



BSI Standards Publication

Sports mats

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

National foreword

This British Standard is the UK implementation of EN 12503-2:2016. It supersedes BS EN 12503-2:2001 which is withdrawn.

BSI, as a member of CEN, is obliged to publish EN 12503-2 as a British Standard. However, attention is drawn to the fact that during the development of this European Standard, the UK committee voted against its approval as a European Standard.

The UK committee did not agree with the removal of Annex A (informative) Flame retardancy. In the UK, there is an expectation that sports matting will meet certain minimum levels of flame retardancy. BS 1892-3:2003 details these levels and the required test methodology.

The UK participation in its preparation was entrusted by Technical Committee SW/136, Sports, playground and other recreational equipment, to Subcommittee SW/136/22, Sports, playground and other recreational equipment – gymnasium and playing field equipment.

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

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English Version

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

Tapis de sport - Partie 2: Sautoirs pour saut à la perche
et saut en hauteur, exigences de sécurité

Sportmatten - Teil 2: Stabhochsprung- und
Hochsprung-Matten, sicherheitstechnische
Anforderungen

This European Standard was approved by CEN on 25 March 2016.

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European foreword

This document (EN 12503-2:2016) 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of an identical text or by endorsement, at the latest by November 2016, and conflicting national standards shall be withdrawn at the latest by November 2016.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 12503-2:2001.

In relation to EN 12503-2:2001, the following main changes have been made:

- a) The document has been editorially revised;
- b) Normative references have been updated;
- c) Table 2 regarding the shock absorption has been modified regarding Type 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 safety requirements (including performance requirements) for 3 types of high jump and pole vault mats used in school, training and competition (see Clause 4).

This standard specifies performance and safety values for shock absorption of the mat and anti-slip characteristics of the base.

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

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 12503-4:2016, *Sports mats — Part 4: Determination of shock absorption*

EN 12503-5:2001, *Sports mats — Part 5: Determination of the base friction*

3 Terms and definitions

For the purposes of this document, 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

[SOURCE: EN 12503-1:2013, 3.1]

3.2

percentage deflection

ability of the mat to deform to an impact expressed as a percentage of the mat thickness

3.3

resilience

ability of the mat to return energy after the impact, expressed as resilience in percent under defined test conditions

[SOURCE: EN 12503-1:2013, 3.3]

3.4

base

under side of the mat designed to be in contact with the floor during use

[SOURCE: EN 12503-1:2013, 3.5]

Note 1 to entry: The mat may be supported on a raised platform in use, but this is not part of the test specified in this standard.

4 Classification

Pole vault and high jump mats shall be classified by the design (types) as shown in Table 1.

Table 1 — Types

Type	Typical use
9	High jump (schools, training)
10	High jump (competition)
11	Pole vault
NOTE For types 1 to 8 see EN 12503-1:2013 and for type 12 see EN 12503-3:2001.	

5 Safety requirements

5.1 Shock absorption

The test shall be carried out in accordance with EN 12503-4 and the mats shall comply with the values of Table 2 except the values, which are indicated as recommended.

Table 2 — Shock absorption

Type	Peak deceleration g (1 $g = 9,81 \text{ ms}^{-2}$)	Deflection	Resilience
9	≤ 10	$\leq 70 \%$	$\leq 20 \%$
10	≤ 10	$\leq 60 \%$	$\leq 20 \%$
11 (test location 1 to 6 according to EN 12503-4:2016, 7.1)	≤ 10	$\leq 55 \%$	$\leq 20 \%$
11 (test location 7 to 8 according to EN 12503-4:2016, 7.1)	≤ 35 (recommended)	$\leq 185 \text{ mm}$ (recommended)	$\leq 25 \text{ mm}$ (recommended)
NOTE Resilience is calculated from the ratio of the squares of the velocities after and before impact, expressed as a percentage.			

5.2 Base friction characteristics

The test shall be carried out in accordance with EN 12503-5:2001 and the mat shall have a value of friction according to Table 3, unless the mat is prevented from moving by a mechanical means.

Table 3 — Base friction characteristics

Type	Frictional value
9	$\geq 4,5$
10	test not needed
11	test not needed

6 Marking

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

- a) the number of this European Standard (EN 12503-2) and the type number;
- b) the name or trademark of the manufacturer, retailer or importer and year of manufacturing;
- c) which is the top surface of the mat (if not clearly recognizable).

Bibliography

- [1] EN 12503-1:2013, *Sports mats — Part 1: Gymnastic mats, safety requirements*
- [2] EN 12503-3:2001, *Sports mats — Part 3: Judo mats, safety requirements*

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BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK