



SLOVENSKI STANDARD

oSIST prEN 17461:2020

01-februar-2020

Gimnastična oprema - Individualne in večnamenske švedske skrinje - Varnostne zahteve in preskusne metode

Gymnastic equipment - Individual and multifunctional vaulting boxes - Safety requirements and test methods

Turngeräte - Individuelle und multifunktionale Sprungkästen - Sicherheitstechnische Anforderungen und Prüfverfahren

Matériel de gymnastique - Plinths individuels et multifonctions - Exigences de sécurité et méthodes d'essai

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97.220.30 Oprema za dvoranske športe Indoor sports equipment

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EUROPEAN STANDARD
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Gymnastic equipment - Individual and multifunctional vaulting boxes - Safety requirements and test methods

Matériel de gymnastique - Plinths individuels et multifonctions - Exigences de sécurité et méthodes d'essai

Turngeräte - Individuelle und multifunktionale Sprungkästen - Sicherheitstechnische Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 136.

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

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European foreword

This document (prEN 17461:2019) 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 CEN Enquiry.

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prEN 17461:2019 (E)**1 Scope**

This document specifies functional requirements and specific safety requirements in addition to the general safety standard EN 913 for gymnastic and vaulting boxes for individual or multifunctional use. This document also specifies requirements when multifunctional boxes are used in combination with accessories.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 913:2018, *Gymnastic equipment - General safety requirements and test methods*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1 vaulting boxes

sectioned box that is padded, used in gymnastics

3.2 multifunctional vaulting boxes

multi-purpose apparatus with connection points and openings provided to use the vaulting box in combination with other vaulting boxes or accessories

4 Requirements**4.1 Classification**

Multifunctional vaulting boxes shall be classified by the design (types) as shown in Table 1. Examples are given in Annex A.

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Table 1 — Classification of vaulting boxes

Type	Description	Example
1	rectangular vaulting box with individual box sections and padded top box	Figure A.1
2	rectangular mini vaulting box with padded top or flat top	Figure A.2
3	pyramidal vaulting box with individual box sections and padded top box	Figure A.3
4	padded vaulting tables with supporting frame	Figure A.4
5	pyramidal to rectangular vaulting box with individual box sections and padded top box	Figure A.5
6	rectangular multifunctional vaulting box with individual box sections and padded top box	Figure A.6
7	pyramidal multifunctional vaulting box with individual box sections and padded top box	Figure A.7
8	vaulting box or table with padded top with any other design which fulfils dimensions and safety requirements of this standard	Table 2

4.2 Dimensions

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Top surfaces of the (multifunctional) vaulting boxes shall comply with the dimensions specified in Table 2.

Table 2 — Dimensions of top surfaces

Dimensions in millimetres

Range	Length <i>l</i>	Width <i>b</i>	Height <i>h</i>
Maximum	1 605	750	1 500
Minimum	700	500	400

Height of the (multifunctional) vaulting boxes shall comply with the dimensions specified in Table 3.

Table 3 — Dimensions of height

Type	Maximum height mm
1, 3, 5, 6, 7, 8	1 500
2	400
4	999

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4.3 Performance of padded box top

When tested according to EN 913:2018, Annex C, using a drop height of 300 mm, the peak acceleration shall not exceed 500 m/s^2 ($50g$).

4.4 Entrapment

The connection points or gaps shall be positioned more than 90 mm from the top of the (multifunctional) vaulting box (including padding), see Figure 1.

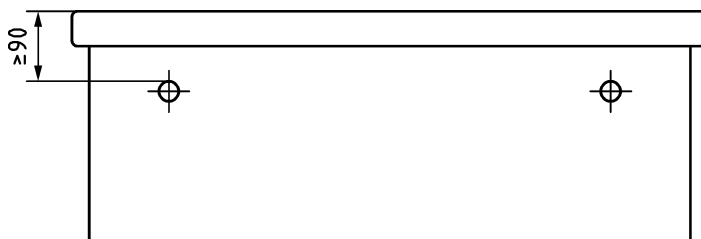


Figure 1 — Position of connection points or gaps

4.5 Floor projection

There should be no floor projection that could cause tripping. The maximum size of floor projection shall comply with the dimensions specified in Table 4. See Figure 2 for an example.

Table 4 — Dimensions of maximum size of projection

Type	Maximum height (length x width x height) mm
1, 6	155 × 90 × 50
2, 3, 4, 5, 7, 8	No floor projection allowed

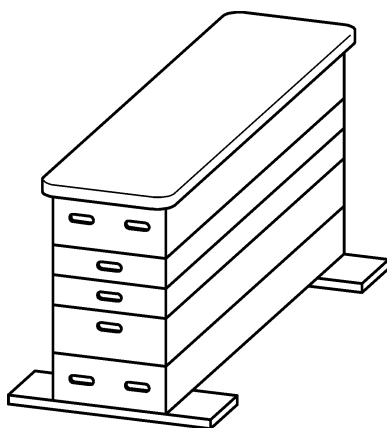


Figure 2 — Example vaulting box type 1

5 Materials

Materials shall be selected and protected such that the structural integrity of the equipment manufactured from them is not affected before the next relevant maintenance inspection.

NOTE 1 The provisions relating to certain materials in this document do not imply that other equivalent materials are unsuitable in the manufacture of multi-sports equipment.

The selection of materials and their use should be in accordance with the appropriate European Standards where applicable.

In the choice of a material or substance for equipment, consideration should be given to the eventual disposal of the material or substance having regard to any possible environmental toxic hazard.

NOTE 2 Information on the identification and classification of such substances can be found in the Directive 67/548/EEC (classification, packaging and labelling of dangerous substances) as well as in the Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

6 Safety requirements

6.1 General

Vaulting boxes shall comply with the requirements of EN 913, except insofar as they are modified by this document.

6.2 Stability

When tested according to 8.1.3, the vaulting box shall not rotate about the base, nor shall any of the sections separate in normal use when subjected to a horizontal and vertical force representing the theoretical test force. The theoretical horizontal test force shall be calculated using the formula given in EN 913:2018, B.1.2.

6.3 Strength

When tested according to 6.2, the vaulting box or any vertical sided individual section shall show no sign of loose bonds, breaking or cracking.

6.4 Durability of construction

When tested according to 6.3, sections shall not show any loose joints, breakage, cracking or change in diagonal dimensions greater than 3 mm.

7 Usage in combination with other equipment

7.1 General

The multifunctional vaulting box could be used in combination with other multifunctional vaulting boxes or equipment within the scope of the EN 913:2018. The intended combination usage is described in this paragraph. In all combinations, keep aware of the safety risks. Perform a safety risk assessment for each combination made with the multifunctional vaulting box.

7.2 Accessories

When accessories are used in combination with multifunctional vaulting boxes the following requirements shall apply.

All accessories shall comply with EN 913 both individually and in each combination used.

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The accessories shall be connected to the multifunctional vaulting box in such a way that it does not disconnect during intended usage.

The manufacturer shall provide instructions for use and set-up (e.g. maximum number of users).

Examples of attention points at risk assessment for multifunctional vaulting boxes are given in Annex B.

Examples for typical combination are given in Annex C.

8 Test methods**8.1 Determination of stability****8.1.1 Principle**

A horizontal force is applied to the top of the equipment and any movement of the top is noted.

8.1.2 Test temperature

Condition the equipment for a minimum of 3 h at a temperature of $(23 \pm 2) ^\circ\text{C}$.

8.1.3 Procedure

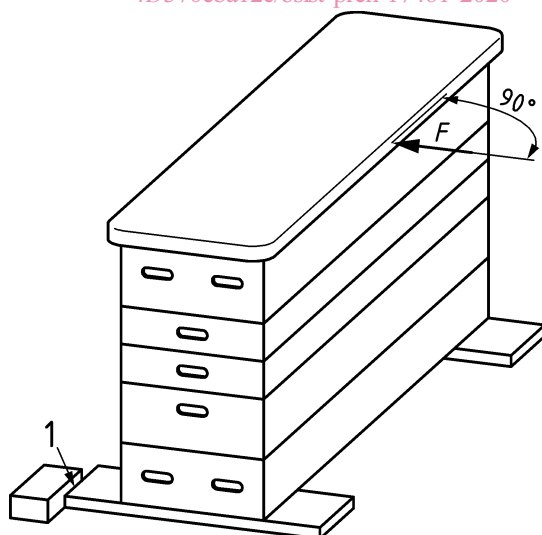
Carry out the test at maximum height according to the manufacturer.

Prevent the vaulting box from sliding, see Figure 3.

For boxes ≤ 500 mm in height, apply a horizontal force calculated from 20% of the self weight of the equipment with a minimum of 70 N to the highest point in the centre of the top (see Figure 3).

For boxes > 500 mm in height, apply a horizontal force calculated from 20% of the self weight of the equipment with a minimum of 140 N to the highest point in the centre of the top (see Figure 3).

After removing the horizontal force, the vaulting box shall return to the start position of the test.

**Key**

1 point of rotation

F force

Figure 3 — Determination of stability