



# SLOVENSKI STANDARD

## SIST EN 12228:2013

01-november-2013

Nadomešča:  
SIST EN 12228:2003

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**Podloge za športne dejavnosti - Ugotavljanje trdnosti spoja športnih podlog iz umetnih snovi**

Surfaces for sports areas - Determination of joint strength of synthetic surfaces

Sportböden - Bestimmung der Nahtfestigkeit von Kunststoffbelägen

Sols sportifs - Détermination de la résistance des joints

**Ta slovenski standard je istoveten z: EN 12228:2013**

SIST EN 12228:2013  
http://www.sist.si/standards/standards/12228-4b86-a529-ff69f535dc99/sist-en-12228-2013

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**ICS:**

97.220.10      Športni objekti                                      Sports facilities

**SIST EN 12228:2013**                                      **en,fr,de**

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EUROPEAN STANDARD

**EN 12228**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2013

ICS 97.220.10

Supersedes EN 12228:2002

English Version

## Surfaces for sports areas - Determination of joint strength of synthetic surfaces

Sols sportifs - Détermination de la résistance des joints

Sportböden - Bestimmung der Nahtfestigkeit von Kunststoffbelägen

This European Standard was approved by CEN on 11 July 2013.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## Foreword

This document (EN 12228:2013) has been prepared by Technical Committee CEN/TC 217 “Surfaces for sports areas”, the secretariat of which is held by AFNOR.

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 March 2014, and conflicting national standards shall be withdrawn at the latest by March 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12228:2002.

Compared with EN 12228:2002, the text has been clarified and editorial errors have been corrected.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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## EN 12228:2013 (E)

## 1 Scope

This European Standard specifies two test methods for the determination of joint strength of synthetic sports surfaces including synthetic turf. Method 1 describes a procedure for butt joints and overlapped adhesive joints in which a direct force is applied. Method 2 describes a procedure for reinforced butt joints in which a peel force is applied.

## 2 Normative references

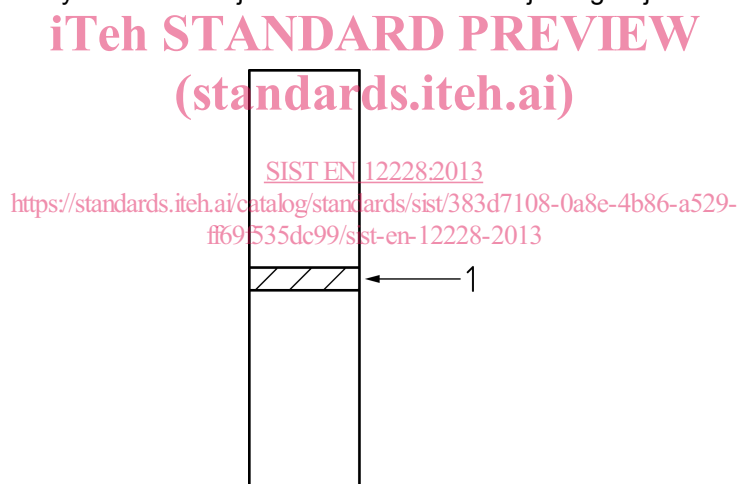
The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system (ISO 7500-1:2004)*

## 3 Method 1 — Direct tension method

### 3.1 General

This method is suitable for testing all types of synthetic sports surfaces that incorporate sewn, chemically welded, hot melt bonded or mechanically bonded butt joints as the manner of joining adjacent lengths of synthetic sports surfacing (see Figure 1).



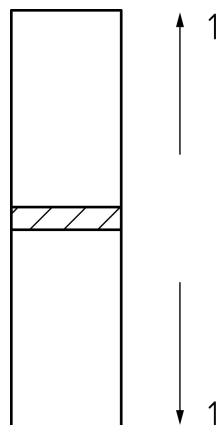
#### Key

- 1 chemical, hot melt adhesive/mechanical joint (including sewn seams)

**Figure 1 — Butt joint**

### 3.2 Principle

An increasing tensile force is applied perpendicular to the joint until it breaks and the maximum force applied is recorded (see Figure 2).

**Key**

1 tensile force

**Figure 2 — Principle of test — Direct tension method****3.3 Apparatus**

**3.3.1 Tensile testing machine**, conforming to class 1 of EN ISO 7500-1:2004.

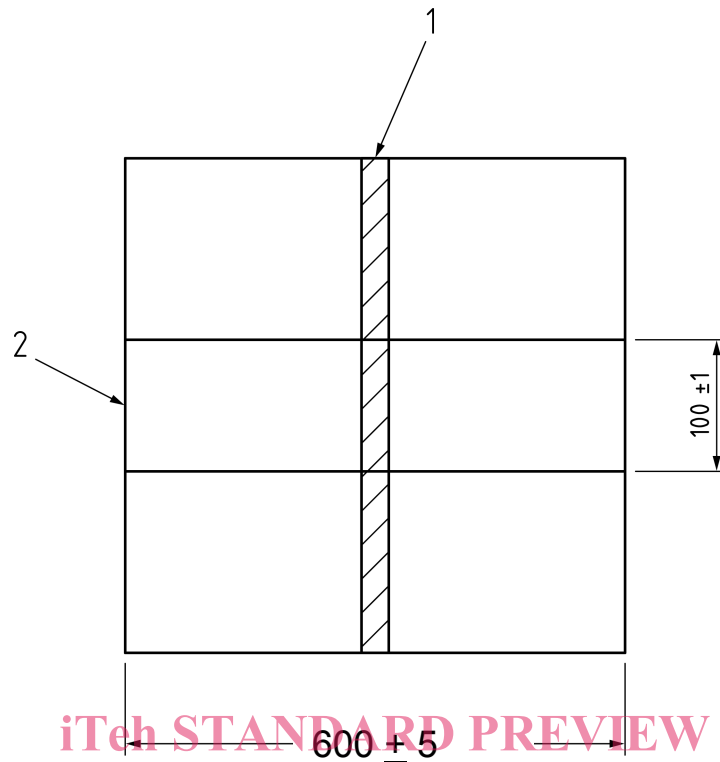
**3.3.2 Jaws**, which are sufficiently wide to hold the entire width of the test piece and with appropriate means to avoid slippage or damage.

**3.4 Test piece****3.4.1 Stitched or welded joint not incorporating joining tape**

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Cut from a sample of surface five test pieces of minimum length 600 mm and width  $(100 \pm 1)$  mm with the joint centrally located 200 mm across each test piece (see Figure 3).

Dimensions in millimetres

**Key**

- 1 joint  
2 test piece

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**Figure 3 — Test piece layout stitched or welded joint**

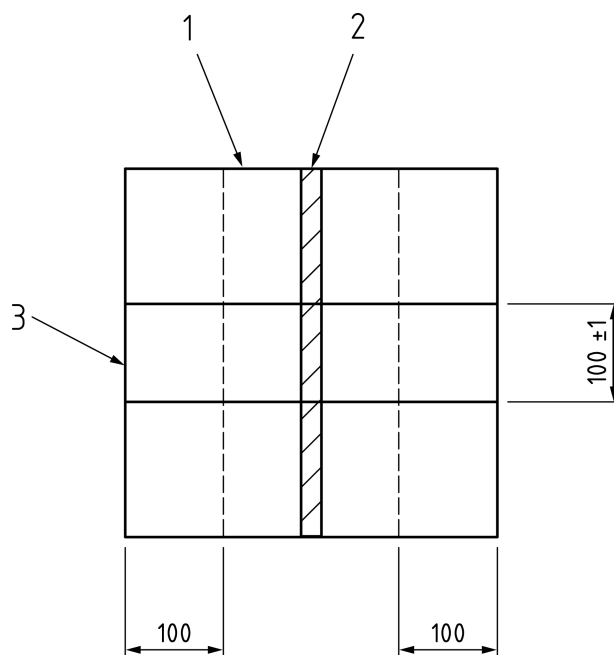
For any test piece containing a stitched joint, the stitching shall be tied off at the edge of the joint to prevent running.

### 3.4.2 Stitched or welded joints incorporating jointing tape

Cut from a sample of surface five test pieces, the length of which shall be the width of the backing material plus 100 mm each side of the backing material and width (100 ± 1) mm (see Figure 4).



Dimensions in millimetres

**Key**

- 1 backing material
- 2 joint
- 3 test piece

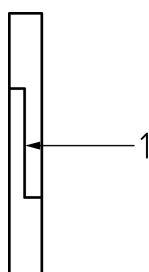
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**Figure 4 — Test piece layout for stitched or welded joint incorporating jointing tape**

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### 3.4.3 Overlapped adhesive joints

Cut from a sample of surface five test pieces, the length of which shall be the width of the overlapped joint plus 100 mm each side of the joint and width  $(100 \pm 1)$  mm (see Figures 5 and 6).

**Key**

- 1 adhesive

**Figure 5 — Overlapped adhesive joint**