

# Sports mats —

## Part 3: Judo mats, safety requirements

The European Standard EN 12503-3:2001 has the status of a British Standard

ICS 97.220.30

## National foreword

This British Standard is the official English language version of EN 12503-3:2001. Together with BS EN 12503-1:2001, BS EN 12503-2:2001, BS EN 12503-4:2001, BS EN 12503-5:2001, BS EN 12503-6:2001 and BS EN 12503-7:2001, it supersedes BS 1892-2.10:1990 which will be withdrawn on 15 August 2001.

The UK participation in its preparation was entrusted to Technical Committee SW/14, Gymnasium and sports equipment, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

### Additional information

#### *Flame retardancy*

For sports matting used in the UK certain minimum levels of flame retardancy and the required test methodology will be detailed in BS 1892-3, which is in preparation.

### Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled "International Standards Correspondence Index", or by using the "Find" facility of the BSI Standards Electronic Catalogue.

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This British Standard, having been prepared under the direction of the Consumer Products and Services Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 June 2001

### Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 7 and a back cover.

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### Amendments issued since publication

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English version

## Sports mats - Part 3: Judo mats, safety requirements

Tapis de sport - Partie 3: Tapis de judo, exigences de  
sécurité

Sportmatten - Teil 3: Judomatten, 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.

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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 "Sports mats" consists of:

Part 1:

Gymnastic mats, safety requirements

Part 2:

Pole vault and high jump mats, safety requirements

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

The annexes A and B are 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.

## 1 Scope

This standard specifies performance and safety requirements for judo mats used in schools, training and competition.

The performance and safety values concern shock absorption, stiffness, anti-slip characteristics of the base and top friction characteristics of the surface. They refer to test methods defined in specific standards indicated in clause 2.

Dimensions and tolerances are given in an informative annex.

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

## 2 Normative references

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).

EN 12503-1:2001

Sports mats – Part 1: Gymnastic mats, safety requirements

EN 12503-2:2001

Sports mats – Part 2: Pole vault and high jump mats, safety requirements

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

EN 12503-7:2001

Sports mats – Part 7: Determination of static stiffness

## 3 Terms and definitions

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

### 3.1

#### **shock absorption**

ability of the mat to reduce impact forces on the athlete, expressed as a maximum deceleration under defined test conditions [EN 12503-1:2001]

### 3.2

#### **static stiffness**

ability of the mat to deform under a force expressed as a maximum deflection under test conditions

### 3.3

#### **resilience**

ability of the mat to return energy after an impact, expressed as resilience in percent under defined test conditions [EN 12503-1:2001]

**3.4 surface**

upper side of the mat on which the athlete moves [EN 12503-1:2001]

**3.5 base**

under side of the mat designed to be in contact with the floor during use [EN 12503-1:2001]

**4 Classification**

Judo mats shall be classified as type 12.

NOTE For types 1 to 8 see EN 12503-1:2001 and for types 9 to 11 see EN 12503-2:2001.

**5 Performance and safety requirements**

**5.1 Shock absorption**

**5.1.1 Homogeneity test**

When tested in accordance with 7.2 of EN 12503-4:2001, the maximum allowable difference between any of the 8 individual points (average reading between 3 to 5) and the overall mean shall be  $\pm 3 g$ .

**5.1.2 Peak g and resilience**

When tested in accordance with 7.2 of EN 12503-4:2001, the values shall be in accordance with table 1.

**Table 1 - Required values**

Parameters	Indentor diameter mm			
	43		116	
	Fall height cm			
	20	60	20	60
Peak deceleration ... g	30	90	40	85
Resilience ..... %	30	28	32	28

**5.2 Static stiffness**

When tested in accordance with EN 12503-7:2001, the maximum static stiffness value shall not be greater than 9 mm.

**5.3 Base friction characteristics of the base**

If the manufacturer describes a mat as having an anti-slip system, it shall be tested in accordance with the test method defined in EN 12503-5:2001.

When tested in accordance with EN 12503-5:2001, the frictional value shall be equal to or greater than 6,5.

**5.4 Top friction characteristics**

When tested in accordance with the test method defined in EN 12503-6:2001, the coefficient of rotational friction shall be equal to or greater than 1,0.

## 6 Marking

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

- a) the number of this European Standard EN 12503-3 and the type number;
- b) the name and trademark of the manufacturer, retailer or importer and the year of manufacture;
- c) which is the top surface of the mat (if not clearly recognizable).

## Annex A (informative)

### Dimensions and tolerances

The dimensions and tolerances of judo mats are measured in normal use conditions (temperature, humidity).

The dimensions of judo mats are given in table A.1, and the tolerances in table A.2

**Table A.1- Dimensions of judo mats**

Length (mm)	multiple of 1 m
Width (mm)	multiple of 1 m
Thickness (mm)	40 or 50

**Table A.2 - Tolerances of dimensions**

Tolerance on length	$\pm 5$ mm
Tolerance on width	$\pm 5$ mm
Tolerance on thickness	$\pm 3$ %



## **Annex B (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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