



SLOVENSKI STANDARD
SIST EN 915:1996

01-december-1996

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Gymnastic equipment - Asymmetric bars - Functional and safety requirements, test methods

Turngeräte - Stufenbarren - Funktionelle und sicherheitstechnische Anforderungen, Prüfverfahren

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Matériel de gymnastique - Barres asymétriques - Exigences fonctionnelles et de sécurité, méthodes d'essai

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Ta slovenski standard je istoveten z: EN 915:1996

ICS:

97.220.30 Oprema za dvoranske športe Indoor sports equipment

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EUROPEAN STANDARD

EN 915

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1996

ICS 97.220.30

Descriptors: sport equipment, gymnastic equipment, asymmetric bars - Gymnastic equipment, safety, accident prevention, specifications, dimensions, stability, rigidity, mechanical strength, marking

English version

**Gymnastic equipment - Asymmetric bars -
Functional and safety requirements, test methods**

Matériel de gymnastique - Barres asymétriques
- Exigences fonctionnelles et de sécurité,
méthodes d'essai

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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 Européen de Normalisation
Europäisches Komitee für Normung

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

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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.

This European Standard should be read in conjunction with EN 913.

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 functional requirements (see clause 3) and specific safety requirements in addition to the general safety requirements in EN 913 (see clause 4).

This standard is applicable to 2 types of asymmetric bars (see table 1).

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 913

Gymnastic equipment – General safety requirements and test methods

3 Requirements

3.1 Classification

Asymmetric bars shall be classified by the design (types and sizes) as shown in table 1.

Table 1: Types

Type	Size	Description
1	–	freestanding asymmetric bar without fixing points
2	1 and 2	asymmetric bar with fixing points

3.2 Dimensions

All asymmetric bars shall comply with the dimensions specified in table 2 and figures 1 and 2.

An example of a suitable profile is shown in annex A.

Dimensions in millimetres

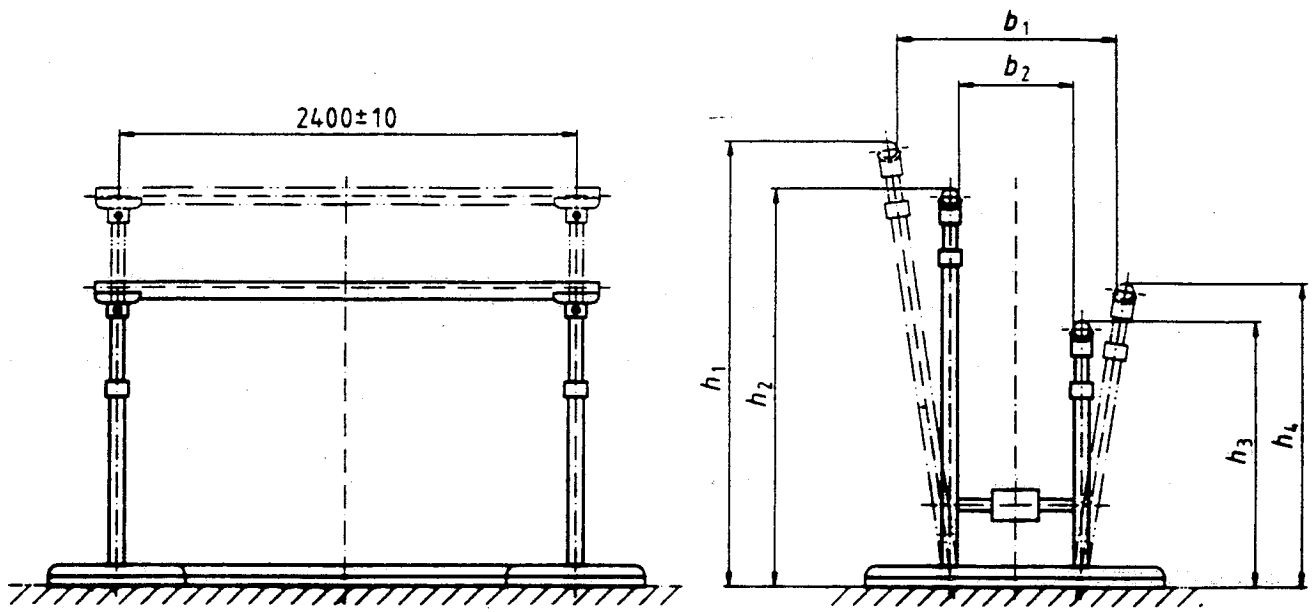


Figure 1: Asymmetric bars

NOTE : The dimension b_1 or b_2 is measured by inclination or parallel adjustment of the bar supports.

Table 2: Typical dimensions
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Dimensions in millimetres

Type	Size	b_1	b_2	h_1	h_2	h_3	h_4
1		1 150	600	2 350	2 100	1 400	1 600
2	1	1 300	600	2 350	2 100	1 400	1 600
	2	1 600	700				

Dimensions in millimetres

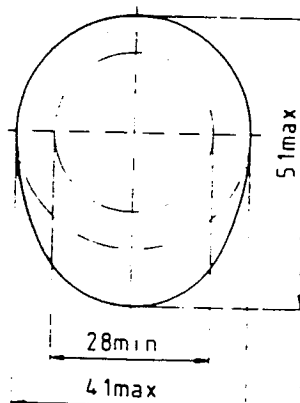


Figure 2: Profile of bars

NOTE: Any profile lying between the dimensions shown is acceptable.

4 Safety requirements

4.1 General requirements

Asymmetric bars shall comply with the requirements of EN 913, except insofar as they are modified by this European Standard.

4.2 Stability

When tested in accordance with 5.1, equipment shall not tip in any direction when subjected to a horizontal force representing 40 % of the self weight of the equipment.

4.3 Stiffness

When tested in accordance with 5.2, the deflection of the upper bar shall be a minimum of 40 mm and a maximum of 100 mm when subjected to a vertical force of 1 350 N.

4.4 Residual deflection

When tested in accordance with 5.2, the upper bar shall not show any residual deflection when the test force of 1 350 N is lifted.

4.5 Strength

When tested in accordance with 5.3, the upper bar shall show no signs of fracture, rupture or defects when subjected to a vertical force of 2 850 N.

NOTE: It is suggested that the upper bar be subjected to the stiffness and strength tests, whilst the lower bar is used for the endurance test.

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4.6 Rigidity of framework

When tested in accordance with 5.2 and with the bars set at their maximum useful height, the upper bar at the supporting cup point shall not deflect by more than 20 mm in longitudinal and transverse direction when subjected to horizontal forces of 570 N in these directions.

4.7 Endurance

When tested in accordance with 5.4, lower bars shall show no signs of wear and tear or rupture or deformation. After testing, bars shall also meet the stiffness requirement.

5 Test methods

5.1 Determination of stability

5.1.1 Principle

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

5.1.2 Apparatus

A strap (100 ± 1) mm wide.

5.1.3 Test temperature

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

5.1.4 Procedure

Carry out the test with the bars at their maximum height.

Apply a horizontal force calculated from 40 % of the self weight of the equipment with a minimum of 90 N to the highest point nearest to the plane of pivot for $1 \text{ min } {}_0^{-10} \text{ s}$.

Note any tipping of the equipment.

5.1.5 Expression of results

Express the level of stability by whether tipping has occurred.

5.2 Determination of stiffness and residual deflection

5.2.1 Principle

A vertical force is applied to the equipment and any deflection is measured. The force is then removed and any residual deflection is measured.

5.2.2 Apparatus

A strap (100 ± 1) mm wide.

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5.2.3 Test temperature <https://standards.iteh.ai/catalog/standards/sist/d7b29e0c-2853-4e7f-b14a-fb95f7db86d/sist-en-915-1996>

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

5.2.4 Procedure

Apply a vertical force at the centre of the equipment for $1 \text{ min } {}_0^{+10} \text{ s}$.

Measure the position of the loaded component from any convenient datum point. Record the deflection.

Remove the force. Measure the residual deflection $30 \text{ min } {}_0^{+30} \text{ s}$ after removal of the force. Record any residual deflection.

5.2.5 Expression of results

Express stiffness as the deflection under load in mm. Express the residual deflection as the deflection remaining in mm.

5.3 Determination of strength

5.3.1 Principle

The equipment is loaded with a calculated vertical force and examined for fracture or other damage.

5.3.2 Apparatus

A strap (100 ± 1) mm wide.

5.3.3 Test temperature

Condition the equipment for a minimum of 3 h at a test temperature of (23 ± 2) °C.

5.3.4 Procedure

Apply a vertical force at the centre of the equipment for 1 min $^{+10}_0$ s.

Note any fracture or other damage to the equipment. Remove the force and measure any residual deflection 30 min $^{+30}_0$ s after removal of the force.

5.3.5 Expression of results

Express the strength by whether fracture or other damage/residual deflection, that can cause a hazard, has occurred.

5.4 Determination of endurance

5.4.1 Principle

A vertical cyclic force is first applied to the point marking the centre of the overall useful length of the bar. Following completion a horizontal cyclic force is then applied to the same point. The bar is then examined for visual signs of deterioration.

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5.4.2 Apparatus

5.4.2.1 Attachment, e. g. stiff belt or rod of maximum width, 50 mm.

5.4.2.2 Cyclic loading machine, e. g. hydraulic cylinder.

5.4.3 Procedure

Apply a vertical force of 1 500 N at right angles to the bar by means of an attachment. The test frequency range shall be of 15 to 30 cycles per minute and the number of applications shall be 200 000. Following completion of the vertical testing, apply a horizontal force of 750 N at the side of the bar using the attachment.

Carry out the same number of applications using the same test frequency as for vertical testing.

5.4.4 Expression of results

Note any visual signs of deterioration.