



SLOVENSKI STANDARD
SIST EN 12233:2003

01-julij-2003

Podloge za športne dejavnosti – Ugotavljanje odrezne višine naravne trave

Surfaces for sports areas - Determination of sward height of natural turf

Sportböden - Bestimmung der Schnitthöhe bei Naturrasen

Sols sportifs - Détermination de la hauteur du gazon naturel - Méthodes d'essai

Ta slovenski standard je istoveten z: EN 12233:2003

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ICS:

97.220.10 Športni objekti Sports facilities

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EUROPEAN STANDARD

EN 12233

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2003

ICS 97.220.10

English version

Surfaces for sports areas - Determination of sward height of natural turf

Sols sportifs - Détermination de la hauteur du gazon naturel
- Méthodes d'essai

Sportböden - Bestimmung der Schnitthöhe bei Naturrasen

This European Standard was approved by CEN on 12 December 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This document (EN 12233:2003) 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of an identical text or by endorsement, at the latest by October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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EN 12233:2003 (E)**1 Scope**

This European Standard specifies a method for determination of sward height of natural turf sports surfaces.

This method is not suitable for areas having ground cover, measured in accordance with prEN 12231, of less than 50 %, because compression of the grass is likely to be accentuated and unrepresentatively low values could be obtained.

2 Normative reference

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

prEN 12231, *Surfaces for sports areas — Determination of ground cover of natural turf.*

3 Principle

Sward height is determined by measuring the distance between the base of a lightweight disc, which rests on the grass blades, and the soil or thatch surface.

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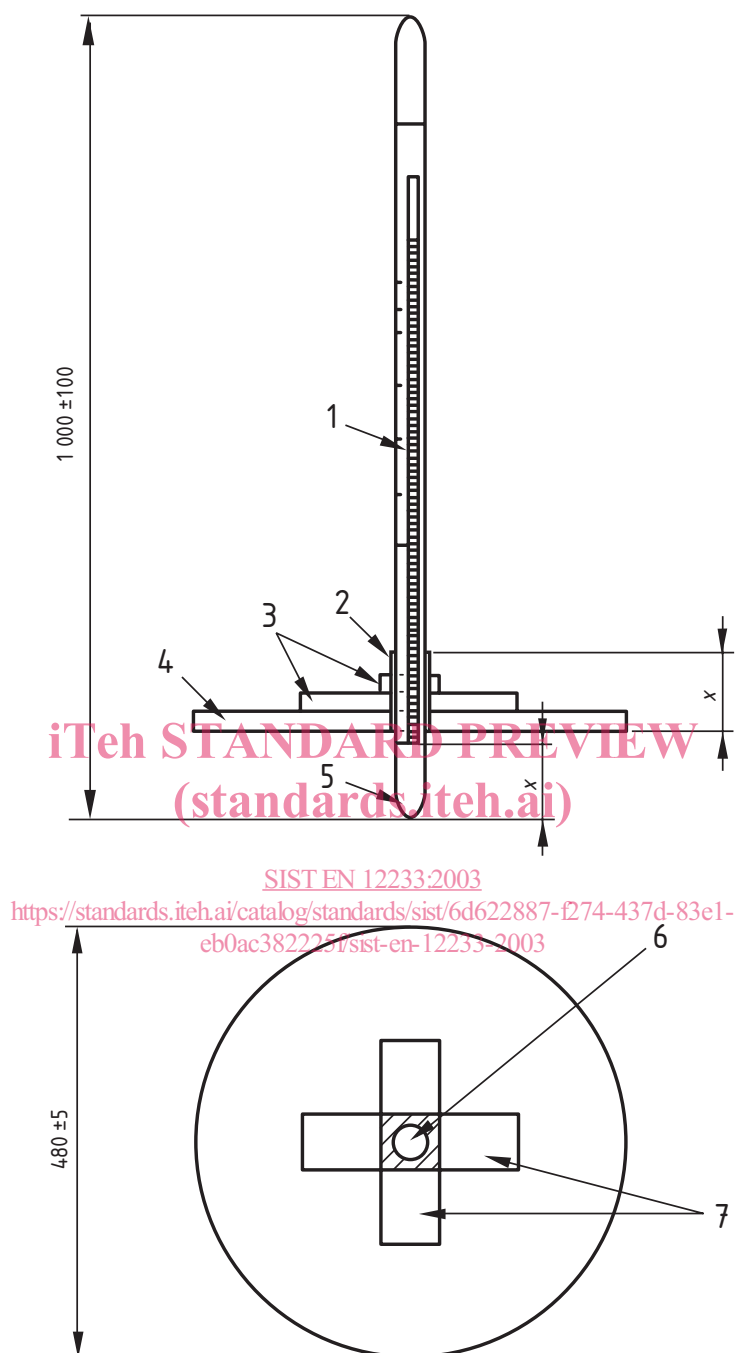
4 Apparatus

[SIST EN 12233:2003](https://standards.iteh.ai/catalog/standards/sist/6d622887-f274-437d-83e1-eb0ac382225f/sist-en-12233-2003)

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4.1 Disc, (80 ± 5) g in mass, (480 ± 5) mm in diameter, constructed from a lightweight material (e.g. polystyrene), which is centre-bored to allow movement up and down a rod of (28 ± 2) mm diameter, as shown in Figure 1. Strips of reinforcement material are used to strengthen the disc, bringing the overall mass of the disc to (110 ± 5) g, and the sleeve is designed to allow free movement between the disc and rod. A measurement scale, graduated in millimetres, is positioned on the rod, so that zero is indicated when the base of the disc is resting on a smooth surface.

Dimensions in millimetres

**Key**

- 1 Scale
- 2 Sleeve
- 3 Reinforcement
- 4 Disc
- 5 Rod, (28 ± 2) mm diameter, rounded at base
- 6 Central hole, diameter ($2,0 \pm 0,5$) mm greater than that of the vertical rod
- 7 Reinforcement (dimensions not critical as long as the overall mass of the disc is (110 ± 5) g)

x = height of the sleeve

Figure 1 — Vertical section and plan of rising disc used for measuring sward height

EN 12233:2003 (E)**5 Procedure**

Hold the measuring rod vertically and press it down sufficiently firmly for the tip to be in contact with the surface. Ensure that the rod is not pushed into the thatch layer and avoid holes or bumps. Do not use on swards of height less than 10 mm or more than about 150 mm, as at that height leaves tend to be fewer in number and structurally weaker, so that the disc is not fully supported.

The weight of the disc lightly compresses leaves projecting above the general sward height until the weight of the disc is supported by the sward. Read off the height value given on the graduated scale.

Unless otherwise specified, take at least eight readings at random on sports surfaces of less than 100 m², take 8 to 15 readings, as appropriate, on sports surfaces of 100 m² to 1 000 m², and 15 to 20 readings on sports surfaces of 1 000 mm² to 5 000 mm². Subdivide larger sports surfaces into two or more sections and test each section as above.

6 Expression of results

Calculate the median sward height for each test area.

7 Test report

The test report shall contain the following information:

- a) reference to this European Standard, i.e. EN 12233:2003;
- b) complete identification of the surface tested, including its location, area and previous history;
- c) the median value of the sward height: [SIST EN 12233:2003](https://standards.iteh.ai/catalog/standards/sist/6d622887-f274-437d-83e1-eb0ac382225f/sist-en-12233-2003)
- d) the individual test results, if required.