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Sports mats - Part 4: Determination of shock absorption

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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

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (FprEN 12503-4:2012) 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 document is currently submitted to the Unique Acceptance Procedure.

This document will supersede 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.

FprEN 12503-4:2012 (E)

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 12503-1:2001, 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 12504-2, *Testing concrete in structures — Part 2: Non-destructive testing — Determination of rebound number*

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 Figures 1 and 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 |