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BSI Standards Publication

Mountaineering equipment — Rope clamps — Safety requirements and test methods

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National foreword

This British Standard is the UK implementation of EN 567:2013. It supersedes BS EN 567:1997 which is withdrawn.

CEN correction notice 8 May 2013 provided a revised English language text, incorporating the following editorial corrections:

- moved Figure 1 in subclause 4.1.5;
- exchanged Figure 2 and Figure 3;
- in Clause 6, item a), deleted “and address” to read “name of the manufacturer or its authorised representative”;
- corrected title to Figure 4 with “according to ISO 7000, Symbol No. 1641”.

The UK participation in its preparation was entrusted by Technical Committee SW/136, Sports, playground and other recreational equipment, to Subcommittee SW/136/5, Sports, Playground and other Recreational Equipment – Mountaineering Equipment.

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

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Date	Text affected
31 July 2013	Implementation of CEN correction notice 8 May 2013

English Version

Mountaineering equipment - Rope clamps - Safety requirements and test methods

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

Bergsteigerausrüstung - Seilklemmen -
Sicherheitstechnische Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 12 January 2013.

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Foreword

This document (EN 567:2013) 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of an identical text or by endorsement, at the latest by September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

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 567:1997.

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 EU Directive(s).

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

In comparison with the previous edition EN 567:1997, the following significant changes have been made:

- a) editorial revision;
- b) introduction of new test methods to test the prevention of an accidentally detachment of the rope from the rope clamp;
- c) update of Annex A.

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, 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.

Introduction

The text is based on UIAA-Standard 126 (International Mountaineering and Climbing Federation), which has been developed with international participation.

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

1 Scope

This European Standard applies to rope clamps used with dynamic mountaineering ropes according to EN 892 or accessory cord according to EN 564 and low stretch kernmantel ropes according to EN 1891.

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 564, *Mountaineering equipment — Accessory cord — Safety requirements and test methods*

EN 892, *Mountaineering equipment — Dynamic mountaineering ropes — Safety requirements and test methods*

EN 1891, *Personal protective equipment for the prevention of falls from a height — Low stretch kernmantel ropes*

3 Terms and definitions

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

3.1

rope clamp

mechanical device which, if attached to a rope or an accessory cord of appropriate diameter, will clamp under load in one direction and move freely in the opposite direction

3.2

locking device

device that, when closed around a rope, prevents the unintended removal of the rope from the rope clamp

4 Safety requirements

4.1 Design

4.1.1 Rope clamps shall have a locking device or similar mechanism that, if closed prevents a rope or an accessory cord with a diameter within the range marked on the rope clamp (see Clause 6) from being removed from the rope clamp. The rope clamps shall be designed in such a way that when used in accordance with the manufacturer's instructions, at least two independent actions shall be needed, before the rope or accessory cord can be released from the rope clamp.

4.1.2 When tested according to 5.2.2 rope clamps shall clamp onto a rope or an accessory cord in one direction and to move freely in the opposite direction.

4.1.3 When tested according to 5.3.1 rope clamps shall not completely break the rope or accessory cord.

4.1.4 When tested according to 5.2.3 rope clamps shall have an attachment point of at least diameter 13 mm (see Figure 1). The edges of all openings for handles and connectors or sling attachment shall be as shown in Figure 1.

4.1.5 When tested according to 5.2.1 all edges of a rope clamp shall be free of burrs.

Dimensions in millimetres

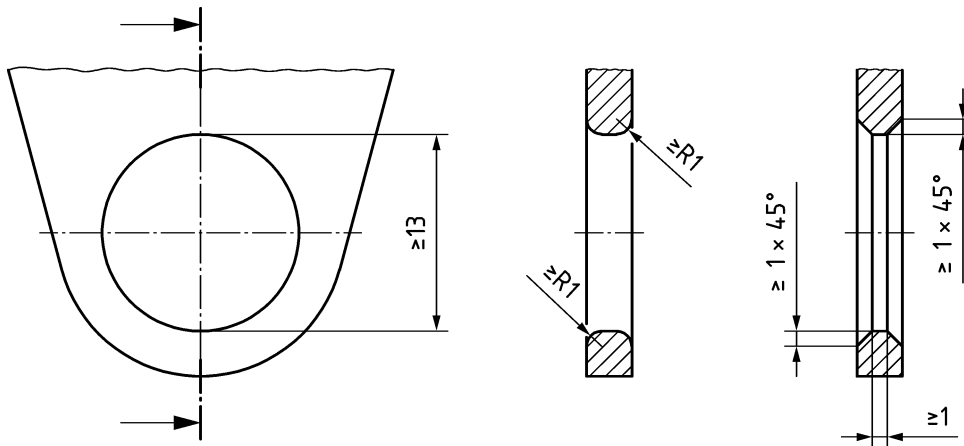


Figure 1 — Edges of openings

4.2 Strength

4.2.1 When tested according to 5.3.1, rope clamps with a rope or accessory cord of diameter within the range marked on the rope clamp (see Clause 6) attached shall show no visible signs of damage or deformation which can impair its function.

4.2.2 When tested according to 5.3.2 the rope or accessory cord shall not be detached from the rope clamp at the force of at least 400 N.

4.2.3 When tested according to 5.3.3 the rope or accessory cord shall not be detached from the rope clamp at the force of at least 2 000 N.

5 Test methods

5.1 Test conditions

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

5.2 Examination of design

5.2.1 General

Test by tactile examination that the edges of the rope clamp are free of burrs.

5.2.2 Function

With the locking device closed and a rope or accessory cord of maximum diameter, as marked on the rope clamp, check that the rope or accessory cord cannot be removed sideways. Check also, by pulling by hand, that the rope clamp locks in one direction and can slip in the opposite direction. Repeat the checks using a rope or accessory cord of minimum diameter as marked on the rope clamp.

5.2.3 Attachment

Determine the dimension of the attachment opening (see 4.1.4) by measuring with a bar of $(13^{+0,01}_0)$ mm diameter.

5.3 Strength test

5.3.1 Determination of the strength

Attach a rope according to EN 892 or EN 1891 or accessory cord according to EN 564 of maximum diameter as marked on the rope clamp, to the rope clamp as specified by the manufacturer and a connector in the attachment point of the rope clamp. Fix the system in a tensile testing machine and load it with a force of $(4 \pm 0,1)$ kN using a test speed of (100 ± 50) mm/min. Release the load immediately. Repeat four more times.

Move the rope clamp between application of each force, so that the locking force is applied to a previously unloaded point of the rope or accessory cord in each case.

Repeat the procedure using a rope or accessory cord of minimum diameter, as marked on the rope clamp.

Note any visible signs of damage or deformation, which can impair its function.

5.3.2 Pushing test

Attach a loop of rope according to EN 892 or EN 1891 or accessory cord according to EN 564 of maximum diameter as marked on the rope clamp to the rope clamp as specified by the manufacturer and a connector in the upper hole of the rope clamp (see Figure 2). If there is no upper hole, clamp or use any other means of attachment without influence on the test. Fix the system in a tensile testing machine and load it with a force of (400 ± 10) N, using a test speed of (100 ± 50) mm/min. Release the load immediately. Repeat the procedure using a rope or accessory cord of minimum diameter, as marked on the rope clamp.

Note any visible signs of damage or deformation, which can impair its function.

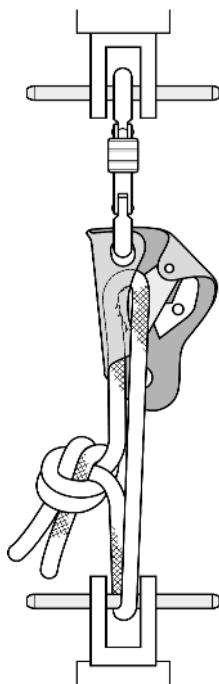


Figure 2 — Pushing test

5.3.3 Pulling test

Attach a rope according to EN 892 or EN 1891 or accessory cord according to EN 564 of maximum diameter as marked on the rope clamp to the rope clamp as specified by the manufacturer and a connector in the hole of the rope clamp (see Figure 3). Fix the system in a tensile testing machine and load it with a force of $(2 \pm 0,01)$ kN using a test speed of (100 ± 50) mm/min. Release the load immediately. The slack on the untensioned strand shall be at least 100 mm (see Figure 3). Repeat the procedure using a rope or accessory cord of minimum diameter, as marked on the rope clamp.

Note any visible signs of damage or deformation, which can impair its function.

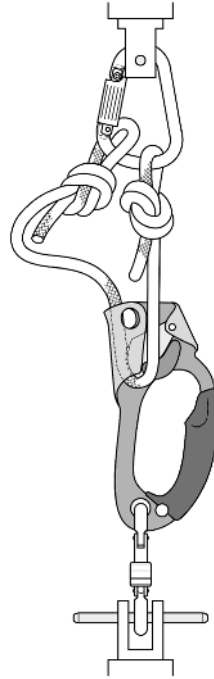


Figure 3 — Pulling test

6 Marking

Rope clamps shall be marked with at least the following information:

- a) name of the manufacturer or its authorised representative;

NOTE For a definition of manufacturer and authorised representative see Regulation 765/2008 [1].

- b) range of rope or accessory cord diameters, in millimetres, to the nearest whole number, with which the rope clamp can be used. The symbol \varnothing shall be used as a prefix to indicate the diameter, e.g. $\varnothing 7$ mm to 11 mm;
- c) pictogram showing the direction of use;
- d) graphical symbol (see Figure 4), which advises the user to read the information given by the manufacturer.



Figure 4 — Operator's manual (according to ISO 7000, Symbol No. 1641)

7 Information supplied by the manufacturer

The information supplied by the manufacturer shall contain at least the following elements:

- a) name and address of the manufacturer or its authorised representative [1];
- b) reference number of this European Standard: EN 567;
- c) the meaning of any markings on the product;
- d) the use of the product;
 - 1) how to choose other components for use in the system, e.g. how to select the right type and diameter of rope;
 - 2) how to insert and extract the rope or accessory cord;
 - 3) how the locking device works;
 - 4) where and how to attach to the rope clamp;
- e) how to maintain and service the product;
- f) the lifespan of the product and factors affecting the lifespan;
- g) advice that the product shall only be used by trained and/or otherwise competent persons or the user should be under the direct supervision of a trained and/or otherwise competent persons;
- h) the effects of chemical reagents and temperature on the product;
- i) conditions of storage.

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 hand 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 Personal protective equipment

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

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 factors	
4.1.5	1.2.1.2 Satisfactory surface condition of all PPE parts in contact with the user	
4.1, 4.2	1.3.2 Lightness and design strength	
6, 7	1.4 Information supplied by the manufacturer	
6	2.12 PPE bearing one or more identification or recognition marks directly or indirectly relating to health and safety	
7	2.8 PPE for use in very dangerous situation	
4.2	3.1.2.2 Prevention against falling from heights	Rope clamps according to this standard are only one part of the safety chain and should be used in conjunction with other compatible equipment.

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

Bibliography

- [1] Regulation 765/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93
- [2] UIAA-Standard 126, Mountaineering and climbing equipment – Rope Clamps (available from www.theuiaa.org)

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