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Gorniška oprema - Pomožna vrv - Varnostne zahteve in preskusne metode

Mountaineering equipment - Accessory cord - Safety requirements and test methods

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Mountaineering equipment - Accessory cord - Safety requirements and test methods

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Bergsteigerausrüstung - Reepschnur -
Sicherheitstechnische Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 136.

If this draft becomes a European Standard, 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.

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COMITÉ EUROPÉEN DE NORMALISATION
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Contents		Page
Foreword.....		3
Introduction		4
1 Scope		5
2 Normative references		5
3 Terms and definitions		5
4 Safety requirements		5
5 Test methods.....		6
6 Marking		7
7 Information to be supplied.....		8
Annex A (informative) Standards on mountaineering equipment.....		9
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC.....		10

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<https://standards.iteh.ai/catalog/standards/sist/11407201-247b-4395-adcd-c4ca7d4fec9c/sist-en-564-2007>

Foreword

This document (prEN 564:2005) has been prepared by the Technical Committee CEN/TC 136 "Sports, playground and other recreational equipment", the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 564:1997.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to support Essential Requirements of EU Directive 89/686/EEC.

For relationship with EU Directives, see informative Annex ZA, which is an integral part of this document.

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Introduction

The text of this document is based on the former UIAA-Standard G (Union Internationale des Associations d'Alpinisme), which has been developed 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 accessory cord comprising a core and a sheath, supplied on a drum or in separate lengths, for use in mountaineering including climbing.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 919:1995, *Fibre ropes for general service — Determination of certain physical and mechanical properties*.

EN 20139, *Textiles — Standard atmospheres for conditioning and testing (ISO 139:1973)*.

3 Terms and definitions

For the purposes of this European Standard, the following term and definition applies:

3.1

accessory cord

cord or rope, comprising a core and a sheath, that has a nominal diameter of 4 mm to 8 mm and is intended to withstand forces, but not intended to absorb energy

4 Safety requirements

4.1 Diameter

The nominal diameter d_{nom} shall be one of the values given in Table 1.

The limit deviation between the actual value d_{eff} and the given nominal diameter shall be not more than
 $+0,5$ mm.
 $-0,2$ mm.

Table 1 — Nominal diameter and minimum tensile strength

Nominal diameter d_{nom} mm	Minimum tensile strength $F_{\text{B min}}$ kN
4	3,2
5	5,0
6	7,2
7	9,8
8	12,8

4.2 Tensile strength

4.2.1 The tensile strength of the accessory cord shall be not less than the value of F_B , calculated using equation (1):

$$F_B = d_{\text{nom}}^2 f \quad (1)$$

where:

d_{nom} is the nominal diameter in millimetres;

f is 200 N/mm².

4.2.2 The minimum tensile strength of the accessory cord, $F_{B\text{min}}$ shall be as given in Table 1 for the appropriate diameter.

4.3 Packaging

If accessory cord is supplied on a drum and consists of more than one piece, the ends of the pieces shall be clearly visible and not joined together.

No testing required.

5 Test methods

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5.1 Test sample

5.1.1 Carry out the tests described in 5.4 on a test sample of minimum length 8 000 mm.

5.1.2 Carry out the test described in 5.5 on a test sample of minimum length 2 000 mm.

5.2 Conditioning

Condition the test samples as described in EN 20139.

Carry out the test at a relative humidity which may be outside the standard atmosphere given in EN 20139, but at a temperature of (23 ± 5) °C, in which case the test shall begin within 5 min of removal from conditioning atmosphere.

5.3 Diameter

Measure the actual diameter d_{eff} under an initial force of (40 ± 1) N after the latter has been applied for (60 ± 15) s.

Ensure that the cross-sectional area of the accessory cord is not subjected to any deformation during the measurement.

Take the measurements in two directions around the diameter, starting at points 90° apart, at each of three locations approximately 300 mm apart. The length of the contact areas of the measuring instrument shall be (50 ± 1) mm.

Report the arithmetic mean of the six measurements, to the nearest 0,1 mm.

5.4 Determination of tensile strength

Carry out the determination of the tensile strength by using a tensile testing machine and fixing devices in accordance with 4.1 of EN 919:1995.

The minimum free length between attachment points shall be 200 mm.

Determine the loading speed, v , as a function of the free length of the test sample, using equation (2):

$$v = 0,5 / \pm 20\% \quad (2)$$

where:

v is the loading speed in millimetres per minute;

l is the free length in millimetres between points of attachment.

5.5 Determination of mass per unit length

Carry out the test with a minimum free length between points of attachment of 1 300 mm.

NOTE 1 There is no requirement for any particular type of fixing device.

Load the test sample without shock at a rate not exceeding 1 mm/s by means of a $(4 \pm 0,05)$ kg test mass.

Retain the maximum load for (60 ± 15) s and mark a reference length of $(1\ 000 \pm 1)$ mm, with a distance between the marks and the points of attachment of at least 100 mm.

Release the load and cut the marked part from the test sample and determine its mass to the nearest 0,1 g.

Report the mass per unit length in grams per metre, to at least two significant figures.

NOTE 2 There is no requirement for mass per unit length, but it can be marked on the drum or packaging of the accessory cord (see clause 6).

6 Marking

The drum or production-line packaging of accessory cords shall be marked with at least the following information:

- a) word "accessory cord" and the number of this document: EN 564;
- b) name or trademark of the manufacturer, importer or supplier;
- c) nominal diameter of the accessory cord;
- d) tensile strength which the manufacturer ensures at the time of manufacturing;
- e) if accessory cord is supplied on a drum and consists of more than one piece, the number of pieces shall be stated on the drum.

NOTE The mass per unit length can also be marked.

7 Information to be supplied

The information shall contain at least the following:

- a) the name or trademark of the manufacturer, importer or supplier;
- b) number of this document: EN 564;
- c) diameter of the accessory cord as specified in 5.3;
- d) mass per unit length of the accessory cord as specified in 5.5;
- e) tensile strength which the manufacturer ensures at the time of manufacturing;
- f) use of the product;
- g) how to choose other components for use in the system;
- h) how to maintain/service the product, on the effects of chemical reagents and how to disinfect the product without adverse effect;
- i) lifespan of the product or how to assess it and that after a serious fall the accessory cord should be withdrawn from use as soon as possible;
- j) influence of wet and icy conditions;
- k) danger of sharp edges;
- l) influence of storage and aging due to use.

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