BS EN 12503-4:2016

BSI Standards Publication

Sports mats

Part 4: Determination of shock absorption

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National foreword

This British Standard is the UK implementation of EN 12503-4:2016. It supersedes BS EN 12503-4:2013 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee SW/136/22, Sports, Playground and other Recreational Equipment - Gymnasium and Playing Field Equipment.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Sportmatten - Teil 4: Bestimmung der Dämpfungseigenschaften

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

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European foreword

This document (EN 12503-4:2016) 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of an identical text or by endorsement, at the latest by November 2016, and conflicting national standards shall be withdrawn at the latest by November 2016.

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 12503-4:2013.

In relation to EN 12503-4:2013, the following main changes have been made:

a) Normative references updated;

b) Requirement and test method for high-jump and pole vault mats precised (Type 9, 10 and 11).

EN 12503, *Sports mats* consists of the following parts:

— *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*

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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 12503-2:2016 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

An indentor 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 ± 0,5	10 ± 0,1
2	150 ± 0,5	10 ± 0,1
3	150 ± 0,5	10 ± 0,1
4	150 ± 0,5	20 ± 0,2
5	150 ± 0,5	20 ± 0,2
6	150 ± 0,5	20 ± 0,2
7	150 ± 0,5	30 ± 0,3
8	150 ± 0,5	30 ± 0,3
9	150 ± 0,5	30 ± 0,3
10	150 ± 0,5	30 ± 0,3
11	150 ± 0,5	30 ± 0,3
12	43 ± 0,2 78 ± 0,2 116 ± 0,2	8 ± 0,05

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