



SLOVENSKI STANDARD

SIST EN 12277:2000

01-julij-2000

Gorniška oprema - Pasovi - Varnostne zahteve in preskusne metode

Mountaineering equipment - Harnesses - Safety requirements and test methods

Bergsteigerausrüstung - Anseilgurte - Sicherheitstechnische Anforderungen und Prüfverfahren

Equipement d'alpinisme et d'escalade - Harnais - Exigences de sécurité et méthodes d'essai

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Ta slovenski standard je istoveten z: **EN 12277:1998**

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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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English version

Mountaineering equipment - Harnesses - Safety requirements and test methods

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

Bergsteigerausrüstung - Anseilgurte -
Sicherheitstechnische Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 1 May 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

	Page
Foreword	3
1 Scope	4
2 Normative references	4
3 Definitions	4
3.1 harness	4
3.2 load bearing parts	4
3.3 non-load bearing parts	5
3.4 adjusting device	5
3.5 rope attachment points	5
3.6 belt	5
4 Safety requirements	5
4.1 Tape	5
4.2 Strength	6
5 Test methods	6
5.1 Conditioning and test conditions	6
5.2 Procedure	6
6 Information to be supplied	8
7 Marking	9
Annex A (informative) Standards on mountaineering equipment	13
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	14

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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 November 1998, and conflicting national standards shall be withdrawn at the latest by November 1998.

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.

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

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

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 harnesses for use in mountaineering including climbing. It is applicable to full body harnesses, small body harnesses, sit harnesses and chest harnesses.

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 892

Mountaineering equipment – Dynamic mountaineering ropes – 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 harness: Assembly of narrow textile fabric(s) (hereafter referred to as tape), adjusting device(s) or other elements which fit around the body to support it in a hanging position.

3.1.1 full body harness (type A): Harness which fits at least around the upper part of the body and the thighs. This type of harness will support an unconscious person in a head up position.

3.1.2 small body harness (type B): Full body harness according to 3.1.1 intended for people up to 40 kg. This type of harness is particularly suitable for people with an undeveloped or ill defined waistline.

3.1.3 sit harness (type C): Harness in the form of a waist belt and connecting sub-pelvic support suitably arranged to support a conscious body in a sitting position.

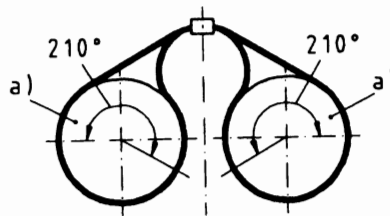
3.1.4 chest harness (type D): Harness which fits around the upper part of the body around the chest and under the armpits. This type of harness alone cannot support a person in the hanging position without permanent injury in less than one minute.

NOTE: A type D harness should only be used in combination with a type C harness.

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3.2 load bearing parts: Parts of the harness which transmit load in the tests in accordance with 5.2.3, 5.2.4, 5.2.5 or 5.2.6 as appropriate. The following parts of the harness in contact with the dummy during the test are **NOT** defined as load bearing parts:

- shoulder straps, the part of the thighs excluded in figure 1 and accessory parts.



- a) excluded area
(applies to both leg loops)

Figure 1: Non-load bearing parts in leg loops of a harness

3.3 non-load bearing parts: The other parts of the harness.

3.4 adjusting device: Any device which allows adjustment to be made to the harness(es) to the needs of the wearer.

3.5 rope attachment points: Parts of the harness intended for the attachment of the rope. Harnesses can have several attachment points.

3.6 belt: The part of the harness which is around the waist.

4 Safety requirements

4.1 Tape

4.1.1 Dimensions

The tape assembly shall comply with the following dimensions:

a) load bearing parts in contact with the dummy during the tests in accordance with 5.2.3.2, 5.2.4.2, 5.2.5.2 or 5.2.6.2 as appropriate:

- 1) harnesses of type B: 33 mm minimum,
- 2) all other types of harnesses: 43 mm minimum

b) shoulder straps:

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- 1) harnesses of type B: 23 mm minimum
- 2) all other types of harnesses: 28 mm minimum

c) all other parts:

no requirements.

4.1.2 Stability

When shuttleless loom webbing is used, the weft shall be locked by an additional locking thread or by any other system, which guarantees that the edges cannot become unravelled when one of the yarns breaks.

4.1.3 Threads

Threads in load bearing parts shall be compatible with the tape and, where it is visible, the stitching shall contrast with the tape in colour or surface appearance.

4.1.4 Metal parts

Any metal parts that can come into contact with fingers, shall be free from burrs.

4.2 Strength

4.2.1 When tested in accordance with 5.2.3, 5.2.4, 5.2.5.3, 5.2.5.4 or 5.2.6 no load bearing part shall break completely. In addition the dummy shall not be released from the harness.

4.2.2 When tested in accordance with 5.2.5.4 no load bearing part shall break completely and no load bearing buckles or adjusting devices shall slip more than 20 mm.

4.2.3 Any loop or combination of loops which are specified in the instructions for use for abseiling shall pass the tests in accordance with 5.2.3.3, 5.2.4.3 or 5.2.5.3 as appropriate.

4.2.4 If there are multiple rope attachment points (for different sizes) the tests in accordance with 5.2.3, 5.2.4, 5.2.5 or 5.2.6 shall be repeated as appropriate for each size as specified in the information to be supplied.

NOTE: Second and subsequent samples can be necessary.

4.2.5 If a harness of type B is adjustable, the range of adjustments shall be within the maximum and minimum ranges claimed on the label (in accordance with clause 7). This shall be checked, after each of the adjustments, in accordance with 5.2.1.

5 Test methods

5.1 Conditioning and test conditions

Condition the test samples in accordance with EN 20139.

Tests may then be done outside the conditioning room, but the temperature shall be (23 ± 5) °C and the tests shall begin within 5 min of removal from the conditioning room.

5.2 Procedure

5.2.1 General

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Verify the requirements according to 4.1.1, 4.2.2 and 4.2.4 by measuring with the harness on the dummy loaded in accordance with 5.2.3.2, 5.2.4.2, 5.2.5.2 or 5.2.6.2. For the width in 4.1.1 the measurements shall be made in three locations per dimension.

5.2.2 Stability

Check the requirements according to 4.1.2 using a test sample of 100 mm minimum length and cut one warp and one weft thread on each type of load bearing tape in the harness.

5.2.3 Type A harnesses

5.2.3.1 Put the harness on a rigid test dummy according to figure 2 and attach it with a single rope, according to EN 892, to the test machine in accordance with the instructions for use.

5.2.3.2 Load the harness gradually up to (800 ± 10) N in the head up position of the dummy. Under this load, the rope attachment points should be placed approximately symmetrical about the plane of symmetry of the dummy.

5.2.3.3 In the head up position of the dummy apply a force increasing gradually to $(15 \begin{smallmatrix} +0,3 \\ 0 \end{smallmatrix})$ kN over a period of $(2 \pm 0,25)$ min. Hold this force for $(1 \pm 0,25)$ min and then release the tension completely over a maximum of 1 min. Reapply the force immediately and increase gradually to $(15 \begin{smallmatrix} +0,3 \\ 0 \end{smallmatrix})$ kN as before and hold the force for $(3 \pm 0,25)$ min before release.

5.2.3.4 In the head down position of the dummy (see figure 3) apply a force increasing gradually to $(10 \begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix})$ kN over a period of $(2 \pm 0,25)$ min. Hold this force for $(1 \pm 0,25)$ min and then release the tension completely over a maximum of 1 min. Reapply the force immediately and increase gradually to $(10 \begin{smallmatrix} +0,3 \\ 0 \end{smallmatrix})$ kN as before and hold the force for $(3 \pm 0,25)$ min before release.

5.2.4 Type B harnesses

5.2.4.1 Put the harness on a rigid test dummy according to figure 3 and attach it with a single rope, according to EN 892, to the test machine in accordance with the instructions for use.

5.2.4.2 Load the harness gradually up to (500 ± 10) N in the head up position of the dummy. Under this load, the rope attachment points should be placed approximately symmetrical about the plane of symmetry of the dummy.

5.2.4.3 In the head up position of the dummy apply a force increasing gradually to $(10 \begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix})$ kN over a period of $(2 \pm 0,25)$ min. Hold this force for $(1 \pm 0,25)$ min and then release the tension completely over a maximum of 1 min. Reapply the force immediately and increase gradually to $(10 \begin{smallmatrix} +0,3 \\ 0 \end{smallmatrix})$ kN as before and hold the force for $(3 \pm 0,25)$ min before release.

5.2.4.4 In the head down position of the dummy apply a force increasing gradually to $(7 \begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix})$ kN over a period of $(2 \pm 0,25)$ min. Hold this force for $(1 \pm 0,25)$ min and then release the tension completely over a maximum of 1 min. Reapply the force immediately and increase gradually to $(7 \begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix})$ kN as before and hold the force for $(3 \pm 0,25)$ min before release.

5.2.5 Type C harnesses

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5.2.5.1 Put the harness on a rigid test dummy according to figure 2 and attach it with a rope, according to EN 892, to the test machine in accordance with the instructions for use.

5.2.5.2 Load the harness gradually up to (800 ± 10) N in the head up position of the dummy. Under this load, the rope attachment points should be placed approximately symmetrical about the plane of symmetry of the dummy.