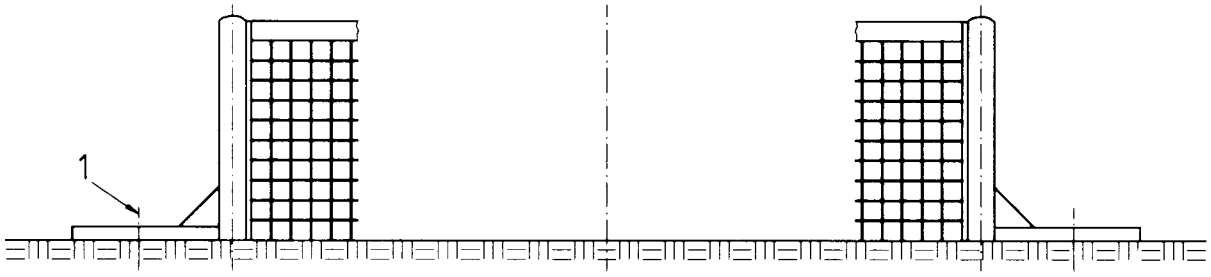
d) class of yarn.

NOTE. It should be noted that the rules of the International Tennis Federation (ITF) do not allow any advertisement on the net, the centre strap or singles sticks.

[1)] Marking EN 1510 on or in relation to a product represents a 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 claimant's responsibility. Such a declaration is not to be confused with third party certification of conformity, which may also be desirable.

Annex A (informative)

Examples of tennis equipment types 2 and 3



1 ground fixings

Figure A.1 Tennis equipment type 2

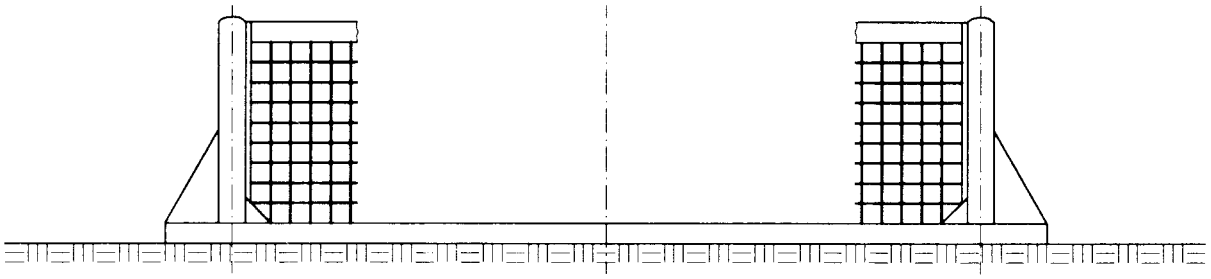
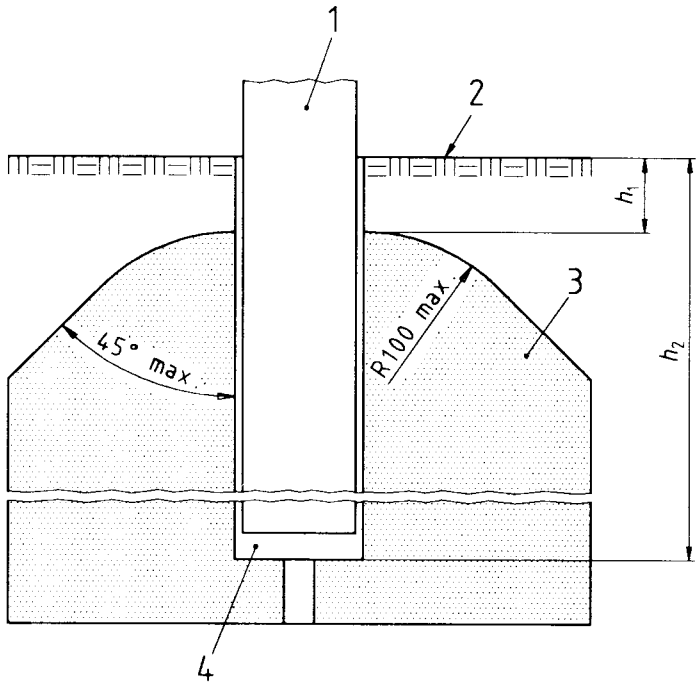


Figure A.2 Tennis equipment type 3

Annex B (informative)

Example of foundation



All dimensions are in millimetres

1 post
2 sport surface
3 concrete block
4 ground socket

Figure B.1 Foundation

Table B.1 Heights	
All dimensions are in millimetres	
Height	**post** (min.)
h_1	40
h_2	350

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