



# SLOVENSKI STANDARD

## SIST EN 12503-1:2002

01-september-2002

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Sports mats - Part 1: Gymnastic mats, safety requirements

Sportmatten - Teil 1: Turnmatten, sicherheitstechnische Anforderungen

Tapis de sport - Partie 1: Tapis de gymnastique, exigences de sécurité

Ta slovenski standard je istoveten z: EN 12503-1:2001

[SIST EN 12503-1:2002](https://standards.iteh.ai/catalog/standards/sist/ca532f7a-a82f-4268-991a-9b9c97358698/sist-en-12503-1-2002)

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**ICS:**

97.220.30      Oprema za dvoranske športe    Indoor sports equipment

**SIST EN 12503-1:2002**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 12503-1**

April 2001

ICS 97.220.30

English version

**Sports mats - Part 1: Gymnastic mats, safety requirements**

Tapis de sport - Partie 1: Tapis de gymnastique, exigences  
de sécurité

Sportmatten - Teil 1: Turnmatten, sicherheitstechnische  
Anforderungen

This European Standard was approved by CEN on 21 January 2001.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, 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 European Standard has been prepared by Technical Committee CEN/TC 136 "Sports, playground and other recreational equipment", the secretariat of which is held by DIN.

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 2001, and conflicting national standards shall be withdrawn at the latest by October 2001.

This standard EN 12503 "Sport mats" consists of:

Part 1: Gymnastic mats, safety requirements

Part 2: Pole vault and high jump mats, safety requirement

Part 3: Judo mats, safety requirements

Part 4: Determination of shock absorption

Part 5: Determination of the base friction

Part 6: Determination of the top friction

Part 7: Determination of static stiffness

Annex A is informative.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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## 1 Scope

This Standard specifies safety requirements (including performance requirements) for 8 types of gymnastic mats used in school, training and competition, see clause 4.

The performance and safety values cover shock absorption, anti-slip characteristics of the base and top friction characteristics of the surface.

NOTE For the specific requirements of international official competitions, see appropriate international regulations.

## 2 Normative references

This 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 standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 12503-4:2001

Sports mats – Part 4: Determination of shock absorption

EN 12503-5:2001

Sports mats – Part 5: Determination of the base friction

EN 12503-6:2001

Sports mats – Part 6: Determination of the top friction

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## 3 Terms and definitions

For the purposes of this standard the following terms and definitions apply:

[SIST EN 12503-1:2002](https://standards.iteh.ai/catalog/standards/sist/ea532f7a-a82f-4268-991a-9b9c97358698/sist-en-12503-1-2002)

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### 3.1

#### **shock absorption**

ability of the mat to reduce impact forces on the athlete, expressed as a maximum deceleration under defined test conditions

### 3.2

#### **deflection**

ability of the mat to deform to an impact whilst maintaining the athletes stability, expressed as maximum deflection under defined test conditions

### 3.3

#### **resilience**

ability of the mat to return energy after an impact, expressed as resilience in percent under defined test conditions

### 3.4

#### **surface**

upper side of the mat on which the athlete moves

### 3.5

#### **base**

under side of the mat designed to be in contact with the floor during use

## 4 Classification

Gymnastic mats shall be classified by the design (types) as shown in table 1.

**Table 1 - Types**

Type	Typical use
1	Mat for floor exercise without jumping (foundation skills)
2	Mat for floor exercise with jumping
3	Mat for floor exercise with jumping and landing
4	Mat for simple dismount from apparatus with controlled landing
5	Mat for dismount
6	Mat for difficult dismount
7	Fall mattress for simple exercises
8	Fall mattress
NOTE For types 9, 10 and 11 see EN 12503-2:2001, for type 12 see EN 12503-3:2001.	

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## 5 Safety requirements

### 5.1 Shock absorption

When tested according to EN 12503-4:2001, the gymnastic mat shall comply with the values of table 2 according to the appropriate type.

**Table 2 - Shock absorption**

Type	Peak deceleration $g$ (1 $g = 9,81 \text{ ms}^{-2}$ )	Deflection mm	Resilience %
1	$\leq 80$	not needed	not needed
2	$\leq 65$	$\leq 35$	20 to 60
3	$\leq 30$	$\leq 50$	$\leq 55$
4	$\leq 40$	$\leq 110$	$\leq 50$
5	$\leq 25$	$\leq 110$	$\leq 30$
6	$\leq 14^a$	$\leq 105^a$	$\leq 15^a$
7	$\leq 35$	$\leq 185$	$\leq 25$
8	$\leq 20$	$\leq 250$	$\leq 25$

<sup>a</sup> These are comparable figures to FIG (Fédération Internationale de Gymnastique) standards from 1997

## 5.2 Base friction characteristics

When tested in accordance with EN 12503-5:2001, the gymnastic mat shall comply with the values given in table 3.

**Table 3 - Base friction characteristics**

Type	Frictional value
1	no requirement
2	$\leq 1,5$
3	$\leq 1,5$
4	$\leq 4,5$
5	$\leq 4,5$
6	$\leq 4,5$
7	$\leq 4,5$
8	$\leq 4,5$

## 5.3 Top friction characteristics

When tested in accordance with EN 12503-6:2001, the gymnastic mat shall comply with the values of table 4.

**Table 4 - Top friction characteristics**

Type	Frictional value
1	$\geq 0,8$
2	$\geq 0,8$
3	$\geq 0,8$
4	$\geq 0,8$
5	$\geq 0,8$
6	$\geq 0,8$
7	not needed
8	not needed

## 6 Marking

Mat shall be marked legibly and indelibly with the following information:

- the number of this European Standard EN 12503-1 and the type number;
- the name and trademark of the manufacturer, retailer or importer and the year of manufacture;
- which is the top surface of the mat (if not clearly recognizable).

## **Annex A** (informative)

### **Flame retardancy**

Sports matting for use in the United Kingdom shall satisfy certain minimum levels of flame retardancy. These levels and the required test methodology are detailed in BS 1892: 2.10 : 1999 (revised).

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