



SLOVENSKI STANDARD
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Podloge iz umetnih snovi za zunanje športne dejavnosti - Specifikacija

Synthetic surfaces for outdoor sports areas - Specification

Kunststoffflächen auf Sportanlagen im Freien - Anforderungen

Sols synthétiques pour installations de sport en plein air - Spécification

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Ta slovenski standard je istoveten z: EN 14877:2006

[SIST EN 14877:2006](https://standards.iteh.ai/catalog/standards/sist/59587f20-cda7-4c85-9a83-b4aa95ebf74d/sist-en-14877-2006)

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English Version

Synthetic surfaces for outdoor sports areas - Specification

Sols synthétiques pour installations de sport en plein air -
Spécification

Kunststoffflächen auf Sportanlagen im Freien -
Anforderungen

This European Standard was approved by CEN on 16 March 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, 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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Foreword

This document (EN 14877:2006) 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of an identical text or by endorsement, at the latest by October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 document specifies requirements for synthetic surfaces (placed in situ and prefabricated) for outdoor sports facilities. It covers synthetic surfaces for the following applications:

- athletics, track and field;
- tennis;
- multi-sports.

It also covers surface systems which include both their supporting and upper layers whether prefabricated, produced in situ or a combination of the two.

NOTE 1 Examples of types of surface and their fields of application are given in Annex A, general recommendations and information regarding requirements in Clauses 4 and 5 are given in Annex B and recommendations for the finished surface are given in Annex C.

NOTE 2 "Multi-sports" will be defined by appropriate national provisions.

NOTE 3 Requirements for the thickness of the surface are specified in 5.1, which means that this European Standard is not applicable to certain coatings used for sports surfaces.

2 Normative references

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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.

[SIST EN 14877:2006](https://standards.iteh.ai/catalog/standards/sist/59587f20-cda7-4c85-9a83-b4a9fcb7443c/en-14877-2006)

[https://standards.iteh.ai/catalog/standards/sist/59587f20-cda7-4c85-9a83-](https://standards.iteh.ai/catalog/standards/sist/59587f20-cda7-4c85-9a83-b4a9fcb7443c/en-14877-2006)

EN 1969, *Surfaces for sports areas — Determination of thickness of synthetic sports surfaces*

EN 13036-4, *Road and airfield surface characteristics — Test methods — Part 4: Method for measurement of slip/skid resistance of a surface — The pendulum test*

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

EN 13865, *Surfaces for sports areas — Determination of angled ball behaviour - Tennis*

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

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

EN 14810, *Surfaces for sports areas — Determination of spike resistance*

EN 14836, *Synthetic surfaces for outdoor sports areas — Exposure to artificial weathering*

EN ISO 5470-1, *Rubber- or plastics-coated fabrics — Determination of abrasion resistance — Part 1: Taber abrader (ISO 5470-1:1999)*

EN ISO 20105-A02, *Textiles – Tests for colour fastness – Part A02: Grey scale for assessing change in colour (ISO 105-A02:1993)*

3 Term and definition

For the purposes of this document, the following term and definition applies.

3.1

multi-sports facilities

facilities where more than one sport is played on the surface

NOTE These facilities normally enable sports such as handball, basketball, volleyball, small sided football to be played, and they can also be used for physical education and many other sporting activities.

4 Requirements for safety in use

4.1 General

For athletics surfaces the requirements in 4.3 to 4.5 shall apply within the temperature range 10 °C to 40 °C. For type approval purposes, tests shall be carried out with the sample at (10^{+2}_0) °C, (23 ± 2) °C and (40_{-2}^0) °C.

For type approval purposes, tests on surfaces for multi-sports and tennis shall be carried out with the sample at (23 ± 2) °C.

Site tests on all synthetic surfaces shall be carried out with the surface temperature in the range 10 °C to 40 °C.

4.2 Friction

When determined in accordance with EN 13036-4, dry and wet at a temperature of (23 ± 2) °C, using the CEN rubber, the mean of the Pendulum Test Value shall be between 55 and 110 and no individual test result shall differ from the mean by more than four units. The verification test described in EN 13036-4 shall be carried out under dry conditions.

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4.3 Shock absorption

When determined in accordance with EN 14808, the force reduction shall be as given in Table 1.

Table 1 — Shock absorption

Athletics		Tennis		Multi-sports	
Force reduction in %					
	Type ^a		Type		Type
25 to 34	SA 25 to SA 34	≤ 10	SA ≤ 10	25 to 34	SA 25 to SA 34
35 to 50	SA 35 to SA 50	11 to 19	SA 11 to 19	35 to 44	SA 35 to SA 44
51 to 60	SA 51 to SA 60	≥ 20	SA ≥ 20	45 to 60	SA 45 to SA 60

^a The type is the lowest category achieved following tests at the three temperatures given in 4.1.

4.4 Vertical deformation

When determined in accordance with EN 14809, the vertical deformation shall be as given in Table 2.

Table 2 — Vertical deformation

Athletics	Multi-sports	Tennis
in mm		
≤ 3	≤ 6	≤ 3

4.5 Vertical ball behaviour

When determined in accordance with EN 12235 the relative rebound height shall be as given in Table 3.

Table 3 — Vertical ball behaviour

Athletics	Multi-sports ^a	Tennis ^b
Relative rebound height in %		
-	≥ 80	
^a Using a basketball. ^b Using a tennis ball.		

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4.6 Angled ball behaviour for tennis [SIST EN 14877:2006](#)

<https://standards.iteh.ai/catalog/standards/sist/59587f20-cda7-4c85-9a83-b4d05b1710/sist-en-14877-2006>

When determined in accordance with EN 13865 the tennis coefficient shall be as given in Table 4 for the appropriate surface.

Table 4 — Angled ball behaviour

Speed of surface	Tennis coefficient
Slow	≤ 29
Medium slow	30 to 34
Medium	35 to 39
Medium fast	40 to 44
Fast	≥ 45

5 Material characteristics

5.1 Thickness of the surface

When determined in accordance with EN 1969, the thickness shall be as given in Table 5.

Table 5 — Thickness of the surface

Athletics ^a	Multi-sports ^a	Tennis
Thickness in mm		
≥ 10 ^{b,c}	No requirement ^d	≥ 3
<p>^a The thickness of the installed surface should nowhere differ by more than 3 mm from the thickness at which a type approval test was carried out.</p> <p>^b Thickness for triple jump run up ≥ 20, pole vault, javelin, high jump take-off areas ≥ 20, water jump landing areas ≥ 30.</p> <p>^c To achieve a minimum thickness of 10 mm, the design depth should be 13 mm.</p> <p>^d Many physical properties depend on the thickness of the layer. Reference should be always made to the thickness at which type approval tests were carried out.</p>		

5.2 Water permeability

When determined in accordance with EN 12616, the water infiltration rate for all synthetic surfaces designed to be permeable shall be at least 150 mm/h upon installation.

5.3 Resistance to wear

When determined in accordance with EN ISO 5470-1, the mass loss after 1 000 cycles for all synthetic surfaces shall not exceed 4 g.

5.4 Resistance to temperature, water and UV-light

After exposing the surface to artificial weathering in accordance with EN 14836; the following properties shall be measured again to establish any change in the relevant characteristic:

- tensile strength (see 5.5);
- resistance to wear (see 5.3);
- spike resistance (tracks, run ups, take-off areas; multi-sports areas only if designed also for athletics) (see 5.6);
- shock absorption (see 4.3).

The tests shall be carried out in the order given in Table 6.