



SLOVENSKI STANDARD

SIST EN 12276:2000

01-julij-2000

Gorniška oprema – Torna sidra (metulji) – Varnostne zahteve in preskusne metode

Mountaineering equipment - Frictional anchors - Safety requirements and test methods

Bergsteigerausrüstung - Klemmgeräte - Sicherheitstechnische Anforderungen und Prüfverfahren

Équipement d'alpinisme et d'escalade - Coinceurs mécaniques - Exigences de sécurité et méthodes d'essai

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Ta slovenski standard je istoveten z: EN 12276:1998

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ICS:

97.220.40	Oprema za športe na prostem in vodne športe	Outdoor and water sports equipment
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en

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English version

Mountaineering equipment - Frictional anchors - Safety requirements and test methods

Équipement d'alpinisme et d'escalade - Coinceurs
mécaniques - Exigences de sécurité et méthodes d'essai

Bergsteigerausrüstung - Klemmgeräte -
Sicherheitstechnische Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 7 August 1998.

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.

This European Standard exists 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Contents

Foreword	3
1 Scope	4
2 Normative reference	4
3 Definitions	4
3.1 frictional anchor	4
3.2 means of attachment	4
3.3 holding force	4
4 Safety requirements	5
4.1 Design	5
4.2 Strength	5
5 Test methods	5
5.1 Test samples	5
5.2 Apparatus for strength test	5
5.3 Conditioning and test conditions	7
5.4 Procedures	7
6 Information to be supplied	8
7 Marking	8
Annex A (informative) Standards on mountaineering equipment	9
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	10

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 136 "Sports, playground and other recreational 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 March 1999, and conflicting national standards shall be withdrawn at the latest by March 1999.

The text is based on UIAA-Standard L (Union Internationale des Associations d'Alpinisme), which has been prepared with international participation.

This standard is one of a package of standards for mountaineering equipment, see annex A.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

Annexes A and ZA of this European Standard are for information only.

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

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1 Scope

This standard specifies safety requirements and test methods for frictional anchors for use in mountaineering including climbing.

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.

prEN 12275

Mountaineering equipment – Connectors – Safety requirements and test methods

EN 20139

Textiles – Standard atmospheres for conditioning and testing (ISO 139 : 1973)

3 Definitions

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

3.1 frictional anchor: Adjustable wedge-shaped body, which is intended to be wedged in cracks in the rock and is able to withstand a load in the direction of the longitudinal axis of the means of attachment.

3.2 means of attachment: Any system which allows the attachment of a connector (in accordance with prEN 12275).

3.3 holding force: The force necessary to cause the frictional anchor to break or slip through the test apparatus, as determined in the strength test in accordance with 5.4.2.

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4 Safety requirements

4.1 Design

4.1.1 Frictional anchors shall be fitted with a means of attachment to a connector.

If the means of attachment is sewn, the stitching shall contrast with the background in colour or surface appearance.

4.1.2 The means of attachment shall be large enough to accommodate a pin with a diameter of 15 mm.

4.1.3 All edges of the frictional anchor and/or the means of attachment that may come into contact with fingers or combinable components shall be free from burrs.

4.2 Strength

When tested in accordance with 5.4.2, the holding force shall be at least 5,0 kN.

5 Test methods

5.1 Test samples

As least two frictional anchors shall be provided for the test. If an frictional anchor is manufactured in different sizes, each size shall be tested.

5.2 Apparatus for strength test

5.2.1 Layout

The apparatus consists of two parallel, rigid steel supporting jaws for the adjustable parts of the frictional anchor and of a loading bar with a diameter of $(10 \pm 0,1)$ mm for the means of attachment, see figure 2.

The static friction between the supporting jaws and the frictional anchor shall be great enough to prevent the frictional anchor from slipping through at the test load, but the maximal surface roughness of R_{max} shall not exceed 500 μm .

The surface of the loading bar shall have an arithmetical mean deviation of the profile of $R_a = 0,8 \mu\text{m}$ and a maximal surface roughness of $R_{max} = 6,3 \mu\text{m}$.

There are no surface roughness requirements for the loading bar when the means of attachment is other than textile material.

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5.2.2 Adjustment

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The distance s between the supporting jaws shall be according to the following formula:

$$\text{Position 1: } s = b_{\min} + [(b_{\max} - b_{\min})/4]$$

$$\text{Position 2: } s = b_{\min} + [(b_{\max} - b_{\min})\%4]$$

where

b_{\min} is the minimum adjustable width

b_{\max} is the maximum adjustable width, see figure 1.

If the range between b_{max} and b_{min} is less than 5 mm only one position according to the following formula shall be adjusted:

$$s = b_{min} + [(b_{max} - b_{min}) / 2]$$

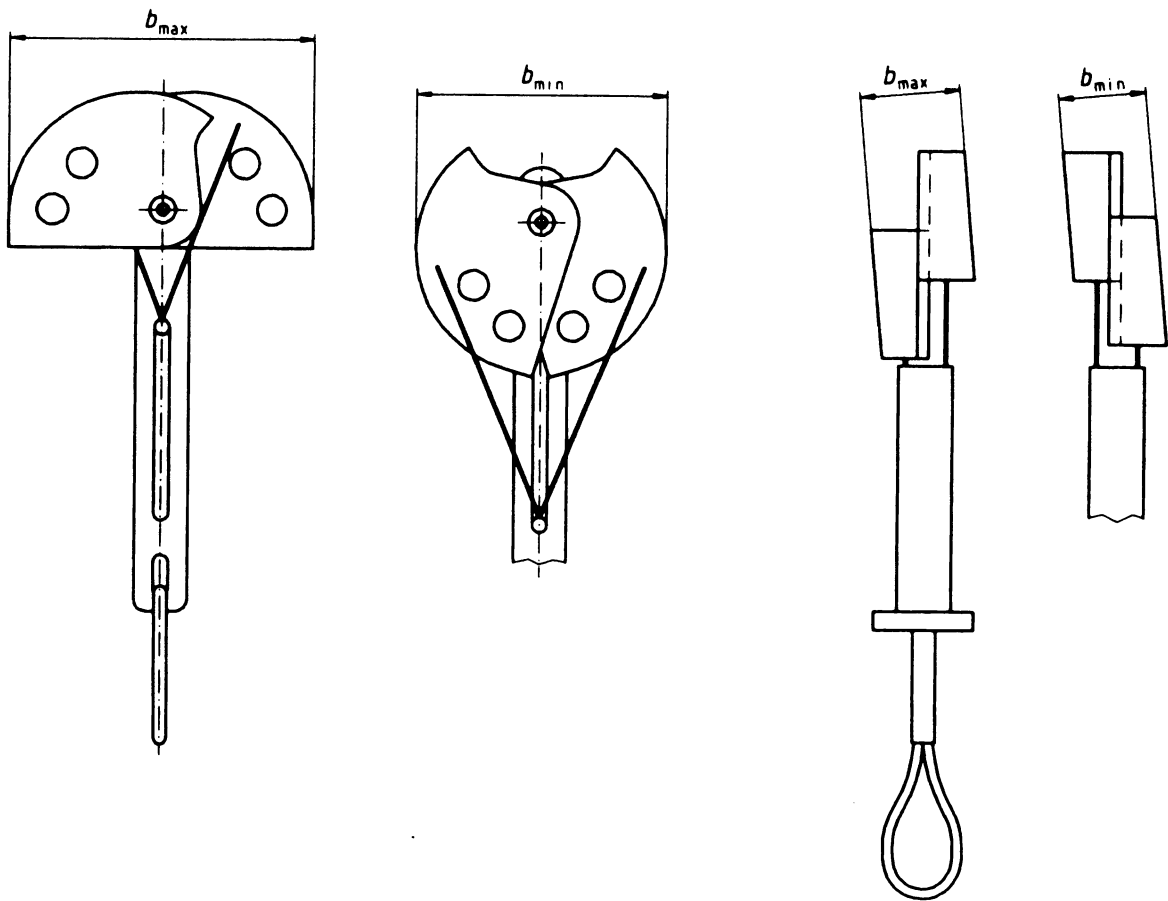


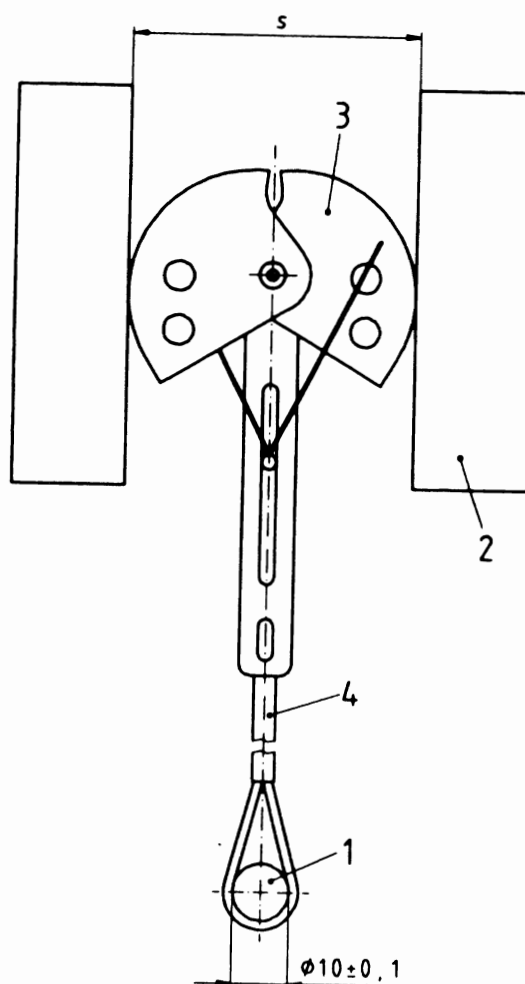
Figure 1: Examples of frictional anchors

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Dimensions in millimetres



- 1) loading bar
- 2) supporting jaws
- 3) frictional anchor
- 4) means of attachment

Figure 2: Layout and adjustment of apparatus

5.3 Conditioning and test conditions

For the strength test according to 5.4.2 condition frictional anchors with textile means of attachment in accordance with EN 20139;

Carry out the strength test at a temperature of (23 ± 5) °C.

For frictional anchors with textile means of attachment, start the strength test within 3 min of removing them from the conditioning atmosphere.

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5.4 Procedure

5.4.1 Design

5.4.1.1 Check by visual examination that the requirements according to 4.1.1 are met.

5.4.1.2 Test the unloaded eye of the means of attachment in accordance with 4.1.2, with a pin of $(15 \pm 0,1)$ mm diameter.

5.1.4.3 Check by visual examination and handling that the requirements according to 4.1.3 are met.