SLOVENSKI STANDARD

SIST EN 913:1996

01-december-1996

Gimnastiļ na oprema - Sploġne varnostne zahteve in preskusne metode

Gymnastic equipment - General safety requirements and test methods

Turngeräte - Allgemeine sicherheitstechnische Anforderungen und Prüfverfahren

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

Ta slovenski standard je istoveten z: EN 913:1996

ICS:

97.220.30

SIST EN 913:1996 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 913

March 1996

ICS 97.220.30

Descriptors: sports equipment, gymnastic equipment, safety, accident prevention, specifications, stability, tests, marking

English version

Gymnastic equipment - General safety requirements and test methods

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

Turngeräte - Allgemeine sicherheitstechnische Anforderungen und Prufverfahren

This European Standard was approved by CEN on 1996-01-28. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Europeen de Normalisation
Europaisches Komitee fur Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Ref. No. EN 913:1996 E

Contents

Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 136 "Sports, playground and other recreational equipment", of which the Secretariat 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of an identical text or by endorsement, at the latest by September 1996, and conflicting national standards shall be withdrawn at the latest by September 1996.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.

When preparing this European Standard, the Committee, bearing in mind both the intended use and reasonably foreseeable misuse of equipment directed its attention to the aspects relevant to safety in identifying the hazards present and included requirements with a view to avoiding or reducing risks emanating from such hazards.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies general safety requirements and test methods for all pieces of gymnastic equipment for foundation, participation and performance and excellence, intended for supervised use.

NOTE: In French, the Englisch terms "foundation, participation and performance and excellence" cannot be translated, since they are not referred to as such in reality. Moreover, it was decided to withdraw these terms from all the standards concerning gymnastic equipment.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 292-1
Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology

ENV 1991-2-1
Eurocode 1 - Basis of design and actions on structures - Part 2-1: Actions on structures - Densities, self-weight and imposed loads

ENV 1991-2-3
Eurocode 1 - Basis of design and actions on structures - Part 2-3: Actions on structures - Snow loads

ISO 6487
Road vehicles - Measurement techniques in impact tests - Instrumentation

3 Hazard assessment

The assessment of hazards has been based on EN 292-1. 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) mechanical strength;

i) movement, including sliding;

j) ergonomic design;

k) fire;

l) information.

4 Definitions

For the purposes of this standard, the following definitions apply:

4.1 hazard: A source of possible injury or damage to health.

4.2 body mass: The mass of the person(s) using the equipment.

4.3 static load: The load acting on the equipment due to its structure, added weights and prestressed components.

4.4 dynamic factor: A factor to take account of the increase in effective body mass during a dynamic movement.

4.5 safety factor: A 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.

4.6 variable load: Loads due to factors other than the static and body loads.

5 General safety requirements

5.1 Surface finish

Sharp edges and protruding parts

Corners, edges and protruding parts in the user's free space that freely project more than 8 mm, and are not shielded by adjacent areas which are not more than 25 mm from the edge of the projecting part, shall be rounded off (see figures 1 and 2). This shall be assessed by carrying out a tactile inspection, visual inspection and measurement. The minimum radius of the chamfer shall be 3 mm.

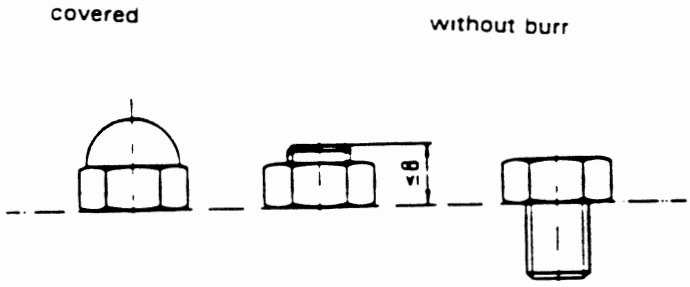
Protruding bolt threads in the user's free space shall be permanently covered, e.g. with cap nuts. Nut and bolt heads that protrud less than 8 mm shall be free from burrs (see figure 1). No burrs shall be caused as a result of welding

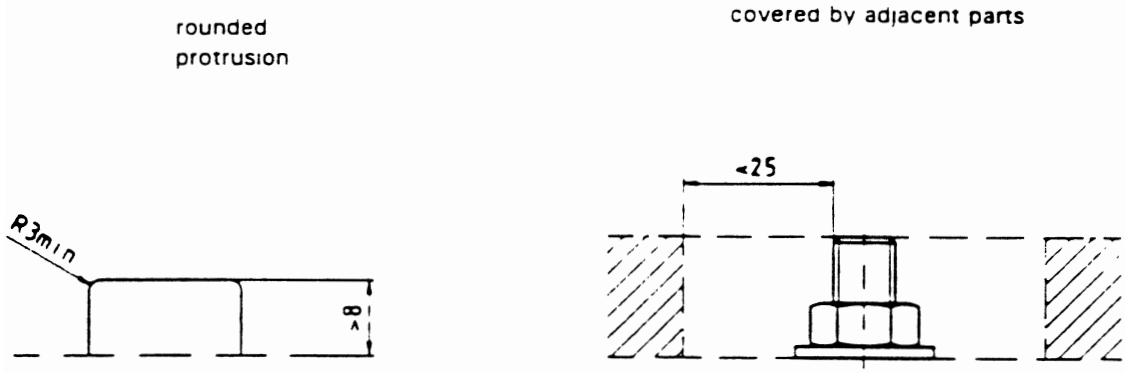
Where practical, protruding bolt threads in the user's free space shall be avoided by passing the bolt from the other side.

Nuts and bolts shall be safeguarded against working themselves loose.

Items of protection padding shall be attached in such a way as to ensure their remaining in place during use.

Dimensions in millimetres





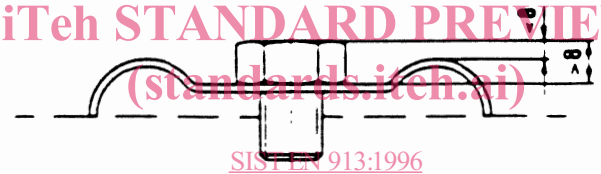


Figure 1: Examples of permissible protruding parts

Dimensions in millimetres

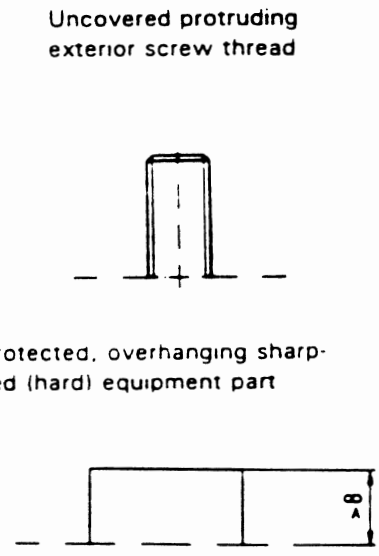


Figure 2: Examples of non-permissible protruding parts

5.2 Entrapment

5.2.1 Gaps and shearing/crushing points

When in use there shall be no gaps and/or shearing/crushing points that can create a danger of entrapment.

This shall be assessed by carrying out a visual inspection and measurement using the methods specified in annex A. This also applies to all parts used during adjustment and transportation of equipment.

5.2.2 Unintentional dropping

Where a transport system is used, it shall not be possible for the equipment to drop when loaded at one end with a minimum weight of 75 kg.

When a transportation device encounters a threshold the mechanism shall not be able to disengage or drop unintentionally.

5.3 Stability and strength

5.3.1 General

Verification of the stability and strength of equipment shall be achieved by engineering calculation or by testing in accordance with the procedures specified in annex B

NOTE: Testing is the preferred method and is usually required in the individual product specifications. The horizontal force to be applied is calculated from 40 % of the self-weight of equipment with a minimum of 90 N.

5.3.2 Stability

When tested in accordance with annex B, equipment shall neither tilt nor slide.

5.3.3 Strength

When tested in accordance with annex B, equipment shall not collapse or fracture, or show any permanent deformation that would result in an additional safety hazard as described in the standard.

5.4 Adjustment devices

Any adjustment devices shall prevent accidental changes during use of the device or the equipment.

None of the operating levers shall protrude into the user's free space.

This shall be assessed by carrying out a visual inspection and operation of the adjustment device.

5.5 Shock absorption of top padding

When tested in accordance with the method specified in annex C, the peak acceleration shall not exceed 500 m/s^{-2} (50 *g*).

6 Marking

All gymnastic equipment shall bear the following marking:

a) the number of the relevant European Standard;

b) means to identify the manufacturer and/or the responsible supplier.