

**SLOVENSKI STANDARD**  
**oSIST prEN 14904-3:2017**  
**01-julij-2017**

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**Podloge za športne dejavnosti - Sistemi večnamenskih podlog za notranjo uporabo - 3. del: Preskušanje na mestu samem**

Surfaces for sports areas - Multi-sports floor systems for indoor use - Part 3: In-situ testing

Sportböden - Mehrzweck-Sporthallenböden - Teil 3: In-situ-Prüfung

Sols sportifs - Systèmes de sols multi-sports pour utilisation en intérieur - Partie 3 : Essais sur site

**Ta slovenski standard je istoveten z: prEN 14904-3**

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**ICS:**

97.220.10      Športni objekti      Sports facilities

**oSIST prEN 14904-3:2017**      **en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 14904-3**

May 2017

ICS 97.220.10

Will supersede EN 14904:2006

English Version

## Surfaces for sports areas - Multi-sports floor systems for indoor use - Part 3: In-situ testing

Sols sportifs - Sols multi-sports intérieurs - Partie 3:  
Essais sur site

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.

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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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## European foreword

This document (prEN 14903-3:2017) 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 14904-2, will supersede EN 14904:2006.

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 standard specifies procedures for *in situ* testing for verification of some properties (defined in EN 14904-1 and EN 14904-2) which need to be considered for a sports floor system that is to be used for one or more than one sport.

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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## 1 Scope

This European Standard specifies *in situ* requirements for verification of performance following installation of a multi-sports floor system 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.”

NOTE 3 Other requirements for multi-sports floor systems designed for use in indoor sport halls and gymnasia are specified in part 2 of this standard.

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.

prEN 16837, *Surfaces for sport areas* Determination of linear shoe/surface friction

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

EN 13036-7, *Road and airfield surface characteristics - Test methods - Part 7: Irregularity measurement of pavement courses : the straightedge test* <https://standards.iteh.ai/catalog/standards/sist/7bfl167d-dc1a-41eb-a3ed-2239612a9770/iso-13036-7-2017>

EN 14808, *Surfaces for sports areas - Determination of shock absorption*

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

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

## 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

Before tested, the sport floor system should be cleaned according to cleaning/maintenance instructions provided by the producer or system house of the sports floor system

## 5 Requirements for site testing

### 5.1 General

The producer or system house shall declare the range temperature and humidity over which the product will satisfy the requirements of the standard.

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The sports floor system shall comply when tested on site within the temperature and humidity range defined by the producer or system house provided that the sports floor system is installed, used and maintained in accordance with their instructions as described in introduction.

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.

**5.2 Requirements on site****5.2.1 General**

NOTE Rotational slip resistance on site can be done according to Annex A.

**5.2.2 Linear friction**

When tested by the method 1 described in prEN 16837 under dry conditions, the sports floor covering shall have a value of linear friction between 80 and 115.

And any position shall not differ from the mean by more than  $\pm 5$  units. No individual test result shall be outside of the specified range.

A minimum of 3 tests positions randomly distributive over the test floor shall be tested for the initial 500 m<sup>2</sup> plus one further measurement per 500 m<sup>2</sup> or part thereof

The floor should be cleaned in line with the manufacturer's/system house's recommendations before carrying out any Friction tests.

**5.2.3 Shock absorption**

When tested by the method described in EN 14808, a minimum of 5 tests positions randomly distributive over the test floor shall be tested for the initial 500 m<sup>2</sup> plus one further measurement per 500 m<sup>2</sup> or part thereof.

The mean shock absorption of the sport floor system shall be between 25 % and 75 % and no individual result shall differ from the mean by more than  $\pm 5$  units.

NOTE The ranges of typical values for different sport floor systems are given in prEN 14904-2:2017, Annex B.

**5.2.4 Vertical ball behaviour****5.2.4.1 General**

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  $\pm 3$  units. No individual value should be under 90 %.

A minimum of 5 tests positions randomly distributive over the test floor shall be tested for the initial 500 m<sup>2</sup> plus one further measurement per 500 m<sup>2</sup> or part thereof.

NOTE The ranges of typical values for different sport floor systems are given in prEN 14904-2:2017, Annex B.

**5.2.4.2 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.

A minimum of 5 tests positions randomly distributive over the test floor shall be tested for the initial 500 m<sup>2</sup> plus one further measurement per 500 m<sup>2</sup> or part thereof.

NOTE Information on typical vertical deformation values for sports floor systems is given in prEN 14904-2:2017, Annex B.



### 5.2.5 Degree of evenness of the installed sport floor system

When tested by the method described in EN 13036-7 over the playing area, including safety zones and out-runs, the greatest distance between the straight edge and the sport floor surface shall not exceed 2 mm over a measuring distance of 0,3 m and shall not exceed 6 mm over a measuring distance of 3 m.

When the measuring distance of the straight edge is greater than 0,3 m and less than 3 m the distance between the straight edge and the sport floor has to be linearly interpolated between 2 mm and 6 mm according to the distance of the straight edge.

The requirement for the substrate should be in accordance with the sports floor manufacturer recommendation.

### 5.3 Positioning of test apparatus on site

Test locations shall be selected to represent areas of high, medium and low use.

## 6 Test reports

### 6.1 General

This clause defines the content of the test reports when measurements are made on site.

### 6.2 *In situ* test report

The test report shall contain the following information:

- a) number and date of this European Standard, i.e. EN 14904-3:201X;
- b) name of the client;
- c) product code if known and type of floor;
- d) test period dates and date of the report;
- e) description of the Sport floor system tested as far as possible and its condition at the time of test;
- f) the name and location of the facility tested;
- g) temperature of the floor surface, air humidity and ambient air temperature for the different tests run;
- h) description of the test positions;
- i) the date of installation if known;
- j) results of the tests relevant to the type of surface being tested;
- k) statement of compliance when compared to manufacturer declaration for each property measured if the customer requires it;
- l) measurement uncertainties for each test.

## **Annex A** (informative)

### **Rotational slip resistance**

When tested by the method described in prEN 14903 using dry conditions at a temperature of  $(23 \pm 2) ^\circ\text{C}$  typical values for the coefficient of friction for Sports floor covering are between 0,4 units and 0,7 units.

Tests at site may be performed according to the general descriptions in Clause 5.

At least 3 test spots for rotational friction measurement shall be made.

The temperature and humidity during test can be recorded.

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