



SLOVENSKI STANDARD
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Podloge za športne dejavnosti - Sistemi večnamenskih podlog za notranjo uporabo - 2. del: Specifikacije

Surfaces for sports areas - Multi-sports floor systems for indoor use - Part 2: Specifications

Sportböden - Mehrzweck-Sporthallenböden - Teil 2: Anforderungen

Sols sportifs - Systèmes de sols multi-sports pour utilisation en intérieur - Partie 2 : Spécifications

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Surfaces for sports areas - Multi-sports floor systems for indoor use - Part 2: Specifications

Sols sportifs - Sols multi-sports intérieurs - Partie 2 :
Spécifications

Sportböden - Mehrzweck-Sporthallenböden -
Anforderungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 217.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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prEN 14904-2:2017 (E)**European foreword**

This document (prEN 14904-2:2017) has been prepared by Technical Committee CEN/TC 217 “Surfaces for sports areas”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document, together with prEN 14904-1 and prEN 14904-3, will supersede EN 14904:2006.

The following significant technical changes have been implemented in this new edition:

- Splitting the former document in 3 parts, this part being related to etc.
- Annex D “Measuring points on sample”
- Annex F “Described system of AVCP related to CE marking”

EN 14904 consists of the following parts, under the general title *Multi-sports floor systems for indoor use*:

- *Part 1: Essential characteristics*
- *Part 2: Specifications*
- *Part 3: In situ testing*

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Introduction

This European Standard is the first revision of EN 14904 which was first published in 2006. This part 2 or the revised standard provides performance criteria, which need to be considered for a sports floor system that is to be used for one or more than one sport and appropriate test methods by which these Characteristics should be measured.

The part 1 of this European Standard details performance criteria for essential characteristics, as mandated by CEN for essential characteristics of multi-sports floors.

When setting the various performance criteria detailed within the standard, the needs of Volleyball, Basketball, Badminton, Small sided Football, Handball and Physical Education were prioritized. Whilst the performance criteria are applicable when one or more sports are played on a sports floor system, it was also felt that if a facility was to be used for just one of the five aforementioned sports then this standard would also be applicable. However, this standard may not be appropriate for single sport centres designed for specialist sports such as Tennis or Cricket as some of the performance criteria (such as shock absorption and angle ball rebound) are not appropriate nor are some of the test methods.

When independent third party testing of indoor multisport- surfaces is required to assess compliance it is recommended that the laboratory complies with EN ISO/IEC 17025 for the tests specified in the standard. It should also be noted that the performance criteria and test methods within this standard are not appropriate for Synthetic Turf or Textile surfaces when used indoors as these types of products would not usually be considered as suitable for a multi-sport facility nor for the playing of the specified sports listed above. Appropriate standards for these types of products are currently being developed.

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prEN 14904-2:2017 (E)**1 Scope**

This European Standard specifies requirements not covered by part 1 of this standard for multi-sports floor systems designed for use in indoor sport halls and gymnasia.

This European Standard also applies to single sport facilities designed for the following sports: volleyball, basketball, badminton, small sided football, and handball.

NOTE 1 Physical education is considered as a multisport use.

NOTE 2 Part 1 covers essential requirements (as defined in regulation EU N° 305/2011) for multi-sports floor systems designed for use in indoor sport halls and gymnasia.”

This European Standard does not apply to synthetic turf or textile surfaces used indoors...

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 1516, *Surfaces for sports areas - Determination of resistance to indentation*

EN 1517, *Surfaces for sports areas - Determination of resistance to impact*

EN 12235, *Surfaces for sports areas - Determination of vertical ball behaviour*

EN 13745, *Surfaces for sports areas - Determination of specular reflectance*

EN 14809, *Surfaces for sports areas - Determination of vertical deformation*

prEN 14904-1, *Surfaces for sports areas - Multi-sports floor systems for indoor use - Part 1: Essential characteristics*

EN ISO 2813, *Paints and varnishes - Determination of gloss value at 20°, 60° and 85° (ISO 2813)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 14904-1 apply.

4 Installation and maintenance instructions

A technical datasheet, installation guide and cleaning/maintenance instructions for the sports floor system shall be provided by the producer or system house of the sports floor system to ensure that it is installed and maintained properly to guarantee the characteristics declared.

5 Requirements**5.1 General**

These are additional characteristics for sports floor systems which are not covered by EN 14904 part 1 that covers the essential characteristics.

NOTE 1 This section describes testing to be carried out in a laboratory.

NOTE 2 Examples of classification of sports floor types are describes in Annex A.

Rotational slip resistance may be assessed as in Annex C.

5.2 Vertical ball behaviour

When tested by the method described in EN 12235 using a basketball, the mean relative rebound height shall be $\geq 90\%$ of the rebound height on concrete and no individual result shall differ from the mean by more than ± 3 units. No individual value should be under 90% .

5.3 Vertical deformation

When tested by the method described in EN 14809, the vertical deformation of sport floor systems shall not exceed 5,0 mm for every single value.

NOTE Information on typical vertical deformation values for sports floor systems is given in Annex B.

5.4 Specular reflectance

Where required, the specular reflectance of the sport floor covering shall be measured using the method described in EN 13745, using an angle of 85° , and the mean value obtained shall be reported.

5.5 Specular gloss

When tested by the method described in EN ISO 2813 using an angle of incidence of 85° , matt sport floor coverings shall have a specular gloss $\leq 30\%$ and lacquered sport floor coverings a specular gloss $\leq 45\%$.

5.6 Resistance to indentation

When tested by the method described in EN 1516, the mean residual indentation of the sport floor system, measured 5 min after removal of the load, shall be reported and the mean residual indentation measured 24 h after removal of the load shall be $\leq 0,5$ mm.

- For the area-elastic sport floor system only its covering, supported on a rigid structure, shall be tested.
- For the combined elastic sport floor system only its point elastic component, supported on a rigid structure, shall be tested

5.7 Resistance to impact

Two procedures are set up:

- Procedure A: temperature of the conditioning is 70°C .
- Procedure B: temperature of the conditioning is 50°C .

The choice of the procedure is the decision of the manufacturer.

The choice of procedure A or B shall be mentioned along with result.

Combined-elastic sport floor systems shall be tested as follows:

- ageing of the point elastic component only;
- to be tested either on the supporting area elastic system or on a rigid floor.

Area-elastic sport floor systems shall be tested as follows:

- ageing of the sports floor covering only;
- to be tested either on the supporting area elastic system or on a rigid floor.

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Parquet/wood/composition wood block are tested as follows

- the whole system shall be tested without ageing at a temperature of (23 ± 2) °C.

After conditioning point elastic and mixed elastic products for 14 days at a temperature of (50 ± 1) °C or (70 ± 1) °C and then testing by the method described in EN 1517 at a test temperature of (10 ± 1) °C using an indenter with a mass of 800 g, there shall be no perceivable cracking, splitting, delamination or permanent indentation of the test piece except for wood sport floors for which the indentation shall not exceed 0,5 mm.

NOTE Information on resistance to repeated impact of synthetic floors is given in Annex C.

6 Preparation of the sample

The position of the system testing spots (as shown in Annex E) (at least 5) is depending on the appropriate sports floor construction and should cover all constructive elements. The positions fixed should be described by wording and for area elastic and combined elastic sports floor in addition shown in a drawing (scheme of the construction). This positioning is requested for tests described in Annex D.

a) area elastic sports floor

- all constructive elements (if appropriate) e.g. joints in the load distribution plate, between sleepers, on sleepers, between pads, on pads, etc. shall be considered;

b) point elastic sports floor

- in the joint free positions;
- on the length and T -joints of each layer including the fabric and the top layer (where they exist);

c) combined elastic sports floor

- all constructive elements of the area-elastic part (where they exist) as i.e. joints in the load distribution plate, between sleepers, on sleepers, between pads, on pads, etc. shall be considered as well as any specific elements of the point-elastic part where they exist;

d) mixed elastic sports floor

- in the joint free positions;
- on the length and T-joints of each layer including the fabric.

7 Laboratory Test reports

This clause defines the content of the test reports, which describe the additional characteristics (technical) to be met by sports floor systems The laboratory test reports shall contain the following information:

- a) number and date of this European Standard, i.e. EN 14904-2:201X;
- b) name of the client;
- c) client 's product name or product code and type of floor;
- d) test period dates and date of the report;

- e) complete description of the sport floor, including dimensions and identifying information about the single parts/components used, identification information (material type, mass, thickness, density, etc.);
- f) drawings or pictures of the construction;
- g) description of the position of the system testing spots;
- h) results of the tests relevant to the type of sport floor system being tested;
- i) statement of compliance or failure for each property measured;
- j) list of any properties not measured that are applicable for the type of sport floor system tested;
- k) humidity and temperature of the floor and ambient air temperature for the different tests run.
- l) measurement uncertainties for each test.

8 Marking and labelling

Sport floor systems which conform to the requirements of this European Standard shall be clearly and indelibly marked by the manufacturer either on an adhesive label or on their packaging or in their accompanying documents with at least the following information:

- a) number and the year of this European Standard, i.e. EN 14904-2:201X;
- b) manufacturer's or supplier's identification;
- c) product name and batch number (possibly in code form).

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