



SLOVENSKI STANDARD
SIST EN 892:2012+A3:2023

01-julij-2023

Gorniška oprema - Dinamično obremenjene gorniške vrvi - Varnostne zahteve in preskusne metode (z dopolnili do vključno A3)

Mountaineering equipment - Dynamic mountaineering ropes - Safety requirements and test methods

Bergsteigerausrüstung - Dynamische Bergseile - Sicherheitstechnische Anforderungen und Prüfverfahren

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

Ta slovenski standard je istoveten z: EN 892:2012+A3:2023

ICS:

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

EN 892:2012+A3

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English Version

Mountaineering equipment - Dynamic mountaineering ropes - Safety requirements and test methods

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

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This European Standard was approved by CEN on 3 October 2021 and includes Amendment 1 approved by CEN on 9 June 2016, Amendment 2 approved by CEN on 3 October 2021 and Amendment 3 approved by CEN on 21 December 2022.

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 CEN-CENELEC Management Centre or to any CEN member.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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[SIST EN 892:2012+A3:2023](https://standards.iteh.ai/catalog/standards/sist/0239ec37-0130-4de3-a1be-af3c05154b09/sist-en-892-2012a3-2023)

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European foreword

This document (EN 892:2012+A3:2023) 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 October 2023, and conflicting national standards shall be withdrawn at the latest by October 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1 approved by CEN on 9 June 2016, Amendment 2 approved by CEN on 3 October 2021 and Amendment 3 approved by CEN on 21 December 2022.

This document supersedes A3 EN 892:2012+A2:2021 A3.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1, A2 A2 and A3 A3.

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

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

The main changes compared to EN 892:2004 are:

- a) editorial changes;
- b) conditioning climate in 5.2 was changed;
- c) dimension of the remaining tape for preparation of the sheath slippage test in 5.4.2 was changed;
- d) allowed slippage of the rope in the drop test in 5.6.3.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

EN 892:2012+A3:2023 (E)

Introduction

The text is based on UIAA-Standard B (International Mountaineering and Climbing federation), which has been prepared with international participation.

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

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1 Scope

This European Standard specifies safety requirements and test methods for dynamic ropes (single, half and twin ropes) in kernmantel construction for use in mountaineering including climbing.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

Ⓐ₃ EN ISO 6508-1:2016, *Metallic materials — Rockwell hardness test — Part 1: Test method (ISO 6508-1:2016)*

ISO 6487:2015¹, *Road vehicles — Measurement techniques in impact tests — Instrumentation* Ⓐ₃

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

dynamic mountaineering rope

rope, which is capable, when used as a component in the safety chain, of arresting the free fall of a person engaged in mountaineering or climbing with a limited peak force

3.2

single rope

dynamic mountaineering rope, capable of being used singly, as a link in the safety chain, to arrest a leader's fall

3.3

half rope

dynamic mountaineering rope, which is capable, when used in pairs, as a link in the safety chain to arrest the leader's fall

Note 1 to entry: See Figure 1.

3.4

twin rope

dynamic mountaineering rope, which is capable, when used in pairs and parallel, as a link in the safety chain to arrest a leader's fall

Note 1 to entry: See Figure 2.

¹ As impacted by ISO 6487:2015/Amd 1:2017.

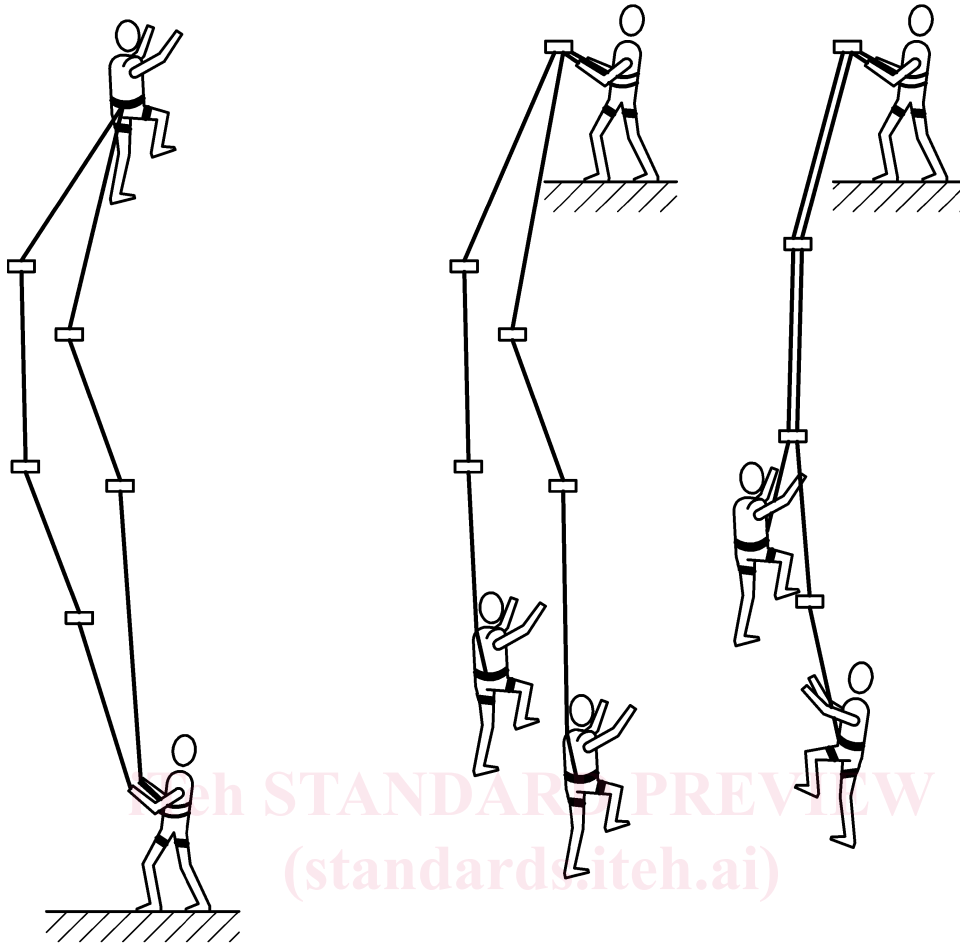


Figure 1 — Examples of use on half ropes

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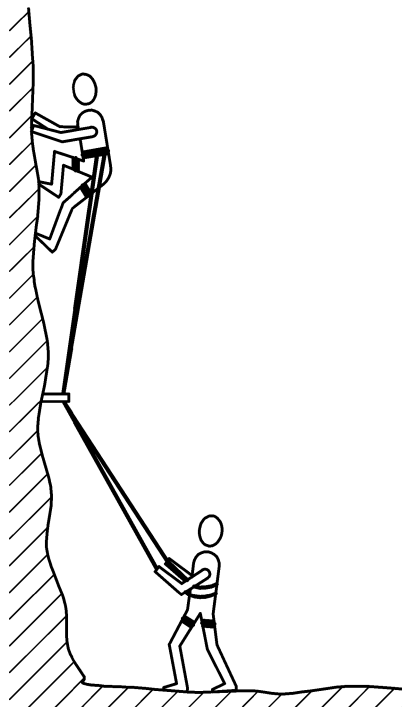


Figure 2 — Use of twin ropes

3.5

kernmantel rope

rope composed of a core and a sheath

3.6

safety chain

connection of linked elements which protects the climber or mountaineer against falls from a height

Note 1 to entry: The safety chain includes ropes connected to the anchors by connectors and to the climbers by harnesses.

4 Safety requirements

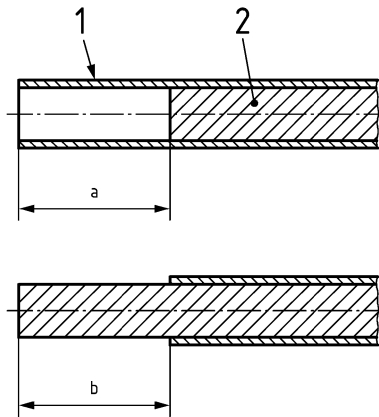
4.1 Construction

Dynamic ropes in accordance with this European Standard shall be made in a kernmantel construction. Diameter and mass per unit length are relevant characteristics. See test method in 5.3.

If the properties of the rope change along its length, for example: diameter, strength, markings, samples from each section shall be submitted for testing. The information to be supplied shall all correspond to the lowest performance section of the rope.

4.2 Sheath slippage

When tested in accordance with 5.4, the sheath slippage in a longitudinal direction relative to the core (in positive or negative direction) shall not exceed 1 % (20 mm) (see Figure 3).

**Key**

- 1 sheath
- 2 core
- a positive sheath slippage ≤ 20 mm
- b negative sheath slippage ≤ 20 mm

Figure 3 — Sheath slippage**4.3 Static elongation**

When tested in accordance with 5.5, the static elongation shall not exceed:

- 10 % in single ropes (single strand of rope);
- 12 % in half ropes (single strand of rope);
- 10 % in twin ropes (double strand of rope).

4.4 Dynamic Elongation

When tested in accordance with 5.6, the dynamic elongation shall not exceed 40 % during the first drop for each test sample.

4.5 Peak force during fall arrest, number of drops**4.5.1 Peak force in the rope**

When tested in accordance with 5.6, the peak force in the rope, during the first drop, for each test sample, shall not exceed:

- 12 kN in single ropes (single strand of rope);
- 8 kN in half ropes (single strand of rope);
- 12 kN in twin ropes (double strand of rope).

4.5.2 Number of drops

When tested in accordance with 5.6, each rope sample shall withstand at least 5, for twin ropes at least 12, consecutive drop tests without breaking.

5 Test methods

5.1 Test samples

A test sample with a length of:

- 40 m for single and half ropes,
- 80 m or 2×40 m for twin rope;

shall be available for the tests.

Carry out the tests in accordance with 5.3 on an unused test sample.

Carry out the tests in accordance with 5.4 on two unused test samples with a length of $(2\,250 \pm 10)$ mm.

Carry out the test in accordance with 5.5 on two unused test samples with a length of at least 1 500 mm.

Carry out the tests in accordance with 5.6 on three unused test samples with a minimum length of 5 m for single and half ropes, and 10 m for twin ropes, cut out of the available test sample.

5.2 Conditioning and test conditions

Dry the test samples for at least 24 h in an atmosphere of (50 ± 5) °C and less than 20 % relative humidity. Then condition these test samples in an atmosphere of (23 ± 2) °C and (50 ± 2) % relative humidity for at least 72 h. Then start testing these samples at a temperature of (23 ± 5) °C within 10 min.

5.3 Construction, diameter, and mass per unit length

5.3.1 Procedure

Clamp the test sample at one end.

Load the test sample without shock with a mass²⁾ of:

- $(10 \pm 0,1)$ kg for single ropes,
- $(6 \pm 0,1)$ kg for half ropes,
- $(5 \pm 0,1)$ kg for twin ropes

at a distance of at least 1 200 mm from the clamp.

After applying the load for 60 s mark within the next 10 s a reference length of $(1\,000 \pm 1)$ mm on the test sample. The distance of the marking from the clamp or attachment for the test sample shall be at least 50 mm.

Within a further 3 min measure the diameter in two directions around the diameter starting at points 90° apart at each of three levels approximately 100 mm apart. If the rope cross section is not circular, the maximum and minimum diameter are to be determined in each section. The length of the contact areas of the measuring instrument shall be (50 ± 1) mm. The rope cross-sectional area shall not be subject to any compression during the measurement.

Then cut out the marked portion of the test sample and determine the mass to the nearest 0,1 g.

Check that the construction of the rope is a kernmantel construction.

2) The mass can be introduced by a corresponding force.

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5.3.2 Expression of results

Express the diameter as the arithmetic mean of the six measurements to the nearest 0,1 mm.

Express the mass per unit length in ktex or g/m to the nearest 1 g.

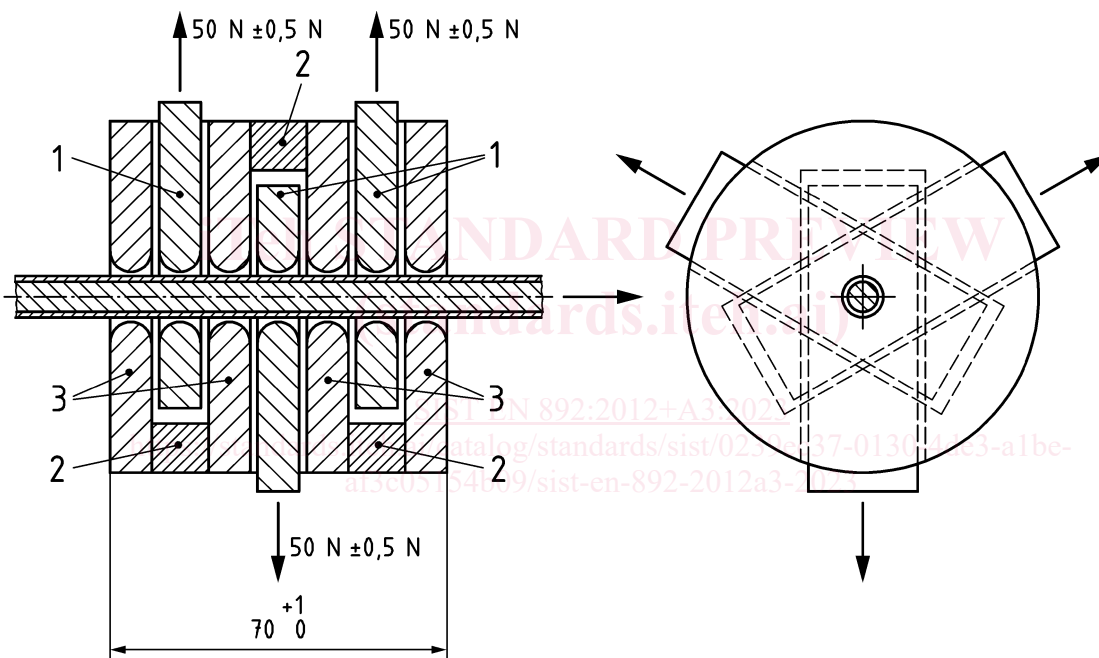
5.4 Sheath slippage

5.4.1 Principle

The rope is drawn through the apparatus illustrated in Figure 4, where the movement is restricted by radial forces. The resulting frictional force on the sheath causes slippage of the sheath relative to the core. The extent of this slippage is measured.

Dimensions in millimetres

A1



A1

Key

- 1 moving plates
- 2 spacers
- 3 fixed plates

Figure 4 — Apparatus for testing the sheath slippage