



SLOVENSKI STANDARD
SIST EN 15301-1:2007

01-junij-2007

Podloge za športne dejavnosti – 1. del: Ugotavljanje odpornosti proti vrtenju

Surfaces for sports areas - Part 1: Determination of rotational resistance

Sportböden - Teil 1: Bestimmung des Drehwiderstandes

Sols sportifs - Partie 1 : Détermination de la résistance en rotation

Ta slovenski standard je istoveten z: EN 15301-1:2007

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ICS:

97.220.10 Športni objekti Sports facilities

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ICS 97.220.10

English Version

Surfaces for sports areas - Part 1: Determination of rotational resistance

Sols sportifs - Partie 1 : Détermination de la résistance en rotation

Sportböden - Teil 1: Bestimmung des Drehwiderstandes

This European Standard was approved by CEN on 10 February 2007.

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.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 15301-1:2007) has been prepared by Technical Committee CEN/TC 217 "Surfaces for sports areas", the Secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by September 2007, and conflicting national standards shall be withdrawn at the latest by September 2007.

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 United Kingdom.

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1 Scope

This part of EN 15301 specifies methods for determining the rotational resistance of sports surfaces.

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 12229, *Surfaces for sports areas - Procedure for the preparation of synthetic turf and needle-punch test pieces*

3 Principle

The force required to initiate rotational movement of a test sole in contact with the sports surface being tested is measured.

4 Apparatus

4.1 The apparatus shall consist of the following components (see Figure 1).

- Test foot, comprised of a steel disc (150 ± 2) mm in diameter to which the appropriate test sole is mounted.
- Shaft with attached lifting handles that are centrally attached to the centre of the studded disc.
- Two-handled mechanical torque wrench with a scale marked from 0 Nm to 80 Nm in a maximum of 2 Nm increments, that attaches to the top of the shaft.
- Set of annular weights that rest centrally on the upper surface of the studded disc allowing free movement of the disc beneath the weights. The total mass of the apparatus (test foot, shaft, torque wrench and weights) shall be (46 ± 2) kg.
- Tripod and guide to minimize any lateral movement of the test foot during testing. The tripod shall not restrict the free rotation of the shaft and the guide shall incorporate a means of holding and dropping the weighted test foot onto the test specimen from a height of (60 ± 5) mm.

4.2 The test sole shall be as specified in the product specification. Standard test soles are as follows:

- a) Football stud test sole;

Six football studs¹ equally spaced on the bottom surface of the test foot (46 ± 1) mm from the centre of the disc. The studs shall be as shown in Figure 2, be manufactured from plastic and have a Shore A hardness of (96 ± 2) .

¹ 13 mm nylon studs supplied by Decathlon Group are an example of suitable products available commercially. This information is given for the convenience of users of this European Standard and does not constitute an endorsement by CEN of this product.

b) Smooth rubber sole;

Smooth rubber disk (150 ± 2) mm in diameter and at least 5 mm thick. The rubber shall be as given in Table 1.

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Table 1 — Properties of smooth rubber test sole

Property	Temperature °C				
	0	10	20	30	40
Lübke Resilience (%)	43 to 49	58 to 65	66 to 73	71 to 77	74 to 79
Hardness (IRHD)	53 to 65				
NOTE The rubber composition given in Annex B of EN 13036-4:2003 has been found to be satisfactory.					

c) Dimpled rubber sole²⁾.

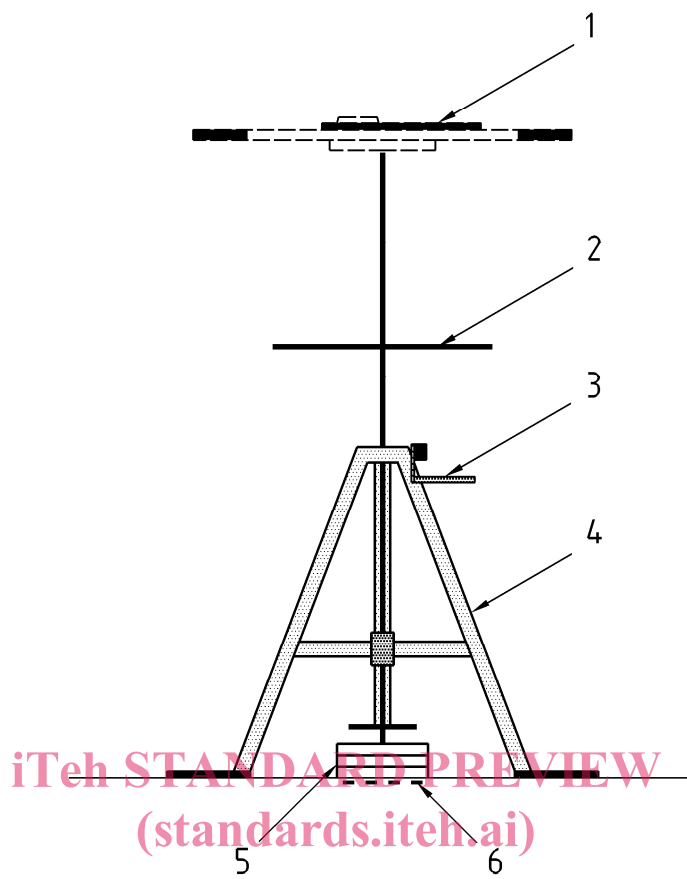
Rubber disk (150 ± 2) mm in diameter with a profile comprised of 55 dimples (studs) positioned as shown in Figure 3. Each dimple shall be (6 ± 1) mm in length and (9 ± 1) mm in depth. The rubber used to form the test foot shall be as given in Table 2.

Table 2 — Properties of dimpled rubber test sole

Property	Temperature °C		
	5	23	40
Lübke Resilience (%)	19 to 23	21 to 26	26 to 30
Hardness (IRHD)	94 to 98		

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2) The dimpled rubber sole is specifically manufactured for testing sports surfaces by Rapra Technology Ltd, Shawbury, Shropshire SY4 4NR, United Kingdom. This information is given for the convenience of the users of this European Standard and does not constitute an endorsement of this product by CEN.



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Key

- 1 dial indicating torque wrench
- 2 lifting handles
- 3 release mechanism
- 4 tripod
- 5 weights
- 6 test foot

Figure 1 — Test apparatus