SLOVENSKI STANDARD
SIST EN 16664:2015

01-september-2015

Oprema športnih igrišč - Lahka nogometna vrata - Funkcionalne, varnostne zahteve in preskusne metode

Playing field equipment - Lightweight goals - Functional, safety requirements and test methods

Spielfeldgeräte - Leichtgewicht Tore - Funktionale, sicherheitstechnische Anforderungen und Prüfverfahren

Équipements de jeux - Buts légers - Exigences fonctionnelles, exigences de sécurité et méthodes d'essai

Ta slovenski standard je istoveten z: **EN 16664:2015**

ICS:

97.220.30	Oprema za dvoranske športe	Indoor sports equipment
97.220.40	Oprema za športe na prostem in vodne športe	Outdoor and water sports equipment

SIST EN 16664:2015 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16664

July 2015

ICS 97.220.30; 97.220.40

English Version

Playing field equipment - Lightweight goals - Functional, safety requirements and test methods

Équipements de jeux - Buts légers - Exigences fonctionnelles, exigences de sécurité et méthodes d'essai

Spielfeldgeräte - Leichtgewicht-Tore - Funktionale, sicherheitstechnische Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 27 May 2015.

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-CENELEC 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-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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

This document (EN 16664:2015) 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 January 2016, and conflicting national standards shall be withdrawn at the latest by January 2016.

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.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the functional and safety requirements and test methods for lightweight goals, which are classified in Clause 4.

This standard is not applicable to goals:

a) according to EN 748 (football);

b) EN 749 (handball);

c) EN 750 (hockey);

d) EN 1270 (basketball);

e) EN 15312 (free access multi-sports);

f) EN 13451-4 (water polo);

g) prEN 16579 (portable and fixed goals);

h) inflatable goals;

i) goals which are classified as toys under the responsibility of technical committees CEN/TC 52 "Safety of toys";

j) goals which are intended to move in use (e.g. rink hockey and roller hockey).

It is applicable to playing field goals used for training or recreational play, indoor and outdoor including educational and public establishments and recreational areas.

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.

EN 913:2008, *Gymnastic equipment - General safety requirements and test methods*

prEN 16579, *Playing field equipment - Portable and fixed goals - Functional, safety requirements and test methods*

EN ISO 1806, *Fishing nets - Determination of mesh breaking force of netting (ISO 1806)*

EN ISO 13938-1, *Textiles - Bursting properties of fabrics - Part 1: Hydraulic method for determination of bursting strength and bursting distension (ISO 13938-1)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 16579 and the following apply.

3.1
lightweight goal
mobile, conveniently portable goal, generally smaller and lighter versions, made stable by measures such as ballast or any other attachment fixture or by the design

3.2
lightweight goal frame
crossbar and uprights or similar design not necessarily rectangular, which form the lightweight goal mouth/opening and fitted, a ball catch net if fitted

Note 1 to entry: The goal frame can incorporate a net supporting system.

3.3
net fixings
attachments on the lightweight goal frame to which the net may be fixed

3.4
anchoring/ballast system
system intended to prevent the lightweight goal from tipping over or being blown away by wind load during normal use

Note 1 to entry: The anchoring/ballast system can be incorporated in the design or may be fixed separately.

3.5
intended use
purpose for which the lightweight goal has been designed by the manufacturer to be used in line with this standard

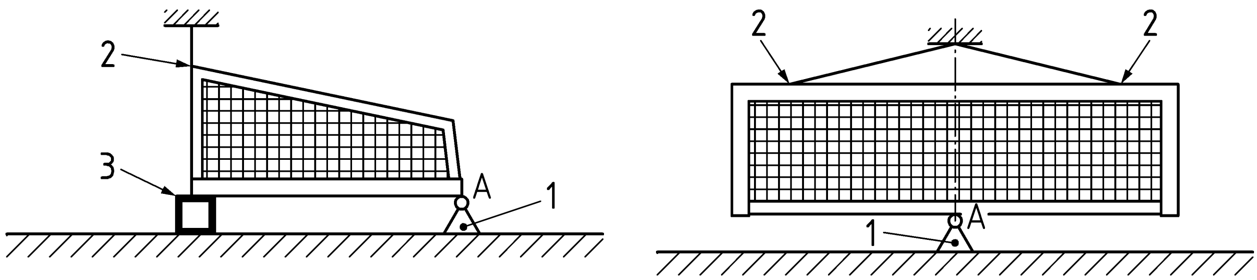
4 Classification

In order to be classified as a lightweight goal it shall meet the following criteria:

a) the total mass including the net, excluding any separate anchoring/ballast system, shall not exceed 10 kg;

b) when laid with the lightweight goal mouth/opening face to the ground (as shown in Figure 1) the total force exerted at point A shall not exceed 50 N. The lightweight goal is either supported or suspended in such a way that the maximum force exerted by the crossbar at the highest point is measured when the lightweight goal mouth/opening is horizontal to the ground.

NOTE The highest point is determined when the lightweight goal is assembled for normal use.



a) Side view b) Front view

Key

A measuring point

1 force measuring device capable of measuring with a precision equal to or better than ± 1 N

2 suspension system

3 supporting block (alternative)

Figure 1 — Example for measuring

5 Material

The selection of materials and their use shall be in accordance with the appropriate European Standards.

Further information for the selection of material is given in Annex C.

The materials should be selected so that potential hazards through direct contact with the skin can be avoided.

6 Requirements

6.1 Strength

The lightweight goal shall be tested in accordance with 7.1 and the lightweight goal frame shall not come apart break or collapse to create sharp, pointed fragments that no longer conform to 6.6.

6.2 Anchorage

Lightweight goals with a total mass exceeding 2 kg shall have at least one anchorage point/ballast system. The ballast shall be at least twice the weight of the lightweight goal.

6.3 Entrapment

Lightweight goals shall be designed and constructed so that, when assembled ready for use there shall be no crushing or shearing hazards between moving parts and/or fixed parts or risk of entrapment of finger, head and neck when assessed in accordance with the procedure given in EN 913:2008, Annex A with the additional requirements according to Annex A of this standard.

6.4 Net fixings

When tested according to 7.2 no visible fracture and/or permanent deformation shall occur at the net fixings and the net fixing shall not dislodge.

Any opening in the net fixing outside the profile of the lightweight goal frame shall not result in entrapment when tested in accordance with 6.3.

Metal cup hooks and metal spring cup hooks shall not be used as a means of fixing the net to the lightweight goal frame.

The spacing between net fixings shall not allow a ball for which the lightweight goal is intended to be used to pass and shall not create any entrapment when tested in accordance with 6.3.

6.5 Net

Net yarn shall have a minimum diameter of 2 mm to reduce the risk of cutting.

Net dimensions shall comply with the requirements of lightweight goal frame dimensions and the associated lightweight goal frame net supports, for which it is intended to be used.

The mesh size shall not allow a ball for which the lightweight goal is intended to be used to pass through nor create any head and neck entrapment when tested in accordance with 6.3.

The net shall meet at least the requirement for mesh breaking strength of Table 1.

Table 1 — Mesh breaking strength

Mesh type	Minimum value	Test method
open mesh	400 N	EN ISO 1806
close mesh	300 kPa	EN ISO 13938-1

6.6 Finish of equipment

The requirements of EN 913:2008, 5.1 shall be met, when assessed by visual inspection and measurement.

7 Test methods

7.1 Impact test

7.1.1 Test principle

The lightweight goal frame assembled as ready for use, with the net in place, is struck at a velocity of (1 ± 0,05) m/s by a soft body suspended from a pendulum, simulating an adult player running into the lightweight goal.

To simulate the worst case scenario, the lightweight goal is restrained by blocks placed on the ground behind the frame on the opposite side to the point of impact so that it cannot slide or tip over when impacted.

The lightweight goal is struck with a series of three single impacts, if the design permits (e.g. for products like given in Figure B.6 the side impact test cannot be carried out):

— First impact, horizontally from the side, impacting the top of the lightweight goal frame (see Figure 4);

— Second impact, horizontally from the front, impacting the centre of the crossbar or the highest point of the lightweight goal frame (see Figure 3);

— Third impact, perpendicular to the lightweight goal, impacting the top of the crossbar or the highest point of the lightweight goal frame (see Figure 5).

Following each impact the lightweight goal is examined for evidence of breakage or collapse and any such damage recorded.

Before conducting the next impact in the series, the restraints securing the lightweight goal should be checked and adjusted as necessary to resist impact from a different direction. If any parts of the lightweight goal have become loose or dislodged, but are otherwise undamaged, these should be re-fixed between impacts.

The test report shall record and fully describe any partial or total collapse of the lightweight goal; and/or any evidence of breakage of any component of the lightweight goal.

7.1.2 Test set up

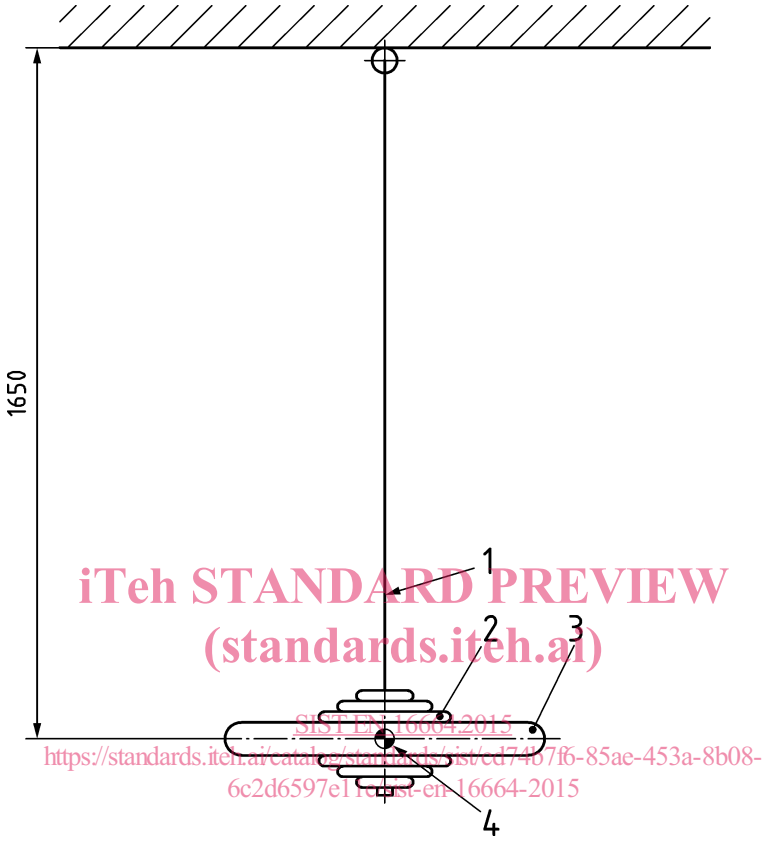
The soft body impactor (see Figure 2) comprises a pneumatic rubber trailer tyre or equivalent, size ca. 508 mm (20 inches), 203 mm (8 inches) wide, mounted on a ca. 254 mm (10 inches) rim, inflated to a pressure of (200 ± 10) kPa [(2,0 ± 0,1) bars], suspended on a rigid pendulum such that the distance from the point of suspension to the centre of the edge of the tyre is (1 650 ± 100) mm.

The total mass of the impactor is adjusted to be (75 ± 0,1) kg by the use of supplementary weights, evenly positioned on either side of the tyre such that the centre of gravity of the total mass of the impactor (include pendulum device) lies on the centre-plane of the tyre.

The pendulum is raised to the angle necessary to create an impact velocity of (1,0 ± 0,05) m/s.

NOTE From the formula: $V = \sqrt{2gL(1-\cos\theta)}$, by releasing the pendulum whose length (*L*) is 1,65 m from an angle of 14,3º to the vertical, the Velocity (*V*) at the point of impact is 1,0 m/s .

Dimensions in millimetres



Key

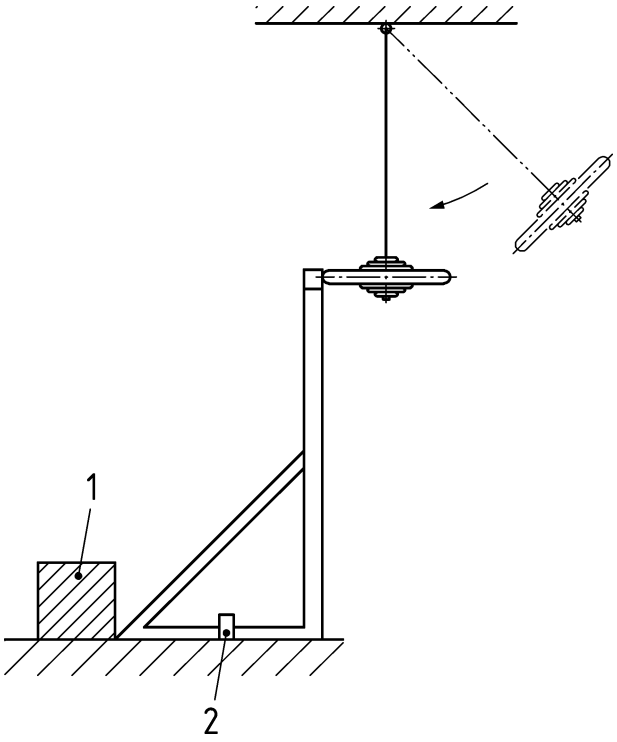
1 impactor freely suspended trough a rigid connecting device

2 supplementary weights to total 75 kg

3 pneumatic tyre

4 centre of gravity of impactor

Figure 2 — Soft body impactor

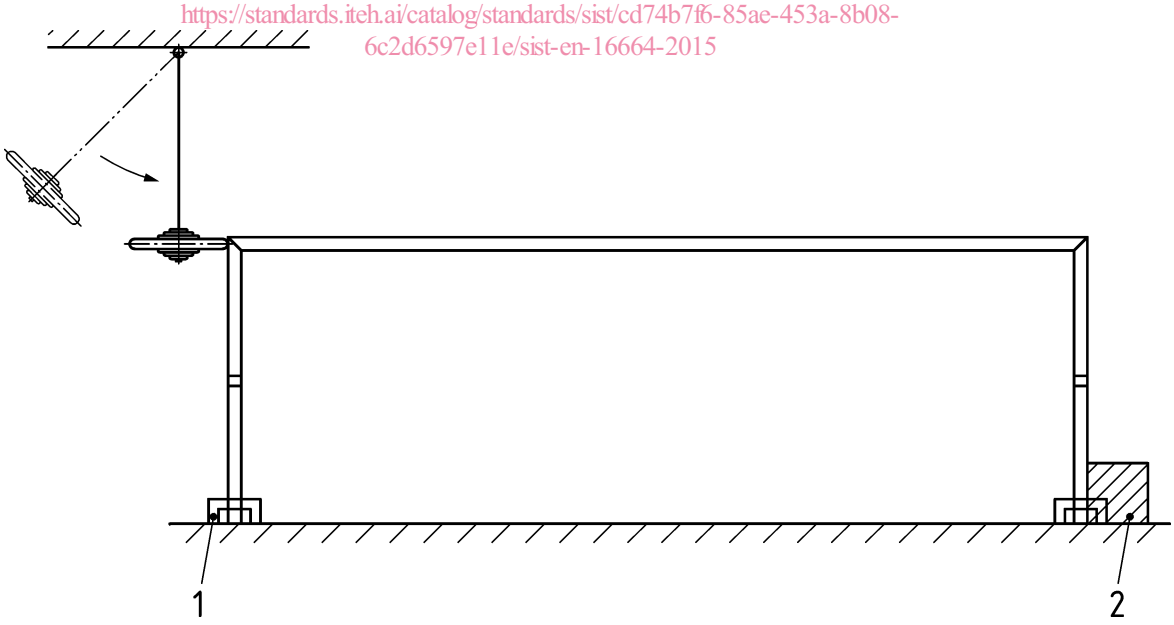


Key

1 additional restraint

2 any anchoring/ballast system normally supplied

Figure 3— Front impact test at centre of crossbar



Key

1 any anchoring/ballast system normally supplied

2 additional restraint to prevent movement

Figure 4 — Side impact test