

Sports mats - Part 4: Determination of shock absorption

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Sports mats - Part 4: Determination of shock absorption

Tapis de sport - Partie 4 : Détermination des
caractéristiques d'amortissement au choc

Sportmatten - Teil 4: Bestimmung der
Dämpfungseigenschaften

This European Standard was approved by CEN on 12 April 2013.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 12503-4:2013) has been prepared by Technical Committee CEN/TC 136 "Sports, playground and other recreational facilities and 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of an identical text or by endorsement, at the latest by January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.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 12503-4:2001.

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*

In relation to EN 12503-4:2001 the following main changes have been made:

- a) Clause 5 "Test piece" has been amended.
- b) The document has been editorially revised.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

1 Scope

This European Standard specifies a method of test for the determination of shock absorption characteristics of sports mats types 1 to 8 of EN 12503-1:2013, 9 to 11 of EN 12503-2:2001 and 12 of EN 12503-3:2001.

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 12390-3, *Testing hardened concrete — Part 3: Compressive strength of test specimens*

ISO 6487, *Road vehicles — Measurement techniques in impact tests — Instrumentation*

3 Principle

A striker is dropped onto the top surface of the mat and the deceleration during the impact monitored. The deceleration profile is processed to yield specified shock absorption parameters.

4 Apparatus

4.1 Indentors

Metal indentors in accordance with the essential dimensions and masses are given in Table 1 and Figure 1 and Figure 2.

Table 1 — Indentors

Type of mat	Diameter mm	Mass kg
1	$150 \pm 0,5$	$10 \pm 0,1$
2	$150 \pm 0,5$	$10 \pm 0,1$
3	$150 \pm 0,5$	$10 \pm 0,1$
4	$150 \pm 0,5$	$20 \pm 0,2$
5	$150 \pm 0,5$	$20 \pm 0,2$
6	$150 \pm 0,5$	$20 \pm 0,2$
7	$150 \pm 0,5$	$30 \pm 0,3$
8	$150 \pm 0,5$	$30 \pm 0,3$
9	$150 \pm 0,5$	$30 \pm 0,3$
10	$150 \pm 0,5$	$30 \pm 0,3$
11	$150 \pm 0,5$	$30 \pm 0,3$
12	$43 \pm 0,2$ $78 \pm 0,2$ $116 \pm 0,2$	$8 \pm 0,05$