

BS EN 564:2014



BSI Standards Publication

# Mountaineering equipment — Accessory cord — Safety requirements and test methods

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**National foreword**

This British Standard is the UK implementation of EN 564:2014. It supersedes BS EN 564:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee SW/136/5, Sports, Playground and other Recreational Equipment - Mountaineering Equipment.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

**Mountaineering equipment - Accessory cord - Safety requirements and test methods**Équipement d'alpinisme et d'escalade - Cordelette -  
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## Foreword

This document (EN 564:2014) 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of an identical text or by endorsement, at the latest by June 2015, and conflicting national standards shall be withdrawn at the latest by June 2015.

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

This document supersedes EN 564:2006.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of 89/686/EEC.

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

Compared with EN 564:2006 the following changes were made:

- a) Tolerance for the diameter changed in 4.2;
- b) Conditioning changed in 5.2.

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

## 1 Scope

This European Standard specifies safety requirements and test methods for accessory cords, supplied on a drum or in separate lengths, for use in mountaineering including climbing.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 2307:2010, *Fibre ropes - Determination of certain physical and mechanical properties (ISO 2307:2010)*

## 3 Terms and definitions

For the purposes of this document, the following term and definition applies.

### 3.1

#### accessory cord

cord that is intended to withstand forces, but not intended to absorb energy

## 4 Safety requirements

### 4.1 Construction

An accessory cord shall be made in a kernmantel construction and have a nominal diameter of 4 mm to 8 mm.

### 4.2 Diameter

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

The limit deviation between the actual value  $d_{\text{eff}}$  and the given nominal diameter shall be not more than

$$\begin{pmatrix} +0,7 \\ -0,2 \end{pmatrix} \text{ mm.}$$

The actual diameter shall be determined according to 5.3.

**Table 1 — Nominal diameter and minimum tensile strength**

<b>Nominal diameter</b> $d_{\text{nom}}$ mm	<b>Minimum tensile strength</b> $F_{\text{Bmin}}$ kN
4	3,2
5	5,0
6	7,2
7	9,8
8	12,8

### 4.3 Tensile strength

**4.3.1** The tensile strength of the accessory cord shall be not less than the value of  $F_{\text{Bmin}}$ , (see Table 1) calculated using Formula (1):

$$F_{\text{Bmin}} = d_{\text{nom}}^2 \times f \quad (1)$$

Where

$d_{\text{nom}}$  is the nominal diameter in millimetres;

$f$  is 200 N/mm<sup>2</sup>.

**4.3.2** The tensile strength shall be determined according to 5.4.

### 4.4 Mass per unit length

This mass shall be determined according to 5.5 and given as information according to Clause 7 d).

## 5 Test methods

### 5.1 Test sample

**5.1.1** Carry out the tests described in 5.4 on one test sample.

**5.1.2** Carry out the tests described in 5.5 on one test sample.

### 5.2 Conditioning

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

### 5.3 Diameter

Measure the actual diameter  $d_{\text{eff}}$  under a load of  $(4 \pm 0,05)$  kg after the latter has been applied for  $(60 \pm 15)$  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  $(50 \pm 1)$  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 EN ISO 2307:2010, 5.1.

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 Formula (2):

$$v = (0,5 \pm 0,1) l \quad (2)$$

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 1 200 mm.

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

Load the test sample without shock by means of a  $(4 \pm 0,05)$  kg test mass.

Retain the load for  $(60 \pm 15)$  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.

There is no specific 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 items:

- a) the number of this European Standard, i.e. EN 564;
- b) name of the manufacturer or its authorized representative;
- 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;
- f) year of manufacture;
- g) Optionally: the mass per unit length.



## 7 Information supplied by the manufacturer

The accessory cord shall be supplied with an explanatory leaflet, and written in at least the official language(s) of the state of destination containing at least the following items:

- a) name and address of the manufacturer or its authorized representative;
- b) the number of this European Standard, i.e. EN 564;
- c) nominal diameter of the accessory cord as specified in 4.1;
- d) mass per unit length of the accessory cord as specified in 4.3;
- 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;
- j) after a serious fall the accessory cord should be withdrawn from use as soon as possible;
- k) influence of wet and icy conditions;
- l) danger of sharp edges;
- m) influence of storage and ageing due to use;
- n) influence of knots on the strength;
- o) meaning of the marking of the product.

## 8 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.

## Annex A (informative)

### Standards on mountaineering equipment

Table A.1 — List of standards on mountaineering equipment

No	Document	Title
1	EN 564	<i>Mountaineering equipment — Accessory cord — Safety requirements and test methods</i>
2	EN 565	<i>Mountaineering equipment — Tape — Safety requirements and test methods</i>
3	EN 566	<i>Mountaineering equipment — Slings — Safety requirements and test methods</i>
4	EN 567	<i>Mountaineering equipment — Rope clamps — Safety requirements and test methods</i>
5	EN 568	<i>Mountaineering equipment — Ice anchors — Safety requirements and test methods</i>
6	EN 569	<i>Mountaineering equipment — Pitons — Safety requirements and test methods</i>
7	EN 892	<i>Mountaineering equipment — Dynamic mountaineering ropes — Safety requirements and test methods</i>
8	EN 893	<i>Mountaineering equipment — Crampons — Safety requirements and test methods</i>
9	EN 958	<i>Mountaineering equipment — Energy absorbing systems for use in klettersteig (via ferrata) climbing — Safety requirements and test methods</i>
10	EN 959	<i>Mountaineering equipment — Rock anchors — Safety requirements and test methods</i>
11	EN 12270	<i>Mountaineering equipment — Chocks — Safety requirements and test methods</i>
12	EN 12275	<i>Mountaineering equipment — Connectors — Safety requirements and test methods</i>
13	EN 12276	<i>Mountaineering equipment — Frictional anchors — Safety requirements and test methods</i>
14	EN 12277	<i>Mountaineering equipment — Harnesses — Safety requirements and test methods</i>
15	EN 12278	<i>Mountaineering equipment — Pulleys — Safety requirements and test methods</i>
16	EN 12492	<i>Mountaineering equipment — Helmets for mountaineers — Safety requirements and test methods</i>
17	EN 13089	<i>Mountaineering equipment — Ice-tools — Safety requirements and test methods</i>
18	EN 15151-1	<i>Mountaineering equipment — Braking devices — Part 1: Braking devices with manually assisted locking, safety requirements and test methods</i>
19	EN 15151-2	<i>Mountaineering equipment — Braking devices — Part 2: Manual braking devices, safety requirements and test methods</i>

## Annex ZA (informative)

### Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC

This European Standard has been prepared under a mandate given to CEN by the European Union and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 89/686/EEC.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and Directive 89/686/EEC**

Clause(s)/sub-clause(s) of this EN	Essential Requirements (ERs) of Directive 89/686/EEC	Qualifying remarks/ Notes
4.1, 4.2	1.2.1 Absence of risk and other 'inherent' nuisance	
4.3	1.3.2 Lightness and design strength	
6	2.12 PPE bearing one or more identification or recognition marks directly or indirectly relating to health and safety	
7	1.4 Information supplied by the manufacturer	

**WARNING —** Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.





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