BRITISH STANDARD

BS EN
1969:2000

Surfaces for sports areas — Determination of thickness of synthetic sports surfaces

The European Standard EN 1969:2000 has the status of a British Standard

ICS 97.150; 97.220.10

National foreword

This British Standard is the official English language version of EN 1969:2000.
EN 1969:2000 is one of a package of standards being produced by CEN/TC 217. On publication of the entire package, BS 7044 will be superseded and withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/57, Surfaces for sports areas, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 4, an inside back cover and a back cover.

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EN 1969

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English version

Surfaces for sports areas — Determination of thickness of synthetic sports surfaces

Sols sportifs — Détermination de l'épaisseur des sols sportifs synthétiques

Sportböden — Bestimmung der Dicke von Kunststoffbelägen

This European Standard was approved by CEN on 4 December 1999.

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CEN

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

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

Ref. No. EN 1969:2000 E

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 217, Surfaces for sport 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of an identical text or by endorsement, at the latest by July 2000, and conflicting national standards shall be withdrawn at the latest by November 2002.

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1 Scope

This European Standard specifies two methods for the determination of the thickness of synthetic surfaces for sports areas, suitable for use in the laboratory and in-situ.

Method A, a destructive test method, is intended for use:

— where the thickness needs to be measured to an accuracy of ±0,1 mm;

— when the thickness of different layers is to be determined.

Method B, a non-destructive test method, is intended for use as a routine check on thickness, e.g. for control purposes or when surveying a large area of synthetic surfacing. It gives measurements to an accuracy between ±0,5 mm and ±1,5 mm, depending upon the texture.

2 Apparatus

2.1 Method A

2.1.1 *Plane reference plate*

2.1.2 *Thickness gauge*, with a 0,01 mm accuracy dial, a plunger with a flat measuring surface of 4 mm ± 0,1 mm diameter and a measurement force between 0,8 N and 1,0 N.

2.2 Method B

2.2.1 *Thickness measuring probe*, comprising three flat-ended, steel probes, circular in section, approximately 2 mm in diameter, set in a triangular pattern between 15 mm and 20 mm apart, which can be driven into a surface under test in such a manner that the minimum depth of penetration from the upper surface of the material under test can be measured by means of a sliding, calibrated barrel, having a flat circular base of 25 mm to 30 mm in diameter (see Figure 1).

Dimensions in millimetres

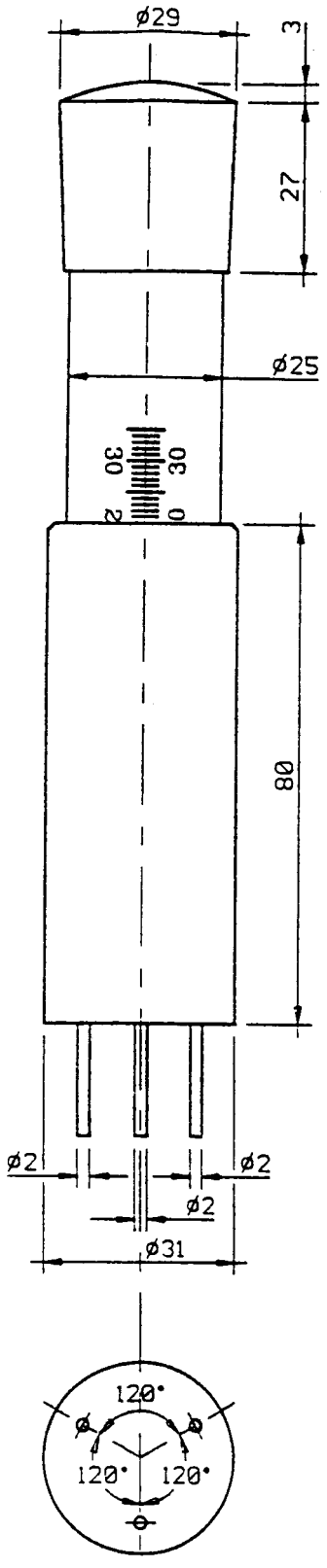

Figure 1 — Example of an apparatus to measure thickness by method B

3 Test specimens for method A

3.1 Preparation

Remove a core of diameter 20 mm to 25 mm from the surface. If necessary, gently abrade the upper and lower surfaces of the core with grade 60 abrasive paper until the surface area ground is approximately 50 % of the total surface area.

3.2 Number of test specimens

Prepare a minimum of five test specimens.

4 Procedure

4.1 Test conditions

Unless stated otherwise in the manufacturer's specification, carry out the tests at 23 °C ± 2 °C and 50 % ± 5 % relative humidity.

4.2 Method A

4.2.1 *Total thickness*

Set the plunger of the thickness gauge directly on the plane reference plate. Record the reading on the dial (zero reading). Place the prepared core between plunger and plate. Record the reading on the dial (measurement reading 1).

4.2.2 *Layer thickness*

Gently abrade the top layer with grade 60 abrasive paper until approximately 50 % of the bottom layer is visible. Replace the core between plunger and plate and record the reading on the dial (measurement reading 2).

4.3 Method B

4.3.1 Force the thickness measuring probe into the surface under test, using hand pressure, until one or more of the steel probes comes into contact with the substrate.

NOTE Care is required when testing surfaces installed over macadam or asphalt, to ensure that the probes do not penetrate any soft areas or voids in the substrate.

Without moving the probes, adjust the sliding barrel until it is in contact with the upper surface of the surface under test, and read off the thickness from the calibrated barrel.

4.3.2 If necessary, make allowance for any surface texture which may be present by laying a reference sample with an identical surface texture over a steel plate, placed adjacent to the test area, and measure the thickness as given in **4.3.1**. Remeasure the thickness of the reference sample as given in **4.2**.

5 Calculation and expression of results

5.1 Method A

Calculate the total thickness and layer thickness of each test specimen as follows:

Total thickness:

Total thickness, in millimetres, is given by measurement reading 1 minus zero reading.

Layer thickness:

Layer thickness, in millimetres, is given by total thickness minus measurement reading 2.

Express the results to the nearest 0,1 mm.

5.2 Method B

Where necessary, apply the following correction factor to all individual measurements:

Correction factor, in millimetres, is given by thickness of the reference sample using method B, in millimetres, minus thickness of the reference sample using method A, in millimetres.

Express results to the nearest 0,5 mm.

6 Test report

The test report shall contain the following:

a) the number and date of this European Standard, i.e. prEN 1969:1999;

b) the nature and designation of the material including, for in-situ measurements, a plan of the testing sites;

c) the test conditions, including site weather conditions for in-situ measurement;

d) the individual test results and their average;

e) the date of the test and the reference number.

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