

# Sports mats —

## Part 7: Determination of static stiffness

The European Standard EN 12503-7:2001 has the status of a British Standard

ICS 97.220.30

## National foreword

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BS EN 12503-4:2001, BS EN 12503-5:2001 and BS EN 12503-6:2001, it supersedes BS 1892-2.10:1990 which will be withdrawn on 15 August 2001.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

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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 5 and a back cover.

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### Amendments issued since publication

Amd. No.	Date	Comments

English version

**Sports mats - Part 7: Determination of static stiffness**Tapis de sport - Partie 7: Détermination de la rigidité  
statique

Sportmatten - Teil 7: Bestimmung der statischen Steifigkeit

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

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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of an identical text or by endorsement, at the latest by October 2001, and conflicting national standards shall be withdrawn at the latest by October 2001.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

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 European Standard specifies a method of test for the determination of static stiffness for type 12 of EN 12503-3:2001.

## 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 12503-3:2001

Sports mats – Part 3: Judo mats, safety requirements

EN 12503-4:2001

Sports mats – Part 4: Determination of shock absorption

## 3 Principle

An indenter is applied to the mat under a specified mass and the deflection of the mat normalised to the deflection at a set distance for the point of indentation is measured (see figure 1).

## 4 Apparatus

Means of applying a load of  $(50 \pm 0,5)$  kg through an indenter vertically onto the mat and a means of measuring the difference between the deflection under the centre of the indenter and the deflection at a diameter of  $(160 \pm 1)$  mm. A suitable form of apparatus is shown in figure 1.

The indenter shall be 78 mm diameter and as specified in figure 2 of EN 12503-4:2001.

The deflection of the mat is conveniently measured in millimetres by means of a scale attached to the indenter and a circular aluminium or rigid plastic plate 160 mm diameter with a central hole 80 mm diameter.

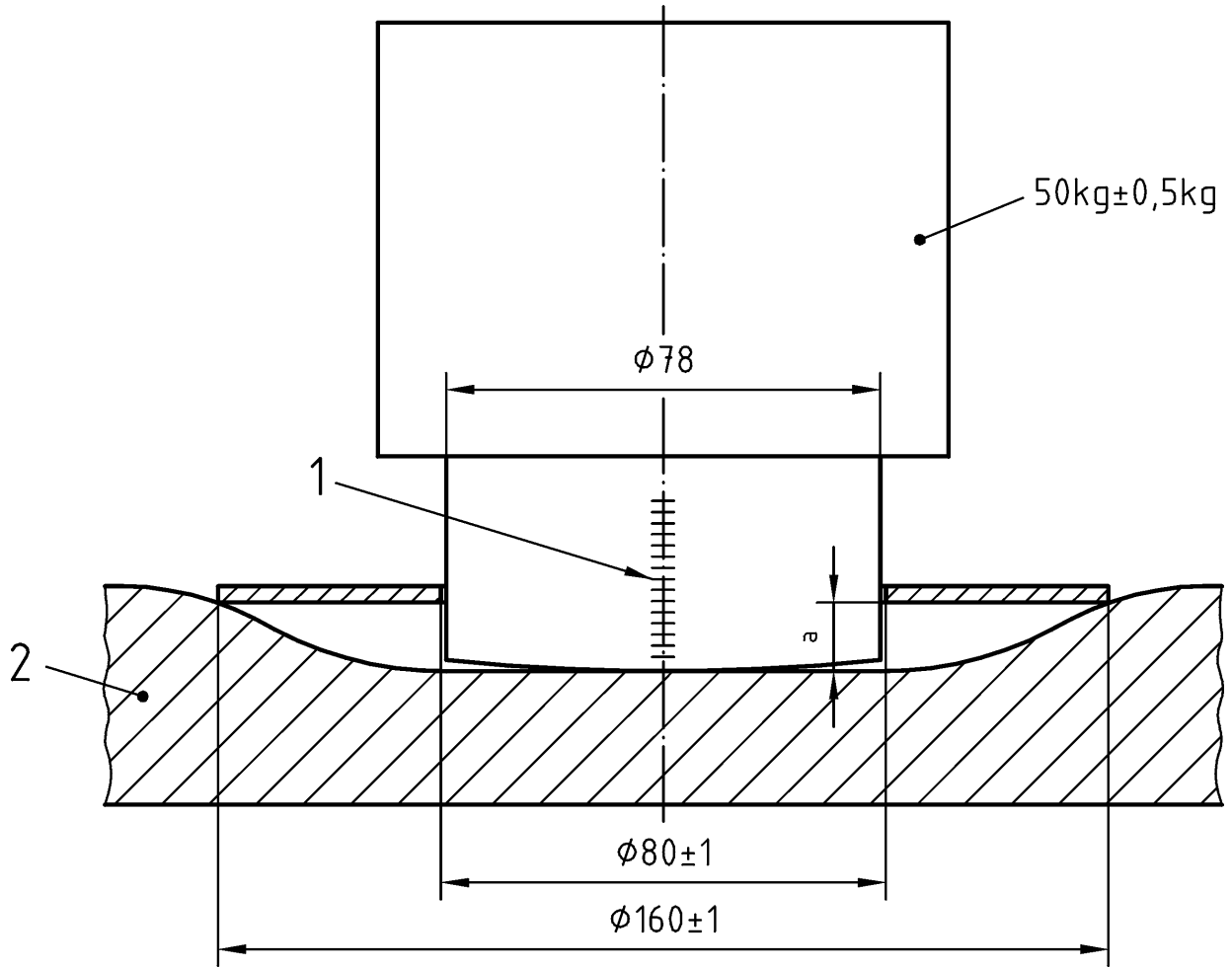
## 5 Test piece

The test piece shall be the complete mat.

## 6 Conditioning

Condition the test pieces for a minimum of 24 h at  $(21 \pm 3)$  °C immediately before the test and carry out the test at the same temperature.

Dimensions in millimetres



**Key**

- 1 scale
- 2 judo mat
- a difference between the deflection under the centre of the indenter and the deflection at the circular measurement plate

**Figure 1 - Apparatus**

## 7 Procedure

Place the indenter on the top surface of the mat under a total load of  $(50 \pm 0,5)$  kg.

Measure the difference between the deflection under the centre of the indenter and the deflection at a diameter of  $(160 \pm 1)$  mm 2 min  $\pm$  5 s after applying the load.

Repeat the measurement to obtain readings at four positions which are approximately at the centre of each quarter of the mat.

NOTE The readings are not to be taken at the same positions as used for measurement of shock absorption (see EN 12503-4:2001).

## 8 Expression of results

Determine the mean of the measures of deflection.

## 9 Test report

The test report shall include the following information:

- a) the number of this standard, i.e. EN 12503-7;
- b) complete identification of the mat tested including type, manufacturer's reference and previous history;
- c) the temperature at which the test was carried out;
- d) the mean deflection;
- e) the individual test values if required;
- f) details of any deviation from the procedure.

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