

Gymnastic equipment — General safety requirements and test methods

ICS 97.220.30

National foreword

This British Standard is the UK implementation of EN 913:2008. It supersedes BS EN 913:1996 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee SW/136/22, 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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Gymnastic equipment - General safety requirements and test methods

Matériel de gymnastique - Exigences générales de sécurité
et méthodes d'essai

Turngeräte - Allgemeine sicherheitstechnische
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 27 September 2008.

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Foreword

This document (EN 913:2008) 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of an identical text or by endorsement, at the latest by May 2009, and conflicting national standards shall be withdrawn at the latest by May 2009.

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 913:1996.

This European Standard is one of several standards, each of which deals with a particular type or a particular group of gymnastic equipment. Gymnastic equipment of any type not covered by a relevant European Standard is covered by this general standard.

The principal changes from the previous edition of EN 913 are as follows:

- a) Requirements on stability and strength were amended by means of a formula with regard to the differentiation of rigid and sectional gymnastic equipment;
- b) Figure 1 was extended with examples of permissible parts;
- c) requirements regarding entrapment were expanded.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies general safety requirements and test methods for all pieces of gymnastic equipment intended for use supervised by a competent person and not specified in other, individual standards.

This European Standard is not applicable to other sport equipment, playground equipment, stationary training equipment or educational training equipment.

2 Normative references

The following referenced documents are indispensable for the application 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 1991-1-1, *Eurocode 1: Actions on structures – Part 1-1: General actions – Densities, self-weight, imposed loads for buildings*

EN 1991-1-3, *Eurocode 1: Actions on structures – Part 1-3: General actions – Snow loads*

EN 1991-1-4, *Eurocode 1: Actions on structures – Part 1-4: General actions – Wind actions*

EN 1991-1-5, *Eurocode 1: Actions on structures – Part 1-5: General actions – Thermal actions*

EN ISO 12100-1, *Safety of machinery – Basic concepts, general principles for design – Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

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

3 Terms and definitions

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

3.1

hazard

source of possible injury or damage to health

3.2

body mass

mass of the person(s) using the equipment

3.3

static load

load acting on the equipment due to its structure, added weights and prestressed components

3.4

dynamic factor

factor to take account of the increase in effective body mass during a dynamic movement

3.5

safety factor

factor intended to cover uncertainties in the body loading and dynamic factor used, and which does not cover allowance for variations in materials and manufacturing processes

3.6

variable load

loads due to factors other than the static and body loads

4 Hazard assessment

The assessment of hazards has been based on EN ISO 12100-1. Twelve categories of hazard or sources of hazard have been considered relevant to gymnastic equipment. These are as follows:

- a) crushing;
- b) shearing;
- c) cutting and severing;
- d) entanglement and trapping;
- e) impact;
- f) stabbing or puncture;
- g) friction and abrasion;
- h) insufficient mechanical strength;
- i) use of unsuitable material;
- j) unintended movement, including sliding;
- k) unsuitable ergonomic design;
- l) fire;
- m) wrong or missing information.

5 General safety requirements

5.1 Surface finish

There shall be no protruding nails, projecting wire rope terminations or pointed or sharp-edged components. Rough surfaces should not present any risk of injury. All welds shall be smooth. Protruding bolt threads within any accessible part of the equipment shall be permanently covered, e.g. dome headed nuts. Nuts and bolt heads that project less than 8 mm are permitted in non accessible parts, provided they are free from burrs.

Corners, edges and projecting parts within the space occupied by the user that protrude more than 8 mm, and which are not shielded by adjacent areas that are not more than 25 mm from the end of the projecting part, shall be rounded off. The minimum radius of the curve shall be 3 mm.

Figure 1 shows examples of protection for nuts and bolts and permissible protruding parts. Figure 2 shows examples of non-permissible protruding parts.

NOTE This requirement is intended only to prevent injuries caused by unintended contact with components.